

DELME TAKIMLARI



MITSUBISHI MATERIALS

GENEL KATALOG C010

2025 – 2027

HEDEFLENDİĞİ GİBİ, SAĞLAM, KULLANIŞLI.

Bu katalog kullanıcılara Mitsubishi Materials'ın geniş ürün portföyünde, hedeflendiği üzere ürün bilgilerine hızlı ve kolay erişim olanağı sunmaktadır.

Aşağıda set halindeki 5 adet küçük ve pratik olan kataloglarımız isimleriyle belirtilmiştir.

- TORNALAMA TAKIMLARI
- DELME TAKIMLARI
- YEKPARE KARBÜR FREZELEME TAKIMLARI
- TAKMA UÇLU FREZELEME TAKIMLARI
- MPLUS



KOLAY KULLANIM

DAHA YÜKSEK ESNEKLİK

ÖZEL UYGULAMA ALANLARI

Sağlanan kılıf, tüm gelecek kataloglar için gerekli alanı sunarak kolay saklama imkanı sağlar. Bu kılıfa, katalog döngüsü süresince yayımlanacak ürün yenilik broşürleri de dahildir. Katalog döngüsü içinde yayımlanan her yeni ürün yenilik broşürü, bir önceki versiyonun yerini tamamen alacaktır. Bu nedenle, koleksiyonun güncel kalmasını sağlamak için eski versiyonları yenileri sağlandığında lütfen imha ediniz.

NOTLAR:

- Bu duyuruyla eski kataloglar ve Ürün Haberleri Broşürleri geçerliliğini yitirecektir.
- Ürün Haber Katalogları Nisan ve Ekim aylarında olmak üzere senede 2 kere yayınlanmaktadır.
- Yeni Genel Kataloglar 5 'li set halinde sipariş edilebilir. **Sipariş No: C010TR**



DİJİTAL VERSİYON

Katalogun dijital versiyonuna erişmek için lütfen QR kodunu tarayın veya medya depomuzu ziyaret edin.

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DELME TAKIMLARI

PERFORMANS - PARAMETRELERİN YENİDEN TANIMLANMASI

Modern imalat endüstrisi hızlı hareket ediyor, bu nedenle Mitsubishi Materials sürekli olarak pazarın ön safında olabilmeyi hedeflemektedir.

Ortaklarla ve müşteriler ile sürekli olarak fikir alışverişi yaparak her durum için çözümler sunuyoruz.

Mitsubishi Materials`ın, 6xD'ye kadar delik derinlikleri için değiştirilebilir uçlu MVX matkapları ve derin delikler için MPS1' matkapları , tüm delme uygulamaları için bireysel çözümler üretir.

DIA EDGE



 MITSUBISHI MATERIALS

İNDEKS

DELME TAKIMLARI

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TEKNİK VERİLER	P001
İNDEKS	1
GENEL BİLGİLER	



DELME TAKIMLARI STANDARTLARININ OKUNMASI

- Bu bölüm sayfası nasıl düzenlenir
- ① Matkap ucu uygulamalarına göre düzenlenmiştir.

ÜRÜN FOTOĞRAFI

ÜRÜN BAŞLIĞI

ÜRÜN TİPİ

ÇAP TOLERANSI

ÜRÜN TİPİ

GEOMETRİ

MPS1 Yeni geliştirilen ATTCM bacak PVD kaplama. Paslanmaz ve yavaş talaş için MPS1'gi zifti tip.

4 Zihli ve Süper Uzun Matkap Ucu

İçten Soğutma

● Tip 1 Konik boyutlu silindirik şank tip
● Tip 2 Silindirik şank tip
● Tür 3 Silindirik + eğik kerk, konik boyutlu şank türü
● Tür 4 Silindirik + eğik kerk şank tip

MPS1-SİL-DİN-C/LRC-L40C
MPS1-SİL-DİN-C/LRC-L40C
MPS1-SİL-DİN (Whistle notch)

DC (mm)	DIN (mm)	DF102	Sipariş No	Boyutlar (mm)							Tip		
				LU	LCP	LH	DL	DL1	DL2	DL3			
3	3	3	MPS1-0305-DIN	15,0	19,5	24,5	61,5	61,5	61,5	61,5	61,5	61,5	3
3	3	3	MPS1-0305-DIN-C	15,0	19,5	24,5	61,5	61,5	61,5	61,5	61,5	61,5	3
5	5	5	MPS1-0505-DIN	20,0	24,5	29,5	65,5	65,5	65,5	65,5	65,5	65,5	5
5	5	5	MPS1-0505-DIN-C	20,0	24,5	29,5	65,5	65,5	65,5	65,5	65,5	65,5	5
6	6	6	MPS1-0605-DIN	25,0	29,5	34,5	69,5	69,5	69,5	69,5	69,5	69,5	6
6	6	6	MPS1-0605-DIN-C	25,0	29,5	34,5	69,5	69,5	69,5	69,5	69,5	69,5	6
8	8	8	MPS1-0805-DIN	30,0	34,5	39,5	73,5	73,5	73,5	73,5	73,5	73,5	8
8	8	8	MPS1-0805-DIN-C	30,0	34,5	39,5	73,5	73,5	73,5	73,5	73,5	73,5	8
10	10	10	MPS1-1005-DIN	35,0	39,5	44,5	77,5	77,5	77,5	77,5	77,5	77,5	10
10	10	10	MPS1-1005-DIN-C	35,0	39,5	44,5	77,5	77,5	77,5	77,5	77,5	77,5	10
12	12	12	MPS1-1205-DIN	40,0	44,5	49,5	81,5	81,5	81,5	81,5	81,5	81,5	12
12	12	12	MPS1-1205-DIN-C	40,0	44,5	49,5	81,5	81,5	81,5	81,5	81,5	81,5	12
15	15	15	MPS1-1505-DIN	45,0	49,5	54,5	85,5	85,5	85,5	85,5	85,5	85,5	15
15	15	15	MPS1-1505-DIN-C	45,0	49,5	54,5	85,5	85,5	85,5	85,5	85,5	85,5	15
20	20	20	MPS1-2005-DIN	50,0	54,5	59,5	89,5	89,5	89,5	89,5	89,5	89,5	20
20	20	20	MPS1-2005-DIN-C	50,0	54,5	59,5	89,5	89,5	89,5	89,5	89,5	89,5	20
25	25	25	MPS1-2505-DIN	55,0	59,5	64,5	93,5	93,5	93,5	93,5	93,5	93,5	25
25	25	25	MPS1-2505-DIN-C	55,0	59,5	64,5	93,5	93,5	93,5	93,5	93,5	93,5	25
30	30	30	MPS1-3005-DIN	60,0	64,5	69,5	97,5	97,5	97,5	97,5	97,5	97,5	30
30	30	30	MPS1-3005-DIN-C	60,0	64,5	69,5	97,5	97,5	97,5	97,5	97,5	97,5	30
35	35	35	MPS1-3505-DIN	65,0	69,5	74,5	101,5	101,5	101,5	101,5	101,5	101,5	35
35	35	35	MPS1-3505-DIN-C	65,0	69,5	74,5	101,5	101,5	101,5	101,5	101,5	101,5	35
40	40	40	MPS1-4005-DIN	70,0	74,5	79,5	105,5	105,5	105,5	105,5	105,5	105,5	40
40	40	40	MPS1-4005-DIN-C	70,0	74,5	79,5	105,5	105,5	105,5	105,5	105,5	105,5	40

DELME (DEĞİŞTİRİLEBİLİR UÇLU TİP)

TAW

● İşletme kontrolü için dalgıç kesme kenarı tasarımı.
● İşletme kontrolü için kesme için kesme diğ geometrisi.
● Kesme kontrolü için kesme diğ geometrisi.

(Genel Kullanım)

● Tip 1 Konik boyutlu silindirik şank tip
● Tip 2 Silindirik şank tip

MPS1-SİL-DİN-C/LRC-L40C
MPS1-SİL-DİN (Whistle notch)

DC (mm)	DIN (mm)	DF102	Sipariş No	Boyutlar (mm)							Tip		
				LU	LCP	LH	DL	DL1	DL2	DL3			
3	3	3	MPS1-0305-DIN	14,8	19,2	24,2	61,2	61,2	61,2	61,2	61,2	3	
3	3	3	MPS1-0305-DIN-C	14,8	19,2	24,2	61,2	61,2	61,2	61,2	61,2	61,2	3
5	5	5	MPS1-0505-DIN	19,2	24,2	29,2	65,2	65,2	65,2	65,2	65,2	65,2	5
5	5	5	MPS1-0505-DIN-C	19,2	24,2	29,2	65,2	65,2	65,2	65,2	65,2	65,2	5
6	6	6	MPS1-0605-DIN	24,2	29,2	34,2	69,2	69,2	69,2	69,2	69,2	69,2	6
6	6	6	MPS1-0605-DIN-C	24,2	29,2	34,2	69,2	69,2	69,2	69,2	69,2	69,2	6
8	8	8	MPS1-0805-DIN	29,2	34,2	39,2	73,2	73,2	73,2	73,2	73,2	73,2	8
8	8	8	MPS1-0805-DIN-C	29,2	34,2	39,2	73,2	73,2	73,2	73,2	73,2	73,2	8
10	10	10	MPS1-1005-DIN	34,2	39,2	44,2	77,2	77,2	77,2	77,2	77,2	77,2	10
10	10	10	MPS1-1005-DIN-C	34,2	39,2	44,2	77,2	77,2	77,2	77,2	77,2	77,2	10
12	12	12	MPS1-1205-DIN	39,2	44,2	49,2	81,2	81,2	81,2	81,2	81,2	81,2	12
12	12	12	MPS1-1205-DIN-C	39,2	44,2	49,2	81,2	81,2	81,2	81,2	81,2	81,2	12
15	15	15	MPS1-1505-DIN	44,2	49,2	54,2	85,2	85,2	85,2	85,2	85,2	85,2	15
15	15	15	MPS1-1505-DIN-C	44,2	49,2	54,2	85,2	85,2	85,2	85,2	85,2	85,2	15
20	20	20	MPS1-2005-DIN	49,2	54,2	59,2	89,2	89,2	89,2	89,2	89,2	89,2	20
20	20	20	MPS1-2005-DIN-C	49,2	54,2	59,2	89,2	89,2	89,2	89,2	89,2	89,2	20
25	25	25	MPS1-2505-DIN	54,2	59,2	64,2	93,2	93,2	93,2	93,2	93,2	93,2	25
25	25	25	MPS1-2505-DIN-C	54,2	59,2	64,2	93,2	93,2	93,2	93,2	93,2	93,2	25
30	30	30	MPS1-3005-DIN	59,2	64,2	69,2	97,2	97,2	97,2	97,2	97,2	97,2	30
30	30	30	MPS1-3005-DIN-C	59,2	64,2	69,2	97,2	97,2	97,2	97,2	97,2	97,2	30
35	35	35	MPS1-3505-DIN	64,2	69,2	74,2	101,2	101,2	101,2	101,2	101,2	101,2	35
35	35	35	MPS1-3505-DIN-C	64,2	69,2	74,2	101,2	101,2	101,2	101,2	101,2	101,2	35
40	40	40	MPS1-4005-DIN	69,2	74,2	79,2	105,2	105,2	105,2	105,2	105,2	105,2	40
40	40	40	MPS1-4005-DIN-C	69,2	74,2	79,2	105,2	105,2	105,2	105,2	105,2	105,2	40

Not 1) Yukarıdaki boyutlar (*) uçları taktikten kullanılır.
Not 2) Lüften bu katalogta olmayan herhangi bir geometri için bizimle iletişime kurun (farklı çap ve uzunluk).

● Avrupa standart stok. □ Stokta bulunulmaz, yalnızca siparişe istinaden üretilir. **M057**

● Avrupa standart stok. □ Stokta bulunulmaz, yalnızca siparişe istinaden üretilir. (Not: Bir kutuda 1 kesici uç) **M148**

ÜRÜN STANDARTLARI
ürün çaplarını, sipariş numaralarını, stok durumunu, kanal sayısını, boyutları ve yedek parçaları gösterir.

STOK DURUM İŞARETİ İÇİN AÇIKLAMA
her bir çift sayfanın sol tarafındaki sayfada gösterilir.

DELME TAKIMLARI

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MATKAP UCU STANDARDI

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RAYBA STANDARDI

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*Alfabetik sıralı indeks

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M020 DFAS	M189 MCW	M158 MVX
M092 DSAS	M128 MHS	M166 MVX (KESİCİ UÇ)
M033 DVAS	M075 MICRO-MGS	M139 STAW
M025 DWAE	M024 MINI-DWAE	M142 STAW (KESİCİ UÇ)
M170 JFS (BURÇ)	M018 MINI-MFE	M148 TAW
M122 MAE	M049 MINI-MVS	M153 TAW (KESİCİ UÇ)
M122 MAS	M053 MINI-MWS	M177 VAPDM
M187 MCA	M078 MMS	M172 VAPDS
M191 MCAH	M098 MNS	M183 VAPDSCB
M186 MCC	M057 MPS1	M181 VSD
M190 MCCH	M008 MSE	

M195 RX1S



M001

ÜRÜN KODU TANIMLAMASI

MATKAP UÇLARININ ÜRÜN KODU

M
DELME

MV

S

0300

X

S

Matkap Ucu Ürün Adı	Soğutma Tipi	Çap	L/D	Şaft Çapı Tipi
DLE : DLE Matkap Uçları DFA : DFAS Matkap Uçları DSA : DSAS Matkap Uçları DWA : DWAE Matkap Uçları MPS1 : MPS1 Matkap Uçları MV : MVS Matkap Uçları MW : MWS Matkap Uçları MF : MFE Matkap Uçları MG : MGS Matkap Uçları MA : MAE/MAS Matkap Uçları MS : MSE Matkap Uçları MM : MMS Matkap Uçları MN : MNS Matkap Uçları MH : MHS Matkap Uçları MC : MC Matkap Uçları	E : Dıştan Soğutma S : İçten Soğutma	Dış. 0050 → Ø 0.5 0300 → Ø 3.0	S : 2D M : 3D L : 5D (MAE / MAS Tipi Matkap Uçları 6D'dir) L8C : 8D L10C : 10D L12C : 12D L15C : 15D L20C : 20D L25C : 25D L30C : 30D L40C : 40D X : 12D X8DB : 8D X10DB : 10D X15DB : 15D X20DB : 20D X25DB : 25D X30DB : 30D	A : Matkap ucu ile aynı çapa sahip şaft B : Sabit çaplı şaft C : Silindirik şaftlı tip S*** : Şaft Çapı

* Özel durumlar kısmen dahil edilmiştir.

VA

PD

S

D0050

Matkap Ucu Ürün Adı	Uygulamalar	Helis kanal Uzunluğu	Çap
VA : Violet kaplamalı hassas matkap uçları (Yüksek Kalite, Yüksek Hız Çeliği) V : Violet matkap uçları	SD : Genel amaçlı düz matkap uçları PD : Yüksek hassasiyetli delme için	S : Kısa M : Orta	Örneğin. D0300 → Ø 3.0 D0050 → Ø 0.5

* Özel durumlar kısmen dahil edilmiştir.

DVA

S

0100

X50

S040

Uygulamalar	Soğutma suyu	Çap	L/D	Şaft tipi
DVA : Genel kullanım amaçlı	S : İçeriden soğutma suyu	0100 → Ø 1.0mm 0290 → Ø 2.9mm	X50 : L/D=50 X02 : L/D=2	S040 : Şaft Çapı 4mm

SEMBOL AÇIKLAMALARI

Takım malzemesi



Ultra mikro graynli karbür

Ultra mikro graynli karbür alt yapı malzemesi kullanılmıştır.



Yüksek kalite yüksek alaşımli HSS

Yüksek kalite yüksek alaşımli HSS alt yapı malzemesi kullanılmıştır.



Yüksek hız çeliği

Yüksek hız çeliği alt yapı malzemesi kullanılmıştır.

Öz inceltme



X öz inceltme

X öz inceltme delme noktasında kullanılır.



Z öz inceltme

Z öz inceltme delme noktasında kullanılır.



XR öz inceltme

XR öz inceltme delme noktasında kullanılır.



N öz inceltme

N öz inceltme delme noktasında kullanılır.

Tolerans



Matkap Çapı Toleransı



Şaft Çapı Toleransı

Soğutma Deliği



Soğutma Delikli

İŞ PARÇASI MALZEME ÇEŞİTLERİ

İlk önerilen



Önerilmeyen



Kaplama



MIRACLE Kaplama

Orijinal MIRACLE (Al,Ti)N kaplama. Ayrıca kuru kesme için uygundur.



PVD Kaplama

Büyük ölçüde küçük çaplı matkaplar için özel üretilmiş, geliştirilmiş aşınma direncine sahip DP102A PVD kaplı sementede edilmiş karbür kalitesidir.



PVD Kaplama

Geniş bir iş parçası malzemesi yelpazesinde çelik, dökme demir bazlı malzemeler ve alüminyum alaşımlarında olağanüstü aşınma direnci sergiler.



PVD Kaplama

Paslanmaz çelik için ideal ultra mikro tanecikli sementede edilmiş karbür ve üstün ısı direncine ve yağlama kapasitesi özelliklerine sahip PVD kaplama.



PVD Kaplama

DP9020, hem yüksek aşınma hem de kırılma direncini birleştirerek, daha uzun takım ömrü elde eder.



VIOLET Kaplama

TiN kaplamalı ürünlerden 2–3 kat daha fazla takım ömrü sağlar.



CVD Elmas Kaplama

Benzersiz çok katlı mikro taneli elmas kristal kontrol teknolojisi, aşınma direncini ve kayganlığı önemli ölçüde artırır.















Açı ve kesme kenarı



Uç açısı

Uçtaki delme noktası açısını gösterir.

MATKAP UCU SEÇME TABLOSU

Takım malzemesi	Ölçü Aralığı	Delik Derinliği (L/D)	Ürün Kodu	Soğutma	Kaplama	Çalışma Malzemesi						Şekil	Sayfa Numarası	
						P	M	K	N	S	H		Boyutlar	Kesme Koşulları
						Karbon Çeligi, Alaşimli Çelik	Paslanmaz Çelik	Dökme Demir	Hafif Alaşım	Isıya Dirençli Alaşım	Sertleştirilmiş Çelik			
Yekpare Karbür	Ø 0.1 - Ø 0.99	5-12	MSE	Dıştan	VP	○	○	○	○	○			M008	M009
												MSP=MSE için Pilot Matkap Ucu		
	Ø 1.0 - Ø 16.0	-	DLE	Dıştan	DP1 DP1A	○	○	○					M012	M016
												SIG=60°, 90°, 120°, 145°		
	Ø 0.75 - Ø 2.95	2	MINI-MFE	Dıştan	DP1A	○	○	○	○				M018	M019
	Ø 3.0 - Ø 14.0	3	DFAS	İçten	DP1A	○	○	○	○	○			M020	M023
	Ø 1.0 - Ø 2.9	2-50	DVAS	İçten	DP1	○	○	○	○	○			M033	M037
	Ø 1.0 - Ø 2.9	2,4	MINI-DWAE	Dıştan	DP1A	○	○	○					M024	M031
	Ø 3.0 - Ø 14.0	2,4	DWAE	Dıştan	DP1A	○	○	○					M025	M031
	Ø 1.0 - Ø 2.9	2*-30	MINI-MVS	İçten	DP1	○	○	○	○	○			M049	M051
	Ø 0.5 - Ø 0.99	1-12	MINI-MWS	İçten	VP	○	○	○	○	○			M053	M055
	Ø 3.0 - Ø 20.0	3-40	MPS1	İçten	DP1	○	○	○					M057	M072
												MPS1-xxxx-PC=MPS1 için Pilot Matkap Ucu		
	Ø 0.95 - Ø 12.0	1-30	MHS	İçten	VP	○	○			○	○		M128	M136
	Ø 3.0 - Ø 20.0	3,5	MMS	İçten	DP7		○						M078	M090
Ø 3.0 - Ø 15.0	3,5	DSAS	İçten	DP9					○			M092	M097	
Ø 0.7 - Ø 3.0	-80	MICRO-MGS	İçten	-	○	○	○	○				M075	M076	

2* = Pilot delik matkabı. Tolerans değeri +0,014'tür ve delik derinliği 2 DC'dir.

MATKAP UCU SERİLERİ

1. Öneri

P M K N S H

2. öneri

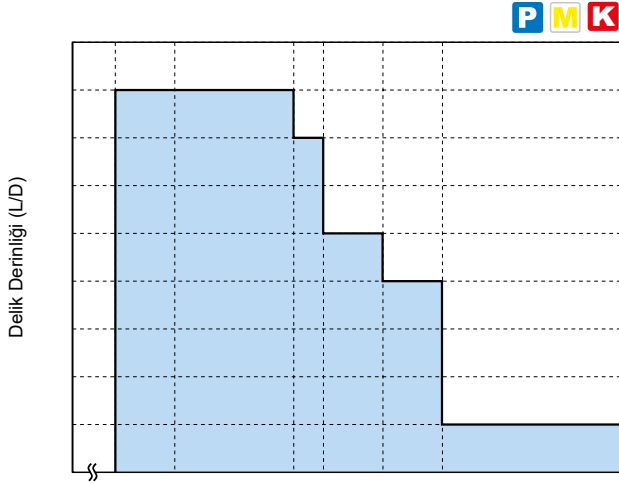
P M K N S H

YEKPARE KARBÜR

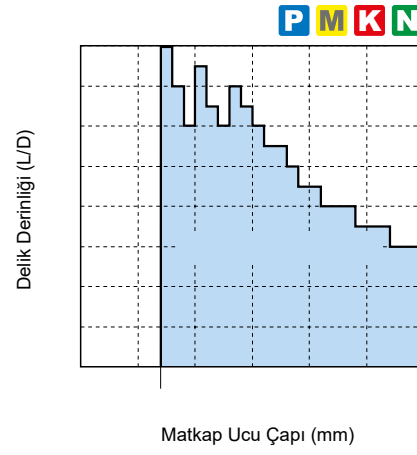
MPS1 (Çift Zırlıklı tip)

M

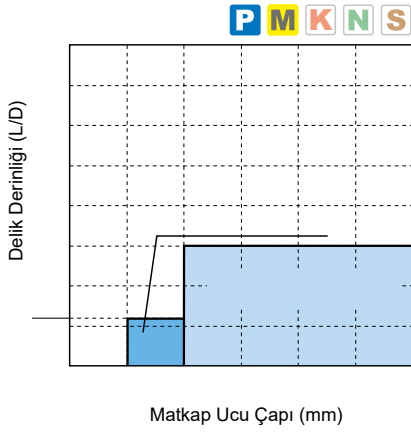
DELME



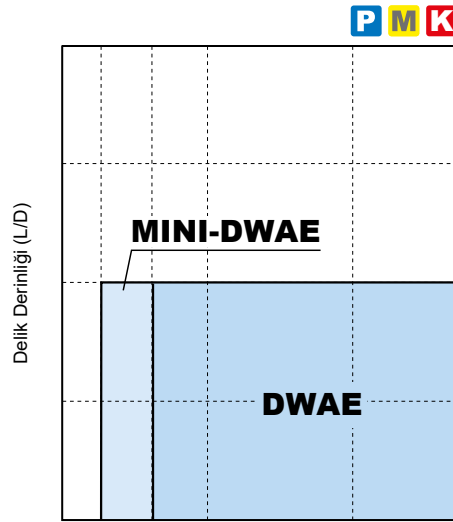
Matkap Ucu Çapı (mm)



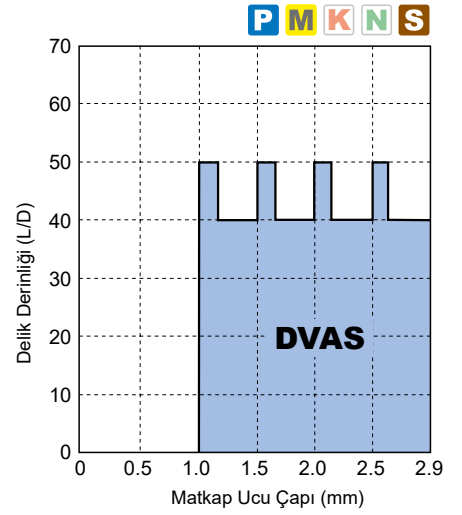
Matkap Ucu Çapı (mm)



Matkap Ucu Çapı (mm)

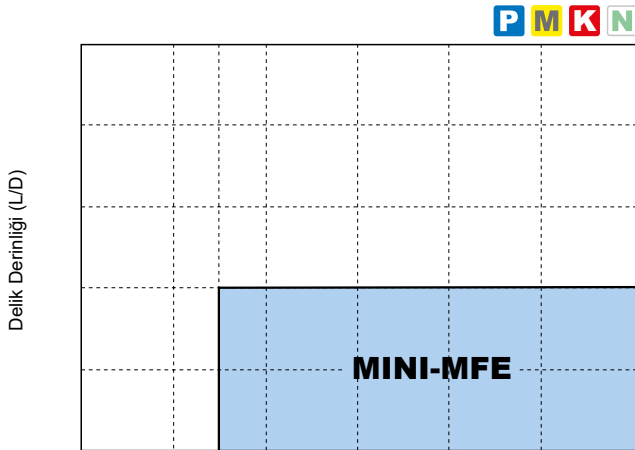


Matkap Ucu Çapı (mm)

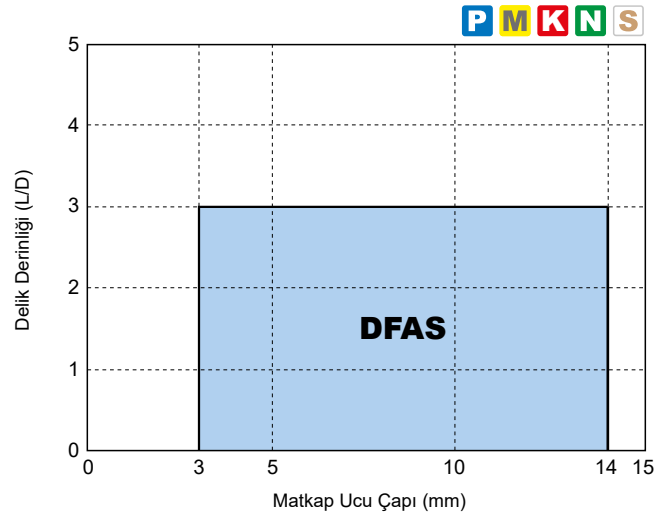
DVAS **NEW**

Matkap Ucu Çapı (mm)

DFAS



Matkap Ucu Çapı (mm)



Matkap Ucu Çapı (mm)

1. Öneri

P M K N S H

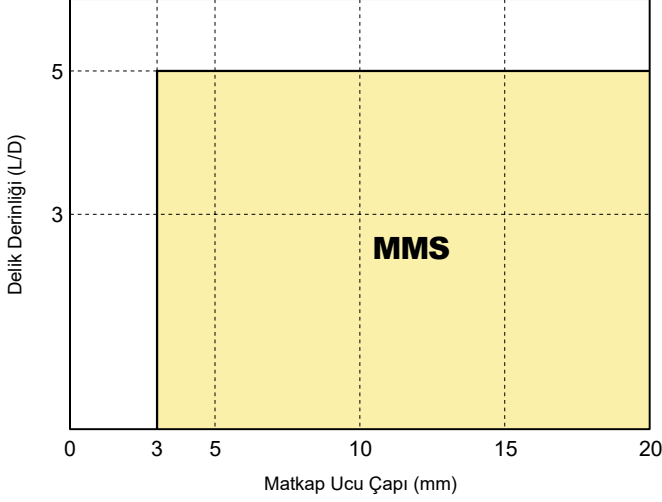
2. öneri

P M K N S H

YEKPARE KARBÜR

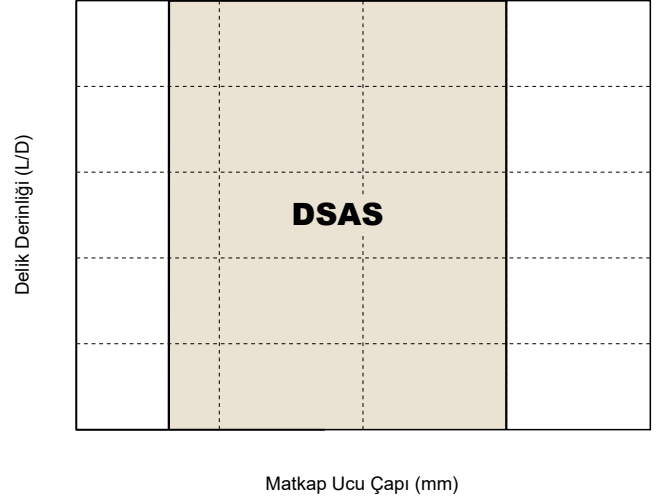
MMS (Paslanmaz çelik için)

M



DSAS (Isıya Dirençli Alaşımların İşlenmesi için)

S

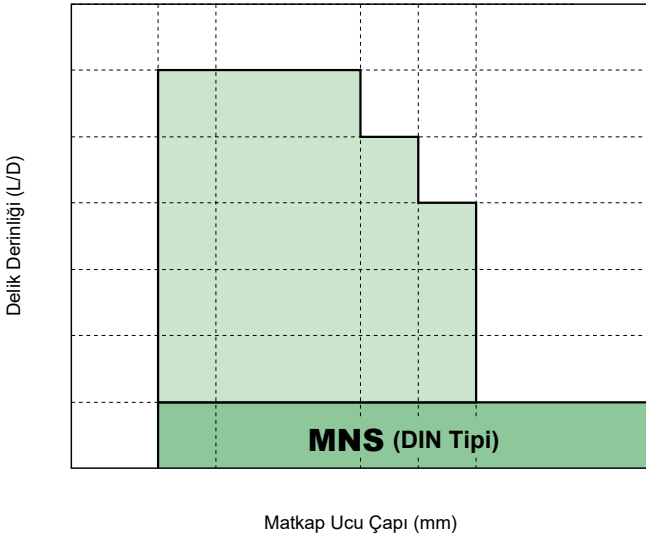


M

DELME

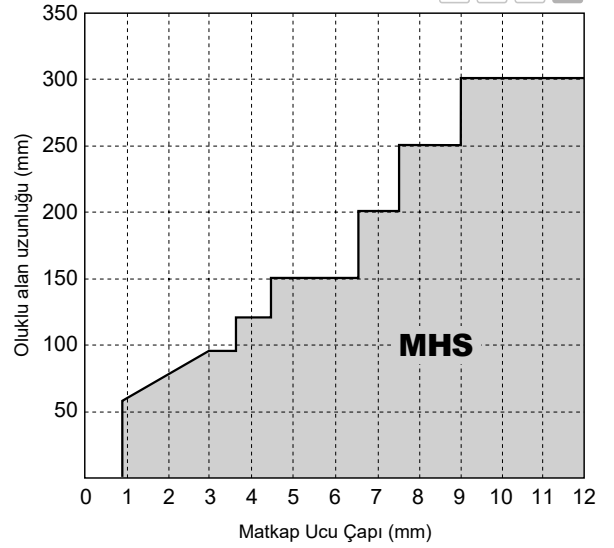
MNS (Alüminyum alaşımları için)

N



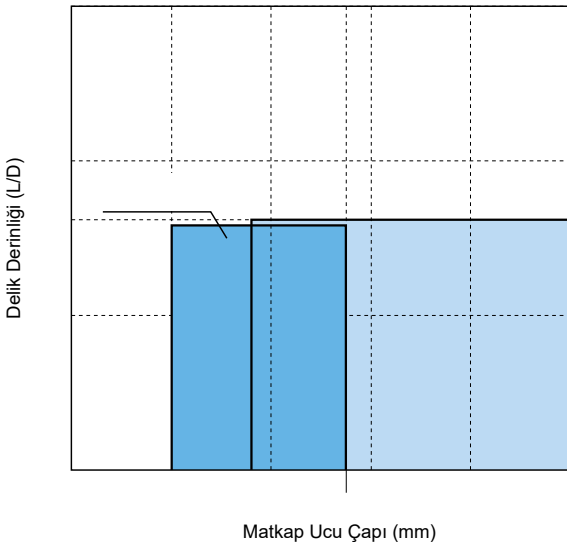
MHS (Lokma ve kalıp işleme için)

P M S H

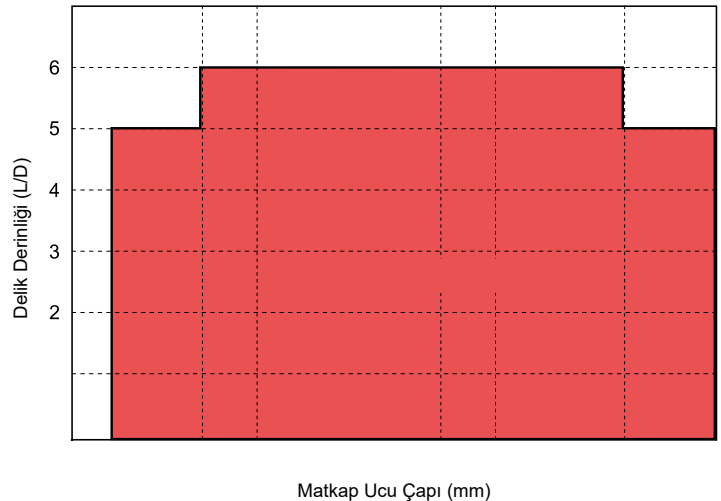


DEĞİŞTİRİLEBİLİR UÇLU TİP

P M K



P M K N H



DELME (YEKPARE KARBÜR)

MSE

- Talaş sıkışmasını önlemek için geniş helis kanalı.
- Stabil, küçük çaplı işleme.



P

M

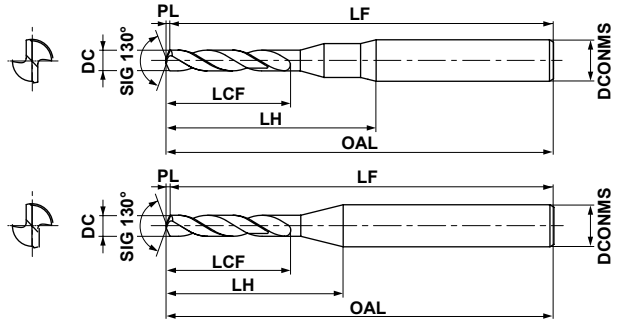
K

N

S

H

Dıştan Soğutma



Tip1

Tip2

M

DELME



$$0.10 \leq DC \leq 0.99$$

$$-0.009$$



$$DCONMS=3$$

$$-0.006$$

- MSE matkap uçları, ısıtmalı tutucularla kullanıma uygundur.

DC (mm)	VP20MF	VP15TF	Sipariş No	Boyutlar (mm)						Tip
				LCF	LH	OAL	LF	PL	DCONMS	
0.10	●		MSE0010SB	1.2	9.7	38.0	38	0.02	3	1
0.11	●		MSE0011SB	1.2	9.7	38.0	38	0.03	3	1
0.12	●		MSE0012SB	1.4	9.7	38.0	38	0.03	3	1
0.13	●		MSE0013SB	1.4	9.7	38.0	38	0.03	3	1
0.14	●		MSE0014SB	2.0	9.7	38.0	38	0.03	3	1
0.15	●		MSE0015SB	2.0	9.7	38.0	38	0.03	3	1
0.16	●		MSE0016SB	2.0	9.7	38.0	38	0.04	3	1
0.17	●		MSE0017SB	2.0	9.7	38.0	38	0.04	3	1
0.18	●		MSE0018SB	2.0	9.7	38.0	38	0.04	3	1
0.19	●		MSE0019SB	2.0	9.7	38.0	38	0.04	3	1
0.20	●		MSE0020SB	2.6	9.8	38.1	38	0.05	3	1
0.21	●		MSE0021SB	2.6	9.8	38.1	38	0.05	3	1
0.22	●		MSE0022SB	2.6	9.8	38.1	38	0.05	3	1
0.23	●		MSE0023SB	2.6	9.8	38.1	38	0.05	3	1
0.24	●		MSE0024SB	3.1	9.8	38.1	38	0.06	3	1
0.25	●		MSE0025SB	3.1	9.8	38.1	38	0.06	3	1
0.26	●		MSE0026SB	3.1	9.8	38.1	38	0.06	3	1
0.27	●		MSE0027SB	3.1	9.8	38.1	38	0.06	3	1
0.28	●		MSE0028SB	3.1	9.8	38.1	38	0.07	3	1
0.29	●		MSE0029SB	3.1	9.8	38.1	38	0.07	3	1
0.30	●		MSE0030SB	5.1	10.3	38.1	38	0.07	3	2
0.31	●		MSE0031SB	5.1	10.3	38.1	38	0.07	3	2
0.32	●		MSE0032SB	5.1	10.3	38.1	38	0.07	3	2
0.33	●		MSE0033SB	5.1	10.3	38.1	38	0.08	3	2
0.34	●		MSE0034SB	6.1	11.3	38.1	38	0.08	3	2
0.35	●		MSE0035SB	6.1	11.2	38.1	38	0.08	3	2
0.36	●		MSE0036SB	6.1	11.2	38.1	38	0.08	3	2
0.37	●		MSE0037SB	6.1	11.2	38.1	38	0.09	3	2
0.38	●		MSE0038SB	6.1	11.2	38.1	38	0.09	3	2
0.39	●		MSE0039SB	6.1	11.2	38.1	38	0.09	3	2
0.40	●		MSE0040SB	7.1	12.2	38.1	38	0.09	3	2
0.41	●		MSE0041SB	7.1	12.1	38.1	38	0.10	3	2
0.42	●		MSE0042SB	7.1	12.1	38.1	38	0.10	3	2
0.43	●		MSE0043SB	7.1	12.1	38.1	38	0.10	3	2

DC (mm)	VP20MF	VP15TF	Sipariş No	Boyutlar (mm)						Tip
				LCF	LH	OAL	LF	PL	DCONMS	
0.44	●		MSE0044SB	7.1	12.1	38.1	38	0.10	3	2
0.45	●		MSE0045SB	7.1	12.1	38.1	38	0.10	3	2
0.46	●		MSE0046SB	7.1	12.0	38.1	38	0.11	3	2
0.47	●		MSE0047SB	7.1	12.0	38.1	38	0.11	3	2
0.48	●		MSE0048SB	7.1	12.0	38.1	38	0.11	3	2
0.49	●		MSE0049SB	7.1	12.0	38.1	38	0.11	3	2
0.50	●		MSE0050SB	7.1	12.0	38.1	38	0.12	3	2
0.51	●		MSE0051SB	7.1	11.9	38.1	38	0.12	3	2
0.52	●		MSE0052SB	7.1	11.9	38.1	38	0.12	3	2
0.53	●		MSE0053SB	7.1	11.9	38.1	38	0.12	3	2
0.54	●		MSE0054SB	7.1	11.9	38.1	38	0.13	3	2
0.55	●		MSE0055SB	7.1	11.9	38.1	38	0.13	3	2
0.56	●		MSE0056SB	7.1	11.9	38.1	38	0.13	3	2
0.57	●		MSE0057SB	7.1	11.8	38.1	38	0.13	3	2
0.58	●		MSE0058SB	7.1	11.8	38.1	38	0.14	3	2
0.59	●		MSE0059SB	7.1	11.8	38.1	38	0.14	3	2
0.60	●		MSE0060SB	7.1	11.8	38.1	38	0.14	3	2
0.61	●		MSE0061SB	7.1	11.8	38.1	38	0.14	3	2
0.62	●		MSE0062SB	7.1	11.7	38.1	38	0.14	3	2
0.63	●		MSE0063SB	7.2	11.8	38.2	38	0.15	3	2
0.64	●		MSE0064SB	7.2	11.8	38.2	38	0.15	3	2
0.65	●		MSE0065SB	7.2	11.8	38.2	38	0.15	3	2
0.66	●		MSE0066SB	7.2	11.8	38.2	38	0.15	3	2
0.67	●		MSE0067SB	7.2	11.7	38.2	38	0.16	3	2
0.68	●		MSE0068SB	7.2	11.7	38.2	38	0.16	3	2
0.69	●		MSE0069SB	7.2	11.7	38.2	38	0.16	3	2
0.70	●		MSE0070SB	8.2	12.7	38.2	38	0.16	3	2
0.71	●		MSE0071SB	8.2	12.7	38.2	38	0.17	3	2
0.72	●		MSE0072SB	8.2	12.7	38.2	38	0.17	3	2
0.73	●		MSE0073SB	8.2	12.6	38.2	38	0.17	3	2
0.74	●		MSE0074SB	8.2	12.6	38.2	38	0.17	3	2
0.75	●		MSE0075SB	8.2	12.6	38.2	38	0.17	3	2
0.76	●		MSE0076SB	8.2	12.6	38.2	38	0.18	3	2
0.77	●		MSE0077SB	8.2	12.6	38.2	38	0.18	3	2

Not 1) Lütfen bu katalogta olmayan herhangi bir geometri için bizimle iletişim kurun (ör. farklı çaplar ve uzunluklar sipariş verilebilir).

- : Avrupa standart stok.

DC (mm)	VP20MF	VP15TF	Sipariş No	Boyutlar (mm)						Tip
				LCF	LH	OAL	LF	PL	DCONMS	
0.78	●	●	MSE0078SB	8.2	12.5	38.2	38	0.18	3	2
0.79	●	●	MSE0079SB	8.2	12.5	38.2	38	0.18	3	2
0.80	●	●	MSE0080SB	10.2	14.5	38.2	38	0.19	3	2
0.81	●	●	MSE0081SB	10.2	14.5	38.2	38	0.19	3	2
0.82	●	●	MSE0082SB	10.2	14.5	38.2	38	0.19	3	2
0.83	●	●	MSE0083SB	10.2	14.5	38.2	38	0.19	3	2
0.84	●	●	MSE0084SB	10.2	14.4	38.2	38	0.20	3	2
0.85	●	●	MSE0085SB	10.2	14.4	38.2	38	0.20	3	2
0.86	●	●	MSE0086SB	10.2	14.4	38.2	38	0.20	3	2
0.87	●	●	MSE0087SB	10.2	14.4	38.2	38	0.20	3	2
0.88	●	●	MSE0088SB	10.2	14.4	38.2	38	0.21	3	2

DC (mm)	VP20MF	VP15TF	Sipariş No	Boyutlar (mm)						Tip
				LCF	LH	OAL	LF	PL	DCONMS	
0.89	●	●	MSE0089SB	10.2	14.3	38.2	38	0.21	3	2
0.90	●	●	MSE0090SB	10.2	14.3	38.2	38	0.21	3	2
0.91	●	●	MSE0091SB	10.2	14.3	38.2	38	0.21	3	2
0.92	●	●	MSE0092SB	10.2	14.3	38.2	38	0.21	3	2
0.93	●	●	MSE0093SB	10.2	14.3	38.2	38	0.22	3	2
0.94	●	●	MSE0094SB	10.2	14.2	38.2	38	0.22	3	2
0.95	●	●	MSE0095SB	10.2	14.2	38.2	38	0.22	3	2
0.96	●	●	MSE0096SB	10.2	14.2	38.2	38	0.22	3	2
0.97	●	●	MSE0097SB	10.2	14.2	38.2	38	0.23	3	2
0.98	●	●	MSE0098SB	10.2	14.2	38.2	38	0.23	3	2
0.99	●	●	MSE0099SB	10.2	14.2	38.2	38	0.23	3	2

ÖNERİLEN KESME KOŞULLARI

Çalışma Malzemesi	P										
	Yumuşak Çelik ($\leq 180\text{HB}$) Ck10						Karbon çelik, Alaşımli çelik (180–280HB) Ck45, 41CrMo4				
Matkap Ucu Çapı DC (mm)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Adım (mm)	İlerleme hızı (mm/dak)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Adım (mm)	İlerleme hızı (mm/dak)	
0.10	6	20000	0.002 (0.001–0.003)	0.02	40	6	20000	0.002 (0.001–0.003)	0.02	40	
0.12	8	20000	0.002 (0.001–0.003)	0.02	40	8	20000	0.002 (0.001–0.003)	0.02	40	
0.16	10	20000	0.002 (0.001–0.003)	0.02	40	10	20000	0.002 (0.001–0.003)	0.02	40	
0.20	13	20000	0.003 (0.002–0.004)	0.04	60	13	20000	0.003 (0.002–0.004)	0.04	60	
0.25	16	20000	0.003 (0.002–0.004)	0.04	60	16	20000	0.003 (0.002–0.004)	0.04	60	
0.32	20	20000	0.004 (0.003–0.005)	0.05	80	20	20000	0.004 (0.003–0.005)	0.05	80	
0.40	25	20000	0.004 (0.003–0.005)	0.05	80	25	20000	0.004 (0.003–0.005)	0.05	80	
0.50	31	20000	0.006 (0.005–0.007)	0.10	120	31	20000	0.006 (0.005–0.007)	0.10	120	
0.63	40	20000	0.008 (0.006–0.010)	0.10	160	40	20000	0.008 (0.006–0.010)	0.10	160	
0.80	50	20000	0.020 (0.015–0.025)	0.30	400	50	20000	0.015 (0.012–0.018)	0.30	300	
0.99	62	20000	0.040 (0.030–0.050)	0.30	800	62	20000	0.020 (0.015–0.025)	0.30	400	

Çalışma Malzemesi	P										
	Karbon çelik, Alaşım çelik (280–350HB) 36CrNiMo4						Önceden Sertleştirilmiş Çelik (35–45HRC) X36CrMo17				
Matkap Ucu Çapı DC (mm)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Adım (mm)	İlerleme hızı (mm/dak)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Adım (mm)	İlerleme hızı (mm/dak)	
0.10	6	20000	0.002 (0.001–0.003)	0.02	40	6	20000	0.002 (0.001–0.003)	0.02	40	
0.12	8	20000	0.002 (0.001–0.003)	0.02	40	8	20000	0.002 (0.001–0.003)	0.02	40	
0.16	10	20000	0.002 (0.001–0.003)	0.02	40	10	20000	0.002 (0.001–0.003)	0.02	40	
0.20	13	20000	0.003 (0.002–0.004)	0.04	60	13	20000	0.003 (0.002–0.004)	0.04	60	
0.25	16	20000	0.003 (0.002–0.004)	0.04	60	16	20000	0.003 (0.002–0.004)	0.04	60	
0.32	20	20000	0.004 (0.003–0.005)	0.05	80	20	20000	0.004 (0.003–0.005)	0.05	80	
0.40	25	20000	0.004 (0.003–0.005)	0.05	80	25	20000	0.004 (0.003–0.005)	0.05	80	
0.50	31	20000	0.006 (0.005–0.007)	0.10	120	31	20000	0.006 (0.005–0.007)	0.10	120	
0.63	40	20000	0.008 (0.006–0.010)	0.10	160	40	20000	0.008 (0.006–0.010)	0.10	160	
0.80	50	20000	0.015 (0.012–0.018)	0.30	300	50	20000	0.015 (0.012–0.018)	0.30	300	
0.99	62	20000	0.020 (0.015–0.025)	0.30	400	62	20000	0.020 (0.015–0.025)	0.30	400	

Not 1) Ø 0.3 mm'ye kadar delikleri delerken, punta matkap ucu kullanılması önerilir.

Not 2) Tezgahın ve iş parçası rijidliğine bağlı olarak kesme koşullarını değiştirin.

Not 3) Derinliği DCx5 üzerindeki delikleri işlerken, yukarıda belirtilen gağalama mesafesini düşürün.

Not 4) Yukarıdaki kesme koşullarını kullanarak delme için suda çözünebilir soğutma sıvısı kullanımı (20 kat seyreltilmiş) önerilir.

Sıvı yağ veya buhuru kullanılırsa devirleri düşürün.

Not 5) Yukarıdaki tablolarda "—" ile işaretli çalışma malzemelerini Diştan soğutma suyu ile delmek zordur.

DELME (YEKPARE KARBÜR)

- Talaş sıkışmasını önlemek için geniş helis kanalı.
- Stabil, küçük çaplı işleme.

MSE

KARBÜR

M
DELME

ÖNERİLEN KESME KOŞULLARI

Çalışma Malzemesi	M					K				
	Ostenitli Paslanmaz Çelik (≤200HB) X5CrNi1810, X5CrNiMo17-12-2					Gri Dökme Demir (≤350 MPa) GG30				
Matkap Ucu Çapı DC (mm)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Adım (mm)	İlerleme hızı (mm/dak)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Adım (mm)	İlerleme hızı (mm/dak)
0.10	6	20000	0.002 (0.001—0.003)	0.02	40	6	20000	0.002 (0.001—0.003)	0.02	40
0.12	8	20000	0.002 (0.001—0.003)	0.02	40	8	20000	0.002 (0.001—0.003)	0.02	40
0.16	10	20000	0.002 (0.001—0.003)	0.02	40	10	20000	0.002 (0.001—0.003)	0.02	40
0.20	11	18000	0.003 (0.002—0.004)	0.04	54	13	20000	0.003 (0.002—0.004)	0.04	60
0.25	14	18000	0.003 (0.002—0.004)	0.04	54	16	20000	0.003 (0.002—0.004)	0.04	60
0.32	15	15000	0.004 (0.003—0.005)	0.05	60	20	20000	0.004 (0.003—0.005)	0.05	80
0.40	19	15000	0.004 (0.003—0.005)	0.05	60	25	20000	0.004 (0.003—0.005)	0.05	80
0.50	16	10000	0.006 (0.005—0.007)	0.10	60	31	20000	0.006 (0.005—0.007)	0.10	120
0.63	20	10000	0.008 (0.006—0.010)	0.10	80	40	20000	0.008 (0.006—0.010)	0.10	160
0.80	15	6000	0.015 (0.012—0.018)	0.20	90	50	20000	0.020 (0.015—0.025)	0.30	400
0.99	19	6000	0.020 (0.015—0.025)	0.20	120	62	20000	0.040 (0.030—0.050)	0.30	800

Çalışma Malzemesi	N					S				
	Alüminyum Alaşım (Si<%5)					Isıya Dirençli Alaşım Inconel®718				
Matkap Ucu Çapı DC (mm)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Adım (mm)	İlerleme hızı (mm/dak)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Adım (mm)	İlerleme hızı (mm/dak)
0.10	6	20000	0.002 (0.001—0.003)	0.05	40	2	7000	0.001 (0.0005—0.001)	0.02	7
0.12	8	20000	0.003 (0.002—0.004)	0.05	60	3	7000	0.001 (0.0005—0.001)	0.02	7
0.16	10	20000	0.004 (0.003—0.005)	0.05	80	4	7000	0.001 (0.0005—0.001)	0.02	7
0.20	13	20000	0.006 (0.005—0.007)	0.10	120	3	5000	0.002 (0.001—0.002)	0.04	10
0.25	16	20000	0.008 (0.006—0.010)	0.10	160	4	5000	0.002 (0.001—0.002)	0.04	10
0.32	20	20000	0.010 (0.008—0.012)	0.30	200	4	4000	0.002 (0.001—0.002)	0.05	8
0.40	25	20000	0.020 (0.015—0.025)	0.30	400	5	4000	0.002 (0.001—0.002)	0.05	8
0.50	31	20000	0.030 (0.025—0.035)	0.50	600	5	3000	0.003 (0.001—0.003)	0.10	9
0.63	40	20000	0.040 (0.035—0.045)	0.50	800	6	3000	0.004 (0.002—0.004)	0.10	12
0.80	50	20000	0.050 (0.045—0.055)	0.80	1000	5	1800	0.006 (0.004—0.006)	0.20	10.8
0.99	62	20000	0.060 (0.055—0.065)	0.80	1200	6	1800	0.010 (0.008—0.010)	0.20	18

Not 1) Ø 0.3 mm'ye kadar delikleri delerken, punta matkap ucu kullanılması önerilir.

Not 2) Tezgahın ve iş parçası rijidliğine bağlı olarak kesme koşullarını değiştirin.

Not 3) Derinliği DCx5 üzerindeki delikleri işlerken, yukarıda belirtilen gağalama mesafesini düşürün.

Not 4) Yukarıdaki kesme koşullarını kullanarak delme için suda çözünebilir soğutma sıvısı kullanımı (20 kat seyreltilmiş) önerilir.

Sıvı yağ veya buhuru kullanılırsa devirleri düşürün.

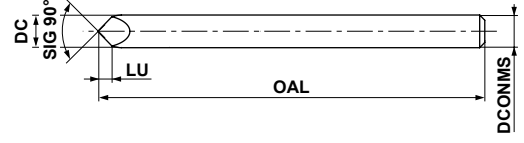
Not 5) Yukarıdaki tablolarda "—" ile işaretli çalışma malzemelerini Dıştan soğutma suyu ile delmek zordur.

MSP

Punta matkab ucu



KARBÜR



M

DELME

Sipariş No	Kalite	Stok	Boyutlar (mm)				Çap Aralığı (mm)
			DC	LU	OAL	DCONMS	
MSP0300SB	VP15TF	●	3.0	1.5	38.0	3.0	0.1—3.0

ÖNERİLEN KESME KOŞULLARI

Delik Çap Aralığı (mm)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	İlerleme hızı (mm/dak)
0.1—3.0	10000	0.0005 (0.00025—0.001)	5

● : Avrupa standart stok.

DELME (YEKPARE KARBÜR)

DLE

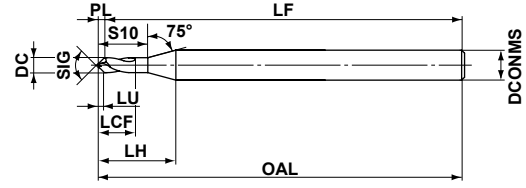
Ön Delik Matkap Ucu Serisi



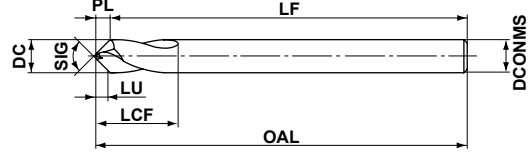
Dıştan Soğutma

■ Uç Açısı SIG 60°, 90°

M
DELME

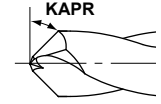


Tip1



Tip2

■ Uç Açısı SIG 120°, 145°



h7	DCONMS=3	3 < DCONMS ≤ 6	6 < DCONMS ≤ 10	10 < DCONMS ≤ 16
	0 -0.010	0 -0.012	0 -0.015	0 -0.018

DC (mm)	SIG	DP1020	DP102A	Sipariş No	Boyutlar (mm)								Tip	
					LU	LCF	LH	S10	OAL	LF	PL	KAPR		DCONMS
3.0	60°	●		DLE0300S030P060	2.0	9	—	—	45	42.9	2.1	60°	3	2
4.0	60°	●		DLE0400S040P060	2.7	12	—	—	50	47.2	2.8	60°	4	2
5.0	60°	●		DLE0500S050P060	3.4	14	—	—	60	56.5	3.5	60°	5	2
6.0	60°	●		DLE0600S060P060	4.0	15	—	—	66	61.8	4.2	60°	6	2
7.0	60°	●		DLE0700S070P060	4.7	18	—	—	74	69.1	4.9	60°	7	2
8.0	60°	●		DLE0800S080P060	5.4	20	—	—	74	68.4	5.6	60°	8	2
10.0	60°	●		DLE1000S100P060	6.8	24	—	—	84	77.0	7.0	60°	10	2
12.0	60°	●		DLE1200S120P060	8.1	28	—	—	95	86.6	8.4	60°	12	2
1.0	90°	●		DLE0100S030P090	0.35	2	6.7	3.0	45	44.6	0.4	45°	3	1
1.5	90°	●		DLE0150S030P090	0.55	3	7.3	4.5	45	44.4	0.6	45°	3	1
2.0	90°	●		DLE0200S030P090	0.8	4	7.9	6.1	45	44.1	0.9	45°	3	1
2.5	90°	●		DLE0250S030P090	1.0	5	7.9	7.1	45	43.9	1.1	45°	3	1
3.0	90°	●		DLE0300S030P090	1.2	9	—	—	45	43.7	1.3	45°	3	2
4.0	90°	●		DLE0400S040P090	1.6	12	—	—	50	48.3	1.7	45°	4	2
5.0	90°	●		DLE0500S050P090	2.0	14	—	—	60	57.9	2.1	45°	5	2
6.0	90°	●		DLE0600S060P090	2.4	15	—	—	66	63.4	2.6	45°	6	2
7.0	90°	●		DLE0700S070P090	2.8	18	—	—	74	71.0	3.0	45°	7	2
8.0	90°	●		DLE0800S080P090	3.2	20	—	—	74	70.6	3.4	45°	8	2
10.0	90°	●		DLE1000S100P090	4.1	24	—	—	84	79.7	4.3	45°	10	2
12.0	90°	●		DLE1200S120P090	4.9	28	—	—	95	89.9	5.1	45°	12	2
16.0	90°	●		DLE1600S160P090	6.6	35	—	—	113	106.2	6.8	45°	16	2

Not 1) İki kademeli uç açılarının bulunduğu merkez bölgesinde kabaca DC/4 kısmında delik yüzeyi 60° ve 90° olmayacaktır. Ayrıca bu kısımda kenara pah açma mümkün değildir.

Not 2) Merkezleme çapı, matkap çapı (işlem çapı) DC'den daha düşük olmalı ve kullanılabilir uzunluk LU, bir kılavuz olarak belirtilmelidir.

● : Avrupa standart stok.

M012

DC (mm)	SIG	DP1020	DP102A	Sipariş No	Boyutlar (mm)								Tip	
					LU	LCF	LH	S10	OAL	LF	PL	KAPR		DCONMS
3.0	120°	●		DLE0300S030P120	0.8	9	—	—	45	44.1	0.9	30°	3	2
4.0	120°	●		DLE0400S040P120	1.1	12	—	—	50	48.8	1.2	30°	4	2
5.0	120°	●		DLE0500S050P120	1.3	14	—	—	60	58.6	1.4	30°	5	2
6.0	120°	●		DLE0600S060P120	1.6	15	—	—	66	64.3	1.7	30°	6	2
7.0	120°	●		DLE0700S070P120	1.9	18	—	—	74	72.0	2.0	30°	7	2
8.0	120°	●		DLE0800S080P120	2.2	20	—	—	74	71.7	2.3	30°	8	2
10.0	120°	●		DLE1000S100P120	2.8	24	—	—	84	81.1	2.9	30°	10	2
12.0	120°	●		DLE1200S120P120	3.3	28	—	—	95	91.5	3.5	30°	12	2
3.0	145°	●		DLE0300S030P145	0.4	9	—	—	45	44.5	0.5	17.5°	3	2
4.0	145°	●		DLE0400S040P145	0.5	12	—	—	50	49.4	0.6	17.5°	4	2
5.0	145°	●		DLE0500S050P145	0.7	14	—	—	60	59.2	0.8	17.5°	5	2
6.0	145°	●		DLE0600S060P145	0.8	15	—	—	66	65.1	0.9	17.5°	6	2
7.0	145°	●		DLE0700S070P145	1.0	18	—	—	74	72.9	1.1	17.5°	7	2
8.0	145°	●		DLE0800S080P145	1.1	20	—	—	74	72.7	1.3	17.5°	8	2
10.0	145°	●		DLE1000S100P145	1.4	24	—	—	84	82.4	1.6	17.5°	10	2
12.0	145°	●		DLE1200S120P145	1.7	28	—	—	95	93.1	1.9	17.5°	12	2

Not 1) Merkezleme çapı, matkap çapı (işlem çapı) DC'den daha düşük olmalı ve kullanılabilir uzunluk LU, bir kılavuz olarak belirtilmelidir.

M

DELME

DELME (YEKPARE KARBÜR)

DLE

Ön Delik Matkap Ucu Serisi

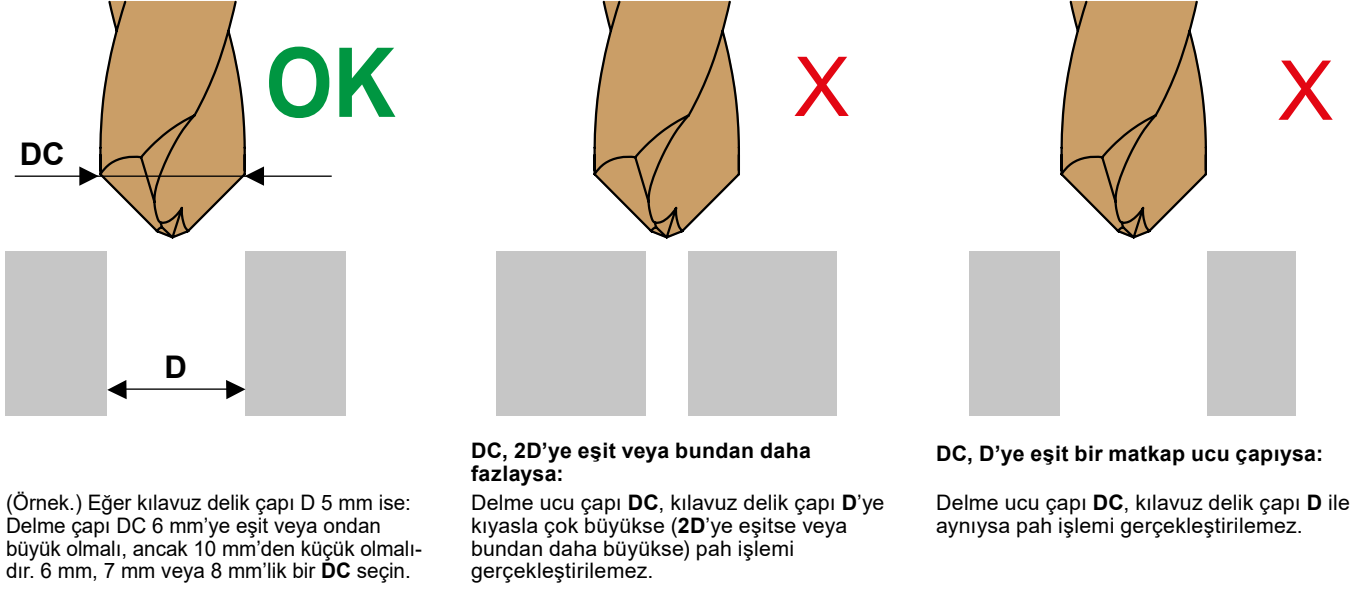
PAH AÇMA İŞLEMİNDE

MATKAP ÇAPI SEÇİMİ

Kılavuz delik çapı D 'ye göre matkap çapını (kesme çapı) DC aralığında olacak şekilde seçin $D < DC < 2D$

M

DELME

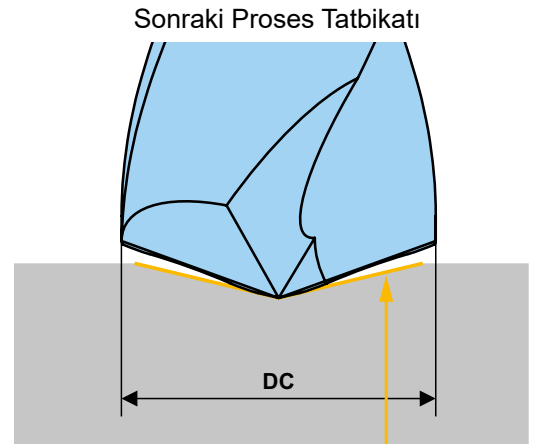
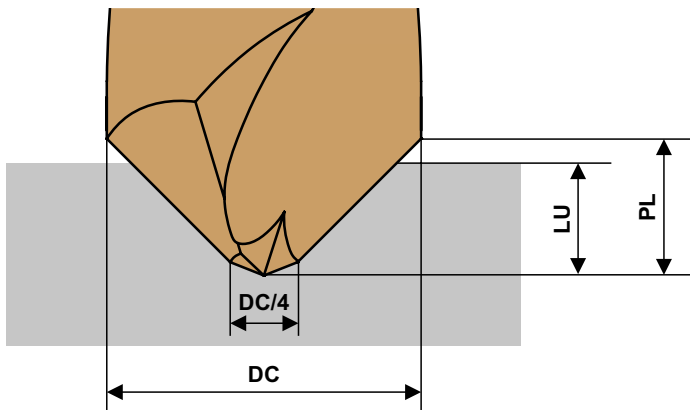


MERKEZLEME İŞLEMİNDE

Merkezleme çapı, matkap ucu çapı (işlem çapı) DC 'den daha düşük olmalı ve kullanılabilir uzunluk LU , bir rehber olarak alınmalıdır.

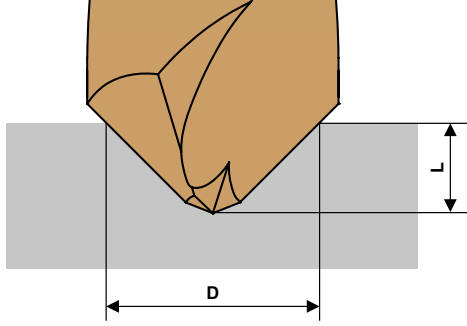
İki kademeli uç açıları ile oluşturulan deliklerin (tam çapın yaklaşık %25'i) merkez bölgesinde 60° ve 90° açılar olmayacaktır. Ayrıca bu kısımda kenara pah açma mümkün değildir.

Merkez ile ilk temas yapılması isteniyorsa, nihai deliğin uç açısından daha büyük bir merkezleme matkap ucu seçin.



Merkezleme uç açısı SIG145°

Takım Çapına Göre Delme Derinliği (L) Tablosu



(mm)

DC	SIG 90°			
	Min.		Max.	
	D	L	D	L
1.0	0.5	0.18	0.8	0.33
1.5	0.8	0.29	1.3	0.54
2.0	1.0	0.35	1.9	0.8
2.5	1.3	0.47	2.4	1.0
3.0	1.5	0.5	2.8	1.2
4.0	2.0	0.7	3.8	1.6
5.0	2.5	0.9	4.7	2.0
6.0	3.0	1.1	5.7	2.4
7.0	3.5	1.2	6.6	2.8
8.0	4.0	1.4	7.6	3.2
10.0	5.0	1.8	9.7	4.1
12.0	6.0	2.1	11.6	4.9
16.0	8.0	2.8	15.5	6.6

(mm)

DC	SIG 60°				SIG 120°				SIG 145°			
	Min.		Max.		Min.		Max.		Min.		Max.	
	D	L	D	L	D	L	D	L	D	L	D	L
3.0	1.5	0.8	2.9	2.0	1.5	0.4	2.8	0.8	1.5	0.2	2.5	0.4
4.0	2.0	1.1	3.9	2.7	2.0	0.6	3.8	1.1	2.0	0.3	3.2	0.5
5.0	2.5	1.3	4.9	3.4	2.5	0.7	4.5	1.3	2.5	0.4	4.4	0.7
6.0	3.0	1.6	5.8	4.0	3.0	0.9	5.5	1.6	3.0	0.5	5.1	0.8
7.0	3.5	1.9	6.8	4.7	3.5	1.0	6.6	1.9	3.5	0.6	6.3	1.0
8.0	4.0	2.1	7.8	5.4	4.0	1.2	7.6	2.2	4.0	0.6	7.0	1.1
10.0	5.0	2.7	9.8	6.8	5.0	1.4	9.7	2.8	5.0	0.8	8.9	1.4
12.0	6.0	3.2	11.6	8.1	6.0	1.7	11.4	3.3	6.0	0.9	10.8	1.7

DELME (YEKPARE KARBÜR)

DLE

Ön Delik Matkap Ucu Serisi

Uç Açısı SIG 60°

ÖNERİLEN KESME KOŞULLARI

Çalışma Malzemesi	P					
	Yumuşak Çelik ($\leq 180\text{HB}$) DIN C10E vs.		Karbon çelik, Alaşımli çelik (180—280HB) DIN Ck45, 41CrMo4 vs.		Karbon çelik, Alaşımli çelik (280—350HB) DIN 40CrNiMoA vs.	
Matkap Ucu Çapı DC (mm)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)
3.0	7900	0.05 (0.03—0.07)	6800	0.05 (0.03—0.07)	6300	0.04 (0.02—0.06)
4.0	5900	0.05 (0.03—0.07)	5100	0.05 (0.03—0.07)	4700	0.04 (0.02—0.06)
5.0	5000	0.06 (0.04—0.08)	4400	0.06 (0.04—0.08)	4100	0.05 (0.03—0.07)
6.0	4200	0.06 (0.04—0.08)	3700	0.06 (0.04—0.08)	3400	0.05 (0.03—0.07)
7.0	3600	0.07 (0.04—0.09)	3100	0.07 (0.04—0.09)	2900	0.05 (0.03—0.07)
8.0	3100	0.07 (0.04—0.09)	2700	0.07 (0.04—0.09)	2500	0.05 (0.03—0.07)
10.0	2700	0.08 (0.04—0.10)	2300	0.08 (0.04—0.10)	2200	0.06 (0.03—0.08)
12.0	2200	0.08 (0.04—0.10)	1900	0.08 (0.04—0.10)	1800	0.06 (0.03—0.08)

Çalışma Malzemesi	M		K			
	Ostenitli Paslanmaz Çelik ($\leq 200\text{HB}$) DIN X5CrNi189, X5CrNiMo1810 vs.		Gri Dökme Demir ($\leq 350\text{MPa}$) DIN GG30 vs.		Duktıl Dökme Demir ($\leq 450\text{MPa}$) DIN GGG40.3 vs.	
Matkap Ucu Çapı DC (mm)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)
3.0	1500	0.03 (0.01—0.05)	7900	0.05 (0.03—0.07)	5800	0.05 (0.03—0.07)
4.0	1100	0.03 (0.01—0.05)	5900	0.05 (0.03—0.07)	4300	0.05 (0.03—0.07)
5.0	1200	0.04 (0.02—0.06)	5000	0.06 (0.04—0.08)	3800	0.06 (0.04—0.08)
6.0	1000	0.04 (0.02—0.06)	4200	0.06 (0.04—0.08)	3100	0.06 (0.04—0.08)
7.0	900	0.04 (0.02—0.06)	3600	0.07 (0.04—0.09)	2700	0.06 (0.04—0.08)
8.0	790	0.04 (0.02—0.06)	3100	0.07 (0.04—0.09)	2300	0.06 (0.04—0.08)
10.0	630	0.04 (0.02—0.06)	2700	0.08 (0.04—0.10)	1900	0.07 (0.04—0.09)
12.0	530	0.04 (0.02—0.06)	2200	0.08 (0.04—0.10)	1500	0.07 (0.04—0.09)

Not 1) İhtiyaç olan merkez deliğinden daha büyük (DC), ama 2 x DC'den daha küçük bir takım kullanın.

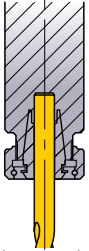
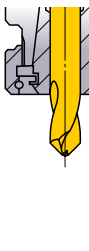
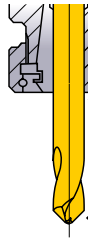
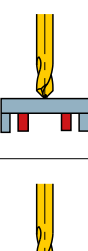
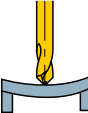
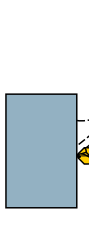
Not 2) Kavisli veya eğimli yüzeylerde merkezleme için, lütfen ilerleme hızını düşürün.

Not 3) V-kanalı açma ve Pah kırmada, lütfen kesme koşullarını düşürün.

Not 4) Tırlama titreşimi veya anormal gürültü üretildiğinde, lütfen bekleme süresini kısaltın veya devri düşürün.

Not 5) Merkezleme yaparken, LU (kullanılabilir uzunluğu) aşmayın.

ÇALIŞMA KILAVUZU

Matkap Ucunu Bağlama	Matkap Ucu Uzunluğu	Montaj Toleransı	İnce İş Parçası	Soğutma Metodu
 <p>Bilyalı tip pens başlığı matkap ucunu emniyetli sabit şekilde tutar.</p>	 <p>Helis kısımdan bağlamayın.</p>	 <p>Salgı ≤ 0.03 mm</p>	 <p>OK İş Parçasını Destekleyin</p>  <p>X Esneme Oluşursa</p>	 <p>Uçta ve merkezde olmak üzere iki soğutma suyu pozisyonu idealdir.</p>

Uç açısı SIG 90°, 120° ve 145°

ÖNERİLEN KESME KOŞULLARI

Çalışma Malzemesi	P					
	Yumuşak Çelik ($\leq 180\text{HB}$) DIN C10E vs.		Karbon çelik, Alaşımli çelik (180—280HB) DIN Ck45, 41CrMo4 vs.		Karbon çelik, Alaşımli çelik (280—350HB) DIN 40CrNiMoA vs.	
Matkap Ucu Çapı DC (mm)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)
1.0	9500	0.02 (0.01—0.03)	6300	0.02 (0.01—0.03)	4700	0.02 (0.01—0.03)
1.5	9500	0.02 (0.01—0.03)	7400	0.02 (0.01—0.03)	6300	0.02 (0.01—0.03)
2.0	9500	0.04 (0.03—0.05)	7900	0.04 (0.03—0.05)	7100	0.04 (0.03—0.05)
2.5	9500	0.04 (0.03—0.05)	8200	0.04 (0.03—0.05)	7600	0.04 (0.03—0.05)
3.0	7900	0.06 (0.04—0.08)	6800	0.06 (0.04—0.08)	6300	0.05 (0.03—0.07)
4.0	5900	0.06 (0.04—0.08)	5100	0.06 (0.04—0.08)	4700	0.05 (0.03—0.07)
5.0	5000	0.07 (0.05—0.09)	4400	0.07 (0.05—0.09)	4100	0.06 (0.04—0.08)
6.0	4200	0.07 (0.05—0.09)	3700	0.07 (0.05—0.09)	3400	0.06 (0.04—0.08)
7.0	3600	0.08 (0.05—0.10)	3100	0.08 (0.05—0.10)	2900	0.06 (0.04—0.08)
8.0	3100	0.08 (0.05—0.10)	2700	0.08 (0.05—0.10)	2500	0.06 (0.04—0.08)
10.0	2700	0.09 (0.05—0.11)	2300	0.09 (0.05—0.11)	2200	0.07 (0.04—0.09)
12.0	2200	0.09 (0.05—0.11)	1900	0.09 (0.05—0.11)	1800	0.07 (0.04—0.09)
16.0	1700	0.12 (0.10—0.14)	1500	0.12 (0.10—0.14)	1400	0.08 (0.06—0.10)

Çalışma Malzemesi	M		K			
	Ostenitli Paslanmaz Çelik ($\leq 200\text{HB}$) DIN X5CrNi189, X5CrNiMo1810 vs.		Gri Dökme Demir ($\leq 350\text{MPa}$) DIN GG30 vs.		Duktıl Dökme Demir ($\leq 450\text{MPa}$) DIN GGG40.3 vs.	
Matkap Ucu Çapı DC (mm)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)
1.0	6300	0.01 (0.005—0.015)	9500	0.02 (0.01—0.03)	3100	0.02 (0.01—0.03)
1.5	4200	0.01 (0.005—0.015)	9500	0.02 (0.01—0.03)	5300	0.02 (0.01—0.03)
2.0	3100	0.04 (0.03—0.05)	9500	0.04 (0.03—0.05)	6300	0.04 (0.03—0.05)
2.5	2500	0.04 (0.03—0.05)	9500	0.04 (0.03—0.05)	7000	0.04 (0.03—0.05)
3.0	2100	0.04 (0.02—0.06)	7900	0.06 (0.04—0.08)	5800	0.06 (0.04—0.08)
4.0	1600	0.04 (0.02—0.06)	5900	0.06 (0.04—0.08)	4300	0.06 (0.04—0.08)
5.0	1200	0.06 (0.04—0.08)	5000	0.07 (0.05—0.09)	3800	0.07 (0.05—0.09)
6.0	1000	0.06 (0.04—0.08)	4200	0.07 (0.05—0.09)	3100	0.07 (0.05—0.09)
7.0	900	0.06 (0.04—0.08)	3600	0.08 (0.05—0.10)	2700	0.07 (0.05—0.09)
8.0	790	0.06 (0.04—0.08)	3100	0.08 (0.05—0.10)	2300	0.07 (0.05—0.09)
10.0	630	0.06 (0.04—0.08)	2700	0.09 (0.05—0.11)	1900	0.08 (0.05—0.10)
12.0	530	0.06 (0.04—0.08)	2200	0.09 (0.05—0.11)	1500	0.08 (0.05—0.10)
16.0	390	0.08 (0.06—0.10)	1700	0.12 (0.10—0.14)	1100	0.11 (0.09—0.13)

Not 1) İhtiyaç olan merkez deliğinden daha büyük (DC), ama 2 x DC'den daha küçük bir takım kullanın.

Not 2) Kavisli veya eğimli yüzeylerde merkezleme için, lütfen ilerleme hızını düşürün.

Not 3) V-kanalı açma ve Pah kırmada, lütfen kesme koşullarını düşürün.

Not 4) Tırlama titreşimi veya anormal gürültü üretildiğinde, lütfen bekleme süresini kısaltın veya devri düşürün.

Not 5) Merkezleme yaparken, LU (kullanılabilir uzunluğu) aşmayın.



P

M

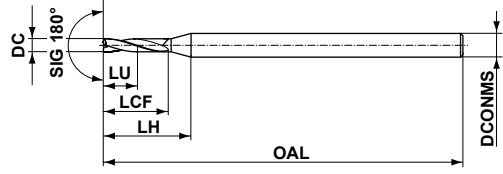
K

N

S

H

Dıştan Soğutma



Tip1

M

DELME



$0.75 \leq DC \leq 2.95$	
0 -0.014	
DCONMS=3	DCONMS=4
0 -0.006	0 -0.008

DC (mm)	Delik Derinliği (L/D)	DP102A	Sipariş No	Boyutlar (mm)					Tip
				LU	LCF	LH	OAL	DCONMS	
0.75	2	★	MFE0075X02S030	1.5	3.0	7.7	45	3	1
0.80	2	★	MFE0080X02S030	1.6	3.2	7.8	45	3	1
0.85	2	★	MFE0085X02S030	1.7	3.4	7.9	45	3	1
0.90	2	★	MFE0090X02S030	1.8	3.6	8.0	45	3	1
0.95	2	★	MFE0095X02S030	1.9	3.8	8.1	45	3	1
1.00	2	★	MFE0100X02S030	2.0	4.0	8.2	45	3	1
1.05	2	★	MFE0105X02S030	2.1	4.2	8.3	45	3	1
1.10	2	★	MFE0110X02S030	2.2	4.4	8.4	45	3	1
1.15	2	★	MFE0115X02S030	2.3	4.6	8.6	45	3	1
1.20	2	★	MFE0120X02S030	2.4	4.8	8.7	45	3	1
1.25	2	★	MFE0125X02S030	2.5	5.0	8.8	45	3	1
1.30	2	★	MFE0130X02S030	2.6	5.2	8.9	45	3	1
1.35	2	★	MFE0135X02S030	2.7	5.4	9.0	45	3	1
1.40	2	★	MFE0140X02S030	2.8	5.6	9.1	45	3	1
1.45	2	★	MFE0145X02S030	2.9	5.8	9.2	45	3	1
1.50	2	★	MFE0150X02S030	3.0	6.0	9.3	45	3	1
1.55	2	★	MFE0155X02S030	3.1	6.2	9.4	45	3	1
1.60	2	★	MFE0160X02S030	3.2	6.4	9.5	45	3	1
1.65	2	★	MFE0165X02S030	3.3	6.6	9.6	45	3	1
1.70	2	★	MFE0170X02S030	3.4	6.8	9.7	45	3	1
1.75	2	★	MFE0175X02S030	3.5	7.0	9.8	45	3	1
1.80	2	★	MFE0180X02S030	3.6	7.2	9.9	45	3	1
1.85	2	★	MFE0185X02S030	3.7	7.4	10.0	45	3	1
1.90	2	★	MFE0190X02S030	3.8	7.6	10.2	45	3	1
1.95	2	★	MFE0195X02S030	3.9	7.8	10.3	45	3	1
2.00	2	★	MFE0200X02S040	4.0	8.0	12.2	50	4	1
2.05	2	★	MFE0205X02S040	4.1	8.2	12.3	50	4	1
2.10	2	★	MFE0210X02S040	4.2	8.4	12.4	50	4	1
2.15	2	★	MFE0215X02S040	4.3	8.6	12.6	50	4	1
2.20	2	★	MFE0220X02S040	4.4	8.8	12.7	50	4	1
2.25	2	★	MFE0225X02S040	4.5	9.0	12.8	50	4	1
2.30	2	★	MFE0230X02S040	4.6	9.2	12.9	50	4	1
2.35	2	★	MFE0235X02S040	4.7	9.4	13.0	50	4	1
2.40	2	★	MFE0240X02S040	4.8	9.6	13.1	50	4	1
2.45	2	★	MFE0245X02S040	4.9	9.8	13.2	50	4	1
2.50	2	★	MFE0250X02S040	5.0	10.0	13.3	50	4	1
2.55	2	★	MFE0255X02S040	5.1	10.2	13.4	50	4	1
2.60	2	★	MFE0260X02S040	5.2	10.4	13.5	50	4	1
2.65	2	★	MFE0265X02S040	5.3	10.6	13.6	50	4	1
2.70	2	★	MFE0270X02S040	5.4	10.8	13.7	50	4	1
2.75	2	★	MFE0275X02S040	5.5	11.0	13.8	50	4	1
2.80	2	★	MFE0280X02S040	5.6	11.2	13.9	50	4	1
2.85	2	★	MFE0285X02S040	5.7	11.4	14.0	50	4	1
2.90	2	★	MFE0290X02S040	5.8	11.6	14.2	50	4	1
2.95	2	★	MFE0295X02S040	5.9	11.8	14.3	50	4	1

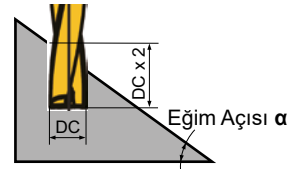
★ : Japonya standart stok.

ÖNERİLEN KESME KOŞULLARI

Çalışma Malzemesi		P					
		Yumuşak Çelik ($\leq 180\text{HB}$)		Karbon çelik, Alaşımli çelik (180–280HB)		Karbon çelik, Alaşımli çelik (280–350HB)	
Prümör vrtâku DC (mm)	L/D	Devir (dak ⁻¹)	$\alpha=0^\circ$ İlerleme oranı (Min.–Maks.) (mm/dev)	Devir (dak ⁻¹)	$\alpha=0^\circ$ İlerleme oranı (Min.–Maks.) (mm/dev)	Devir (dak ⁻¹)	$\alpha=0^\circ$ İlerleme oranı (Min.–Maks.) (mm/dev)
0.75	≤ 2	23300	0.030 (0.010–0.050)	19000	0.030 (0.010–0.050)	16900	0.030 (0.010–0.050)
1.0	≤ 2	17500	0.030 (0.010–0.050)	14300	0.030 (0.010–0.050)	12700	0.030 (0.010–0.050)
1.5	≤ 2	12200	0.035 (0.015–0.055)	10000	0.035 (0.015–0.055)	8400	0.035 (0.015–0.050)
2.0	≤ 2	9500	0.040 (0.020–0.060)	7900	0.040 (0.020–0.060)	6700	0.040 (0.020–0.060)
2.5	≤ 2	7900	0.050 (0.030–0.070)	6600	0.050 (0.030–0.070)	5700	0.050 (0.030–0.070)
2.95	≤ 2	7900	0.060 (0.040–0.080)	7900	0.060 (0.040–0.080)	6800	0.060 (0.040–0.080)

Çalışma Malzemesi		M		K			
		Ostenitli Paslanmaz Çelik ($\leq 200\text{HB}$)		Gri Dökme Demir ($\leq 350\text{MPa}$)		Duktıl Dökme Demir ($\leq 450\text{MPa}$)	
Matkap Ucu Çapı DC (mm)	L/D	Devir (dak ⁻¹)	$\alpha=0^\circ$ İlerleme oranı (Min.–Maks.) (mm/dev)	Devir (dak ⁻¹)	$\alpha=0^\circ$ İlerleme oranı (Min.–Maks.) (mm/dev)	Devir (dak ⁻¹)	$\alpha=0^\circ$ İlerleme oranı (Min.–Maks.) (mm/dev)
0.75	≤ 2	10600	0.007 (0.003–0.011)	23300	0.030 (0.010–0.050)	16900	0.010 (0.005–0.015)
1.0	≤ 2	7900	0.007 (0.003–0.011)	17500	0.030 (0.010–0.050)	12700	0.010 (0.005–0.015)
1.5	≤ 2	5300	0.010 (0.005–0.015)	12200	0.035 (0.015–0.055)	10000	0.020 (0.010–0.030)
2.0	≤ 2	4700	0.015 (0.010–0.020)	9500	0.040 (0.020–0.060)	8700	0.030 (0.015–0.045)
2.5	≤ 2	3800	0.015 (0.010–0.020)	7900	0.050 (0.030–0.070)	7300	0.045 (0.025–0.065)
2.95	≤ 2	3100	0.020 (0.010–0.030)	7900	0.060 (0.040–0.080)	6800	0.050 (0.040–0.060)

Çalışma Malzemesi		N	
		Alüminyum Alaşım (Si<%5)	
Matkap Ucu Çapı DC (mm)	L/D	Devir (dak ⁻¹)	$\alpha=0^\circ$ İlerleme oranı (Min.–Maks.) (mm/dev)
0.75	≤ 2	42400	0.020 (0.010–0.030)
1.0	≤ 2	31800	0.020 (0.010–0.030)
1.5	≤ 2	21200	0.020 (0.010–0.030)
2.0	≤ 2	17500	0.050 (0.030–0.070)
2.5	≤ 2	14000	0.060 (0.040–0.090)
2.95	≤ 2	11600	0.060 (0.040–0.090)



Not 1) Önerilen delik derinliği $DC \times 2$ 'dir. Bu, açılı yüzeylerde işleme sırasında çalışılan malzemenin en üst yüzeyinden olan derinliktir. (Şemaya bakın)

Not 2) Yukarıdaki kesme tablosunda düz bir yüzey üzerinde delik açıldığı kabul edilir.

Açılı yüzeylerde delik delmek için ilerleme hızını eğim açısına uygun şekilde ayarlayın.

Eğim açısı α 30° veya daha az olduğunda ilerleme hızını %70 veya daha düşük olarak ayarlayın.

Eğim açısı α 30° veya daha büyük olduğunda ilerleme hızını %50 veya daha düşük olarak ayarlayın.

Not 3) Bu ürün, delik delme amaçlı bir takımdır. Çaprazlama ilerleme ile işleme ya da helisel işleme için kullanılamaz.

DELME (YEKPARE KARBÜR)

DFAS NEW

Yekpare karbür düz ağızlı matkap uçları



P

M

K

N

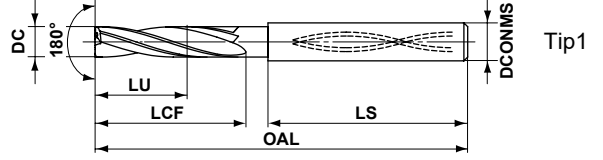
S

H

İçten Soğutma

M

DELME



DC=3	3 < DC ≤ 6	6 < DC ≤ 10	10 < DC ≤ 14
$\begin{matrix} 0 \\ -0.014 \end{matrix}$	$\begin{matrix} 0 \\ -0.018 \end{matrix}$	$\begin{matrix} 0 \\ -0.022 \end{matrix}$	$\begin{matrix} 0 \\ -0.027 \end{matrix}$
4 < DCONMS ≤ 6	6 < DCONMS ≤ 10	10 < DCONMS ≤ 14	
$\begin{matrix} 0 \\ -0.008 \end{matrix}$	$\begin{matrix} 0 \\ -0.009 \end{matrix}$	$\begin{matrix} 0 \\ -0.011 \end{matrix}$	



DC (mm)	Delik Derinliği (L/D)	DP102A	Sipariş No	Boyutlar (mm)					Tip
				LU	LCF	LS	OAL	DCONMS	
3.0	3	●	DFAS0300X03S040	9.0	14	39.0	55	4	1
3.1	3	★	DFAS0310X03S040	9.3	16	37.0	55	4	1
3.2	3	★	DFAS0320X03S040	9.6	16	37.0	55	4	1
3.3	3	●	DFAS0330X03S040	9.9	16	37.0	55	4	1
3.4	3	★	DFAS0340X03S040	10.2	16	37.0	55	4	1
3.5	3	●	DFAS0350X03S040	10.5	16	37.0	55	4	1
3.6	3	★	DFAS0360X03S040	10.8	18	35.0	55	4	1
3.7	3	★	DFAS0370X03S040	11.1	18	35.0	55	4	1
3.8	3	★	DFAS0380X03S040	11.4	18	35.0	55	4	1
3.9	3	★	DFAS0390X03S040	11.7	18	35.0	55	4	1
4.0	3	●	DFAS0400X03S040	12.0	18	35.0	55	4	1
4.1	3	★	DFAS0410X03S050	12.3	20	40.0	62	5	1
4.2	3	●	DFAS0420X03S050	12.6	20	40.0	62	5	1
4.3	3	★	DFAS0430X03S050	12.9	20	40.0	62	5	1
4.4	3	★	DFAS0440X03S050	13.2	20	40.0	62	5	1
4.5	3	●	DFAS0450X03S050	13.5	20	40.0	62	5	1
4.6	3	★	DFAS0460X03S050	13.8	23	37.0	62	5	1
4.7	3	★	DFAS0470X03S050	14.1	23	37.0	62	5	1
4.8	3	★	DFAS0480X03S050	14.4	23	37.0	62	5	1
4.9	3	★	DFAS0490X03S050	14.7	23	37.0	62	5	1
5.0	3	●	DFAS0500X03S050	15.0	23	37.0	62	5	1
5.1	3	★	DFAS0510X03S060	15.3	25	39.0	66	6	1
5.2	3	★	DFAS0520X03S060	15.6	25	39.0	66	6	1
5.3	3	●	DFAS0530X03S060	15.9	25	39.0	66	6	1
5.4	3	★	DFAS0540X03S060	16.2	25	39.0	66	6	1
5.5	3	●	DFAS0550X03S060	16.5	25	39.0	66	6	1
5.6	3	★	DFAS0560X03S060	16.8	27	37.0	66	6	1
5.7	3	★	DFAS0570X03S060	17.1	27	37.0	66	6	1
5.8	3	★	DFAS0580X03S060	17.4	27	37.0	66	6	1
5.9	3	★	DFAS0590X03S060	17.7	27	37.0	66	6	1

● : Avrupa standart stok. ★ : Japonya standart stok.

DC (mm)	Delik Derinliği (L/D)	DP102A	Sipariş No	Boyutlar (mm)					Tip
				LU	LCF	LS	OAL	DCONMS	
6.0	3	●	DFAS0600X03S060	18.0	27	37.0	66	6	1
6.1	3	★	DFAS0610X03S070	18.3	29	44.0	75	7	1
6.2	3	★	DFAS0620X03S070	18.6	29	44.0	75	7	1
6.3	3	★	DFAS0630X03S070	18.9	29	44.0	75	7	1
6.4	3	★	DFAS0640X03S070	19.2	29	44.0	75	7	1
6.5	3	●	DFAS0650X03S070	19.5	29	44.0	75	7	1
6.6	3	★	DFAS0660X03S070	19.8	32	41.0	75	7	1
6.7	3	★	DFAS0670X03S070	20.1	32	41.0	75	7	1
6.8	3	●	DFAS0680X03S070	20.4	32	41.0	75	7	1
6.9	3	★	DFAS0690X03S070	20.7	32	41.0	75	7	1
7.0	3	●	DFAS0700X03S070	21.0	32	41.0	75	7	1
7.1	3	★	DFAS0710X03S080	21.3	34	44.0	80	8	1
7.2	3	★	DFAS0720X03S080	21.6	34	44.0	80	8	1
7.3	3	★	DFAS0730X03S080	21.9	34	44.0	80	8	1
7.4	3	★	DFAS0740X03S080	22.2	34	44.0	80	8	1
7.5	3	●	DFAS0750X03S080	22.5	34	44.0	80	8	1
7.6	3	★	DFAS0760X03S080	22.8	36	42.0	80	8	1
7.7	3	★	DFAS0770X03S080	23.1	36	42.0	80	8	1
7.8	3	★	DFAS0780X03S080	23.4	36	42.0	80	8	1
7.9	3	★	DFAS0790X03S080	23.7	36	42.0	80	8	1
8.0	3	●	DFAS0800X03S080	24.0	36	42.0	80	8	1
8.1	3	★	DFAS0810X03S090	24.3	38	45.0	85	9	1
8.2	3	●	DFAS0820X03S090	24.6	38	45.0	85	9	1
8.3	3	★	DFAS0830X03S090	24.9	38	45.0	85	9	1
8.4	3	★	DFAS0840X03S090	25.2	38	45.0	85	9	1
8.5	3	●	DFAS0850X03S090	25.5	38	45.0	85	9	1
8.6	3	★	DFAS0860X03S090	25.8	41	42.0	85	9	1
8.7	3	★	DFAS0870X03S090	26.1	41	42.0	85	9	1
8.8	3	●	DFAS0880X03S090	26.4	41	42.0	85	9	1
8.9	3	★	DFAS0890X03S090	26.7	41	42.0	85	9	1
9.0	3	●	DFAS0900X03S090	27.0	41	42.0	85	9	1
9.1	3	★	DFAS0910X03S100	27.3	43	45.0	90	10	1
9.2	3	★	DFAS0920X03S100	27.6	43	45.0	90	10	1
9.3	3	★	DFAS0930X03S100	27.9	43	45.0	90	10	1
9.4	3	★	DFAS0940X03S100	28.2	43	45.0	90	10	1
9.5	3	●	DFAS0950X03S100	28.5	43	45.0	90	10	1
9.6	3	★	DFAS0960X03S100	28.8	45	43.0	90	10	1
9.7	3	●	DFAS0970X03S100	29.1	45	43.0	90	10	1
9.8	3	★	DFAS0980X03S100	29.4	45	43.0	90	10	1
9.9	3	★	DFAS0990X03S100	29.7	45	43.0	90	10	1

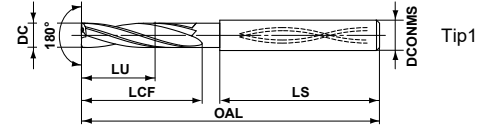
M

DELME

DELME (YEKPARE KARBÜR)

DFAS NEW

Yekpare karbür düz ağızlı matkap uçları



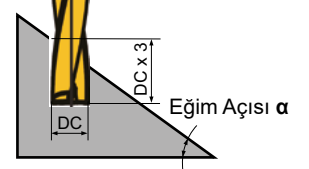
DC (mm)	Delik Derinliği (L/D)	DP102A	Sipariş No	Boyutlar (mm)					Tip
				LU	LCF	LS	OAL	DCONMS	
10.0	3	●	DFAS1000X03S100	30.0	45	43.0	90	10	1
10.1	3	★	DFAS1010X03S110	30.3	47	52.0	101	11	1
10.2	3	●	DFAS1020X03S110	30.6	47	52.0	101	11	1
10.3	3	★	DFAS1030X03S110	30.9	47	52.0	101	11	1
10.4	3	★	DFAS1040X03S110	31.2	47	52.0	101	11	1
10.5	3	●	DFAS1050X03S110	31.5	47	52.0	101	11	1
10.6	3	★	DFAS1060X03S110	31.8	50	49.0	101	11	1
10.7	3	★	DFAS1070X03S110	32.1	50	49.0	101	11	1
10.8	3	★	DFAS1080X03S110	32.4	50	49.0	101	11	1
10.9	3	★	DFAS1090X03S110	32.7	50	49.0	101	11	1
11.0	3	●	DFAS1100X03S110	33.0	50	49.0	101	11	1
11.1	3	★	DFAS1110X03S120	33.3	52	51.0	105	12	1
11.2	3	★	DFAS1120X03S120	33.6	52	51.0	105	12	1
11.3	3	★	DFAS1130X03S120	33.9	52	51.0	105	12	1
11.4	3	★	DFAS1140X03S120	34.2	52	51.0	105	12	1
11.5	3	●	DFAS1150X03S120	34.5	52	51.0	105	12	1
11.6	3	★	DFAS1160X03S120	34.8	54	49.0	105	12	1
11.7	3	★	DFAS1170X03S120	35.1	54	49.0	105	12	1
11.8	3	★	DFAS1180X03S120	35.4	54	49.0	105	12	1
11.9	3	★	DFAS1190X03S120	35.7	54	49.0	105	12	1
12.0	3	●	DFAS1200X03S120	36.0	54	49.0	105	12	1
12.5	3	★	DFAS1250X03S130	37.5	56	52.0	110	13	1
13.0	3	●	DFAS1300X03S130	39.0	59	49.0	110	13	1
13.5	3	★	DFAS1350X03S140	40.5	61	51.0	114	14	1
14.0	3	●	DFAS1400X03S140	42.0	63	49.0	114	14	1

● : Avrupa standart stok. ★ : Japonya standart stok.

ÖNERİLEN KESME KOŞULLARI

Çalışma Malzemesi		P		M		K	
Yumuşak Çelik, Karbon çelik, Alaşımli çelik		Paslanmaz Çelik, Çökeltmeyle Sertleştirilmiş Paslanmaz Çelik		Gri Dökme Demir, Duktıl Dökme Demir		Pik Döküm, Sfero Döküm	
St44-2, AISI 1010, 4140, 4340		AISI 304, SUS316, SUS630, SUS631					
Prümör vrtâku DC (mm)	L/D	Devir (dak ⁻¹)	$\alpha=0^\circ$ İlerleme oranı (Min.—Maks.) (mm/dev)	Devir (dak ⁻¹)	$\alpha=0^\circ$ İlerleme oranı (Min.—Maks.) (mm/dev)	Devir (dak ⁻¹)	$\alpha=0^\circ$ İlerleme oranı (Min.—Maks.) (mm/dev)
3.0	≤3	10610	0.07 (0.04—0.10)	3180	0.05 (0.04—0.06)	10610	0.04 (0.02—0.07)
4.0	≤3	7960	0.08 (0.04—0.11)	2390	0.06 (0.05—0.08)	7960	0.05 (0.03—0.09)
5.0	≤3	6370	0.10 (0.05—0.14)	1910	0.08 (0.06—0.10)	6370	0.07 (0.03—0.11)
6.0	≤3	5310	0.12 (0.06—0.17)	1590	0.10 (0.08—0.12)	5310	0.08 (0.04—0.13)
7.0	≤3	4550	0.13 (0.07—0.20)	1360	0.11 (0.09—0.14)	4550	0.09 (0.05—0.15)
8.0	≤3	3980	0.16 (0.08—0.23)	1190	0.13 (0.10—0.16)	3980	0.11 (0.05—0.17)
9.0	≤3	3540	0.17 (0.09—0.26)	1060	0.15 (0.12—0.18)	3540	0.12 (0.06—0.20)
10.0	≤3	3180	0.20 (0.10—0.29)	950	0.16 (0.13—0.20)	3180	0.13 (0.07—0.22)
11.0	≤3	2890	0.22 (0.11—0.32)	870	0.18 (0.14—0.22)	2890	0.15 (0.07—0.24)
12.0	≤3	2650	0.24 (0.12—0.35)	800	0.20 (0.16—0.24)	2650	0.16 (0.08—0.26)
13.0	≤3	2450	0.26 (0.13—0.39)	730	0.22 (0.17—0.26)	2450	0.17 (0.09—0.28)
14.0	≤3	2270	0.28 (0.14—0.42)	680	0.23 (0.19—0.28)	2270	0.19 (0.09—0.30)

Çalışma Malzemesi		N		S	
Alüminyum Alaşım		Titanyum Alaşımaları			
EN AW-6061, EN AW-7075		Ti-6Al-4V, Ti-5Al-5V-5Mo-3Cr			
Prümör vrtâku DC (mm)	L/D	Devir (dak ⁻¹)	$\alpha=0^\circ$ İlerleme oranı (Min.—Maks.) (mm/dev)	Devir (dak ⁻¹)	$\alpha=0^\circ$ İlerleme oranı (Min.—Maks.) (mm/dev)
3.0	≤3	13790	0.04 (0.02—0.07)	3710	0.03 (0.01—0.05)
4.0	≤3	10350	0.05 (0.03—0.09)	2790	0.04 (0.01—0.07)
5.0	≤3	8280	0.07 (0.03—0.11)	2230	0.05 (0.02—0.08)
6.0	≤3	6900	0.08 (0.04—0.13)	1860	0.06 (0.02—0.10)
7.0	≤3	5910	0.09 (0.05—0.15)	1590	0.07 (0.02—0.12)
8.0	≤3	5170	0.11 (0.05—0.17)	1390	0.08 (0.03—0.13)
9.0	≤3	4600	0.12 (0.06—0.20)	1240	0.09 (0.03—0.15)
10.0	≤3	4140	0.13 (0.07—0.22)	1110	0.10 (0.03—0.17)
11.0	≤3	3760	0.15 (0.07—0.24)	1010	0.11 (0.04—0.18)
12.0	≤3	3450	0.16 (0.08—0.26)	930	0.12 (0.04—0.20)
13.0	≤3	3180	0.17 (0.09—0.28)	860	0.13 (0.04—0.22)
14.0	≤3	2960	0.19 (0.09—0.30)	800	0.14 (0.05—0.23)



Not 1) Önerilen delik derinliği DCx3'dir. Bu, açılı yüzeylerde işleme sırasında iş parçasının en üst yüzeyinden olan derinliktir. (Şemaya bakınız)

Not 2) Yukarıdaki kesme tablosunda düz bir yüzey üzerinde delik açıldığı kabul edilir.

Açılı yüzeylerde delik delmek için ilerleme hızını eğim açısına uygun şekilde ayarlayın.

Eğim açısı α 30° veya daha az olduğunda ilerleme hızını %30 veya daha fazla azaltın.

Eğim açısı α 30° veya daha büyük olduğunda ilerleme hızını %50 veya daha fazla azaltın.

Not 3) Paslanmaz çeliğin düz yüzey işleme için, önce aynı çapta bir pilot delik açın veya bir havşa açın.

Not 4) Bu ürün, delik delme amaçlı bir takımdır. Rampalama ile işleme ya da helisel işleme için kullanılamaz.



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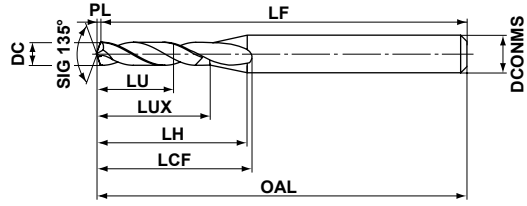
Dıştan Soğutma



DC<2.0



DC≥2.0



Tip1

DELME



DC≤3	
0	
-0.014	



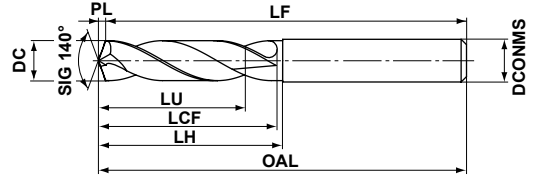
DCONMS=3	DCONMS=4
0	0
-0.006	-0.008

DC (mm)	Delik Derinliği (L/D)	DP102A	Sipariş No	Boyutlar (mm)								Tip
				LU	LUX	LCF	LH	OAL	LF	PL	DCONMS	
1.0	2	●	DWAE0100X02S030	2.2	5.0	7.7	8.7	45.0	44.8	0.2	3	1
1.0	4	●	DWAE0100X04S030	4.2	7.0	9.9	10.7	45.0	44.8	0.2	3	1
1.1	2	★	DWAE0110X02S030	2.4	5.4	8.1	8.9	45.0	44.8	0.2	3	1
1.1	4	★	DWAE0110X04S030	4.6	7.6	10.5	11.1	45.0	44.8	0.2	3	1
1.2	2	★	DWAE0120X02S030	2.6	5.8	8.5	9.2	45.0	44.8	0.2	3	1
1.2	4	★	DWAE0120X04S030	5.0	8.2	11.1	11.6	45.0	44.8	0.2	3	1
1.3	2	★	DWAE0130X02S030	2.9	6.3	9.0	9.5	45.0	44.7	0.3	3	1
1.3	4	★	DWAE0130X04S030	5.5	8.9	11.9	12.1	45.0	44.7	0.3	3	1
1.4	2	★	DWAE0140X02S030	3.1	6.7	9.4	9.7	45.0	44.7	0.3	3	1
1.4	4	★	DWAE0140X04S030	5.9	9.5	12.5	12.5	45.0	44.7	0.3	3	1
1.5	2	●	DWAE0150X02S030	3.3	7.1	9.8	9.9	45.0	44.7	0.3	3	1
1.5	4	●	DWAE0150X04S030	6.3	10.1	13.1	12.9	45.0	44.7	0.3	3	1
1.6	2	★	DWAE0160X02S030	3.5	7.5	10.2	10.1	45.0	44.7	0.3	3	1
1.6	4	★	DWAE0160X04S030	6.7	10.7	13.7	13.3	45.0	44.7	0.3	3	1
1.7	2	★	DWAE0170X02S030	3.8	8.0	10.7	10.4	45.0	44.6	0.4	3	1
1.7	4	★	DWAE0170X04S030	7.2	11.4	14.4	13.8	45.0	44.6	0.4	3	1
1.8	2	★	DWAE0180X02S030	4.0	8.4	11.1	10.6	45.0	44.6	0.4	3	1
1.8	4	★	DWAE0180X04S030	7.6	12.0	15.1	14.2	45.0	44.6	0.4	3	1
1.9	2	★	DWAE0190X02S030	4.2	8.8	11.5	10.9	45.0	44.6	0.4	3	1
1.9	4	★	DWAE0190X04S030	8.0	12.6	15.7	14.7	45.0	44.6	0.4	3	1
2.0	2	●	DWAE0200X02S040	4.4	9.2	12.8	12.9	50.0	49.6	0.4	4	1
2.0	4	●	DWAE0200X04S040	8.4	13.2	17.2	16.9	50.0	49.6	0.4	4	1
2.1	2	★	DWAE0210X02S040	4.6	9.6	13.2	13.1	50.0	49.6	0.4	4	1
2.1	4	★	DWAE0210X04S040	8.8	13.8	17.8	17.3	50.0	49.6	0.4	4	1
2.2	2	★	DWAE0220X02S040	4.9	10.1	13.7	13.5	50.0	49.5	0.5	4	1
2.2	4	★	DWAE0220X04S040	9.3	14.5	18.5	17.9	50.0	49.5	0.5	4	1
2.3	2	★	DWAE0230X02S040	5.1	10.5	14.1	13.7	50.0	49.5	0.5	4	1
2.3	4	★	DWAE0230X04S040	9.7	15.1	19.2	18.3	50.0	49.5	0.5	4	1
2.4	2	★	DWAE0240X02S040	5.3	10.9	14.5	13.9	50.0	49.5	0.5	4	1
2.4	4	★	DWAE0240X04S040	10.1	15.7	19.8	18.7	50.0	49.5	0.5	4	1
2.5	2	●	DWAE0250X02S040	5.5	11.3	14.9	14.1	50.0	49.5	0.5	4	1
2.5	4	●	DWAE0250X04S040	10.5	16.3	20.4	19.1	50.0	49.5	0.5	4	1
2.6	2	★	DWAE0260X02S040	5.7	11.7	15.3	14.3	50.0	49.5	0.5	4	1
2.6	4	★	DWAE0260X04S040	10.9	16.9	21.0	19.5	50.0	49.5	0.5	4	1
2.7	2	★	DWAE0270X02S040	6.0	12.2	15.8	14.6	50.0	49.4	0.6	4	1
2.7	4	★	DWAE0270X04S040	11.4	17.6	21.7	20.0	50.0	49.4	0.6	4	1
2.8	2	★	DWAE0280X02S040	6.2	12.6	16.2	14.8	50.0	49.4	0.6	4	1
2.8	4	★	DWAE0280X04S040	11.8	18.2	22.4	20.4	50.0	49.4	0.6	4	1
2.9	2	★	DWAE0290X02S040	6.4	13.0	16.6	15.1	50.0	49.4	0.6	4	1
2.9	4	★	DWAE0290X04S040	12.2	18.8	23.0	20.9	50.0	49.4	0.6	4	1

● : Avrupa standart stok. ★ : Japonya standart stok.

P M K N S H

Dıştan Soğutma



Tip1



DC=3	3<DC≤6	6<DC≤10	10<DC≤14
$\begin{matrix} 0 \\ -0.014 \end{matrix}$	$\begin{matrix} 0 \\ -0.018 \end{matrix}$	$\begin{matrix} 0 \\ -0.022 \end{matrix}$	$\begin{matrix} 0 \\ -0.027 \end{matrix}$
DCONMS=3	3<DCONMS≤6	6<DCONMS≤10	10<DCONMS≤14
$\begin{matrix} 0 \\ -0.006 \end{matrix}$	$\begin{matrix} 0 \\ -0.008 \end{matrix}$	$\begin{matrix} 0 \\ -0.009 \end{matrix}$	$\begin{matrix} 0 \\ -0.011 \end{matrix}$



M

DELME

DC (mm)	Delik Derinliği (L/D)	DP102A	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
3.0	2	●	DWAE0300X02S030	6.5	12.5	14.5	45.5	45	0.5	3	1
3.0	4	●	DWAE0300X04S030	12.5	21.5	23.5	55.5	55	0.5	3	1
3.1	2	●	DWAE0310X02S040	6.8	12.6	14.6	55.6	55	0.6	4	1
3.1	4	●	DWAE0310X04S040	13.0	21.6	23.6	60.6	60	0.6	4	1
3.2	2	●	DWAE0320X02S040	7.0	13.6	15.6	55.6	55	0.6	4	1
3.2	4	●	DWAE0320X04S040	13.4	22.6	24.6	60.6	60	0.6	4	1
3.3	2	●	DWAE0330X02S040	7.2	13.6	15.6	55.6	55	0.6	4	1
3.3	4	●	DWAE0330X04S040	13.8	23.6	25.6	60.6	60	0.6	4	1
3.4	2	●	DWAE0340X02S040	7.4	13.6	15.6	55.6	55	0.6	4	1
3.4	4	●	DWAE0340X04S040	14.2	23.6	25.6	60.6	60	0.6	4	1
3.5	2	●	DWAE0350X02S040	7.6	14.6	16.6	55.6	55	0.6	4	1
3.5	4	●	DWAE0350X04S040	14.6	24.6	26.6	60.6	60	0.6	4	1
3.6	2	●	DWAE0360X02S040	7.9	14.7	16.7	55.7	55	0.7	4	1
3.6	4	●	DWAE0360X04S040	15.1	25.7	27.7	60.7	60	0.7	4	1
3.7	2	●	DWAE0370X02S040	8.1	14.7	16.7	55.7	55	0.7	4	1
3.7	4	●	DWAE0370X04S040	15.5	25.7	27.7	60.7	60	0.7	4	1
3.8	2	●	DWAE0380X02S040	8.3	15.7	17.7	55.7	55	0.7	4	1
3.8	4	●	DWAE0380X04S040	15.9	26.7	28.7	60.7	60	0.7	4	1
3.9	2	●	DWAE0390X02S040	8.5	15.7	17.7	55.7	55	0.7	4	1
3.9	4	●	DWAE0390X04S040	16.3	27.7	29.7	60.7	60	0.7	4	1
4.0	2	●	DWAE0400X02S040	8.7	15.7	17.7	55.7	55	0.7	4	1
4.0	4	●	DWAE0400X04S040	16.7	27.7	29.7	60.7	60	0.7	4	1
4.1	2	●	DWAE0410X02S050	8.9	16.7	18.7	62.7	62	0.7	5	1
4.1	4	●	DWAE0410X04S050	17.1	28.7	30.7	80.7	80	0.7	5	1
4.2	2	●	DWAE0420X02S050	9.2	16.8	18.8	62.8	62	0.8	5	1
4.2	4	●	DWAE0420X04S050	17.6	29.8	31.8	80.8	80	0.8	5	1
4.3	2	●	DWAE0430X02S050	9.4	17.8	19.8	62.8	62	0.8	5	1
4.3	4	●	DWAE0430X04S050	18.0	30.8	32.8	80.8	80	0.8	5	1
4.4	2	●	DWAE0440X02S050	9.6	17.8	19.8	62.8	62	0.8	5	1
4.4	4	●	DWAE0440X04S050	18.4	30.8	32.8	80.8	80	0.8	5	1

DWAE

DC (mm)	Delik Derinliđi (L/D)	DP102A	Sipariř No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
4.5	2	●	DWAE0450X02S050	9.8	17.8	19.8	62.8	62	0.8	5	1
4.5	4	●	DWAE0450X04S050	18.8	31.8	33.8	80.8	80	0.8	5	1
4.6	2	●	DWAE0460X02S050	10.0	18.8	20.8	62.8	62	0.8	5	1
4.6	4	●	DWAE0460X04S050	19.2	32.8	34.8	80.8	80	0.8	5	1
4.7	2	●	DWAE0470X02S050	10.3	18.9	20.9	62.9	62	0.9	5	1
4.7	4	●	DWAE0470X04S050	19.7	32.9	34.9	80.9	80	0.9	5	1
4.8	2	●	DWAE0480X02S050	10.5	18.9	20.9	62.9	62	0.9	5	1
4.8	4	●	DWAE0480X04S050	20.1	33.9	35.9	80.9	80	0.9	5	1
4.9	2	●	DWAE0490X02S050	10.7	19.9	21.9	62.9	62	0.9	5	1
4.9	4	●	DWAE0490X04S050	20.5	34.9	36.9	80.9	80	0.9	5	1
5.0	2	●	DWAE0500X02S050	10.9	19.9	21.9	62.9	62	0.9	5	1
5.0	4	●	DWAE0500X04S050	20.9	34.9	36.9	80.9	80	0.9	5	1
5.1	2	★	DWAE0510X02S060	11.1	21.9	23.9	66.9	66	0.9	6	1
5.1	4	★	DWAE0510X04S060	21.3	35.9	37.9	80.9	80	0.9	6	1
5.2	2	●	DWAE0520X02S060	11.3	21.9	23.9	66.9	66	0.9	6	1
5.2	4	●	DWAE0520X04S060	21.7	36.9	38.9	80.9	80	0.9	6	1
5.3	2	★	DWAE0530X02S060	11.6	22.0	24.0	67.0	66	1.0	6	1
5.3	4	★	DWAE0530X04S060	22.2	37.0	39.0	81.0	80	1.0	6	1
5.4	2	●	DWAE0540X02S060	11.8	22.0	24.0	67.0	66	1.0	6	1
5.4	4	●	DWAE0540X04S060	22.6	38.0	40.0	81.0	80	1.0	6	1
5.5	2	★	DWAE0550X02S060	12.0	22.0	24.0	67.0	66	1.0	6	1
5.5	4	★	DWAE0550X04S060	23.0	39.0	41.0	81.0	80	1.0	6	1
5.6	2	●	DWAE0560X02S060	12.2	24.0	26.0	67.0	66	1.0	6	1
5.6	4	●	DWAE0560X04S060	23.4	39.0	41.0	81.0	80	1.0	6	1
5.7	2	★	DWAE0570X02S060	12.4	24.0	26.0	67.0	66	1.0	6	1
5.7	4	★	DWAE0570X04S060	23.8	39.0	41.0	81.0	80	1.0	6	1
5.8	2	●	DWAE0580X02S060	12.7	24.1	26.1	67.1	66	1.1	6	1
5.8	4	●	DWAE0580X04S060	24.3	41.1	43.1	81.1	80	1.1	6	1
5.9	2	★	DWAE0590X02S060	12.9	24.1	26.1	67.1	66	1.1	6	1
5.9	4	★	DWAE0590X04S060	24.7	41.1	43.1	81.1	80	1.1	6	1
6.0	2	●	DWAE0600X02S060	13.1	24.1	26.1	67.1	66	1.1	6	1
6.0	4	●	DWAE0600X04S060	25.1	42.1	44.1	81.1	80	1.1	6	1
6.1	2	★	DWAE0610X02S070	13.3	26.1	28.1	75.1	74	1.1	7	1
6.1	4	★	DWAE0610X04S070	25.5	44.1	46.1	84.1	83	1.1	7	1
6.2	2	●	DWAE0620X02S070	13.5	26.1	28.1	75.1	74	1.1	7	1
6.2	4	●	DWAE0620X04S070	25.9	44.1	46.1	84.1	83	1.1	7	1
6.3	2	★	DWAE0630X02S070	13.7	26.1	28.1	75.1	74	1.1	7	1
6.3	4	★	DWAE0630X04S070	26.3	44.1	46.1	84.1	83	1.1	7	1
6.4	2	●	DWAE0640X02S070	14.0	26.2	28.2	75.2	74	1.2	7	1
6.4	4	●	DWAE0640X04S070	26.8	44.2	46.2	84.2	83	1.2	7	1
6.5	2	★	DWAE0650X02S070	14.2	26.2	28.2	75.2	74	1.2	7	1
6.5	4	★	DWAE0650X04S070	27.2	44.2	46.2	84.2	83	1.2	7	1

● : Avrupa standart stok. ★ : Japonya standart stok.

DC (mm)	Delik Derinliği (L/D)	DP-102A	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
6.6	2	●	DWAE0660X02S070	14.4	28.2	30.2	75.2	74	1.2	7	1
6.6	4	●	DWAE0660X04S070	27.6	46.2	48.2	84.2	83	1.2	7	1
6.7	2	★	DWAE0670X02S070	14.6	28.2	30.2	75.2	74	1.2	7	1
6.7	4	★	DWAE0670X04S070	28.0	46.2	48.2	84.2	83	1.2	7	1
6.8	2	●	DWAE0680X02S070	14.8	28.2	30.2	75.2	74	1.2	7	1
6.8	4	●	DWAE0680X04S070	28.4	46.2	48.2	84.2	83	1.2	7	1
6.9	2	★	DWAE0690X02S070	15.1	28.3	30.3	75.3	74	1.3	7	1
6.9	4	★	DWAE0690X04S070	28.9	46.3	48.3	84.3	83	1.3	7	1
7.0	2	●	DWAE0700X02S070	15.3	28.3	30.3	75.3	74	1.3	7	1
7.0	4	●	DWAE0700X04S070	29.3	46.3	48.3	84.3	83	1.3	7	1
7.1	2	★	DWAE0710X02S080	15.5	29.3	31.3	80.3	79	1.3	8	1
7.1	4	★	DWAE0710X04S080	29.7	51.3	53.3	91.3	90	1.3	8	1
7.2	2	●	DWAE0720X02S080	15.7	29.3	31.3	80.3	79	1.3	8	1
7.2	4	●	DWAE0720X04S080	30.1	51.3	53.3	91.3	90	1.3	8	1
7.3	2	★	DWAE0730X02S080	15.9	29.3	31.3	80.3	79	1.3	8	1
7.3	4	★	DWAE0730X04S080	30.5	51.3	53.3	91.3	90	1.3	8	1
7.4	2	●	DWAE0740X02S080	16.1	29.3	31.3	80.3	79	1.3	8	1
7.4	4	●	DWAE0740X04S080	30.9	51.3	53.3	91.3	90	1.3	8	1
7.5	2	★	DWAE0750X02S080	16.4	29.4	31.4	80.4	79	1.4	8	1
7.5	4	★	DWAE0750X04S080	31.4	51.4	53.4	91.4	90	1.4	8	1
7.6	2	●	DWAE0760X02S080	16.6	31.4	33.4	80.4	79	1.4	8	1
7.6	4	●	DWAE0760X04S080	31.8	53.4	55.4	91.4	90	1.4	8	1
7.7	2	★	DWAE0770X02S080	16.8	31.4	33.4	80.4	79	1.4	8	1
7.7	4	★	DWAE0770X04S080	32.2	53.4	55.4	91.4	90	1.4	8	1
7.8	2	●	DWAE0780X02S080	17.0	31.4	33.4	80.4	79	1.4	8	1
7.8	4	●	DWAE0780X04S080	32.6	53.4	55.4	91.4	90	1.4	8	1
7.9	2	★	DWAE0790X02S080	17.2	31.4	33.4	80.4	79	1.4	8	1
7.9	4	★	DWAE0790X04S080	33.0	53.4	55.4	91.4	90	1.4	8	1
8.0	2	●	DWAE0800X02S080	17.5	31.5	33.5	80.5	79	1.5	8	1
8.0	4	●	DWAE0800X04S080	33.5	53.5	55.5	91.5	90	1.5	8	1
8.1	2	★	DWAE0810X02S090	17.7	33.5	35.5	85.5	84	1.5	9	1
8.1	4	★	DWAE0810X04S090	33.9	57.5	59.5	99.5	98	1.5	9	1
8.2	2	●	DWAE0820X02S090	17.9	33.5	35.5	85.5	84	1.5	9	1
8.2	4	●	DWAE0820X04S090	34.3	57.5	59.5	99.5	98	1.5	9	1
8.3	2	★	DWAE0830X02S090	18.1	33.5	35.5	85.5	84	1.5	9	1
8.3	4	★	DWAE0830X04S090	34.7	57.5	59.5	99.5	98	1.5	9	1
8.4	2	●	DWAE0840X02S090	18.3	33.5	35.5	85.5	84	1.5	9	1
8.4	4	●	DWAE0840X04S090	35.1	57.5	59.5	99.5	98	1.5	9	1
8.5	2	★	DWAE0850X02S090	18.5	33.5	35.5	85.5	84	1.5	9	1
8.5	4	★	DWAE0850X04S090	35.5	57.5	59.5	99.5	98	1.5	9	1
8.6	2	●	DWAE0860X02S090	18.8	34.6	36.6	85.6	84	1.6	9	1
8.6	4	●	DWAE0860X04S090	36.0	61.6	63.6	99.6	98	1.6	9	1
8.7	2	★	DWAE0870X02S090	19.0	34.6	36.6	85.6	84	1.6	9	1
8.7	4	★	DWAE0870X04S090	36.4	61.6	63.6	99.6	98	1.6	9	1

M

DELME

DWAE

DC (mm)	Delik Derinliđi (L/D)	DP102A	Sipariř No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
8.8	2	●	DWAE0880X02S090	19.2	34.6	36.6	85.6	84	1.6	9	1
8.8	4	●	DWAE0880X04S090	36.8	61.6	63.6	99.6	98	1.6	9	1
8.9	2	★	DWAE0890X02S090	19.4	34.6	36.6	85.6	84	1.6	9	1
8.9	4	★	DWAE0890X04S090	37.2	61.6	63.6	99.6	98	1.6	9	1
9.0	2	●	DWAE0900X02S090	19.6	34.6	36.6	85.6	84	1.6	9	1
9.0	4	●	DWAE0900X04S090	37.6	61.6	63.6	99.6	98	1.6	9	1
9.1	2	★	DWAE0910X02S100	19.9	36.7	38.7	90.7	89	1.7	10	1
9.1	4	★	DWAE0910X04S100	38.1	63.7	65.7	106.7	105	1.7	10	1
9.2	2	●	DWAE0920X02S100	20.1	36.7	38.7	90.7	89	1.7	10	1
9.2	4	●	DWAE0920X04S100	38.5	63.7	65.7	106.7	105	1.7	10	1
9.3	2	★	DWAE0930X02S100	20.3	36.7	38.7	90.7	89	1.7	10	1
9.3	4	★	DWAE0930X04S100	38.9	63.7	65.7	106.7	105	1.7	10	1
9.4	2	●	DWAE0940X02S100	20.5	36.7	38.7	90.7	89	1.7	10	1
9.4	4	●	DWAE0940X04S100	39.3	63.7	65.7	106.7	105	1.7	10	1
9.5	2	★	DWAE0950X02S100	20.7	36.7	38.7	90.7	89	1.7	10	1
9.5	4	★	DWAE0950X04S100	39.7	63.7	65.7	106.7	105	1.7	10	1
9.6	2	●	DWAE0960X02S100	20.9	37.7	39.7	90.7	89	1.7	10	1
9.6	4	●	DWAE0960X04S100	40.1	66.7	68.7	106.7	105	1.7	10	1
9.7	2	★	DWAE0970X02S100	21.2	37.8	39.8	90.8	89	1.8	10	1
9.7	4	★	DWAE0970X04S100	40.6	66.8	68.8	106.8	105	1.8	10	1
9.8	2	●	DWAE0980X02S100	21.4	37.8	39.8	90.8	89	1.8	10	1
9.8	4	●	DWAE0980X04S100	41.0	66.8	68.8	106.8	105	1.8	10	1
9.9	2	★	DWAE0990X02S100	21.6	37.8	39.8	90.8	89	1.8	10	1
9.9	4	★	DWAE0990X04S100	41.4	66.8	68.8	106.8	105	1.8	10	1
10.0	2	●	DWAE1000X02S100	21.8	37.8	39.8	90.8	89	1.8	10	1
10.0	4	●	DWAE1000X04S100	41.8	66.8	68.8	106.8	105	1.8	10	1
10.1	2	●	DWAE1010X02S110	22.0	40.8	42.8	101.8	100	1.8	11	1
10.1	4	●	DWAE1010X04S110	42.2	71.8	73.8	115.8	114	1.8	11	1
10.2	2	●	DWAE1020X02S110	22.3	40.9	42.9	101.9	100	1.9	11	1
10.2	4	●	DWAE1020X04S110	42.7	71.9	73.9	115.9	114	1.9	11	1
10.3	2	●	DWAE1030X02S110	22.5	40.9	42.9	101.9	100	1.9	11	1
10.3	4	●	DWAE1030X04S110	43.1	71.9	73.9	115.9	114	1.9	11	1
10.4	2	●	DWAE1040X02S110	22.7	40.9	42.9	101.9	100	1.9	11	1
10.4	4	●	DWAE1040X04S110	43.5	71.9	73.9	115.9	114	1.9	11	1
10.5	2	●	DWAE1050X02S110	22.9	40.9	42.9	101.9	100	1.9	11	1
10.5	4	●	DWAE1050X04S110	43.9	71.9	73.9	115.9	114	1.9	11	1
10.6	2	●	DWAE1060X02S110	23.1	41.9	43.9	101.9	100	1.9	11	1
10.6	4	●	DWAE1060X04S110	44.3	72.9	74.9	115.9	114	1.9	11	1
10.7	2	●	DWAE1070X02S110	23.3	41.9	43.9	101.9	100	1.9	11	1
10.7	4	●	DWAE1070X04S110	44.7	72.9	74.9	115.9	114	1.9	11	1
10.8	2	●	DWAE1080X02S110	23.6	42.0	44.0	102.0	100	2.0	11	1
10.8	4	●	DWAE1080X04S110	45.2	73.0	75.0	116.0	114	2.0	11	1

● : Avrupa standart stok. ★ : Japonya standart stok.

DC (mm)	Delik Derinliği (L/D)	DP-102A	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
10.9	2	●	DWAE1090X02S110	23.8	42.0	44.0	102.0	100	2.0	11	1
10.9	4	●	DWAE1090X04S110	45.6	73.0	75.0	116.0	114	2.0	11	1
11.0	2	●	DWAE1100X02S110	24.0	42.0	44.0	102.0	100	2.0	11	1
11.0	4	●	DWAE1100X04S110	46.0	73.0	75.0	116.0	114	2.0	11	1
11.1	2	●	DWAE1110X02S120	24.2	45.0	47.0	102.0	100	2.0	12	1
11.1	4	●	DWAE1110X04S120	46.4	77.0	79.0	123.0	121	2.0	12	1
11.2	2	●	DWAE1120X02S120	24.4	45.0	47.0	102.0	100	2.0	12	1
11.2	4	●	DWAE1120X04S120	46.8	77.0	79.0	123.0	121	2.0	12	1
11.3	2	●	DWAE1130X02S120	24.7	45.1	47.1	102.1	100	2.1	12	1
11.3	4	●	DWAE1130X04S120	47.3	77.1	79.1	123.1	121	2.1	12	1
11.4	2	●	DWAE1140X02S120	24.9	45.1	47.1	102.1	100	2.1	12	1
11.4	4	●	DWAE1140X04S120	47.7	77.1	79.1	123.1	121	2.1	12	1
11.5	2	●	DWAE1150X02S120	25.1	45.1	47.1	102.1	100	2.1	12	1
11.5	4	●	DWAE1150X04S120	48.1	77.1	79.1	123.1	121	2.1	12	1
11.6	2	●	DWAE1160X02S120	25.3	47.1	49.1	102.1	100	2.1	12	1
11.6	4	●	DWAE1160X04S120	48.5	79.1	81.1	123.1	121	2.1	12	1
11.7	2	●	DWAE1170X02S120	25.5	47.1	49.1	102.1	100	2.1	12	1
11.7	4	●	DWAE1170X04S120	48.9	79.1	81.1	123.1	121	2.1	12	1
11.8	2	●	DWAE1180X02S120	25.7	47.1	49.1	102.1	100	2.1	12	1
11.8	4	●	DWAE1180X04S120	49.3	79.1	81.1	123.1	121	2.1	12	1
11.9	2	●	DWAE1190X02S120	26.0	47.2	49.2	102.2	100	2.2	12	1
11.9	4	●	DWAE1190X04S120	49.8	79.2	81.2	123.2	121	2.2	12	1
12.0	2	●	DWAE1200X02S120	26.2	47.2	49.2	102.2	100	2.2	12	1
12.0	4	●	DWAE1200X04S120	50.2	79.2	81.2	123.2	121	2.2	12	1
12.1	2	●	DWAE1210X02S130	26.4	49.2	51.2	102.2	100	2.2	13	1
12.1	4	●	DWAE1210X04S130	50.6	82.2	84.2	139.2	137	2.2	13	1
12.2	2	●	DWAE1220X02S130	26.6	49.2	51.2	102.2	100	2.2	13	1
12.2	4	●	DWAE1220X04S130	51.0	82.2	84.2	139.2	137	2.2	13	1
12.3	2	●	DWAE1230X02S130	26.8	49.2	51.2	102.2	100	2.2	13	1
12.3	4	●	DWAE1230X04S130	51.4	82.2	84.2	139.2	137	2.2	13	1
12.4	2	●	DWAE1240X02S130	27.1	49.3	51.3	102.3	100	2.3	13	1
12.4	4	●	DWAE1240X04S130	51.9	82.3	84.3	139.3	137	2.3	13	1
12.5	2	●	DWAE1250X02S130	27.3	49.3	51.3	102.3	100	2.3	13	1
12.5	4	●	DWAE1250X04S130	52.3	82.3	84.3	139.3	137	2.3	13	1
12.6	2	●	DWAE1260X02S130	27.5	52.3	54.3	102.3	100	2.3	13	1
12.6	4	●	DWAE1260X04S130	52.7	84.3	86.3	139.3	137	2.3	13	1
12.7	2	●	DWAE1270X02S130	27.7	52.3	54.3	102.3	100	2.3	13	1
12.7	4	●	DWAE1270X04S130	53.1	84.3	86.3	139.3	137	2.3	13	1
12.8	2	●	DWAE1280X02S130	27.9	52.3	54.3	102.3	100	2.3	13	1
12.8	4	●	DWAE1280X04S130	53.5	84.3	86.3	139.3	137	2.3	13	1
12.9	2	●	DWAE1290X02S130	28.1	52.3	54.3	102.3	100	2.3	13	1
12.9	4	●	DWAE1290X04S130	53.9	84.3	86.3	139.3	137	2.3	13	1

M

DELME

DC (mm)	Delik Derinliđi (L/D)	DP102A	Sipariř No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
13.0	2	●	DWAE1300X02S130	28.4	52.4	54.4	102.4	100	2.4	13	1
13.0	4	●	DWAE1300X04S130	54.4	84.4	86.4	139.4	137	2.4	13	1
13.1	2	●	DWAE1310X02S140	28.6	55.4	57.4	102.4	100	2.4	14	1
13.1	4	●	DWAE1310X04S140	54.8	92.4	94.4	149.4	147	2.4	14	1
13.2	2	●	DWAE1320X02S140	28.8	55.4	57.4	102.4	100	2.4	14	1
13.2	4	●	DWAE1320X04S140	55.2	92.4	94.4	149.4	147	2.4	14	1
13.3	2	●	DWAE1330X02S140	29.0	55.4	57.4	102.4	100	2.4	14	1
13.3	4	●	DWAE1330X04S140	55.6	92.4	94.4	149.4	147	2.4	14	1
13.4	2	●	DWAE1340X02S140	29.2	55.4	57.4	102.4	100	2.4	14	1
13.4	4	●	DWAE1340X04S140	56.0	92.4	94.4	149.4	147	2.4	14	1
13.5	2	●	DWAE1350X02S140	29.5	55.5	57.5	102.5	100	2.5	14	1
13.5	4	●	DWAE1350X04S140	56.5	92.5	94.5	149.5	147	2.5	14	1
13.6	2	●	DWAE1360X02S140	29.7	57.5	59.5	102.5	100	2.5	14	1
13.6	4	●	DWAE1360X04S140	56.9	97.5	99.5	149.5	147	2.5	14	1
13.7	2	●	DWAE1370X02S140	29.9	57.5	59.5	102.5	100	2.5	14	1
13.7	4	●	DWAE1370X04S140	57.3	97.5	99.5	149.5	147	2.5	14	1
13.8	2	●	DWAE1380X02S140	30.1	57.5	59.5	102.5	100	2.5	14	1
13.8	4	●	DWAE1380X04S140	57.7	97.5	99.5	149.5	147	2.5	14	1
13.9	2	●	DWAE1390X02S140	30.3	57.5	59.5	102.5	100	2.5	14	1
13.9	4	●	DWAE1390X04S140	58.1	97.5	99.5	149.5	147	2.5	14	1
14.0	2	●	DWAE1400X02S140	30.5	57.5	59.5	102.5	100	2.5	14	1
14.0	4	●	DWAE1400X04S140	58.5	97.5	99.5	149.5	147	2.5	14	1

● : Avrupa standart stok.

ÖNERİLEN KESME KOŞULLARI

Çalışma Malzemesi	P							
	Yumuşak Çelikler ($\leq 180\text{HB}$)				Karbon Çelikleri, Alaşımli Çelikler ($180-250\text{HB}$)			
	EU S275JR, Ck10, vs.				C45, 42CrMo4, vs.			
Matkap Ucu Çapı DC (mm)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	İlerleme hızı (mm/dak)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	İlerleme hızı (mm/dak)
1.0	30	9500	0.03 (0.02—0.04)	285	30	9500	0.03 (0.02—0.04)	285
1.5	30	6300	0.05 (0.03—0.06)	315	30	6300	0.05 (0.03—0.06)	315
2.0	55	8700	0.06 (0.04—0.08)	520	55	8700	0.06 (0.04—0.08)	520
2.5	55	7000	0.08 (0.05—0.10)	560	55	7000	0.08 (0.05—0.10)	560
3.0	65	6800	0.09 (0.07—0.11)	610	60	6300	0.09 (0.07—0.11)	565
4.0	70	5500	0.12 (0.09—0.14)	660	65	5100	0.12 (0.09—0.14)	610
5.0	70	4400	0.15 (0.11—0.18)	660	65	4100	0.15 (0.11—0.18)	615
6.0	80	4200	0.18 (0.14—0.21)	755	75	3900	0.18 (0.14—0.21)	700
7.0	80	3600	0.21 (0.16—0.25)	755	75	3400	0.21 (0.16—0.25)	715
8.0	85	3300	0.23 (0.18—0.28)	760	80	3100	0.23 (0.18—0.28)	715
10.0	90	2800	0.27 (0.21—0.32)	755	85	2700	0.27 (0.21—0.32)	730
12.0	95	2500	0.28 (0.22—0.34)	700	90	2300	0.28 (0.22—0.34)	645
14.0	95	2100	0.29 (0.23—0.35)	610	90	2000	0.29 (0.23—0.35)	580

Çalışma Malzemesi	P				M			
	Karbon Çelikleri, Alaşımli Çelikler ($280-350\text{HB}$)				Ostenitli Paslanmaz Çelikler ($\leq 200\text{HB}$) Ferritik ve Martensitik Paslanmaz Çelikler ($>200\text{HB}$)			
	40CrNiMo, vs.				X12CrS13, X30Cr13, vs.			
Matkap Ucu Çapı DC (mm)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	İlerleme hızı (mm/dak)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	İlerleme hızı (mm/dak)
1.0	25	7900	0.02 (0.01—0.03)	160	30	9500	0.02 (0.01—0.03)	190
1.5	25	5300	0.04 (0.02—0.05)	210	30	6300	0.04 (0.02—0.05)	250
2.0	50	7900	0.05 (0.03—0.07)	395	35	5500	0.04 (0.02—0.06)	220
2.5	50	6300	0.07 (0.04—0.09)	440	35	4400	0.06 (0.03—0.08)	265
3.0	55	5800	0.08 (0.06—0.09)	465	40	4200	0.07 (0.04—0.10)	295
4.0	60	4700	0.11 (0.08—0.13)	515	40	3100	0.08 (0.05—0.10)	250
5.0	60	3800	0.13 (0.10—0.16)	495	40	2500	0.10 (0.05—0.15)	250
6.0	70	3700	0.16 (0.12—0.19)	590	40	2100	0.11 (0.06—0.15)	230
7.0	70	3100	0.18 (0.14—0.22)	560	40	1800	0.12 (0.06—0.18)	215
8.0	75	2900	0.21 (0.16—0.25)	610	40	1500	0.13 (0.06—0.20)	195
10.0	80	2500	0.24 (0.20—0.28)	600	40	1200	0.14 (0.08—0.20)	170
12.0	85	2200	0.25 (0.20—0.30)	550	40	1000	0.18 (0.10—0.25)	180
14.0	85	1900	0.25 (0.20—0.30)	475	40	900	0.18 (0.10—0.25)	160

- Not 1) Yukarıdaki kesme koşulları suda çözünür soğutma sıvısı olduğunda kullanılmalı. Paslanmaz çelikler için, suda çözünmeyen soğutma sıvısı önerilir.
Not 2) Suda çözünmeyen bir soğutma sıvısı kullanırken, yeterli yağlama sağlamak için kesme hızının % 20 düşürün.
Not 3) Talaşların durumunu kontrol edin, uygun değilse gagalama işlemi uygulayın. * Referans gagalama boyu: 0.2 - 1.0 DC arası
Not 4) Kesme koşullarını takım tezgahı ve iş parçası bağlama sağlamlığına ve işleme geometrisine göre ayarlayın, vb.
Not 5) Talaş kanalı uzunluğunu (LU) aşan işleme derinlikleri önerilmemektedir.
Not 6) Matkabı salgısı 0.03 mm için de kalacak şekilde bağlayın.
Not 7) Matkabı talaş kanalı bölümünden bağlamayın.

DELME (YEKPAE KARBÜR)

KARBÜR

ÖNERİLEN KESME KOŞULLARI

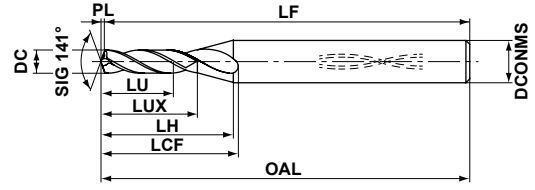
Çalışma Malzemesi	K							
	Gri Dökme Demir ($\leq 350\text{MPa}$)				Sfero Dökme Demir ($\leq 450\text{MPa}$)			
Matkap Ucu Çapı DC (mm)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	İlerleme hızı (mm/dak)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	İlerleme hızı (mm/dak)
GG30,vb.					EN-GJS-450-10,vs.			
1.0	30	9500	0.03 (0.02—0.04)	285	25	7900	0.02 (0.01—0.03)	160
1.5	30	6300	0.05 (0.03—0.06)	315	25	5300	0.04 (0.02—0.05)	210
2.0	55	8700	0.06 (0.04—0.08)	520	50	7900	0.05 (0.03—0.07)	395
2.5	55	7000	0.08 (0.05—0.10)	560	50	6300	0.07 (0.04—0.09)	440
3.0	65	6800	0.09 (0.07—0.11)	610	55	5800	0.09 (0.05—0.12)	520
4.0	70	5500	0.12 (0.09—0.14)	660	60	4700	0.12 (0.07—0.17)	565
5.0	70	4400	0.15 (0.11—0.18)	660	60	3800	0.14 (0.08—0.20)	530
6.0	80	4200	0.18 (0.14—0.21)	755	70	3700	0.15 (0.10—0.20)	555
7.0	80	3600	0.21 (0.16—0.25)	755	70	3100	0.18 (0.12—0.23)	560
8.0	85	3300	0.23 (0.18—0.28)	760	75	2900	0.20 (0.15—0.25)	580
10.0	90	2800	0.27 (0.21—0.32)	755	80	2500	0.23 (0.18—0.28)	575
12.0	95	2500	0.28 (0.22—0.34)	700	85	2200	0.25 (0.20—0.30)	550
14.0	95	2100	0.29 (0.23—0.35)	610	85	1900	0.25 (0.20—0.30)	475

- Not 1) Yukarıdaki kesme koşulları suda çözünür soğutma sıvısı olduğunda kullanılmalı. Paslanmaz çelikler için, suda çözünmeyen soğutma sıvısı önerilir.
Not 2) Suda çözünmeyen bir soğutma sıvısı kullanırken, yeterli yağlama sağlamak için kesme hızını% 20 düşürün.
Not 3) Talaşların durumunu kontrol edin, uygun değilse gagalama işlemini uygulayın. * Referans gagalama boyu: 0.2 - 1.0 DC arası
Not 4) Kesme koşullarını takım tezgahı ve iş parçası bağlama sağlamlığına ve işleme geometrisine göre ayarlayın,vb.
Not 5) Talaş kanalı uzunluğunu (LU) aşan işleme derinlikleri önerilmemektedir.
Not 6) Matkabı salgısı 0.03 mm için de kalacak şekilde bağlayın.
Not 7) Matkabı talaş kanalı bölümünden bağlamayın.

M
DELME

P M K N S H

İçten Soğutma



Tip1



DC<3
0.006
-0.004



DCONMS=4
0
-0.008

M

DELME

DC (mm)	Delik Derinliği (L/D)	DP1120	Sipariş No	Boyutlar (mm)								Tip
				LU	LUX	LCF	LH	OAL	LF	PL	DCONMS	
1.0	2	●	DVAS0100X02S040	2.2	3.2	8.6	8.8	50.0	49.8	0.2	4	1
1.1	2	●	DVAS0110X02S040	2.4	3.5	9.0	8.9	50.0	49.8	0.2	4	1
1.2	2	●	DVAS0120X02S040	2.6	3.9	9.4	9.0	50.0	49.8	0.2	4	1
1.3	2	●	DVAS0130X02S040	2.8	4.2	9.9	9.2	50.0	49.8	0.2	4	1
1.4	2	●	DVAS0140X02S040	3.0	4.5	10.3	9.3	50.0	49.8	0.2	4	1
1.5	2	●	DVAS0150X02S040	3.3	4.8	10.7	9.4	50.0	49.7	0.3	4	1
1.6	2	●	DVAS0160X02S040	3.5	5.1	11.1	9.6	50.0	49.7	0.3	4	1
1.7	2	●	DVAS0170X02S040	3.7	5.5	11.6	9.7	50.0	49.7	0.3	4	1
1.8	2	●	DVAS0180X02S040	3.9	5.8	12.0	9.8	50.0	49.7	0.3	4	1
1.9	2	●	DVAS0190X02S040	4.1	6.1	12.4	10.0	50.0	49.7	0.3	4	1
2.0	2	●	DVAS0200X02S040	4.4	6.4	12.9	10.1	50.0	49.6	0.4	4	1
2.1	2	●	DVAS0210X02S040	4.6	6.7	13.3	10.2	50.0	49.6	0.4	4	1
2.2	2	●	DVAS0220X02S040	4.8	7.0	13.7	10.3	50.0	49.6	0.4	4	1
2.3	2	●	DVAS0230X02S040	5.0	7.4	14.1	10.5	55.0	54.6	0.4	4	1
2.4	2	●	DVAS0240X02S040	5.2	7.7	14.6	10.6	55.0	54.6	0.4	4	1
2.5	2	●	DVAS0250X02S040	5.5	8.0	15.0	10.7	55.0	54.6	0.4	4	1
2.6	2	●	DVAS0260X02S040	5.7	8.3	15.4	10.9	55.0	54.5	0.5	4	1
2.7	2	●	DVAS0270X02S040	5.9	8.6	15.8	11.0	55.0	54.5	0.5	4	1
2.8	2	●	DVAS0280X02S040	6.1	8.9	16.3	11.1	55.0	54.5	0.5	4	1
2.9	2	●	DVAS0290X02S040	6.3	9.3	16.7	11.3	55.0	54.5	0.5	4	1

● : Avrupa standart stok.

KESME KOŞULLARI > M037
ÇALIŞMA KILAVUZU > M038
TEKNİK VERİLER > P001

M033

DELME (YEKPARE KARBÜR)

DVAS

Mini Boyut

NEW

TRISTAR Matkap



P

M

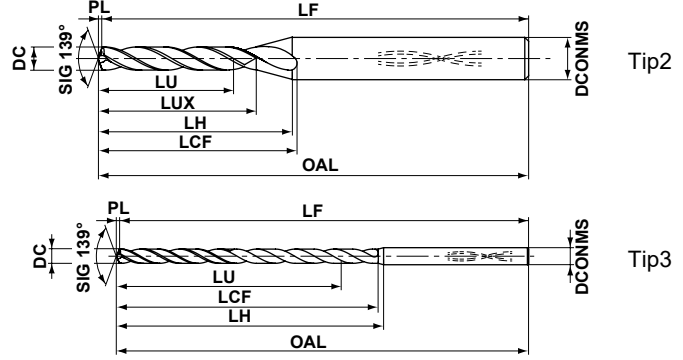
K

N

S

H

İçten Soğutma



M
DELME

DC < 3
0 -0.010
DCONMS=4
0 -0.008

DC (mm)	Delik Derinliği (L/D)	DP1120	Sipariş No	Boyutlar (mm)								Tip
				LU	LUX	LCF	LH	OAL	LF	PL	DCONMS	
1.0	7	●	DVAS0100X07S040	7.2	8.2	13.6	13.8	55.0	54.8	0.2	4	2
1.0	12	●	DVAS0100X12S040	12.2	13.2	18.6	18.8	58.0	57.8	0.2	4	2
1.0	20	●	DVAS0100X20S040	20.2	-	23.2	28.8	67.0	66.8	0.2	4	3
1.0	25	●	DVAS0100X25S040	25.2	-	28.2	33.8	73.0	72.8	0.2	4	3
1.0	30	●	DVAS0100X30S040	30.2	-	33.2	38.8	79.0	78.8	0.2	4	3
1.0	40	●	DVAS0100X40S040	40.2	-	43.2	48.8	90.0	89.8	0.2	4	3
1.0	50	●	DVAS0100X50S040	50.2	-	53.2	58.8	102.0	101.8	0.2	4	3
1.1	7	●	DVAS0110X07S040	7.9	9.1	14.5	14.4	55.0	54.8	0.2	4	2
1.1	12	●	DVAS0110X12S040	13.4	14.6	20.0	19.9	58.0	57.8	0.2	4	2
1.1	20	●	DVAS0110X20S040	22.2	-	25.5	30.9	67.0	66.8	0.2	4	3
1.1	25	●	DVAS0110X25S040	27.7	-	31.0	36.4	73.0	72.8	0.2	4	3
1.1	30	●	DVAS0110X30S040	33.2	-	36.5	41.9	79.0	78.8	0.2	4	3
1.1	40	●	DVAS0110X40S040	44.2	-	47.5	52.9	90.0	89.8	0.2	4	3
1.2	7	●	DVAS0120X07S040	8.6	9.9	15.4	15.0	55.0	54.8	0.2	4	2
1.2	12	●	DVAS0120X12S040	14.6	15.9	21.4	21.0	60.0	59.8	0.2	4	2
1.2	20	●	DVAS0120X20S040	24.2	-	27.8	33.0	71.0	70.8	0.2	4	3
1.2	25	●	DVAS0120X25S040	30.2	-	33.8	39.0	77.0	76.8	0.2	4	3
1.2	30	●	DVAS0120X30S040	36.2	-	39.8	45.0	84.0	83.8	0.2	4	3
1.2	40	●	DVAS0120X40S040	48.2	-	51.8	57.0	97.0	96.8	0.2	4	3
1.3	7	●	DVAS0130X07S040	9.3	10.7	16.4	15.7	55.0	54.8	0.2	4	2
1.3	12	●	DVAS0130X12S040	15.8	17.2	22.9	22.2	60.0	59.8	0.2	4	2
1.3	20	●	DVAS0130X20S040	26.2	-	30.1	35.2	71.0	70.8	0.2	4	3
1.3	25	●	DVAS0130X25S040	32.7	-	36.6	41.7	77.0	76.8	0.2	4	3
1.3	30	●	DVAS0130X30S040	39.2	-	43.1	48.2	84.0	83.8	0.2	4	3
1.3	40	●	DVAS0130X40S040	52.2	-	56.1	61.2	97.0	96.8	0.2	4	3
1.4	7	●	DVAS0140X07S040	10.1	11.5	17.3	16.3	55.0	54.7	0.3	4	2
1.4	12	●	DVAS0140X12S040	17.1	18.5	24.3	23.3	63.0	62.7	0.3	4	2
1.4	20	●	DVAS0140X20S040	28.3	-	32.5	37.3	75.0	74.7	0.3	4	3
1.4	25	●	DVAS0140X25S040	35.3	-	39.5	44.3	82.0	81.7	0.3	4	3
1.4	30	●	DVAS0140X30S040	42.3	-	46.5	51.3	90.0	89.7	0.3	4	3
1.4	40	●	DVAS0140X40S040	56.3	-	60.5	65.3	105.0	104.7	0.3	4	3
1.5	7	●	DVAS0150X07S040	10.8	12.3	18.2	16.9	55.0	54.7	0.3	4	2
1.5	12	●	DVAS0150X12S040	18.3	19.8	25.7	24.4	63.0	62.7	0.3	4	2
1.5	20	●	DVAS0150X20S040	30.3	-	34.8	39.4	75.0	74.7	0.3	4	3
1.5	25	●	DVAS0150X25S040	37.8	-	42.3	46.9	82.0	81.7	0.3	4	3
1.5	30	●	DVAS0150X30S040	45.3	-	49.8	54.4	90.0	89.7	0.3	4	3

● : Avrupa standart stok.

DC (mm)	Delik Derinliği (L/D)	DP1120	Sipariş No	Boyutlar (mm)								Tip
				LU	LUX	LCF	LH	OAL	LF	PL	DCONMS	
1.5	40	●	DVAS0150X40S040	60.3	–	64.8	69.4	105.0	104.7	0.3	4	3
1.5	50	●	DVAS0150X50S040	75.3	–	79.8	84.4	120.0	119.7	0.3	4	3
1.6	7	●	DVAS0160X07S040	11.5	13.1	19.2	17.6	57.0	56.7	0.3	4	2
1.6	12	●	DVAS0160X12S040	19.5	21.1	27.2	25.6	66.0	65.7	0.3	4	2
1.6	20	●	DVAS0160X20S040	32.3	–	37.1	41.6	79.0	78.7	0.3	4	3
1.6	25	●	DVAS0160X25S040	40.3	–	45.1	49.6	88.0	87.7	0.3	4	3
1.6	30	●	DVAS0160X30S040	48.3	–	53.1	57.6	99.0	98.7	0.3	4	3
1.6	40	●	DVAS0160X40S040	64.3	–	69.1	73.6	113.0	112.7	0.3	4	3
1.7	7	●	DVAS0170X07S040	12.2	14.0	20.1	18.2	57.0	56.7	0.3	4	2
1.7	12	●	DVAS0170X12S040	20.7	22.5	28.6	26.7	66.0	65.7	0.3	4	2
1.7	20	●	DVAS0170X20S040	34.3	–	39.4	43.7	79.0	78.7	0.3	4	3
1.7	25	●	DVAS0170X25S040	42.8	–	47.9	52.2	88.0	87.7	0.3	4	3
1.7	30	●	DVAS0170X30S040	51.3	–	56.4	60.7	99.0	98.7	0.3	4	3
1.7	40	●	DVAS0170X40S040	68.3	–	73.4	77.7	113.0	112.7	0.3	4	3
1.8	7	●	DVAS0180X07S040	12.9	14.8	21.0	18.8	59.0	58.7	0.3	4	2
1.8	12	●	DVAS0180X12S040	21.9	23.8	30.0	27.8	69.0	68.7	0.3	4	2
1.8	20	●	DVAS0180X20S040	36.3	–	41.7	45.8	84.0	83.7	0.3	4	3
1.8	25	●	DVAS0180X25S040	45.3	–	50.7	54.8	94.0	93.7	0.3	4	3
1.8	30	●	DVAS0180X30S040	54.3	–	59.7	63.8	104.0	103.7	0.3	4	3
1.8	40	●	DVAS0180X40S040	72.3	–	77.7	81.8	123.0	122.7	0.3	4	3
1.9	7	●	DVAS0190X07S040	13.7	15.6	21.9	19.5	59.0	58.6	0.4	4	2
1.9	12	●	DVAS0190X12S040	23.2	25.1	31.4	29.0	69.0	68.6	0.4	4	2
1.9	20	●	DVAS0190X20S040	38.4	–	44.1	48.0	84.0	83.6	0.4	4	3
1.9	25	●	DVAS0190X25S040	47.9	–	53.6	57.5	94.0	93.6	0.4	4	3
1.9	30	●	DVAS0190X30S040	57.4	–	63.1	67.0	104.0	103.6	0.4	4	3
1.9	40	●	DVAS0190X40S040	76.4	–	82.1	86.0	123.0	122.6	0.4	4	3
2.0	7	●	DVAS0200X07S040	14.4	16.4	22.9	20.1	62.0	61.6	0.4	4	2
2.0	12	●	DVAS0200X12S040	24.4	26.4	32.9	30.1	73.0	72.6	0.4	4	2
2.0	20	●	DVAS0200X20S040	40.4	–	46.4	50.1	91.0	90.6	0.4	4	3
2.0	25	●	DVAS0200X25S040	50.4	–	56.4	60.1	102.0	101.6	0.4	4	3
2.0	30	●	DVAS0200X30S040	60.4	–	66.4	70.1	113.0	112.6	0.4	4	3
2.0	40	●	DVAS0200X40S040	80.4	–	86.4	90.1	136.0	135.6	0.4	4	3
2.0	50	●	DVAS0200X50S040	100.4	–	106.4	110.1	158.0	157.6	0.4	4	3
2.1	7	●	DVAS0210X07S040	15.1	17.2	23.8	20.7	62.0	61.6	0.4	4	2
2.1	12	●	DVAS0210X12S040	25.6	27.7	34.3	31.2	73.0	72.6	0.4	4	2
2.1	20	●	DVAS0210X20S040	42.4	–	48.7	52.2	91.0	90.6	0.4	4	3
2.1	25	●	DVAS0210X25S040	52.9	–	59.2	62.7	102.0	101.6	0.4	4	3
2.1	30	●	DVAS0210X30S040	63.4	–	69.7	73.2	113.0	112.6	0.4	4	3
2.1	40	●	DVAS0210X40S040	84.4	–	90.7	94.2	136.0	135.6	0.4	4	3
2.2	7	●	DVAS0220X07S040	15.8	18.1	24.7	21.4	62.0	61.6	0.4	4	2
2.2	12	●	DVAS0220X12S040	26.8	29.1	35.7	32.4	73.0	72.6	0.4	4	2
2.2	20	●	DVAS0220X20S040	44.4	–	51.0	54.4	91.0	90.6	0.4	4	3
2.2	25	●	DVAS0220X25S040	55.4	–	62.0	65.4	102.0	101.6	0.4	4	3
2.2	30	●	DVAS0220X30S040	66.4	–	73.0	76.4	113.0	112.6	0.4	4	3
2.2	40	●	DVAS0220X40S040	88.4	–	95.0	98.4	136.0	135.6	0.4	4	3
2.3	7	●	DVAS0230X07S040	16.5	18.9	25.7	22.0	65.0	64.6	0.4	4	2
2.3	12	●	DVAS0230X12S040	28.0	30.4	37.2	33.5	78.0	77.6	0.4	4	2
2.3	20	●	DVAS0230X20S040	46.4	–	53.3	56.5	98.0	97.6	0.4	4	3

M

DELME

DELME (YEKPARE KARBÜR)

DVAS

Mini Boyut

NEW

TRISTAR Matkap

KARBÜR

M
DELME

DC (mm)	Delik Derinliği (L/D)	DP1120	Sipariş No	Boyutlar (mm)								Tip
				LU	LUX	LCF	LH	OAL	LF	PL	DCONMS	
2.3	25	●	DVAS0230X25S040	57.9	–	64.8	68.0	111.0	110.6	0.4	4	3
2.3	30	●	DVAS0230X30S040	69.4	–	76.3	79.5	124.0	123.6	0.4	4	3
2.3	40	●	DVAS0230X40S040	92.4	–	99.3	102.5	150.0	149.6	0.4	4	3
2.4	7	●	DVAS0240X07S040	17.2	19.7	26.6	22.6	65.0	64.6	0.4	4	2
2.4	12	●	DVAS0240X12S040	29.2	31.7	38.6	34.6	78.0	77.6	0.4	4	2
2.4	20	●	DVAS0240X20S040	48.4	–	55.6	58.6	98.0	97.6	0.4	4	3
2.4	25	●	DVAS0240X25S040	60.4	–	67.6	70.6	111.0	110.6	0.4	4	3
2.4	30	●	DVAS0240X30S040	72.4	–	79.6	82.6	124.0	123.6	0.4	4	3
2.4	40	●	DVAS0240X40S040	96.4	–	103.6	106.6	150.0	149.6	0.4	4	3
2.5	7	●	DVAS0250X07S040	18.0	20.5	27.5	23.3	65.0	64.5	0.5	4	2
2.5	12	●	DVAS0250X12S040	30.5	33.0	40.0	35.8	78.0	77.5	0.5	4	2
2.5	20	●	DVAS0250X20S040	50.5	–	58.0	60.8	98.0	97.5	0.5	4	3
2.5	25	●	DVAS0250X25S040	63.0	–	70.5	73.3	111.0	110.5	0.5	4	3
2.5	30	●	DVAS0250X30S040	75.5	–	83.0	85.8	124.0	123.5	0.5	4	3
2.5	40	●	DVAS0250X40S040	100.5	–	108.0	110.8	150.0	149.5	0.5	4	3
2.5	50	●	DVAS0250X50S040	125.5	–	133.0	135.8	176.0	175.5	0.5	4	3
2.6	7	●	DVAS0260X07S040	18.7	21.3	28.4	23.9	65.0	64.5	0.5	4	2
2.6	12	●	DVAS0260X12S040	31.7	34.3	41.4	36.9	78.0	77.5	0.5	4	2
2.6	20	●	DVAS0260X20S040	52.5	–	60.3	62.9	98.0	97.5	0.5	4	3
2.6	25	●	DVAS0260X25S040	65.5	–	73.3	75.9	111.0	110.5	0.5	4	3
2.6	30	●	DVAS0260X30S040	78.5	–	86.3	88.9	124.0	123.5	0.5	4	3
2.6	40	●	DVAS0260X40S040	104.5	–	112.3	114.9	150.0	149.5	0.5	4	3
2.7	7	●	DVAS0270X07S040	19.4	22.2	29.4	24.5	68.0	67.5	0.5	4	2
2.7	12	●	DVAS0270X12S040	32.9	35.7	42.9	38.0	83.0	82.5	0.5	4	2
2.7	20	●	DVAS0270X20S040	54.5	–	62.6	65.0	107.0	106.5	0.5	4	3
2.7	25	●	DVAS0270X25S040	68.0	–	76.1	78.5	122.0	121.5	0.5	4	3
2.7	30	●	DVAS0270X30S040	81.5	–	89.6	92.0	137.0	136.5	0.5	4	3
2.7	40	●	DVAS0270X40S040	108.5	–	116.6	119.0	167.0	166.5	0.5	4	3
2.8	7	●	DVAS0280X07S040	20.1	23.0	30.3	25.2	68.0	67.5	0.5	4	2
2.8	12	●	DVAS0280X12S040	34.1	37.0	44.3	39.2	83.0	82.5	0.5	4	2
2.8	20	●	DVAS0280X20S040	56.5	–	64.9	67.2	107.0	106.5	0.5	4	3
2.8	25	●	DVAS0280X25S040	70.5	–	78.9	81.2	122.0	121.5	0.5	4	3
2.8	30	●	DVAS0280X30S040	84.5	–	92.9	95.2	137.0	136.5	0.5	4	3
2.8	40	●	DVAS0280X40S040	112.5	–	120.9	123.2	167.0	166.5	0.5	4	3
2.9	7	●	DVAS0290X07S040	20.8	23.8	31.2	25.8	68.0	67.5	0.5	4	2
2.9	12	●	DVAS0290X12S040	35.3	38.3	45.7	40.3	83.0	82.5	0.5	4	2
2.9	20	●	DVAS0290X20S040	58.5	–	67.2	69.3	107.0	106.5	0.5	4	3
2.9	25	●	DVAS0290X25S040	73.0	–	81.7	83.8	122.0	121.5	0.5	4	3
2.9	30	●	DVAS0290X30S040	87.5	–	96.2	98.3	137.0	136.5	0.5	4	3
2.9	40	●	DVAS0290X40S040	116.5	–	125.2	127.3	167.0	166.5	0.5	4	3

● : Avrupa standart stok.

M036

ÖNERİLEN KESME KOŞULLARI

Çalışma Malzemesi		P			M		
Yumuşak Çelik Karbon Çelik, Alaşımli Çelik S144-2, AISI 1010, CK45, 4140 vs.		Ostenitli Paslanmaz Çelik, Ferritik paslanmaz çelik Ferritik ve Martensitik Paslanmaz Çelik Çökeltimli sertleştirilmiş paslanmaz çelik SUS410, SUS420J2, AISI 304, SUS316, SUS630 vs.					
Prüme vrtaku DC (mm)	L/D	Kesme Hızı (Min.—Maks.) (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Kesme Hızı (Min.—Maks.) (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)
1.0	2-30	65 (30-100)	20700	0.035 (0.020-0.050)	60 (20-100)	19100	0.025 (0.010-0.040)
1.0	40, 50	65 (30-100)	20700	0.030 (0.020-0.040)	60 (20-100)	19100	0.020 (0.010-0.030)
1.5	2-30	65 (30-100)	13800	0.053 (0.030-0.075)	60 (20-100)	12700	0.038 (0.015-0.060)
1.5	40, 50	65 (30-100)	13800	0.045 (0.030-0.060)	60 (20-100)	12700	0.030 (0.015-0.045)
2.0	2-30	70 (40-100)	11100	0.070 (0.040-0.100)	60 (20-100)	9500	0.050 (0.020-0.080)
2.0	40, 50	70 (40-100)	11100	0.060 (0.040-0.080)	60 (20-100)	9500	0.040 (0.020-0.060)
2.5	2-30	70 (40-100)	8900	0.088 (0.050-0.125)	60 (20-100)	7600	0.063 (0.025-0.100)
2.5	40, 50	70 (40-100)	8900	0.075 (0.050-0.100)	60 (20-100)	7600	0.050 (0.025-0.075)
2.9	2-30	70 (40-100)	7700	0.102 (0.058-0.145)	60 (20-100)	6600	0.073 (0.029-0.116)
2.9	40, 50	70 (40-100)	7700	0.087 (0.058-0.116)	60 (20-100)	6600	0.058 (0.029-0.087)

Çalışma Malzemesi		K			N		
Gri Dökme Demir Duktil Dökme Demir Pik Döküm, Sfero Döküm vs.		Alüminyum Alaşım EN AW-5051A, EN AW-6061, EN AW-7075					
Prüme vrtaku DC (mm)	L/D	Kesme Hızı (Min.—Maks.) (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Kesme Hızı (Min.—Maks.) (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)
1.0	2-30	70 (40-100)	22300	0.035 (0.020-0.050)	140 (100-180)	31800	0.040 (0.020-0.060)
1.0	40, 50	70 (40-100)	22300	0.030 (0.020-0.040)	140 (100-180)	31800	0.035 (0.020-0.050)
1.5	2-30	70 (40-100)	14900	0.053 (0.030-0.075)	140 (100-180)	21200	0.060 (0.030-0.090)
1.5	40, 50	70 (40-100)	14900	0.045 (0.030-0.060)	140 (100-180)	21200	0.053 (0.030-0.075)
2.0	2-30	70 (40-100)	11100	0.070 (0.040-0.100)	140 (100-180)	15900	0.080 (0.040-0.120)
2.0	40, 50	70 (40-100)	11100	0.060 (0.040-0.080)	140 (100-180)	15900	0.070 (0.040-0.100)
2.5	2-30	70 (40-100)	8900	0.088 (0.050-0.125)	140 (100-180)	12700	0.100 (0.050-0.150)
2.5	40, 50	70 (40-100)	8900	0.075 (0.050-0.100)	140 (100-180)	12700	0.088 (0.050-0.125)
2.9	2-30	70 (40-100)	7700	0.102 (0.058-0.145)	140 (100-180)	11000	0.116 (0.058-0.174)
2.9	40, 50	70 (40-100)	7700	0.087 (0.058-0.116)	140 (100-180)	11000	0.102 (0.058-0.145)

Çalışma Malzemesi		S			S		
Isiya Dirençli Alaşımlar Inconel® 718 vs.		Titanyum Alaşımları Ti-6Al-4V vs.					
Prüme vrtaku DC (mm)	L/D	Kesme Hızı (Min.—Maks.) (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Kesme Hızı (Min.—Maks.) (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)
1.0	2-30	30 (10-50)	9500	0.015 (0.010-0.020)	30 (20-40)	9500	0.020 (0.010-0.030)
1.0	40, 50	30 (10-50)	9500	0.015 (0.010-0.020)	30 (20-40)	9500	0.020 (0.010-0.030)
1.5	2-30	30 (10-50)	6400	0.023 (0.015-0.030)	30 (20-40)	6400	0.030 (0.015-0.045)
1.5	40, 50	30 (10-50)	6400	0.023 (0.015-0.030)	30 (20-40)	6400	0.030 (0.015-0.045)
2.0	2-30	30 (10-50)	4800	0.030 (0.020-0.040)	30 (20-40)	4800	0.040 (0.020-0.060)
2.0	40, 50	30 (10-50)	4800	0.030 (0.020-0.040)	30 (20-40)	4800	0.040 (0.020-0.060)
2.5	2-30	30 (10-50)	3800	0.038 (0.025-0.050)	30 (20-40)	3800	0.050 (0.025-0.075)
2.5	40, 50	30 (10-50)	3800	0.038 (0.025-0.050)	30 (20-40)	3800	0.050 (0.025-0.075)
2.9	2-30	30 (10-50)	3300	0.044 (0.029-0.058)	30 (20-40)	3300	0.058 (0.029-0.087)
2.9	40, 50	30 (10-50)	3300	0.044 (0.029-0.058)	30 (20-40)	3300	0.058 (0.029-0.087)

Çalışma Malzemesi		S		
Kobalt Krom Alaşımları T7402-2, ASTM F1537, F799 vs.				
Prüme vrtaku DC (mm)	L/D	Kesme Hızı (Min.—Maks.) (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)
1.0	2-30	60 (30-90)	19100	0.020 (0.010-0.030)
1.0	40, 50	60 (30-90)	19100	0.020 (0.010-0.030)
1.5	2-30	60 (30-90)	12700	0.030 (0.015-0.045)
1.5	40, 50	60 (30-90)	12700	0.030 (0.015-0.045)
2.0	2-30	60 (30-90)	9500	0.040 (0.020-0.060)
2.0	40, 50	60 (30-90)	9500	0.040 (0.020-0.060)
2.5	2-30	60 (30-90)	7600	0.050 (0.025-0.075)
2.5	40, 50	60 (30-90)	7600	0.050 (0.025-0.075)
2.9	2-30	60 (30-90)	6600	0.058 (0.029-0.087)
2.9	40, 50	60 (30-90)	6600	0.058 (0.029-0.087)

Not 1) Bu koşul sadece dahili soğutma sıvısı kullanıldığında tavsiye edilir.

Not 2) Talaşların durumunu kontrol edin, uygun değilse gagalama işlemini uygulayın. * Referans gagalama boyu: 0,2 - 1,0 DC arası

Not 3) Kesme koşullarını takım tezgahı ve iş parçası bağlama sağlamlığına ve işleme geometrisine göre ayarlayın, vb.

Not 4) Talaş kanalı uzunluğunu (LU) aşan işleme derinlikleri önerilmemektedir.

Not 5) Matkap ucu salgısının 0.03 mm'yi aşmadığından emin olun.

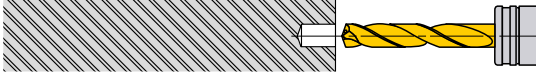
Not 6) Matkabi talaş kanalı bölümünden bağlamayın.

ÇALIŞMA KILAVUZU

■ DVAS L/D=2-40 İÇİN ÇALIŞMA KILAVUZU

DÜZ YÜZEY DELME ● Bir kör delik delme

■ 1. Bir pilot deliği delme



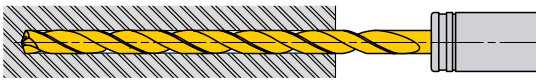
- ① Süper uzun tipten daha geniş (daha yassı) uç açılı bir matkap ucu kullanın. Mümkün olan en kısa talaş kanalını kullanın. Pilot delikleri delmek için bir L/D = 2 DVAS matkap ucu, L/D = 3 değerine kadar işlenebilir.
- ② Yüksek hassasiyette bir kılavuz deliği açıldığından emin olun.
- ③ Delme derinliği (mm): Yakl. DCx3.
(Kılavuz deliği uzunluğunu, uzun tip matkap ucuna göre ayarlayın.)

■ 2. Uzun tip matkap ucu ile kesmeye başlama



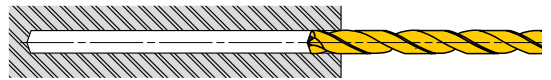
- ① Matkap ucunu düşük devir hızında kullanarak pilot deliğe yerleştirin. (mil hızı 500 – 1000 dak⁻¹, ilerleme hızı 1000 – 2000 mm/dak)
- ② Matkap ucunu pilot delikte deliğin altından 0.5 – 1 mm uzakta durdurun.

■ 3. Derin deliğin delinmesi



- ① Önerilen hızda ve ilerleme oranıyla gagalama yapmadan (düz ilerleme) çevrimi ile kesmeye başlayın.

■ 4. Matkap ucunu geriye çekme



- ① Delme işleminden sonra, kesme devrini deliğin tabanından yaklaşık 0.5 – 1 mm uzağa indirin. (Yaklaşık devir 500 – 1000 dak⁻¹)
- ② Ardından, matkap ucunu 1000 ila 2000 mm/dak ilerleme hızında dışarı çekin.

DARBELİ DELME ● Üzerinde düzensiz veya açılı yüzler bulunan parçaları delme ve boşa çıkma

■ 1. Spot yüzeyi açma



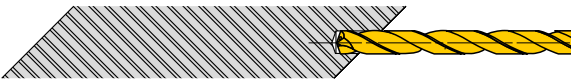
- ① Bir parmak frezeyi veya spot yüzeyi açma özellikli spot matkap ucunu kullanarak düz veya düzensiz bir yüzeyi işleyin. İşlenecek derin delik çapı ile aynı çapta bir düz yüzey yapın.

■ 2. Bir pilot deliği delme



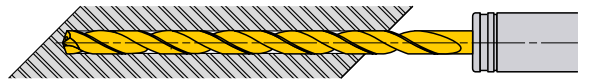
- ① Süper uzun tipten daha geniş (daha yassı) uç açılı bir matkap ucu kullanın. Mümkün olan en kısa talaş kanalını kullanın.
- ② Yüksek hassasiyette bir kılavuz deliği açıldığından emin olun.
- ③ Delme derinliği (mm): Yakl. DCx2.
(Kılavuz deliği uzunluğunu, uzun tip matkap ucuna göre ayarlayın.)

■ 3. Uzun tip matkap ucu ile kesmeye başlama



- ① Matkap ucunu düşük devir hızında kullanarak pilot deliğe yerleştirin. (mil hızı 500 – 1000 dak⁻¹, ilerleme hızı 1000 – 2000 mm/dak)
- ② Matkap ucunu pilot delikte deliğin altından 0.5 – 1 mm uzakta durdurun.

■ 4. Derin deliğin delinmesi



- ① Önerilen hızda ve ilerleme oranıyla gagalama yapmadan (düz ilerleme) çevrimi ile kesmeye başlayın.

■ 5. Boşa çıkma



- ① Boşa çıkma işlemi sırasında, kesme kenarı hasar görebilir.
- ② Yüzeğe yakın ilerleme oranını düşürün.

■ 6. Matkap ucunu geriye çekme

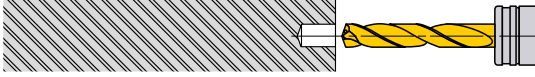


- ① Delme işleminden sonra mil hızını 500 – 1000 dak⁻¹ olarak değiştirin.
- ② Ardından, matkap ucunu 1000 – 2000 mm/dak ilerleme hızında dışarı çekin.

■ DVAS L/D=50 İÇİN ÇALIŞMA KILAVUZU

DÜZ YÜZEY DELME ● Bir kör delik delme

■ 1. Bir pilot deliği delme



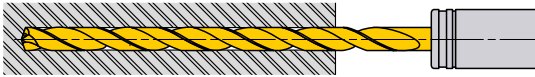
- ① Süper uzun tipten daha geniş (daha yassı) uç açılı bir matkap ucu kullanın. DVAS L/D = 7 matkap ucu kullanın.
- ② Yüksek hassasiyette bir kılavuz deliği açıldığından emin olun.
- ③ Delme derinliği (mm): Yakl. DCx7.
(Kılavuz deliği uzunluğunu, uzun tip matkap ucuna göre ayarlayın.)

■ 2. Uzun tip matkap ucu ile kesmeye başlama



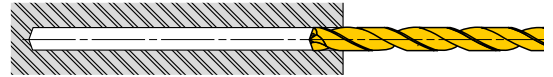
- ① Matkap ucunu düşük devir hızında kullanarak pilot deliğe yerleştirin. (mil hızı 500 – 1000 dak⁻¹, ilerleme hızı 1000 – 2000 mm/dak)
- ② Matkap ucunu pilot delikte deliğin altından 0.5 – 1 mm uzakta durdurun.

■ 3. Derin deliğin delinmesi



- ① Önerilen hızda ve ilerleme oranıyla gagalama yapmadan (düz ilerleme) çevrimi ile kesmeye başlayın.

■ 4. Matkap ucunu geriye çekme



- ① Delme işleminden sonra, kesme devrini deliğin tabanından yaklaşık 0.5 – 1 mm uzağa indirin. (Yaklaşık devir 500 – 1000 dak⁻¹)
- ② Ardından, matkap ucunu 1000 ila 2000 mm/dak ilerleme hızında dışarı çekin.

DARBELİ DELME ● Üzerinde düzensiz veya açılı yüzler bulunan parçaları delme ve boşa çıkma

■ 1. Spot yüzeyi açma



- ① Bir parmak frezeyi veya spot yüzeyi açma özellikli spot matkap ucunu kullanarak düz veya düzensiz bir yüzeyi işleyin. İşlenecek derin delik çapı ile aynı çapta bir düz yüzey yapın.

■ 2. Bir pilot deliği delme



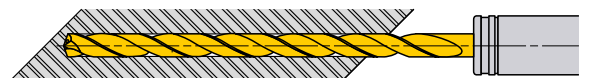
- ① Süper uzun tipten daha geniş (daha yassı) uç açılı bir matkap ucu kullanın. DVAS L/D = 7 matkap ucu kullanın.
- ② Yüksek hassasiyette bir kılavuz deliği açıldığından emin olun.
- ③ Delme derinliği (mm): Yakl. DCx7.
(Kılavuz deliği uzunluğunu, uzun tip matkap ucuna göre ayarlayın.)

■ 3. Uzun tip matkap ucu ile kesmeye başlama



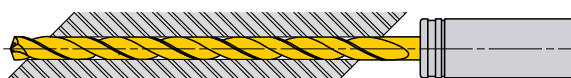
- ① Matkap ucunu düşük devir hızında kullanarak pilot deliğe yerleştirin. (mil hızı 500 – 1000 dak⁻¹, ilerleme hızı 1000 – 2000 mm/dak)
- ② Matkap ucunu pilot delikte deliğin altından 0.5 – 1 mm uzakta durdurun.

■ 4. Derin deliğin delinmesi



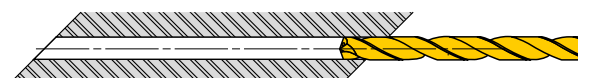
- ① Önerilen hızda ve ilerleme oranıyla gagalama yapmadan (düz ilerleme) çevrimi ile kesmeye başlayın.

■ 5. Boşa çıkma



- ① Boşa çıkma işlemi sırasında, kesme kenarı hasar görebilir.
- ② Yüzeğe yakın ilerleme oranını düşürün.

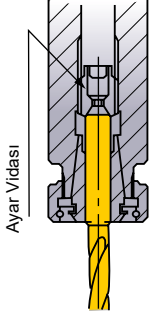
■ 6. Matkap ucunu geriye çekme



- ① Delme işleminden sonra mil hızını 500 – 1000 dak⁻¹ olarak değiştirin.
- ② Ardından, matkap ucunu 1000 – 2000 mm/dak ilerleme hızında dışarı çekin.

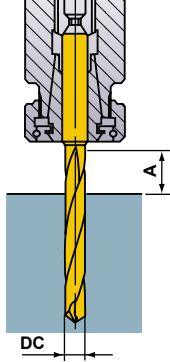
ÇALIŞMA KILAVUZU

Matkap Ucunu Bağlama



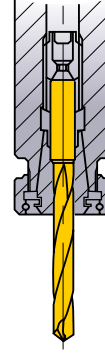
Bilyalı tip pens başlığı matkap ucunu emniyetli sabit şekilde tutar.

Matkap Ucu Uzunluğu



$$A \geq DC \times 2$$

Matkap Ucunu Takma



Helis kısmından bağlamayın.

Soğutma suyu basıncı

Soğutma sıvısı basıncını sıvının türüne ve yoğunluğuna göre ayarlayın.

Matkap Ucu Çapı DC	Suda Çözünür	Suda Çözünmez
DC<2mm	≥ 3MPa	≥ 7MPa
DC<3mm	≥ 2MPa	≥ 5MPa

Pilot matkap

Derin delik açarken aşağıdaki şekle başvurun.

$$L/D \leq 40$$



DVAS X02S040 kullanın

*Pilot delikleri delmek için L/D = 2, L/D = 3 değerine kadar işlenebilir.

$$L/D > 40$$



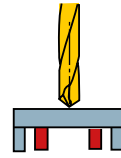
DVAS X07S040 kullanın

Soğutma Suyu Kullanımı

Küçük talaş parçaları küçük çaplı matkap uçlarında yağ deliğini tıkar. Önlem olarak her zaman ince delikli bir filtre kullanın

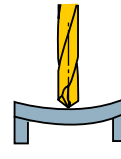
Matkap Ucu Çapı DC	İnce Delikli Filtre
DC<2mm	≤ 10µm
DC<3mm	≤ 20µm

İnce İş Parçası



İş Parçasını Destekleyin

OK



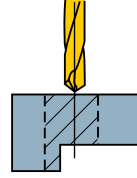
Bükülme Olasılığı

X

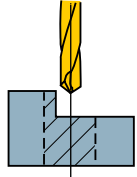
Darbeli Kesme

Bir Metot

OK



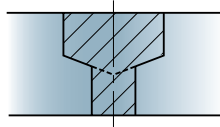
① Darbeli parçayı delerken ilerlemeyi düşürün.



Ön işleme Gerekir

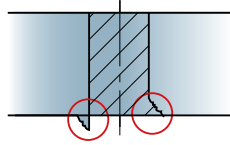
① Delmeden önce Parmak freze ile yüzeyi düzleştirin.

Kademeli Delikler



- ① İki işlem uygulayın.
 - ② Önce büyük deliği delin.
- *Hem pah hem de spot yüzeyin işlenmesi için özel tasarım bir takım üretilemek üzere sipariş edilebilir.

Çapaklanma ve İş parçasında çentik oluşması



- ① Delme işlemi sonuna doğru ilerlemeyi %50 oranında düşürün.
- ② Ağız açısını değiştirin.

L/D = 40'ı aşan derin bir delik açmak için öneriler

İş parçası döndürme yöntemi: küçük tornalar, otomatik tornalar, vb.

(1) Yüzey havşası (DLE matkap ucu önerilir)



(2) Pilot deliği yaklaşık 3D derinliğe kadar delin (DVAS matkap ucu önerilir)



(3) DVAS $\odot\odot\odot\odot$ X50S040 ile derin delik açın.



Takım döndürme yöntemi: İşleme merkezleri, kompozit makineler, vb.

(1) Pilot deliği yaklaşık 3D derinliğe kadar delin (DVAS matkap ucu önerilir)



(2) Pilot deliği yaklaşık 7D derinliğinde delin

Ekstra stabilite gerekiyorsa, 7D'den daha derin bir pilot delik açın.



(3) DVAS $\odot\odot\odot\odot$ X50S040 ile derin delik açın.



DELME (YEKPARE KARBÜR)

MINI-MVS

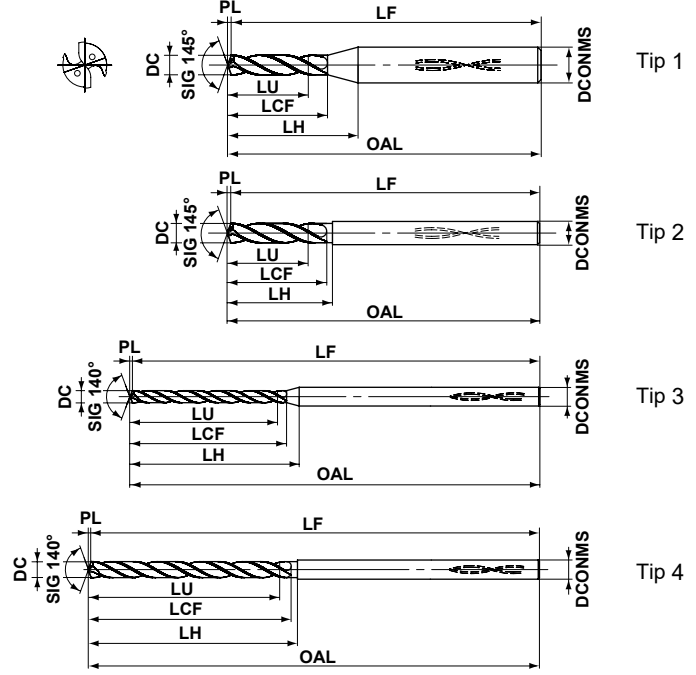
- Düz kesme kenarı sayesinde; talaş tahliyesi ve kesme kenarı mukavemeti arasında iyi bir denge kurar.
- Çift zırlıklı yapı, küçük çaplı delme işlemlerinde optimum denge ve hassasiyet sağlar.



KARBÜR



İçten Soğutma



M

DELME

Sipariş No	1 ≤ DC ≤ 2.9
MVS-X02- (pilot matkap)	+0.014 0
Diğerleri	0 -0.014
Sipariş No	DCONMS
MVS	0 -0.006

DC (mm)	Delik Derinliği (L/D)	DP1020	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
1.0	2*	●	MVS0100X02S030	2.2	5.2	8.9	55.2	55	0.2	3	1
	7	●	MVS0100X07S030	7.2	10.2	14.2	55.2	55	0.2	3	3
	12	●	MVS0100X12S030	12.2	15.2	19.2	55.2	55	0.2	3	3
	20	●	MVS0100X20S030	20.2	24.2	28.2	60.2	60	0.2	3	3
	25	●	MVS0100X25S030	25.2	28.2	32.2	66.2	66	0.2	3	3
	30	●	MVS0100X30S030	30.2	33.2	37.2	72.2	72	0.2	3	3
1.1	2*	●	MVS0110X02S030	2.4	5.6	9.1	55.2	55	0.2	3	1
	7	●	MVS0110X07S030	7.9	11.2	15.2	55.2	55	0.2	3	3
	12	●	MVS0110X12S030	13.4	17.2	21.2	55.2	55	0.2	3	3
	20	●	MVS0110X20S030	22.2	25.2	29.2	60.2	60	0.2	3	3
	25	●	MVS0110X25S030	27.7	31.2	34.2	66.2	66	0.2	3	3
	30	●	MVS0110X30S030	33.2	36.2	40.2	72.2	72	0.2	3	3
1.2	2*	●	MVS0120X02S030	2.6	6.2	9.6	55.2	55	0.2	3	1
	7	●	MVS0120X07S030	8.6	12.2	15.2	55.2	55	0.2	3	3
	12	●	MVS0120X12S030	14.6	18.2	21.2	55.2	55	0.2	3	3
	20	●	MVS0120X20S030	24.2	28.2	31.2	60.2	60	0.2	3	3
	25	●	MVS0120X25S030	30.2	34.2	37.2	66.2	66	0.2	3	3
	30	●	MVS0120X30S030	36.2	40.2	43.2	72.2	72	0.2	3	3
1.3	2*	●	MVS0130X02S030	2.8	6.6	9.8	55.2	55	0.2	3	1
	7	●	MVS0130X07S030	9.3	13.2	16.2	55.2	55	0.2	3	3
	12	●	MVS0130X12S030	15.8	20.2	23.2	55.2	55	0.2	3	3
	20	●	MVS0130X20S030	26.2	30.2	33.2	68.2	68	0.2	3	3
	25	●	MVS0130X25S030	32.7	36.2	40.2	74.2	74	0.2	3	3
	30	●	MVS0130X30S030	39.2	43.2	46.2	82.2	82	0.2	3	3

DC (mm)	Delik Derinliği (L/D)	DP1020	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
1.4	2*	●	MVS0140X02S030	3.0	7.2	10.2	55.2	55	0.2	3	1
	7	●	MVS0140X07S030	10.1	14.3	17.3	55.3	55	0.3	3	3
	12	●	MVS0140X12S030	17.1	21.3	24.3	55.3	55	0.3	3	3
	20	●	MVS0140X20S030	28.3	32.3	35.3	68.3	68	0.3	3	3
	25	●	MVS0140X25S030	35.3	39.3	42.3	74.3	74	0.3	3	3
	30	●	MVS0140X30S030	42.3	46.3	49.3	82.3	82	0.3	3	3
1.5	2*	●	MVS0150X02S030	3.2	7.6	10.4	55.2	55	0.2	3	1
	7	●	MVS0150X07S030	10.8	15.3	18.3	55.3	55	0.3	3	3
	12	●	MVS0150X12S030	18.3	23.3	26.3	55.3	55	0.3	3	3
	20	●	MVS0150X20S030	30.3	35.3	37.3	68.3	68	0.3	3	3
	25	●	MVS0150X25S030	37.8	42.3	45.3	74.3	74	0.3	3	3
	30	●	MVS0150X30S030	45.3	50.3	52.3	82.3	82	0.3	3	3
1.6	2*	●	MVS0160X02S030	3.5	8.3	10.9	68.3	68	0.3	3	1
	7	●	MVS0160X07S030	11.5	16.3	19.3	68.3	68	0.3	3	3
	12	●	MVS0160X12S030	19.5	24.3	27.3	68.3	68	0.3	3	3
	20	●	MVS0160X20S030	32.3	37.3	39.3	78.3	78	0.3	3	3
	25	●	MVS0160X25S030	40.3	45.3	47.3	86.3	86	0.3	3	3
	30	●	MVS0160X30S030	48.3	53.3	55.3	95.3	95	0.3	3	3
1.7	2*	●	MVS0170X02S030	3.7	8.7	11.1	68.3	68	0.3	3	1
	7	●	MVS0170X07S030	12.2	17.3	19.3	68.3	68	0.3	3	3
	12	●	MVS0170X12S030	20.7	26.3	28.3	68.3	68	0.3	3	3
	20	●	MVS0170X20S030	34.3	39.3	42.3	78.3	78	0.3	3	3
	25	●	MVS0170X25S030	42.8	48.3	50.3	86.3	86	0.3	3	3
	30	●	MVS0170X30S030	51.3	56.3	59.3	95.3	95	0.3	3	3

2* = Pilot delik matkabı. Tolerans değeri +0,014'tür ve delik derinliği DCx2'dir.

● : Avrupa standart stok.

KESME KOŞULLARI	> M051
ÇALIŞMA KILAVUZU	> M052
TEKNİK VERİLER	> P001

M049

MINI-MVS

KARBÜR

M
DELME

DC (mm)	Delik Derinliği (L/D)	DP1020	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
1.8	2*	●	MVS0180X02S030	3.9	9.3	11.5	68.3	68	0.3	3	1
	7	●	MVS0180X07S030	12.9	18.3	20.3	68.3	68	0.3	3	3
	12	●	MVS0180X12S030	21.9	27.3	29.3	68.3	68	0.3	3	3
	20	●	MVS0180X20S030	36.3	41.3	44.3	84.3	84	0.3	3	3
	25	●	MVS0180X25S030	45.3	50.3	53.3	94.3	94	0.3	3	3
	30	●	MVS0180X30S030	54.3	59.3	62.3	102.3	102	0.3	3	3
1.9	2*	●	MVS0190X02S030	4.1	9.7	11.8	68.3	68	0.3	3	1
	7	●	MVS0190X07S030	13.6	19.3	21.3	68.3	68	0.3	3	3
	12	●	MVS0190X12S030	23.1	29.3	31.3	68.3	68	0.3	3	3
	20	●	MVS0190X20S030	38.3	44.3	46.3	84.3	84	0.3	3	3
	25	●	MVS0190X25S030	47.8	53.3	55.3	94.3	94	0.3	3	3
	30	●	MVS0190X30S030	57.3	63.3	65.3	102.3	102	0.3	3	3
2.0	2*	●	MVS0200X02S030	4.3	10.3	12.2	68.3	68	0.3	3	1
	7	●	MVS0200X07S030	14.4	20.4	22.4	68.4	68	0.4	3	3
	12	●	MVS0200X12S030	24.4	30.4	32.4	68.4	68	0.4	3	3
	20	●	MVS0200X20S030	40.4	46.4	48.4	84.4	84	0.4	3	3
	25	●	MVS0200X25S030	50.4	56.4	58.4	94.4	94	0.4	3	3
	30	●	MVS0200X30S030	60.4	66.4	68.4	102.4	102	0.4	3	3
2.1	2*	●	MVS0210X02S030	4.5	10.7	12.4	74.3	74	0.3	3	1
	7	●	MVS0210X07S030	15.1	21.4	23.4	74.4	74	0.4	3	3
	12	●	MVS0210X12S030	25.6	32.4	34.4	74.4	74	0.4	3	3
	20	●	MVS0210X20S030	42.4	48.4	50.4	94.4	94	0.4	3	3
	25	●	MVS0210X25S030	52.9	59.4	60.4	107.4	107	0.4	3	3
	30	●	MVS0210X30S030	63.4	69.4	71.4	118.4	118	0.4	3	3
2.2	2*	●	MVS0220X02S030	4.7	11.3	12.8	74.3	74	0.3	3	1
	7	●	MVS0220X07S030	15.8	22.4	23.4	74.4	74	0.4	3	3
	12	●	MVS0220X12S030	26.8	33.4	34.4	74.4	74	0.4	3	3
	20	●	MVS0220X20S030	44.4	51.4	52.4	94.4	94	0.4	3	3
	25	●	MVS0220X25S030	55.4	62.4	63.4	107.4	107	0.4	3	3
	30	●	MVS0220X30S030	66.4	73.4	74.4	118.4	118	0.4	3	3
2.3	2*	●	MVS0230X02S030	5.0	11.8	13.1	74.4	74	0.4	3	1
	7	●	MVS0230X07S030	16.5	23.4	24.4	74.4	74	0.4	3	3
	12	●	MVS0230X12S030	28.0	35.4	36.4	74.4	74	0.4	3	3
	20	●	MVS0230X20S030	46.4	53.4	54.4	94.4	94	0.4	3	3
	25	●	MVS0230X25S030	57.9	64.4	66.4	107.4	107	0.4	3	3
	30	●	MVS0230X30S030	69.4	76.4	77.4	118.4	118	0.4	3	3
2.4	2*	●	MVS0240X02S030	5.2	12.4	13.5	74.4	74	0.4	3	1
	7	●	MVS0240X07S030	17.2	24.4	25.4	74.4	74	0.4	3	3
	12	●	MVS0240X12S030	29.2	36.4	37.4	74.4	74	0.4	3	3
	20	●	MVS0240X20S030	48.4	55.4	56.4	94.4	94	0.4	3	3
	25	●	MVS0240X25S030	60.4	67.4	68.4	107.4	107	0.4	3	3
	30	●	MVS0240X30S030	72.4	79.4	80.4	118.4	118	0.4	3	3
2.5	2*	●	MVS0250X02S030	5.4	12.8	13.7	74.4	74	0.4	3	1
	7	●	MVS0250X07S030	18.0	25.5	26.5	74.5	74	0.5	3	3
	12	●	MVS0250X12S030	30.5	38.5	39.5	74.5	74	0.5	3	3
	20	●	MVS0250X20S030	50.5	58.5	59.5	94.5	94	0.5	3	3
	25	●	MVS0250X25S030	63.0	70.5	71.5	107.5	107	0.5	3	3
	30	●	MVS0250X30S030	75.5	83.5	84.5	118.5	118	0.5	3	3

DC (mm)	Delik Derinliği (L/D)	DP1020	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
2.6	2*	●	MVS0260X02S030	5.6	13.4	13.4	81.4	81	0.4	3	2
	7	●	MVS0260X07S030	18.7	26.5	26.5	81.5	81	0.5	3	4
	12	●	MVS0260X12S030	31.7	39.5	39.5	81.5	81	0.5	3	4
	20	●	MVS0260X20S030	52.5	60.5	60.5	103.5	103	0.5	3	4
	25	●	MVS0260X25S030	65.5	73.5	73.5	117.5	117	0.5	3	4
	30	●	MVS0260X30S030	78.5	86.5	86.5	132.5	132	0.5	3	4
2.7	2*	●	MVS0270X02S030	5.8	13.8	13.8	81.4	81	0.4	3	2
	7	●	MVS0270X07S030	19.4	27.5	27.5	81.5	81	0.5	3	4
	12	●	MVS0270X12S030	32.9	41.5	41.5	81.5	81	0.5	3	4
	20	●	MVS0270X20S030	54.5	62.5	62.5	103.5	103	0.5	3	4
	25	●	MVS0270X25S030	68.0	76.5	76.5	117.5	117	0.5	3	4
	30	●	MVS0270X30S030	81.5	89.5	89.5	132.5	132	0.5	3	4
2.8	2*	●	MVS0280X02S030	6.0	14.4	14.4	81.4	81	0.4	3	2
	7	●	MVS0280X07S030	20.1	28.5	28.5	81.5	81	0.5	3	4
	12	●	MVS0280X12S030	34.1	42.5	42.5	81.5	81	0.5	3	4
	20	●	MVS0280X20S030	56.5	64.5	64.5	103.5	103	0.5	3	4
	25	●	MVS0280X25S030	70.5	78.5	78.5	117.5	117	0.5	3	4
	30	●	MVS0280X30S030	84.5	92.5	92.5	132.5	132	0.5	3	4
2.9	2*	●	MVS0290X02S030	6.3	14.9	14.9	81.5	81	0.5	3	2
	7	●	MVS0290X07S030	20.8	29.5	29.5	81.5	81	0.5	3	4
	12	●	MVS0290X12S030	35.3	44.5	44.5	81.5	81	0.5	3	4
	20	●	MVS0290X20S030	58.5	67.5	67.5	103.5	103	0.5	3	4
	25	●	MVS0290X25S030	73.0	81.5	81.5	117.5	117	0.5	3	4
	30	●	MVS0290X30S030	87.5	96.5	96.5	132.5	132	0.5	3	4

2* = Pilot delik matkabı. Tolerans değeri +0,014'tür ve delik derinliği DCx2'dir.

● : Avrupa standart stok.

ÖNERİLEN KESME KOŞULLARI

Çalışma Malzemesi		P					
		Yumuşak Çelik ($\leq 180\text{HB}$)		Karbon Çelik, Alaşımli Çelik (180–280HB)		Karbon Çelik, Alaşımli Çelik (280–350HB)	
Matkap Ucu Çapı DC (mm)	L/D	Devir (dak ⁻¹)	İlerleme oranı (Min. – Maks.) (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (Min. – Maks.) (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (Min. – Maks.) (mm/dev)
1.0	2*,7DC	15900	0.04 (0.02–0.05)	15900	0.04 (0.02–0.05)	12700	0.04 (0.02–0.05)
	$\geq 12\text{DC}$	15900	0.02 (0.01–0.03)	12700	0.02 (0.01–0.03)	9500	0.02 (0.01–0.03)
1.5	2*,7DC	10600	0.05 (0.03–0.08)	10600	0.05 (0.03–0.08)	8400	0.05 (0.03–0.08)
	$\geq 12\text{DC}$	10600	0.05 (0.02–0.08)	8400	0.05 (0.03–0.08)	6300	0.05 (0.02–0.08)
2.0	2*,7DC	7900	0.07 (0.04–0.10)	7900	0.07 (0.04–0.10)	6300	0.07 (0.04–0.10)
	$\geq 12\text{DC}$	7900	0.07 (0.04–0.10)	7900	0.07 (0.04–0.10)	7900	0.07 (0.04–0.10)
2.5	2*,7DC	7600	0.09 (0.05–0.13)	7600	0.09 (0.05–0.13)	6300	0.09 (0.05–0.13)
	$\geq 12\text{DC}$	7600	0.09 (0.06–0.13)	6300	0.09 (0.06–0.13)	6300	0.08 (0.05–0.13)

Çalışma Malzemesi		M		K			
		Ostenitli Paslanmaz Çelik ($\leq 200\text{HB}$)		Gri Dökme Demir ($\leq 350\text{ MPa}$)		Duktil Dökme Demir ($\leq 450\text{ MPa}$)	
Matkap Ucu Çapı DC (mm)	L/D	Devir (dak ⁻¹)	İlerleme oranı (Min. – Maks.) (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (Min. – Maks.) (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (Min. – Maks.) (mm/dev)
1.0	2*,7DC	9500	0.03 (0.02–0.05)	15900	0.04 (0.02–0.05)	12700	0.04 (0.02–0.05)
	$\geq 12\text{DC}$	9500	0.02 (0.01–0.03)	12700	0.02 (0.01–0.03)	9500	0.02 (0.01–0.03)
1.5	2*,7DC	6300	0.05 (0.03–0.07)	10600	0.05 (0.03–0.08)	8400	0.05 (0.03–0.08)
	$\geq 12\text{DC}$	6300	0.05 (0.02–0.08)	8400	0.05 (0.03–0.08)	6300	0.05 (0.02–0.08)
2.0	2*,7DC	4700	0.06 (0.04–0.08)	7900	0.07 (0.04–0.10)	6300	0.07 (0.04–0.10)
	$\geq 12\text{DC}$	4700	0.07 (0.04–0.10)	7900	0.07 (0.04–0.10)	7900	0.07 (0.04–0.10)
2.5	2*,7DC	5000	0.08 (0.05–0.10)	7600	0.09 (0.05–0.13)	6300	0.09 (0.05–0.13)
	$\geq 12\text{DC}$	3800	0.08 (0.05–0.12)	6300	0.09 (0.06–0.13)	6300	0.08 (0.05–0.12)

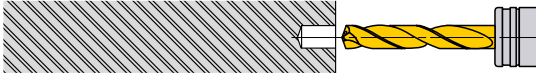
Çalışma Malzemesi		N		S	
		Alüminyum Alaşım (Si<%5)		Isıya Dirençli Alaşım	
Matkap Ucu Çapı DC (mm)	L/D	Devir (dak ⁻¹)	İlerleme oranı (Min. – Maks.) (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (Min. – Maks.) (mm/dev)
1.0	2*,7DC	19000	0.05 (0.03–0.08)	3100	0.02 (0.01–0.03)
	$\geq 12\text{DC}$	15900	0.05 (0.03–0.08)	3100	0.02 (0.01–0.03)
1.5	2*,7DC	16900	0.07 (0.05–0.12)	2100	0.03 (0.02–0.04)
	$\geq 12\text{DC}$	14800	0.08 (0.05–0.12)	2100	0.03 (0.02–0.04)
2.0	2*,7DC	14300	0.10 (0.06–0.15)	2300	0.04 (0.03–0.05)
	$\geq 12\text{DC}$	12700	0.11 (0.06–0.15)	2300	0.04 (0.03–0.05)
2.5	2*,7DC	12700	0.13 (0.08–0.20)	1900	0.05 (0.04–0.06)
	$\geq 12\text{DC}$	11400	0.14 (0.08–0.20)	1900	0.05 (0.04–0.06)

2* = Pilot delik delme. Delme boyu DCx2'dir.

■ MINI-MVS UZUN TIP MATKAP UCU İÇİN ÇALIŞMA KILAVUZU (L/D ≥ 10)

DÜZ YÜZEY DELME ● Bir kör delik delme

■ 1. Bir pilot deliği delme



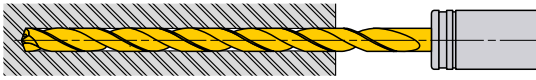
- ① Süper uzun tipten daha büyük (düz) uç açılı bir matkap ucu kullanın. Olası en kısa helis kanallıyı kullanın.
- ② Yataklama için yüksek hassasiyetli deliğin delindiğinden emin olun.
- ③ Matkap ucu derinliği : Yaklaşık 1DC veya daha derin.
(Pilot Delik Derinliğini süper uzun tip matkap ucu uzunluğuna göre ayarlayın.)

■ 2. Uzun tip matkap ucu ile kesmeye başlama



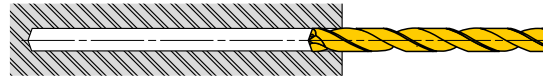
- ① Pilot deliğe düşük devirde nüfuz edin. (Devir 1000dak⁻¹, ilerleme oranı 0.2–0.3mm/dev)
- ② Uzun tip matkap ucunu pilot delik tabanına 0.5–1mm kala durdurun.

■ 3. Derin deliğin delinmesi



- ① Önerilen hızda ve ilerleme oranıyla gagalama yapmadan (düz ilerleme) çevrimi ile kesmeye başlayın.

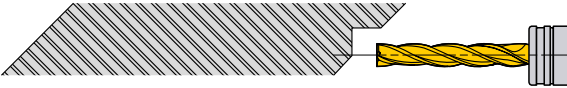
■ 4. Matkap ucunu geriye çekme



- ① Deldikten sonra, kesme devrini delik ucundan yaklaşık 0.5–1mm daha gerisinde düşürün (Devir yaklaşık 1000dak⁻¹)
- ② 3000mm/dak ilerleme hızıyla matkap ucunu pilot Delik Derinliği başlangıç noktasına geri çekin.
- ③ Son olarak, 20–30m/dak kesme hızında ve 0.2–0.3mm/dev ilerleme oranında deliği temizleyin.

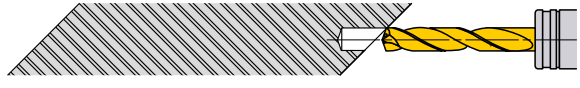
DARBELİ DELME ● Üzerinde düzensiz veya açılı yüzler bulunan parçaları delme ve boşa çıkma

■ 1. Spot yüzeyi açma



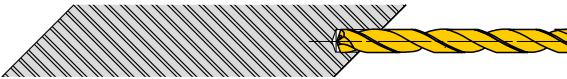
- ① Bir parmak frezeyi veya spot yüzeyi açma özellikli spot matkap ucunu kullanarak düz veya düzensiz bir yüzeyi işleyin. İşlenecek derin delik çapı ile aynı çapta bir düz yüzey yapın.

■ 2. Bir pilot deliği delme



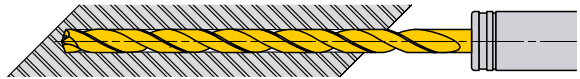
- ① Süper uzun tipten daha büyük (düz) bir uç açılı bir matkap ucu kullanın. Olası en kısa helis kanallıyı kullanın.
- ② Yataklama için yüksek hassasiyetli deliğin delindiğinden emin olun.
- ③ Matkap ucu derinliği : Yaklaşık 1DC veya daha uzun.
(Pilot Delik Derinliğini süper uzun tip matkap ucu uzunluğuna göre ayarlayın.)

■ 3. Uzun tip matkap ucu ile kesmeye başlama



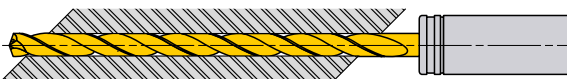
- ① Yataklama deliğine düşük devirde nüfuz edin. (Devir 1000dak⁻¹, ilerleme oranı 0.2–0.3mm/dev)
- ② Uzun tip matkap ucunu pilot delik tabanına 0.5–1mm kala durdurun.

■ 4. Derin deliğin delinmesi



- ① Önerilen hızda ve ilerleme oranıyla gagalama yapmadan (düz ilerleme) çevrimi ile kesmeye başlayın.

■ 5. Boşa çıkma



- ① Boşa çıkma işlemi sırasında, kesme kenarı hasar görebilir.
- ② Yüzeğe yakın ilerleme oranını düşürün.

■ 6. Matkap ucunu geriye çekme



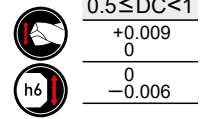
- ① Son olarak 20–30m/dak kesme hızında ve 0.2–0.3mm/dev ilerleme oranında deliği temizleyin.
- ② 3000mm/dak ilerleme hızında matkap ucunu pilot Delik Derinliği başlangıç noktasına geri çekin.

MINI-MWS

- Stabil derin delik delme için boydan boya soğutma delikli mikro delme uçları.
- Karbon çeliklerinden kesmesi zor malzemelere kadar yüksek doğrulukta ve etkili delme için.

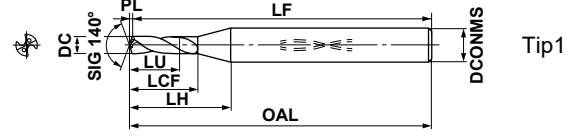


KARBÜR



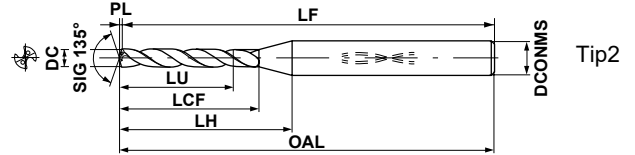
İçten Soğutma

SB Tipi (Pilot delikler için)



M
DELME

LB/XB Tipi



● MWS matkap uçları ısıtmslı tutucular ile kullanıma uygundur.

DC (mm)	Delik Derinliği (L/D)	VP15TF	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
0.50	1	●	MWS0050SB	0.6	2.6	7.3	47.1	47	0.09	3	1
	5	★	MWS0050LB	2.6	8.1	13.1	47.1	47	0.10	3	2
	12	★	MWS0050XB	6.1	16.1	21.1	47.1	47	0.10	3	2
0.51	1	★	MWS0051SB	0.6	2.7	7.3	47.1	47	0.09	3	1
	5	★	MWS0051LB	2.7	8.1	13.1	47.1	47	0.11	3	2
	12	★	MWS0051XB	6.2	16.1	21.1	47.1	47	0.11	3	2
0.52	1	★	MWS0052SB	0.6	2.7	7.3	47.1	47	0.09	3	1
	5	★	MWS0052LB	2.7	8.1	13.1	47.1	47	0.11	3	2
	12	★	MWS0052XB	6.4	16.1	21.1	47.1	47	0.11	3	2
0.53	1	★	MWS0053SB	0.6	2.7	7.3	47.1	47	0.10	3	1
	5	★	MWS0053LB	2.8	8.1	13.1	47.1	47	0.11	3	2
	12	★	MWS0053XB	6.5	16.1	21.1	47.1	47	0.11	3	2
0.54	1	★	MWS0054SB	0.6	2.7	7.3	47.1	47	0.10	3	1
	5	★	MWS0054LB	2.8	8.1	13.1	47.1	47	0.11	3	2
	12	★	MWS0054XB	6.6	16.1	21.1	47.1	47	0.11	3	2
0.55	1	●	MWS0055SB	0.7	2.7	7.3	47.1	47	0.10	3	1
	5	★	MWS0055LB	2.9	8.1	13.1	47.1	47	0.11	3	2
	12	★	MWS0055XB	6.7	16.1	21.1	47.1	47	0.11	3	2
0.56	1	★	MWS0056SB	0.7	3.0	7.6	47.1	47	0.10	3	1
	5	★	MWS0056LB	2.9	8.1	13.1	47.1	47	0.12	3	2
	12	★	MWS0056XB	6.8	16.1	21.1	47.1	47	0.12	3	2
0.57	1	★	MWS0057SB	0.7	3.0	7.5	47.1	47	0.10	3	1
	5	★	MWS0057LB	3.0	8.1	13.1	47.1	47	0.12	3	2
	12	★	MWS0057XB	7.0	16.1	21.1	47.1	47	0.12	3	2

DC (mm)	Delik Derinliği (L/D)	VP15TF	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
0.58	1	★	MWS0058SB	0.7	3.0	7.5	47.1	47	0.11	3	1
	5	★	MWS0058LB	3.0	8.1	13.1	47.1	47	0.12	3	2
	12	★	MWS0058XB	7.1	16.1	21.1	47.1	47	0.12	3	2
0.59	1	★	MWS0059SB	0.7	3.0	7.5	47.1	47	0.11	3	1
	5	★	MWS0059LB	3.1	8.1	12.1	47.1	47	0.12	3	2
	12	★	MWS0059XB	7.2	16.1	20.1	47.1	47	0.12	3	2
0.60	1	●	MWS0060SB	0.7	3.0	7.5	47.1	47	0.11	3	1
	5	★	MWS0060LB	3.1	8.1	12.1	47.1	47	0.12	3	2
	12	★	MWS0060XB	7.3	16.1	20.1	47.1	47	0.12	3	2
0.61	1	★	MWS0061SB	0.7	3.2	7.7	47.1	47	0.11	3	1
	5	★	MWS0061LB	3.2	8.1	12.1	47.1	47	0.13	3	2
	12	★	MWS0061XB	7.5	16.1	20.1	47.1	47	0.13	3	2
0.62	1	★	MWS0062SB	0.7	3.2	7.6	47.1	47	0.11	3	1
	5	★	MWS0062LB	3.2	8.1	12.1	47.1	47	0.13	3	2
	12	★	MWS0062XB	7.6	16.1	20.1	47.1	47	0.13	3	2
0.63	1	★	MWS0063SB	0.7	3.2	7.6	47.1	47	0.11	3	1
	5	★	MWS0063LB	3.3	8.1	12.1	47.1	47	0.13	3	2
	12	★	MWS0063XB	7.7	16.1	20.1	47.1	47	0.13	3	2
0.64	1	★	MWS0064SB	0.8	3.2	7.6	47.1	47	0.12	3	1
	5	★	MWS0064LB	3.3	8.1	12.1	47.1	47	0.13	3	2
	12	★	MWS0064XB	7.8	16.1	20.1	47.1	47	0.13	3	2
0.65	1	●	MWS0065SB	0.8	3.2	7.6	47.1	47	0.12	3	1
	5	★	MWS0065LB	3.4	8.1	12.1	47.1	47	0.13	3	2
	12	★	MWS0065XB	7.9	16.1	20.1	47.1	47	0.13	3	2

Not 1) Lütfen bu katalogta olmayan herhangi bir geometri için bizimle iletişim kurun (ör. farklı çap ve uzunluk).

● : Avrupa standart stok. ★ : Japonya standart stok.

KESME KOŞULLARI > M055

ÇALIŞMA KILAVUZU > M056
TEKNİK VERİLER > P001

M053

MINI-MWS

KARBÜR

M
DELME

DC (mm)	Delik Derinliği (L/D)	VP15TF	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
0.66	1	★	MWS0066SB	0.8	3.5	7.9	47.1	47	0.12	3	1
	5	★	MWS0066LB	3.4	8.1	12.1	47.1	47	0.14	3	2
	12	★	MWS0066XB	8.1	16.1	20.1	47.1	47	0.14	3	2
0.67	1	★	MWS0067SB	0.8	3.5	7.8	47.1	47	0.12	3	1
	5	★	MWS0067LB	3.5	8.1	12.1	47.1	47	0.14	3	2
	12	★	MWS0067XB	8.2	16.1	20.1	47.1	47	0.14	3	2
0.68	1	★	MWS0068SB	0.8	3.5	7.8	47.1	47	0.12	3	1
	5	★	MWS0068LB	3.5	8.1	12.1	47.1	47	0.14	3	2
	12	★	MWS0068XB	8.3	16.1	20.1	47.1	47	0.14	3	2
0.69	1	★	MWS0069SB	0.8	3.5	7.8	47.1	47	0.13	3	1
	5	★	MWS0069LB	3.6	8.1	12.1	47.1	47	0.14	3	2
	12	★	MWS0069XB	8.4	16.1	20.1	47.1	47	0.14	3	2
0.70	1	●	MWS0070SB	0.8	3.5	7.8	47.1	47	0.13	3	1
	5	★	MWS0070LB	3.6	8.1	12.1	47.1	47	0.14	3	2
	12	★	MWS0070XB	8.5	16.1	20.1	47.1	47	0.14	3	2
0.71	1	★	MWS0071SB	0.8	3.7	8.0	50.1	50	0.13	3	1
	5	★	MWS0071LB	3.7	10.1	14.1	50.1	50	0.15	3	2
	12	★	MWS0071XB	8.7	20.1	24.1	50.1	50	0.15	3	2
0.72	1	★	MWS0072SB	0.9	3.7	8.0	50.1	50	0.13	3	1
	5	★	MWS0072LB	3.8	10.1	14.1	50.1	50	0.15	3	2
	12	★	MWS0072XB	8.8	20.1	24.1	50.1	50	0.15	3	2
0.73	1	★	MWS0073SB	0.9	3.7	7.9	50.1	50	0.13	3	1
	5	★	MWS0073LB	3.8	10.1	14.1	50.1	50	0.15	3	2
	12	★	MWS0073XB	8.9	20.1	24.1	50.1	50	0.15	3	2
0.74	1	★	MWS0074SB	0.9	3.7	7.9	50.1	50	0.13	3	1
	5	★	MWS0074LB	3.9	10.1	14.1	50.1	50	0.15	3	2
	12	★	MWS0074XB	9.0	20.1	24.1	50.1	50	0.15	3	2
0.75	1	●	MWS0075SB	0.9	3.7	7.9	50.1	50	0.14	3	1
	5	★	MWS0075LB	3.9	10.1	14.1	50.1	50	0.16	3	2
	12	★	MWS0075XB	9.2	20.1	24.1	50.1	50	0.16	3	2
0.76	1	★	MWS0076SB	0.9	4.0	8.2	50.1	50	0.14	3	1
	5	★	MWS0076LB	4.0	10.1	14.1	50.1	50	0.16	3	2
	12	★	MWS0076XB	9.3	20.1	24.1	50.1	50	0.16	3	2
0.77	1	★	MWS0077SB	0.9	4.0	8.2	50.1	50	0.14	3	1
	5	★	MWS0077LB	4.0	10.1	14.1	50.1	50	0.16	3	2
	12	★	MWS0077XB	9.4	20.1	24.1	50.1	50	0.16	3	2
0.78	1	★	MWS0078SB	0.9	4.0	8.1	50.1	50	0.14	3	1
	5	★	MWS0078LB	4.1	10.1	14.1	50.1	50	0.16	3	2
	12	★	MWS0078XB	9.5	20.1	24.1	50.1	50	0.16	3	2
0.79	1	★	MWS0079SB	0.9	4.0	8.1	50.1	50	0.14	3	1
	5	★	MWS0079LB	4.1	10.1	14.1	50.1	50	0.16	3	2
	12	★	MWS0079XB	9.6	20.1	24.1	50.1	50	0.16	3	2
0.80	1	●	MWS0080SB	1.0	4.1	8.2	50.2	50	0.15	3	1
	5	★	MWS0080LB	4.2	10.2	14.2	50.2	50	0.17	3	2
	12	★	MWS0080XB	9.8	20.2	24.2	50.2	50	0.17	3	2
0.81	1	★	MWS0081SB	1.0	4.3	8.4	50.2	50	0.15	3	1
	5	★	MWS0081LB	4.2	10.2	14.2	50.2	50	0.17	3	2
	12	★	MWS0081XB	9.9	20.2	24.2	50.2	50	0.17	3	2
0.82	1	★	MWS0082SB	1.0	4.3	8.4	50.2	50	0.15	3	1
	5	★	MWS0082LB	4.3	10.2	14.2	50.2	50	0.17	3	2
	12	★	MWS0082XB	10.0	20.2	24.2	50.2	50	0.17	3	2

DC (mm)	Delik Derinliği (L/D)	VP15TF	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
0.83	1	★	MWS0083SB	1.0	4.3	8.3	50.2	50	0.15	3	1
	5	★	MWS0083LB	4.3	10.2	14.2	50.2	50	0.17	3	2
	12	★	MWS0083XB	10.1	20.2	24.2	50.2	50	0.17	3	2
0.84	1	★	MWS0084SB	1.0	4.3	8.3	50.2	50	0.15	3	1
	5	★	MWS0084LB	4.4	10.2	14.2	50.2	50	0.17	3	2
	12	★	MWS0084XB	10.3	20.2	24.2	50.2	50	0.17	3	2
0.85	1	●	MWS0085SB	1.0	4.3	8.3	50.2	50	0.15	3	1
	5	★	MWS0085LB	4.4	10.2	14.2	50.2	50	0.18	3	2
	12	★	MWS0085XB	10.4	20.2	24.2	50.2	50	0.18	3	2
0.86	1	★	MWS0086SB	1.0	4.6	8.6	50.2	50	0.16	3	1
	5	★	MWS0086LB	4.5	10.2	14.2	50.2	50	0.18	3	2
	12	★	MWS0086XB	10.5	20.2	24.2	50.2	50	0.18	3	2
0.87	1	★	MWS0087SB	1.0	4.6	8.6	50.2	50	0.16	3	1
	5	★	MWS0087LB	4.5	10.2	14.2	50.2	50	0.18	3	2
	12	★	MWS0087XB	10.6	20.2	24.2	50.2	50	0.18	3	2
0.88	1	★	MWS0088SB	1.0	4.6	8.6	50.2	50	0.16	3	1
	5	★	MWS0088LB	4.6	10.2	14.2	50.2	50	0.18	3	2
	12	★	MWS0088XB	10.7	20.2	24.2	50.2	50	0.18	3	2
0.89	1	★	MWS0089SB	1.1	4.6	8.5	50.2	50	0.16	3	1
	5	★	MWS0089LB	4.6	10.2	14.2	50.2	50	0.18	3	2
	12	★	MWS0089XB	10.9	20.2	24.2	50.2	50	0.18	3	2
0.90	1	●	MWS0090SB	1.1	4.6	8.5	50.2	50	0.16	3	1
	5	★	MWS0090LB	4.7	10.2	14.2	50.2	50	0.19	3	2
	12	★	MWS0090XB	11.0	20.2	24.2	50.2	50	0.19	3	2
0.91	1	★	MWS0091SB	1.1	4.8	8.7	50.2	50	0.17	3	1
	5	★	MWS0091LB	4.7	10.2	14.2	50.2	50	0.19	3	2
	12	★	MWS0091XB	11.1	20.2	24.2	50.2	50	0.19	3	2
0.92	1	★	MWS0092SB	1.1	4.8	8.7	50.2	50	0.17	3	1
	5	★	MWS0092LB	4.8	10.2	14.2	50.2	50	0.19	3	2
	12	★	MWS0092XB	11.2	20.2	24.2	50.2	50	0.19	3	2
0.93	1	★	MWS0093SB	1.1	4.8	8.7	50.2	50	0.17	3	1
	5	★	MWS0093LB	4.8	10.2	14.2	50.2	50	0.19	3	2
	12	★	MWS0093XB	11.4	20.2	24.2	50.2	50	0.19	3	2
0.94	1	★	MWS0094SB	1.1	4.8	8.6	50.2	50	0.17	3	1
	5	★	MWS0094LB	4.9	10.2	14.2	50.2	50	0.19	3	2
	12	★	MWS0094XB	11.5	20.2	24.2	50.2	50	0.19	3	2
0.95	1	●	MWS0095SB	1.1	4.8	8.6	50.2	50	0.17	3	1
	5	★	MWS0095LB	5.0	10.2	14.2	50.2	50	0.20	3	2
	12	★	MWS0095XB	11.6	20.2	24.2	50.2	50	0.20	3	2
0.96	1	★	MWS0096SB	1.1	5.1	8.9	50.2	50	0.17	3	1
	5	★	MWS0096LB	5.0	10.2	14.2	50.2	50	0.20	3	2
	12	★	MWS0096XB	11.7	20.2	24.2	50.2	50	0.20	3	2
0.97	1	★	MWS0097SB	1.2	5.1	8.9	50.2	50	0.18	3	1
	5	★	MWS0097LB	5.1	10.2	14.2	50.2	50	0.20	3	2
	12	★	MWS0097XB	11.8	20.2	24.2	50.2	50	0.20	3	2
0.98	1	★	MWS0098SB	1.2	5.1	8.9	50.2	50	0.18	3	1
	5	★	MWS0098LB	5.1	10.2	14.2	50.2	50	0.20	3	2
	12	★	MWS0098XB	12.0	20.2	24.2	50.2	50	0.20	3	2
0.99	1	★	MWS0099SB	1.2	5.1	8.9	50.2	50	0.18	3	1
	5	★	MWS0099LB	5.2	10.2	14.2	50.2	50	0.21	3	2
	12	★	MWS0099XB	12.1	20.2	24.2	50.2	50	0.21	3	2

Not 1) Lütfen bu katalogda olmayan herhangi bir geometri için bizimle iletişim kurun (ör. farklı çap ve uzunluk).

● : Avrupa standart stok. ★ : Japonya standart stok.

ÖNERİLEN KESME KOŞULLARI

■ SB/LB/XB Tip Matkap Ucu (L/D<10)

Çalışma Malzemesi	P							
	Yumuşak Çelik ($\leq 180\text{HB}$)				Karbon Çelik, Alaşımli Çelik (180–280HB)			
Matkap Ucu Çapı DC (mm)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.–Maks.) (mm/dev)	İlerleme hızı (mm/dak)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.–Maks.) (mm/dev)	İlerleme hızı (mm/dak)
0.63	40	20200	0.014 (0.008–0.020)	280	40	20200	0.014 (0.008–0.020)	280
0.8	45	17900	0.028 (0.016–0.040)	500	45	17900	0.028 (0.016–0.040)	500
1.0	50	15900	0.035 (0.020–0.050)	555	50	15900	0.035 (0.020–0.050)	555

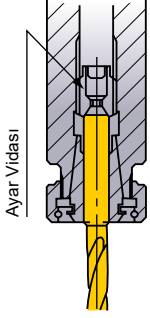
Çalışma Malzemesi	P				M			
	Karbon Çelik, Alaşımli Çelik (280–350HB)				Ostenitli Paslanmaz Çelik ($\leq 200\text{HB}$)			
Matkap Ucu Çapı DC (mm)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.–Maks.) (mm/dev)	İlerleme hızı (mm/dak)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.–Maks.) (mm/dev)	İlerleme hızı (mm/dak)
0.63	30	15100	0.014 (0.008–0.020)	210	20	10100	0.010 (0.008–0.013)	100
0.8	35	13900	0.028 (0.016–0.040)	385	25	9900	0.020 (0.016–0.026)	195
1.0	40	12700	0.035 (0.020–0.050)	440	30	9500	0.030 (0.020–0.044)	285

Çalışma Malzemesi	K							
	Gri Dökme Demir ($\leq 350\text{MPa}$)				Duktil Dökme Demir ($\leq 450\text{MPa}$)			
Matkap Ucu Çapı DC (mm)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.–Maks.) (mm/dev)	İlerleme hızı (mm/dak)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.–Maks.) (mm/dev)	İlerleme hızı (mm/dak)
0.63	40	20200	0.014 (0.008–0.020)	280	30	15100	0.014 (0.008–0.020)	210
0.8	45	17900	0.028 (0.016–0.040)	500	35	13900	0.028 (0.016–0.040)	385
1.0	50	15900	0.035 (0.020–0.050)	555	40	12700	0.035 (0.020–0.050)	440

Çalışma Malzemesi	N				S			
	Alüminyum Alaşım (Si<%5)				Isıya Dirençli Alaşım			
Matkap Ucu Çapı DC (mm)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.–Maks.) (mm/dev)	İlerleme hızı (mm/dak)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.–Maks.) (mm/dev)	İlerleme hızı (mm/dak)
0.63	40	20200	0.020 (0.012–0.030)	400	10	5000	0.008 (0.007–0.010)	40
0.8	45	17900	0.036 (0.024–0.050)	640	10	3900	0.016 (0.013–0.021)	60
1.0	60	19000	0.050 (0.030–0.075)	950	10	3100	0.020 (0.016–0.027)	60

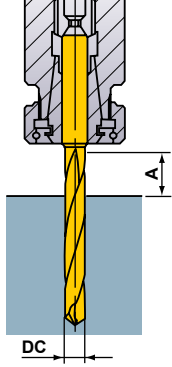
■ ÇALIŞMA KILAVUZU

Matkap Ucunu Bağlama



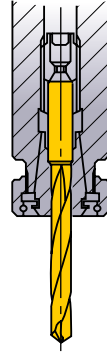
Bilyalı tip pens başlığı matkap ucunu emniyetli sabit şekilde tutar.

Matkap Ucu Uzunluğu



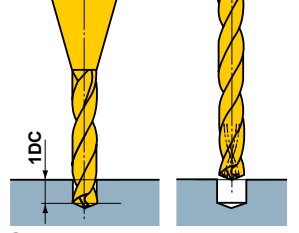
$$A \geq DC \times 2.0$$

Matkap Ucunu Takma



Helis kısmından bağlamayın.

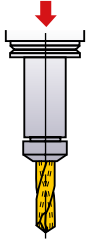
Matkap Ucunu Takma



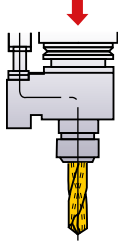
- ① Pilot delik delmek için, SB tipi matkap ucu kullanın.
- ② Yağ delikli bir matkap ucunu kullanırken yataklama için hazırlanan ön delik kullanın. Kesme şartlarına bağlı olarak, gagalama ilerlemesi önerilir.

Boydan boya Soğutmalı Tip

Tezgah mili içinden Soğutma Tipi

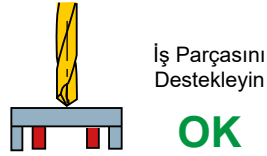


Dışdan pompa ile sağlanan soğutma tipi



Önerilen soğutma suyu basıncı: ≥ 30 bar
En az 15 bar gereklidir.

İnce İş Parçası



Soğutma Suyu Kullanımı

- 1) Küçük çaplı matkap uçlarının yağ deliklerine küçük talaş parçacıkları sıkışabilir. Koruyucu bir önlem olarak daima ince elekli filtre kullanın.
- 2) Kir ve toz parçacıkları eski soğutma suyundaki yağa yapışır ve etkili akışı önler. Düzenli soğutma suyu değişimi önerilir.

■ KULLANIMA İLİŞKİN NOTLAR

- Yağ deliğinde sıkışmayı önlemek için soğutma suyu için lütfen ince elekli filtre (elek $\leq 5\mu\text{m}$) kullanın.

MPS1

- Yeni edinilen AlTiCrN bazlı PVD kaplama.
- Hassas ve güvenilir delme için MPS1 çift zırlı tip.



L/D=2 PC L/D=3-5 L/D=8

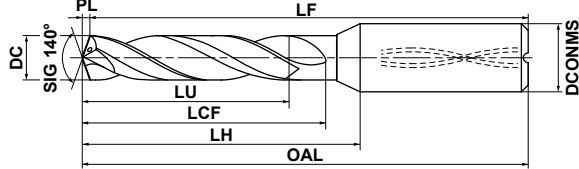
4 Zırlı ve Süper Uzun Matkap Ucu



İçten Soğutma

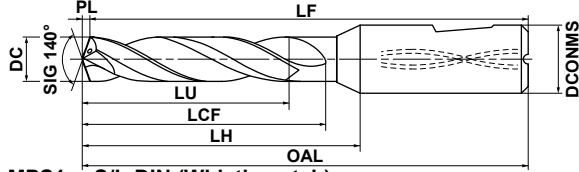


● Tip 1 Konik boyunlu silindirik şanklı tip



MPS1----S/L-DIN-C/L8C-L40C

● Tür 3 Silindirik + eğik kerkik, konik boyunlu şank türü



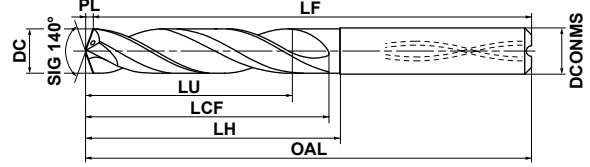
MPS1----S/L-DIN (Whistle notch)



	3≤DC≤6	6<DC≤10	10<DC≤18	18<DC≤20
DIN / PC	+0.010 -0.002	+0.010 -0.005	+0.005 -0.013	+0.005 -0.016
L___C	0 -0.012	0 -0.015	0 -0.018	0 -0.021
h6	0 -0.008	0 -0.009	0 -0.011	0 -0.013

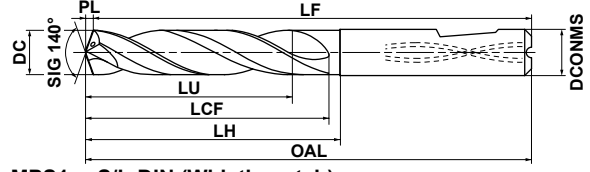
*Ø4,9 mm veya küçük soğutma suyu deliği yuvarlak şekilli olacaktır.
*SIG : L/D 3-5 ve 10-40 = 140°, 8 = 135°, PC = 145°

● Tür 2 Silindirik şank tip



MPS1----S/L-DIN-C/L8C-L40C

● Tür 4 Silindirik + eğik kerkik şank tip



MPS1----S/L-DIN (Whistle notch)

DC (mm)	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip	
				LU	LCF	LH	OAL	LF	PL	DCONMS		
3.0	3	□	MPS1-0300S-DIN	15.0	19.5	24.5	61.5	61	0.5	6	3	
	3	●	MPS1-0300S-DIN-C	15.0	19.5	24.5	61.5	61	0.5	6	1	
	5	□	MPS1-0300L-DIN	20.0	24.5	28.5	65.5	65	0.5	6	3	
	5	●	MPS1-0300L-DIN-C	20.0	24.5	28.5	65.5	65	0.5	6	1	
	2	●	MPS1-0300-PC	6.5	16.5	19.7	55.5	55	0.5	6	1	
	8	●	MPS1-0300-L8C	24.6	33.6	39.6	76.6	76	0.6	6	1	
	10	●	MPS1-0300-L10C	30.5	37.5	42.5	79.5	79	0.5	6	1	
	12	●	MPS1-0300-L12C	36.5	43.5	48.5	85.5	85	0.5	6	1	
	15	●	MPS1-0300-L15C	45.5	52.5	57.5	94.5	94	0.5	6	1	
	20	●	MPS1-0300-L20C	60.5	67.5	72.5	109.5	109	0.5	6	1	
3.05	25	●	MPS1-0300-L25C	75.5	82.5	87.5	124.5	124	0.5	6	1	
	30	●	MPS1-0300-L30C	90.5	97.5	102.5	139.5	139	0.5	6	1	
	35	□	MPS1-0300-L35C	105.5	113.5	121.5	158.5	158	0.5	6	1	
	40	●	MPS1-0300-L40C	120.5	128.5	136.5	173.5	173	0.5	6	1	
	3	□	MPS1-0305S-DIN	15.0	19.6	24.6	61.6	61	0.6	6	3	
	3	●	MPS1-0305S-DIN-C	15.0	19.6	24.6	61.6	61	0.6	6	1	
	5	□	MPS1-0305L-DIN	20.0	24.6	28.6	65.6	65	0.6	6	3	
	5	●	MPS1-0305L-DIN-C	20.0	24.6	28.6	65.6	65	0.6	6	1	
	3.1	3	□	MPS1-0310S-DIN	14.9	19.6	24.6	61.6	61	0.6	6	3
		3	●	MPS1-0310S-DIN-C	14.9	19.6	24.6	61.6	61	0.6	6	1
5		□	MPS1-0310L-DIN	19.9	24.6	28.6	65.6	65	0.6	6	3	
5		●	MPS1-0310L-DIN-C	19.9	24.6	28.6	65.6	65	0.6	6	1	
2		●	MPS1-0310-PC	6.7	18.5	21.6	55.5	55	0.5	6	1	
8		●	MPS1-0310-L8C	25.4	39.6	45.6	82.6	82	0.6	6	1	
10		□	MPS1-0310-L10C	31.6	44.6	49.6	86.6	86	0.6	6	1	
12		●	MPS1-0310-L12C	37.8	51.6	56.6	93.6	93	0.6	6	1	
15		●	MPS1-0310-L15C	47.1	61.6	66.6	103.6	103	0.6	6	1	
20		●	MPS1-0310-L20C	62.6	79.6	84.6	121.6	121	0.6	6	1	
3.3	25	●	MPS1-0310-L25C	78.1	96.6	101.6	138.6	138	0.6	6	1	
	30	●	MPS1-0310-L30C	93.6	114.6	119.6	156.6	156	0.6	6	1	
	35	□	MPS1-0310-L35C	109.1	123.6	138.6	175.6	175	0.6	6	1	
	40	●	MPS1-0310-L40C	124.6	138.6	153.6	190.6	190	0.6	6	1	

DC (mm)	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
3.2	3	□	MPS1-0320S-DIN	14.8	19.6	24.6	61.6	61	0.6	6	3
	3	●	MPS1-0320S-DIN-C	14.8	19.6	24.6	61.6	61	0.6	6	1
	5	□	MPS1-0320L-DIN	19.8	24.6	28.6	65.6	65	0.6	6	3
	5	●	MPS1-0320L-DIN-C	19.8	24.6	28.6	65.6	65	0.6	6	1
	2	●	MPS1-0320-PC	6.9	18.5	21.5	55.5	55	0.5	6	1
	8	●	MPS1-0320-L8C	26.3	39.7	45.7	82.7	82	0.7	6	1
	10	□	MPS1-0320-L10C	32.6	44.6	49.6	86.6	86	0.6	6	1
	12	●	MPS1-0320-L12C	39.0	51.6	56.6	93.6	93	0.6	6	1
	15	●	MPS1-0320-L15C	48.6	61.6	66.6	103.6	103	0.6	6	1
	20	●	MPS1-0320-L20C	64.6	79.6	84.6	121.6	121	0.6	6	1
3.3	25	●	MPS1-0320-L25C	80.6	96.6	101.6	138.6	138	0.6	6	1
	30	●	MPS1-0320-L30C	96.6	114.6	119.6	156.6	156	0.6	6	1
	35	□	MPS1-0320-L35C	112.6	123.6	138.6	175.6	175	0.6	6	1
	40	●	MPS1-0320-L40C	128.6	138.6	153.6	190.6	190	0.6	6	1
	3	□	MPS1-0330S-DIN	14.7	19.6	24.6	61.6	61	0.6	6	3
	3	●	MPS1-0330S-DIN-C	14.7	19.6	24.6	61.6	61	0.6	6	1
	5	□	MPS1-0330L-DIN	20.2	25.1	28.6	65.6	65	0.6	6	3
	5	●	MPS1-0330L-DIN-C	20.2	25.1	28.6	65.6	65	0.6	6	1
	2	●	MPS1-0330-PC	7.1	18.5	21.4	55.5	55	0.5	6	1
	8	●	MPS1-0330-L8C	27.1	39.7	45.7	82.7	82	0.7	6	1
10	□	MPS1-0330-L10C	33.6	44.6	49.6	86.6	86	0.6	6	1	
12	●	MPS1-0330-L12C	40.2	51.6	56.6	93.6	93	0.6	6	1	
15	●	MPS1-0330-L15C	50.1	61.6	66.6	103.6	103	0.6	6	1	
20	●	MPS1-0330-L20C	66.6	79.6	84.6	121.6	121	0.6	6	1	
25	●	MPS1-0330-L25C	83.1	96.6	101.6	138.6	138	0.6	6	1	
30	●	MPS1-0330-L30C	99.6	114.6	119.6	156.6	156	0.6	6	1	
35	□	MPS1-0330-L35C	116.1	132.6	138.6	175.6	175	0.6	6	1	
40	●	MPS1-0330-L40C	132.6	148.6	153.6	190.6	190	0.6	6	1	

● : Avrupa standart stok. □ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

KESME KOŞULLARI > M072
ÇALIŞMA KILAVUZU > M073
TEKNİK VERİLER > P001

M057

M

DELME

DC (mm)	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
3.4	3	□	MPS1-0340S-DIN	14.5	19.6	24.6	61.6	61	0.6	6	3
	3	●	MPS1-0340S-DIN-C	14.5	19.6	24.6	61.6	61	0.6	6	1
	5	□	MPS1-0340L-DIN	20.0	25.1	28.6	65.6	65	0.6	6	3
	5	●	MPS1-0340L-DIN-C	20.0	25.1	28.6	65.6	65	0.6	6	1
	2	●	MPS1-0340-PC	7.3	18.5	21.3	55.5	55	0.5	6	1
	8	●	MPS1-0340-L8C	27.9	39.7	45.7	82.7	82	0.7	6	1
	10	□	MPS1-0340-L10C	34.6	44.6	49.6	86.6	86	0.6	6	1
	12	●	MPS1-0340-L12C	41.4	51.6	56.6	93.6	93	0.6	6	1
	15	●	MPS1-0340-L15C	51.6	61.6	66.6	103.6	103	0.6	6	1
	20	●	MPS1-0340-L20C	68.6	79.6	84.6	121.6	121	0.6	6	1
	25	●	MPS1-0340-L25C	85.6	96.6	101.6	138.6	138	0.6	6	1
	30	●	MPS1-0340-L30C	102.6	114.6	119.6	156.6	156	0.6	6	1
35	□	MPS1-0340-L35C	119.6	132.6	138.6	175.6	175	0.6	6	1	
40	●	MPS1-0340-L40C	136.6	148.6	153.6	190.6	190	0.6	6	1	
3.5	3	□	MPS1-0350S-DIN	14.4	19.6	24.6	61.6	61	0.6	6	3
	3	●	MPS1-0350S-DIN-C	14.4	19.6	24.6	61.6	61	0.6	6	1
	5	□	MPS1-0350L-DIN	19.9	25.1	28.6	65.6	65	0.6	6	3
	5	●	MPS1-0350L-DIN-C	19.9	25.1	28.6	65.6	65	0.6	6	1
	2	●	MPS1-0350-PC	7.6	18.6	21.2	55.6	55	0.6	6	1
	8	●	MPS1-0350-L8C	28.7	39.7	45.7	82.7	82	0.7	6	1
	10	□	MPS1-0350-L10C	35.6	44.6	49.6	86.6	86	0.6	6	1
	12	●	MPS1-0350-L12C	42.6	51.6	56.6	93.6	93	0.6	6	1
	15	●	MPS1-0350-L15C	53.1	61.6	66.6	103.6	103	0.6	6	1
	20	●	MPS1-0350-L20C	70.6	79.6	84.6	121.6	121	0.6	6	1
	25	●	MPS1-0350-L25C	88.1	96.6	101.6	138.6	138	0.6	6	1
	30	●	MPS1-0350-L30C	105.6	114.6	119.6	156.6	156	0.6	6	1
35	□	MPS1-0350-L35C	123.1	132.6	138.6	175.6	175	0.6	6	1	
40	●	MPS1-0350-L40C	140.6	148.6	153.6	190.6	190	0.6	6	1	
3.6	3	□	MPS1-0360S-DIN	14.3	19.7	24.7	61.7	61	0.7	6	3
	3	●	MPS1-0360S-DIN-C	14.3	19.7	24.7	61.7	61	0.7	6	1
	5	□	MPS1-0360L-DIN	19.8	25.2	28.7	65.7	65	0.7	6	3
	5	●	MPS1-0360L-DIN-C	19.8	25.2	28.7	65.7	65	0.7	6	1
	2	●	MPS1-0360-PC	7.8	20.6	23.1	55.6	55	0.6	6	1
	8	●	MPS1-0360-L8C	29.5	44.7	50.7	87.7	87	0.7	6	1
	10	□	MPS1-0360-L10C	36.7	50.7	55.7	92.7	92	0.7	6	1
	12	●	MPS1-0360-L12C	43.9	58.7	63.7	100.7	100	0.7	6	1
	15	●	MPS1-0360-L15C	54.7	70.7	75.7	112.7	112	0.7	6	1
	20	●	MPS1-0360-L20C	72.7	90.7	95.7	132.7	132	0.7	6	1
	25	□	MPS1-0360-L25C	90.7	110.7	115.7	152.7	152	0.7	6	1
	30	●	MPS1-0360-L30C	108.7	130.7	135.7	172.7	172	0.7	6	1
35	□	MPS1-0360-L35C	126.7	143.7	155.7	192.7	192	0.7	6	1	
40	●	MPS1-0360-L40C	144.7	160.7	175.7	212.7	212	0.7	6	1	
3.7	3	□	MPS1-0370S-DIN	14.1	19.7	24.7	61.7	61	0.7	6	3
	3	●	MPS1-0370S-DIN-C	14.1	19.7	24.7	61.7	61	0.7	6	1
	5	□	MPS1-0370L-DIN	20.1	25.7	28.7	65.7	65	0.7	6	3
	5	●	MPS1-0370L-DIN-C	20.1	25.7	28.7	65.7	65	0.7	6	1
	2	●	MPS1-0370-PC	8.0	20.6	23.1	55.6	55	0.6	6	1
	8	●	MPS1-0370-L8C	30.4	44.8	50.8	87.8	87	0.8	6	1
	10	□	MPS1-0370-L10C	37.7	50.7	55.7	92.7	92	0.7	6	1
	12	●	MPS1-0370-L12C	45.1	58.7	63.7	100.7	100	0.7	6	1
	15	●	MPS1-0370-L15C	56.2	70.7	75.7	112.7	112	0.7	6	1
	20	●	MPS1-0370-L20C	74.7	90.7	95.7	132.7	132	0.7	6	1
	25	●	MPS1-0370-L25C	93.2	110.7	115.7	152.7	152	0.7	6	1
	30	●	MPS1-0370-L30C	111.7	130.7	135.7	172.7	172	0.7	6	1
35	□	MPS1-0370-L35C	130.2	143.7	155.7	192.7	192	0.7	6	1	
40	●	MPS1-0370-L40C	148.7	160.7	175.7	212.7	212	0.7	6	1	

DC (mm)	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
3.8	3	□	MPS1-0380S-DIN	18.0	23.7	28.7	65.7	65	0.7	6	3
	3	●	MPS1-0380S-DIN-C	18.0	23.7	28.7	65.7	65	0.7	6	1
	5	□	MPS1-0380L-DIN	28.0	33.7	36.7	73.7	73	0.7	6	3
	5	●	MPS1-0380L-DIN-C	28.0	33.7	36.7	73.7	73	0.7	6	1
	2	●	MPS1-0380-PC	8.2	20.6	23.0	55.6	55	0.6	6	1
	8	●	MPS1-0380-L8C	31.2	44.8	50.8	87.8	87	0.8	6	1
	10	□	MPS1-0380-L10C	38.7	50.7	55.7	92.7	92	0.7	6	1
	12	●	MPS1-0380-L12C	46.3	58.7	63.7	100.7	100	0.7	6	1
	15	●	MPS1-0380-L15C	57.7	70.7	75.7	112.7	112	0.7	6	1
	20	●	MPS1-0380-L20C	76.7	90.7	95.7	132.7	132	0.7	6	1
	25	●	MPS1-0380-L25C	95.7	110.7	115.7	152.7	152	0.7	6	1
	30	●	MPS1-0380-L30C	114.7	130.7	135.7	172.7	172	0.7	6	1
35	□	MPS1-0380-L35C	133.7	150.7	155.7	192.7	192	0.7	6	1	
40	●	MPS1-0380-L40C	152.7	170.7	175.7	212.7	212	0.7	6	1	
3.9	3	□	MPS1-0390S-DIN	17.9	23.7	28.7	65.7	65	0.7	6	3
	3	●	MPS1-0390S-DIN-C	17.9	23.7	28.7	65.7	65	0.7	6	1
	5	□	MPS1-0390L-DIN	27.9	33.7	36.7	73.7	73	0.7	6	3
	5	●	MPS1-0390L-DIN-C	27.9	33.7	36.7	73.7	73	0.7	6	1
	2	●	MPS1-0390-PC	8.4	20.6	22.9	55.6	55	0.6	6	1
	8	●	MPS1-0390-L8C	32.0	44.8	50.8	87.8	87	0.8	6	1
	10	□	MPS1-0390-L10C	39.7	50.7	55.7	92.7	92	0.7	6	1
	12	●	MPS1-0390-L12C	47.5	58.7	63.7	100.7	100	0.7	6	1
	15	●	MPS1-0390-L15C	59.2	70.7	75.7	112.7	112	0.7	6	1
	20	●	MPS1-0390-L20C	78.7	90.7	95.7	132.7	132	0.7	6	1
	25	□	MPS1-0390-L25C	98.2	110.7	115.7	152.7	152	0.7	6	1
	30	●	MPS1-0390-L30C	117.7	130.7	135.7	172.7	172	0.7	6	1
35	□	MPS1-0390-L35C	137.2	150.7	155.7	192.7	192	0.7	6	1	
40	●	MPS1-0390-L40C	156.7	170.7	175.7	212.7	212	0.7	6	1	
4.0	3	□	MPS1-0400S-DIN	17.7	23.7	28.7	65.7	65	0.7	6	3
	3	●	MPS1-0400S-DIN-C	17.7	23.7	28.7	65.7	65	0.7	6	1
	5	□	MPS1-0400L-DIN	27.7	33.7	36.7	73.7	73	0.7	6	3
	5	●	MPS1-0400L-DIN-C	27.7	33.7	36.7	73.7	73	0.7	6	1
	2	●	MPS1-0400-PC	8.6	20.6	22.8	55.6	55	0.6	6	1
	8	●	MPS1-0400-L8C	32.8	44.8	50.8	87.8	87	0.8	6	1
	10	□	MPS1-0400-L10C	40.7	50.7	55.7	92.7	92	0.7	6	1
	12	●	MPS1-0400-L12C	48.7	58.7	63.7	100.7	100	0.7	6	1
	15	●	MPS1-0400-L15C	60.7	70.7	75.7	112.7	112	0.7	6	1
	20	●	MPS1-0400-L20C	80.7	90.7	95.7	132.7	132	0.7	6	1
	25	●	MPS1-0400-L25C	100.7	110.7	115.7	152.7	152	0.7	6	1
	30	●	MPS1-0400-L30C	120.7	130.7	135.7	172.7	172	0.7	6	1
35	□	MPS1-0400-L35C	140.7	150.7	155.7	192.7	192	0.7	6	1	
40	●	MPS1-0400-L40C	160.7	170.7	175.7	212.7	212	0.7	6	1	
4.05	3	□	MPS1-0405S-DIN	17.7	23.7	28.7	65.7	65	0.7	6	3
	3	●	MPS1-0405S-DIN-C	17.7	23.7	28.7	65.7	65	0.7	6	1
	5	□	MPS1-0405L-DIN	27.7	33.7	36.7	73.7	73	0.7	6	3
	5	●	MPS1-0405L-DIN-C	27.7	33.7	36.7	73.7	73	0.7	6	1

● : Avrupa standart stok. □ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip	
				LU	LCF	LH	OAL	LF	PL	DCONMS		
4.1	3	□	MPS1-0410S-DIN	17.6	23.7	28.7	65.7	65	0.7	6	3	
	3	●	MPS1-0410S-DIN-C	17.6	23.7	28.7	65.7	65	0.7	6	1	
	5	□	MPS1-0410L-DIN	27.6	33.7	36.7	73.7	73	0.7	6	3	
	5	●	MPS1-0410L-DIN-C	27.6	33.7	36.7	73.7	73	0.7	6	1	
	2	●	MPS1-0410-PC	8.8	22.6	24.7	62.6	62	0.6	6	1	
	8	●	MPS1-0410-L8C	33.6	50.8	55.8	92.8	92	0.8	6	1	
	10	□	MPS1-0410-L10C	41.7	58.7	62.7	99.7	99	0.7	6	1	
	12	●	MPS1-0410-L12C	49.9	67.7	71.7	108.7	108	0.7	6	1	
	15	●	MPS1-0410-L15C	62.2	80.7	84.7	121.7	121	0.7	6	1	
	20	●	MPS1-0410-L20C	82.7	103.7	107.7	144.7	144	0.7	6	1	
	25	●	MPS1-0410-L25C	103.2	125.7	129.7	166.7	166	0.7	6	1	
	30	●	MPS1-0410-L30C	123.7	148.7	152.7	189.7	189	0.7	6	1	
	35	□	MPS1-0410-L35C	144.2	164.7	174.7	211.7	211	0.7	6	1	
	40	●	MPS1-0410-L40C	164.7	184.7	198.7	235.7	235	0.7	6	1	
	4.2	3	□	MPS1-0420S-DIN	17.5	23.8	28.8	65.8	65	0.8	6	3
		3	●	MPS1-0420S-DIN-C	17.5	23.8	28.8	65.8	65	0.8	6	1
5		□	MPS1-0420L-DIN	28.0	34.3	36.8	73.8	73	0.8	6	3	
5		●	MPS1-0420L-DIN-C	28.0	34.3	36.8	73.8	73	0.8	6	1	
2		●	MPS1-0420-PC	9.1	22.7	24.6	62.7	62	0.7	6	1	
8		●	MPS1-0420-L8C	34.5	50.9	55.9	92.9	92	0.9	6	1	
10		□	MPS1-0420-L10C	42.8	58.8	62.8	99.8	99	0.8	6	1	
12		●	MPS1-0420-L12C	51.2	67.8	71.8	108.8	108	0.8	6	1	
15		●	MPS1-0420-L15C	63.8	80.8	84.8	121.8	121	0.8	6	1	
20		●	MPS1-0420-L20C	84.8	103.8	107.8	144.8	144	0.8	6	1	
25		●	MPS1-0420-L25C	105.8	125.8	129.8	166.8	166	0.8	6	1	
30		●	MPS1-0420-L30C	126.8	148.8	152.8	189.8	189	0.8	6	1	
35		●	MPS1-0420-L35C	147.8	164.8	174.8	211.8	211	0.8	6	1	
40		●	MPS1-0420-L40C	168.8	184.8	198.8	235.8	235	0.8	6	1	
4.3		3	□	MPS1-0430S-DIN	17.3	23.8	28.8	65.8	65	0.8	6	3
		3	●	MPS1-0430S-DIN-C	17.3	23.8	28.8	65.8	65	0.8	6	1
	5	□	MPS1-0430L-DIN	27.8	34.3	36.8	73.8	73	0.8	6	3	
	5	●	MPS1-0430L-DIN-C	27.8	34.3	36.8	73.8	73	0.8	6	1	
	2	●	MPS1-0430-PC	9.3	22.7	24.5	62.7	62	0.7	6	1	
	8	●	MPS1-0430-L8C	35.3	50.9	55.9	92.9	92	0.9	6	1	
	10	□	MPS1-0430-L10C	43.8	58.8	62.8	99.8	99	0.8	6	1	
	12	●	MPS1-0430-L12C	52.4	67.8	71.8	108.8	108	0.8	6	1	
	15	●	MPS1-0430-L15C	65.3	80.8	84.8	121.8	121	0.8	6	1	
	20	●	MPS1-0430-L20C	86.8	103.8	107.8	144.8	144	0.8	6	1	
	25	●	MPS1-0430-L25C	108.3	125.8	129.8	166.8	166	0.8	6	1	
	30	●	MPS1-0430-L30C	129.8	148.8	152.8	189.8	189	0.8	6	1	
	35	□	MPS1-0430-L35C	151.3	170.8	174.8	211.8	211	0.8	6	1	
	40	●	MPS1-0430-L40C	172.8	194.8	198.8	235.8	235	0.8	6	1	
	4.4	3	□	MPS1-0440S-DIN	17.2	23.8	28.8	65.8	65	0.8	6	3
		3	●	MPS1-0440S-DIN-C	17.2	23.8	28.8	65.8	65	0.8	6	1
5		□	MPS1-0440L-DIN	27.7	34.3	36.8	73.8	73	0.8	6	3	
5		●	MPS1-0440L-DIN-C	27.7	34.3	36.8	73.8	73	0.8	6	1	
2		●	MPS1-0440-PC	9.5	22.7	24.4	62.7	62	0.7	6	1	
8		●	MPS1-0440-L8C	36.1	50.9	55.9	92.9	92	0.9	6	1	
10		□	MPS1-0440-L10C	44.8	58.8	62.8	99.8	99	0.8	6	1	
12		●	MPS1-0440-L12C	53.6	67.8	71.8	108.8	108	0.8	6	1	
15		●	MPS1-0440-L15C	66.8	80.8	84.8	121.8	121	0.8	6	1	
20		□	MPS1-0440-L20C	88.8	103.8	107.8	144.8	144	0.8	6	1	
25		□	MPS1-0440-L25C	110.8	125.8	129.8	166.8	166	0.8	6	1	
30		□	MPS1-0440-L30C	132.8	148.8	152.8	189.8	189	0.8	6	1	
35		□	MPS1-0440-L35C	154.8	170.8	174.8	211.8	211	0.8	6	1	
40		●	MPS1-0440-L40C	176.8	194.8	198.8	235.8	235	0.8	6	1	

DC	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip	
				LU	LCF	LH	OAL	LF	PL	DCONMS		
4.5	3	□	MPS1-0450S-DIN	17.1	23.8	28.8	65.8	65	0.8	6	3	
	3	●	MPS1-0450S-DIN-C	17.1	23.8	28.8	65.8	65	0.8	6	1	
	5	□	MPS1-0450L-DIN	27.6	34.3	36.8	73.8	73	0.8	6	3	
	5	●	MPS1-0450L-DIN-C	27.6	34.3	36.8	73.8	73	0.8	6	1	
	2	●	MPS1-0450-PC	9.7	22.7	24.3	62.7	62	0.7	6	1	
	8	●	MPS1-0450-L8C	36.9	50.9	55.9	92.9	92	0.9	6	1	
	10	□	MPS1-0450-L10C	45.8	58.8	62.8	99.8	99	0.8	6	1	
	12	●	MPS1-0450-L12C	54.8	67.8	71.8	108.8	108	0.8	6	1	
	15	●	MPS1-0450-L15C	68.3	80.8	84.8	121.8	121	0.8	6	1	
	20	●	MPS1-0450-L20C	90.8	103.8	107.8	144.8	144	0.8	6	1	
	25	●	MPS1-0450-L25C	113.3	125.8	129.8	166.8	166	0.8	6	1	
	30	●	MPS1-0450-L30C	135.8	148.8	152.8	189.8	189	0.8	6	1	
	35	□	MPS1-0450-L35C	158.3	170.8	174.8	211.8	211	0.8	6	1	
	40	●	MPS1-0450-L40C	180.8	194.8	198.8	235.8	235	0.8	6	1	
	4.6	3	□	MPS1-0460S-DIN	16.9	23.8	28.8	65.8	65	0.8	6	4
		3	●	MPS1-0460S-DIN-C	16.9	23.8	28.8	65.8	65	0.8	6	2
5		□	MPS1-0460L-DIN	28.9	35.8	36.8	73.8	73	0.8	6	4	
5		●	MPS1-0460L-DIN-C	28.9	35.8	36.8	73.8	73	0.8	6	2	
2		●	MPS1-0460-PC	9.9	24.7	27.7	62.7	62	0.7	6	2	
8		●	MPS1-0460-L8C	37.8	56.0	59.0	96.0	95	1.0	6	2	
10		□	MPS1-0460-L10C	46.8	65.8	68.8	105.8	105	0.8	6	2	
12		●	MPS1-0460-L12C	56.0	75.8	78.8	115.8	115	0.8	6	2	
15		●	MPS1-0460-L15C	69.8	90.8	93.8	130.8	130	0.8	6	2	
20		●	MPS1-0460-L20C	92.8	115.8	118.8	155.8	155	0.8	6	2	
25		●	MPS1-0460-L25C	115.8	140.8	143.8	180.8	180	0.8	6	2	
30		●	MPS1-0460-L30C	138.8	165.8	168.8	205.8	205	0.8	6	2	
35		□	MPS1-0460-L35C	161.8	184.8	192.8	229.8	229	0.8	6	2	
40		●	MPS1-0460-L40C	184.8	204.8	217.8	254.8	254	0.8	6	2	
4.65		3	□	MPS1-0465S-DIN	16.9	23.8	28.8	65.8	65	0.8	6	4
		3	●	MPS1-0465S-DIN-C	16.9	23.8	28.8	65.8	65	0.8	6	2
	5	□	MPS1-0465L-DIN	28.9	35.8	36.8	73.8	73	0.8	6	4	
	5	●	MPS1-0465L-DIN-C	28.9	35.8	36.8	73.8	73	0.8	6	2	
4.7	3	□	MPS1-0470S-DIN	16.8	23.9	28.9	65.9	65	0.9	6	4	
	3	●	MPS1-0470S-DIN-C	16.8	23.9	28.9	65.9	65	0.9	6	2	
	5	□	MPS1-0470L-DIN	28.8	35.9	36.9	73.9	73	0.9	6	4	
	5	●	MPS1-0470L-DIN-C	28.8	35.9	36.9	73.9	73	0.9	6	2	
	2	●	MPS1-0470-PC	10.1	24.7	27.7	62.7	62	0.7	6	2	
	8	●	MPS1-0470-L8C	38.6	56.0	59.0	96.0	95	1.0	6	2	
	10	□	MPS1-0470-L10C	47.9	65.9	68.9	105.9	105	0.9	6	2	
	12	●	MPS1-0470-L12C	57.3	75.9	78.9	115.9	115	0.9	6	2	
	15	●	MPS1-0470-L15C	71.4	90.9	93.9	130.9	130	0.9	6	2	
	20	●	MPS1-0470-L20C	94.9	115.9	118.9	155.9	155	0.9	6	2	
	25	●	MPS1-0470-L25C	118.4	140.9	143.9	180.9	180	0.9	6	2	
	30	●	MPS1-0470-L30C	141.9	165.9	168.9	205.9	205	0.9	6	2	
	35	□	MPS1-0470-L35C	165.4	184.9	192.9	229.9	229	0.9	6	2	
	40	●	MPS1-0470-L40C	188.9	204.9	217.9	254.9	254	0.9	6	2	

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DELME

DC	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip	
				LU	LCF	LH	OAL	LF	PL	DCONMS		
4.8	3	□	MPS1-0480S-DIN	20.7	27.9	28.9	65.9	65	0.9	6	4	
	3	●	MPS1-0480S-DIN-C	20.7	27.9	28.9	65.9	65	0.9	6	2	
	5	□	MPS1-0480L-DIN	36.7	43.9	44.9	81.9	81	0.9	6	4	
	5	●	MPS1-0480L-DIN-C	36.7	43.9	44.9	81.9	81	0.9	6	2	
	2	●	MPS1-0480-PC	10.4	24.8	27.8	62.8	62	0.8	6	2	
	8	●	MPS1-0480-L8C	39.4	56.0	59.0	96.0	95	1.0	6	2	
	10	□	MPS1-0480-L10C	48.9	65.9	68.9	105.9	105	0.9	6	2	
	12	●	MPS1-0480-L12C	58.5	75.9	78.9	115.9	115	0.9	6	2	
	15	●	MPS1-0480-L15C	72.9	90.9	93.9	130.9	130	0.9	6	2	
	20	●	MPS1-0480-L20C	96.9	115.9	118.9	155.9	155	0.9	6	2	
	25	●	MPS1-0480-L25C	120.9	140.9	143.9	180.9	180	0.9	6	2	
	30	●	MPS1-0480-L30C	144.9	165.9	168.9	205.9	205	0.9	6	2	
	35	□	MPS1-0480-L35C	168.9	190.9	192.9	229.9	229	0.9	6	2	
	40	●	MPS1-0480-L40C	192.9	215.9	217.9	254.9	254	0.9	6	2	
	4.9	3	□	MPS1-0490S-DIN	20.5	27.9	28.9	65.9	65	0.9	6	4
		3	●	MPS1-0490S-DIN-C	20.5	27.9	28.9	65.9	65	0.9	6	2
5		□	MPS1-0490L-DIN	36.5	43.9	44.9	81.9	81	0.9	6	4	
5		●	MPS1-0490L-DIN-C	36.5	43.9	44.9	81.9	81	0.9	6	2	
2		●	MPS1-0490-PC	10.6	24.8	27.8	62.8	62	0.8	6	2	
8		●	MPS1-0490-L8C	40.2	56.0	59.0	96.0	95	1.0	6	2	
10		□	MPS1-0490-L10C	49.9	65.9	68.9	105.9	105	0.9	6	2	
12		●	MPS1-0490-L12C	59.7	75.9	78.9	115.9	115	0.9	6	2	
15		●	MPS1-0490-L15C	74.4	90.9	93.9	130.9	130	0.9	6	2	
20		□	MPS1-0490-L20C	98.9	115.9	118.9	155.9	155	0.9	6	2	
25		●	MPS1-0490-L25C	123.4	140.9	143.9	180.9	180	0.9	6	2	
30		●	MPS1-0490-L30C	147.9	165.9	168.9	205.9	205	0.9	6	2	
35		□	MPS1-0490-L35C	172.4	190.9	192.9	229.9	229	0.9	6	2	
40		●	MPS1-0490-L40C	196.9	215.9	217.9	254.9	254	0.9	6	2	
5.0		3	□	MPS1-0500S-DIN	20.4	27.9	28.9	65.9	65	0.9	6	4
		3	●	MPS1-0500S-DIN-C	20.4	27.9	28.9	65.9	65	0.9	6	2
	5	□	MPS1-0500L-DIN	36.4	43.9	44.9	81.9	81	0.9	6	4	
	5	●	MPS1-0500L-DIN-C	36.4	43.9	44.9	81.9	81	0.9	6	2	
	2	●	MPS1-0500-PC	10.8	24.8	25.8	62.8	62	0.8	6	2	
	8	●	MPS1-0500-L8C	41.0	56.0	59.0	96.0	95	1.0	6	2	
	10	□	MPS1-0500-L10C	50.9	65.9	68.9	105.9	105	0.9	6	2	
	12	●	MPS1-0500-L12C	60.9	75.9	78.9	115.9	115	0.9	6	2	
	15	●	MPS1-0500-L15C	75.9	90.9	93.9	130.9	130	0.9	6	2	
	20	●	MPS1-0500-L20C	100.9	115.9	118.9	155.9	155	0.9	6	2	
	25	●	MPS1-0500-L25C	125.9	140.9	143.9	180.9	180	0.9	6	2	
	30	●	MPS1-0500-L30C	150.9	165.9	168.9	205.9	205	0.9	6	2	
	35	□	MPS1-0500-L35C	175.9	190.9	192.9	229.9	229	0.9	6	2	
	40	●	MPS1-0500-L40C	200.9	215.9	217.9	254.9	254	0.9	6	2	
	5.05	3	□	MPS1-0505S-DIN	20.3	27.9	28.9	65.9	65	0.9	6	4
		3	●	MPS1-0505S-DIN-C	20.3	27.9	28.9	65.9	65	0.9	6	2
5		□	MPS1-0505L-DIN	36.3	43.9	44.9	81.9	81	0.9	6	4	
5		●	MPS1-0505L-DIN-C	36.3	43.9	44.9	81.9	81	0.9	6	2	

DC	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip	
				LU	LCF	LH	OAL	LF	PL	DCONMS		
5.1	3	□	MPS1-0510S-DIN	20.3	27.9	28.9	65.9	65	0.9	6	4	
	3	●	MPS1-0510S-DIN-C	20.3	27.9	28.9	65.9	65	0.9	6	2	
	5	□	MPS1-0510L-DIN	36.3	43.9	44.9	81.9	81	0.9	6	4	
	5	●	MPS1-0510L-DIN-C	36.3	43.9	44.9	81.9	81	0.9	6	2	
	2	●	MPS1-0510-PC	11.0	26.8	28.8	66.8	66	0.8	6	2	
	8	●	MPS1-0510-L8C	41.9	62.1	65.1	102.1	101	1.1	6	2	
	10	□	MPS1-0510-L10C	51.9	72.9	75.9	112.9	112	0.9	6	2	
	12	●	MPS1-0510-L12C	62.1	83.9	86.9	123.9	123	0.9	6	2	
	15	●	MPS1-0510-L15C	77.4	99.9	102.9	139.9	139	0.9	6	2	
	20	●	MPS1-0510-L20C	102.9	127.9	130.9	167.9	167	0.9	6	2	
	25	●	MPS1-0510-L25C	128.4	154.9	157.9	194.9	194	0.9	6	2	
	30	●	MPS1-0510-L30C	153.9	182.9	185.9	222.9	222	0.9	6	2	
	35	□	MPS1-0510-L35C	179.4	203.9	211.9	248.9	248	0.9	6	2	
	40	●	MPS1-0510-L40C	204.9	230.9	241.9	278.9	278	0.9	6	2	
	5.2	3	□	MPS1-0520S-DIN	20.1	27.9	28.9	65.9	65	0.9	6	4
		3	●	MPS1-0520S-DIN-C	20.1	27.9	28.9	65.9	65	0.9	6	2
5		□	MPS1-0520L-DIN	36.1	43.9	44.9	81.9	81	0.9	6	4	
5		●	MPS1-0520L-DIN-C	36.1	43.9	44.9	81.9	81	0.9	6	2	
2		●	MPS1-0520-PC	11.2	26.8	28.8	66.8	66	0.8	6	2	
8		●	MPS1-0520-L8C	42.7	62.1	65.1	102.1	101	1.1	6	2	
10		□	MPS1-0520-L10C	52.9	72.9	75.9	112.9	112	0.9	6	2	
12		●	MPS1-0520-L12C	63.3	83.9	86.9	123.9	123	0.9	6	2	
15		●	MPS1-0520-L15C	78.9	99.9	102.9	139.9	139	0.9	6	2	
20		●	MPS1-0520-L20C	104.9	127.9	130.9	167.9	167	0.9	6	2	
25		●	MPS1-0520-L25C	130.9	154.9	157.9	194.9	194	0.9	6	2	
30		●	MPS1-0520-L30C	156.9	182.9	185.9	222.9	222	0.9	6	2	
35		□	MPS1-0520-L35C	182.9	203.9	211.9	248.9	248	0.9	6	2	
40		●	MPS1-0520-L40C	208.9	230.9	241.9	278.9	278	0.9	6	2	
5.3		3	□	MPS1-0530S-DIN	20.0	28.0	29.0	66.0	65	1.0	6	4
		3	●	MPS1-0530S-DIN-C	20.0	28.0	29.0	66.0	65	1.0	6	2
	5	□	MPS1-0530L-DIN	36.0	44.0	45.0	82.0	81	1.0	6	4	
	5	●	MPS1-0530L-DIN-C	36.0	44.0	45.0	82.0	81	1.0	6	2	
	2	●	MPS1-0530-PC	11.4	26.8	28.8	66.8	66	0.8	6	2	
	8	●	MPS1-0530-L8C	43.5	62.1	65.1	102.1	101	1.1	6	2	
	10	□	MPS1-0530-L10C	54.0	73.0	76.0	113.0	112	1.0	6	2	
	12	●	MPS1-0530-L12C	64.6	84.0	87.0	124.0	123	1.0	6	2	
	15	●	MPS1-0530-L15C	80.5	100.0	103.0	140.0	139	1.0	6	2	
	20	□	MPS1-0530-L20C	107.0	128.0	131.0	168.0	167	1.0	6	2	
	25	●	MPS1-0530-L25C	133.5	155.0	158.0	195.0	194	1.0	6	2	
	30	●	MPS1-0530-L30C	160.0	183.0	186.0	223.0	222	1.0	6	2	
	35	□	MPS1-0530-L35C	186.5	210.0	212.0	249.0	248	1.0	6	2	
	40	●	MPS1-0530-L40C	213.0	241.0	242.0	279.0	278	1.0	6	2	
	5.4	3	□	MPS1-0540S-DIN	19.9	28.0	29.0	66.0	65	1.0	6	2
		3	●	MPS1-0540S-DIN-C	19.9	28.0	29.0	66.0	65	1.0	6	2
5		□	MPS1-0540L-DIN	35.9	44.0	45.0	82.0	81	1.0	6	4	
5		●	MPS1-0540L-DIN-C	35.9	44.0	45.0	82.0	81	1.0	6	2	
2		●	MPS1-0540-PC	11.7	26.9	28.9	66.9	66	0.9	6	2	
8		●	MPS1-0540-L8C	44.3	62.1	65.1	102.1	101	1.1	6	2	
10		□	MPS1-0540-L10C	55.0	73.0	76.0	113.0	112	1.0	6	2	
12		●	MPS1-0540-L12C	65.8	84.0	87.0	124.0	123	1.0	6	2	
15		●	MPS1-0540-L15C	82.0	100.0	103.0	140.0	139	1.0	6	2	
20		●	MPS1-0540-L20C	109.0	128.0	131.0	168.0	167	1.0	6	2	
25		□	MPS1-0540-L25C	136.0	155.0	158.0	195.0	194	1.0	6	2	
30		□	MPS1-0540-L30C	163.0	183.0	186.0	223.0	222	1.0	6	2	
35		□	MPS1-0540-L35C	190.0	210.0	212.0	249.0	248	1.0	6	2	
40		●	MPS1-0540-L40C	217.0	241.0	242.0	279.0	278	1.0	6	2	

● : Avrupa standart stok. □ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
5.5	3	□	MPS1-0550S-DIN	19.8	28.0	29.0	66.0	65	1.0	6	4
	3	●	MPS1-0550S-DIN-C	19.8	28.0	29.0	66.0	65	1.0	6	2
	5	□	MPS1-0550L-DIN	35.8	44.0	45.0	82.0	81	1.0	6	4
	5	●	MPS1-0550L-DIN-C	35.8	44.0	45.0	82.0	81	1.0	6	2
	2	●	MPS1-0550-PC	11.9	26.9	28.9	66.9	66	0.9	6	2
	8	●	MPS1-0550-L8C	45.1	62.1	65.1	102.1	101	1.1	6	2
	10	□	MPS1-0550-L10C	56.0	73.0	76.0	113.0	112	1.0	6	2
	12	●	MPS1-0550-L12C	67.0	84.0	87.0	124.0	123	1.0	6	2
	15	●	MPS1-0550-L15C	83.5	100.0	103.0	140.0	139	1.0	6	2
	20	●	MPS1-0550-L20C	111.0	128.0	131.0	168.0	167	1.0	6	2
	25	●	MPS1-0550-L25C	138.5	155.0	158.0	195.0	194	1.0	6	2
	30	●	MPS1-0550-L30C	166.0	183.0	186.0	223.0	222	1.0	6	2
35	□	MPS1-0550-L35C	193.5	210.0	212.0	249.0	248	1.0	6	2	
40	●	MPS1-0550-L40C	221.0	241.0	242.0	279.0	278	1.0	6	2	
5.55	3	□	MPS1-0555S-DIN	19.7	28.0	29.0	66.0	65	1.0	6	4
	3	●	MPS1-0555S-DIN-C	19.7	28.0	29.0	66.0	65	1.0	6	2
	5	□	MPS1-0555L-DIN	35.7	44.0	45.0	82.0	81	1.0	6	4
	5	●	MPS1-0555L-DIN-C	35.7	44.0	45.0	82.0	81	1.0	6	2
5.6	3	□	MPS1-0560S-DIN	19.6	28.0	29.0	66.0	65	1.0	6	4
	3	●	MPS1-0560S-DIN-C	19.6	28.0	29.0	66.0	65	1.0	6	2
	5	□	MPS1-0560L-DIN	35.6	44.0	45.0	82.0	81	1.0	6	4
	5	●	MPS1-0560L-DIN-C	35.6	44.0	45.0	82.0	81	1.0	6	2
	2	●	MPS1-0560-PC	12.1	28.9	28.9	66.9	66	0.9	6	2
	8	●	MPS1-0560-L8C	46.0	67.2	70.2	107.2	106	1.2	6	2
	10	□	MPS1-0560-L10C	57.0	79.0	82.0	119.0	118	1.0	6	2
	12	●	MPS1-0560-L12C	68.2	91.0	94.0	131.0	130	1.0	6	2
	15	●	MPS1-0560-L15C	85.0	109.0	112.0	149.0	148	1.0	6	2
	20	□	MPS1-0560-L20C	113.0	139.0	142.0	179.0	178	1.0	6	2
	25	□	MPS1-0560-L25C	141.0	169.0	172.0	209.0	208	1.0	6	2
	30	●	MPS1-0560-L30C	169.0	199.0	202.0	239.0	238	1.0	6	2
35	□	MPS1-0560-L35C	197.0	223.0	231.0	268.0	267	1.0	6	2	
40	●	MPS1-0560-L40C	225.0	251.0	262.0	299.0	298	1.0	6	2	
5.7	3	□	MPS1-0570S-DIN	19.5	28.0	29.0	66.0	65	1.0	6	4
	3	●	MPS1-0570S-DIN-C	19.5	28.0	29.0	66.0	65	1.0	6	2
	5	□	MPS1-0570L-DIN	35.5	44.0	45.0	82.0	81	1.0	6	4
	5	●	MPS1-0570L-DIN-C	35.5	44.0	45.0	82.0	81	1.0	6	2
	2	●	MPS1-0570-PC	12.3	28.9	28.9	66.9	66	0.9	6	2
	8	●	MPS1-0570-L8C	46.8	67.2	70.2	107.2	106	1.2	6	2
	10	□	MPS1-0570-L10C	58.0	79.0	82.0	119.0	118	1.0	6	2
	12	●	MPS1-0570-L12C	69.4	91.0	94.0	131.0	130	1.0	6	2
	15	●	MPS1-0570-L15C	86.5	109.0	112.0	149.0	148	1.0	6	2
	20	□	MPS1-0570-L20C	115.0	139.0	142.0	179.0	178	1.0	6	2
	25	●	MPS1-0570-L25C	143.5	169.0	172.0	209.0	208	1.0	6	2
	30	□	MPS1-0570-L30C	172.0	199.0	202.0	239.0	238	1.0	6	2
35	□	MPS1-0570-L35C	200.5	223.0	231.0	268.0	267	1.0	6	2	
40	●	MPS1-0570-L40C	229.0	251.0	262.0	299.0	298	1.0	6	2	

DC	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
5.8	3	□	MPS1-0580S-DIN	19.4	28.1	29.1	66.1	65	1.1	6	4
	3	●	MPS1-0580S-DIN-C	19.4	28.1	29.1	66.1	65	1.1	6	2
	5	□	MPS1-0580L-DIN	35.4	44.1	45.1	82.1	81	1.1	6	4
	5	●	MPS1-0580L-DIN-C	35.4	44.1	45.1	82.1	81	1.1	6	2
	2	●	MPS1-0580-PC	12.5	28.9	28.9	66.9	66	0.9	6	2
	8	●	MPS1-0580-L8C	47.6	67.2	70.2	107.2	106	1.2	6	2
	10	□	MPS1-0580-L10C	59.1	79.1	82.1	119.1	118	1.1	6	2
	12	●	MPS1-0580-L12C	70.7	91.1	94.1	131.1	130	1.1	6	2
	15	●	MPS1-0580-L15C	88.1	109.1	112.1	149.1	148	1.1	6	2
	20	●	MPS1-0580-L20C	117.1	139.1	142.1	179.1	178	1.1	6	2
	25	□	MPS1-0580-L25C	146.1	169.1	172.1	209.1	208	1.1	6	2
	30	●	MPS1-0580-L30C	175.1	199.1	202.1	239.1	238	1.1	6	2
35	□	MPS1-0580-L35C	204.1	229.1	231.1	268.1	267	1.1	6	2	
40	●	MPS1-0580-L40C	233.1	261.1	262.1	299.1	298	1.1	6	2	
5.9	3	□	MPS1-0590S-DIN	19.2	28.1	29.1	66.1	65	1.1	6	4
	3	●	MPS1-0590S-DIN-C	19.2	28.1	29.1	66.1	65	1.1	6	2
	5	□	MPS1-0590L-DIN	35.2	44.1	45.1	82.1	81	1.1	6	4
	5	●	MPS1-0590L-DIN-C	35.2	44.1	45.1	82.1	81	1.1	6	2
	2	●	MPS1-0590-PC	12.7	28.9	28.9	66.9	66	0.9	6	2
	8	●	MPS1-0590-L8C	48.4	67.2	70.2	107.2	106	1.2	6	2
	10	□	MPS1-0590-L10C	60.1	79.1	82.1	119.1	118	1.1	6	2
	12	●	MPS1-0590-L12C	71.9	91.1	94.1	131.1	130	1.1	6	2
	15	●	MPS1-0590-L15C	89.6	109.1	112.1	149.1	148	1.1	6	2
	20	●	MPS1-0590-L20C	119.1	139.1	142.1	179.1	178	1.1	6	2
	25	●	MPS1-0590-L25C	148.6	169.1	172.1	209.1	208	1.1	6	2
	30	□	MPS1-0590-L30C	178.1	199.1	202.1	239.1	238	1.1	6	2
35	□	MPS1-0590-L35C	207.6	229.1	231.1	268.1	267	1.1	6	2	
40	●	MPS1-0590-L40C	237.1	261.1	262.1	299.1	298	1.1	6	2	
6.0	3	□	MPS1-0600S-DIN	19.1	28.1	29.1	66.1	65	1.1	6	4
	3	●	MPS1-0600S-DIN-C	19.1	28.1	29.1	66.1	65	1.1	6	2
	5	□	MPS1-0600L-DIN	35.1	44.1	45.1	82.1	81	1.1	6	4
	5	●	MPS1-0600L-DIN-C	35.1	44.1	45.1	82.1	81	1.1	6	2
	2	●	MPS1-0600-PC	12.9	28.9	28.9	66.9	66	0.9	6	2
	8	●	MPS1-0600-L8C	49.2	67.2	70.2	107.2	106	1.2	6	2
	10	□	MPS1-0600-L10C	61.1	79.1	82.1	119.1	118	1.1	6	2
	12	●	MPS1-0600-L12C	73.1	91.1	94.1	131.1	130	1.1	6	2
	15	●	MPS1-0600-L15C	91.1	109.1	112.1	149.1	148	1.1	6	2
	20	●	MPS1-0600-L20C	121.1	139.1	142.1	179.1	178	1.1	6	2
	25	●	MPS1-0600-L25C	151.1	169.1	172.1	209.1	208	1.1	6	2
	30	●	MPS1-0600-L30C	181.1	199.1	202.1	239.1	238	1.1	6	2
35	□	MPS1-0600-L35C	211.1	229.1	231.1	268.1	267	1.1	6	2	
40	●	MPS1-0600-L40C	241.1	261.1	262.1	299.1	298	1.1	6	2	
6.05	3	□	MPS1-0605S-DIN	25.0	34.1	42.1	79.1	78	1.1	8	4
	3	●	MPS1-0605S-DIN-C	25.0	34.1	42.1	79.1	78	1.1	8	2
	5	□	MPS1-0605L-DIN	44.0	53.1	54.1	91.1	90	1.1	8	4
	5	●	MPS1-0605L-DIN-C	44.0	53.1	54.1	91.1	90	1.1	8	2

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DELME

DC (mm)	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)								Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS		
6.9	3	□	MPS1-0690S-DIN	23.9	34.3	42.3	79.3	78	1.3	8	4	
	3	●	MPS1-0690S-DIN-C	23.9	34.3	42.3	79.3	78	1.3	8	2	
	5	□	MPS1-0690L-DIN	42.9	53.3	54.3	91.3	90	1.3	8	4	
	5	●	MPS1-0690L-DIN-C	42.9	53.3	54.3	91.3	90	1.3	8	2	
	2	●	MPS1-0690-PC	14.9	35.1	37.1	75.1	74	1.1	8	2	
	8	●	MPS1-0690-L8C	56.6	78.4	81.4	118.4	117	1.4	8	2	
	10	□	MPS1-0690-L10C	70.3	92.3	95.3	132.3	131	1.3	8	2	
	12	●	MPS1-0690-L12C	84.1	106.3	109.3	146.3	145	1.3	8	2	
	15	●	MPS1-0690-L15C	104.8	127.3	130.3	167.3	166	1.3	8	2	
	20	●	MPS1-0690-L20C	139.3	162.3	165.3	202.3	201	1.3	8	2	
	25	●	MPS1-0690-L25C	173.8	197.3	200.3	237.3	236	1.3	8	2	
	30	●	MPS1-0690-L30C	208.3	232.3	235.3	272.3	271	1.3	8	2	
	35	□	MPS1-0690-L35C	242.8	267.3	269.3	306.3	305	1.3	8	2	
	40	●	MPS1-0690-L40C	277.3	301.3	304.3	341.3	340	1.3	8	2	
	7.0	3	□	MPS1-0700S-DIN	23.8	34.3	42.3	79.3	78	1.3	8	4
		3	●	MPS1-0700S-DIN-C	23.8	34.3	42.3	79.3	78	1.3	8	2
5		□	MPS1-0700L-DIN	42.8	53.3	54.3	91.3	90	1.3	8	4	
5		●	MPS1-0700L-DIN-C	42.8	53.3	54.3	91.3	90	1.3	8	2	
2		●	MPS1-0700-PC	15.1	35.1	37.1	75.1	74	1.1	8	2	
8		●	MPS1-0700-L8C	57.4	78.4	81.4	118.4	117	1.4	8	2	
10		●	MPS1-0700-L10C	71.3	92.3	95.3	132.3	131	1.3	8	2	
12		●	MPS1-0700-L12C	85.3	106.3	109.3	146.3	145	1.3	8	2	
15		●	MPS1-0700-L15C	106.3	127.3	130.3	167.3	166	1.3	8	2	
20		●	MPS1-0700-L20C	141.3	162.3	165.3	202.3	201	1.3	8	2	
25		●	MPS1-0700-L25C	176.3	197.3	200.3	237.3	236	1.3	8	2	
30		●	MPS1-0700-L30C	211.3	232.3	235.3	272.3	271	1.3	8	2	
35		□	MPS1-0700-L35C	246.3	267.3	269.3	306.3	305	1.3	8	2	
40		●	MPS1-0700-L40C	281.3	301.3	304.3	341.3	340	1.3	8	2	
7.1		3	□	MPS1-0710S-DIN	30.6	41.3	42.3	79.3	78	1.3	8	4
		3	●	MPS1-0710S-DIN-C	30.6	41.3	42.3	79.3	78	1.3	8	2
	5	□	MPS1-0710L-DIN	42.6	53.3	54.3	91.3	90	1.3	8	4	
	5	●	MPS1-0710L-DIN-C	42.6	53.3	54.3	91.3	90	1.3	8	2	
	2	●	MPS1-0710-PC	15.3	35.1	38.1	80.1	79	1.1	8	2	
	8	●	MPS1-0710-L8C	58.3	84.5	87.5	124.5	123	1.5	8	2	
	10	□	MPS1-0710-L10C	72.3	99.3	102.3	139.3	138	1.3	8	2	
	12	●	MPS1-0710-L12C	86.5	114.3	117.3	154.3	153	1.3	8	2	
	15	●	MPS1-0710-L15C	107.8	136.3	139.3	176.3	175	1.3	8	2	
	20	●	MPS1-0710-L20C	143.3	174.3	177.3	214.3	213	1.3	8	2	
	25	●	MPS1-0710-L25C	178.8	211.3	214.3	251.3	250	1.3	8	2	
	30	●	MPS1-0710-L30C	214.3	249.3	252.3	289.3	288	1.3	8	2	
	35	□	MPS1-0710-L35C	249.8	286.3	288.3	325.3	324	1.3	8	2	
	40	●	MPS1-0710-L40C	285.3	321.3	323.3	360.3	359	1.3	8	2	
	7.2	3	□	MPS1-0720S-DIN	30.5	41.3	42.3	79.3	78	1.3	8	4
		3	●	MPS1-0720S-DIN-C	30.5	41.3	42.3	79.3	78	1.3	8	2
5		□	MPS1-0720L-DIN	42.5	53.3	54.3	91.3	90	1.3	8	4	
5		●	MPS1-0720L-DIN-C	42.5	53.3	54.3	91.3	90	1.3	8	2	
2		●	MPS1-0720-PC	15.5	35.1	38.1	80.1	79	1.1	8	2	
8		●	MPS1-0720-L8C	59.1	84.5	87.5	124.5	123	1.5	8	2	
10		□	MPS1-0720-L10C	73.3	99.3	102.3	139.3	138	1.3	8	2	
12		●	MPS1-0720-L12C	87.7	114.3	117.3	154.3	153	1.3	8	2	
15		□	MPS1-0720-L15C	109.3	136.3	139.3	176.3	175	1.3	8	2	
20		□	MPS1-0720-L20C	145.3	174.3	177.3	214.3	213	1.3	8	2	
25		□	MPS1-0720-L25C	181.3	211.3	214.3	251.3	250	1.3	8	2	
30		□	MPS1-0720-L30C	217.3	249.3	252.3	289.3	288	1.3	8	2	
35		□	MPS1-0720-L35C	253.3	286.3	288.3	325.3	324	1.3	8	2	
40		●	MPS1-0720-L40C	289.3	321.3	323.3	360.3	359	1.3	8	2	

DC (mm)	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)								Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS		
7.3	3	□	MPS1-0730S-DIN	30.4	41.3	42.3	79.3	78	1.3	8	4	
	3	●	MPS1-0730S-DIN-C	30.4	41.3	42.3	79.3	78	1.3	8	2	
	5	□	MPS1-0730L-DIN	42.4	53.3	54.3	91.3	90	1.3	8	4	
	5	●	MPS1-0730L-DIN-C	42.4	53.3	54.3	91.3	90	1.3	8	2	
	2	●	MPS1-0730-PC	15.8	35.2	38.2	80.2	79	1.2	8	2	
	8	●	MPS1-0730-L8C	59.9	84.5	87.5	124.5	123	1.5	8	2	
	10	□	MPS1-0730-L10C	74.3	99.3	102.3	139.3	138	1.3	8	2	
	12	●	MPS1-0730-L12C	88.9	114.3	117.3	154.3	153	1.3	8	2	
	15	□	MPS1-0730-L15C	110.8	136.3	139.3	176.3	175	1.3	8	2	
	20	□	MPS1-0730-L20C	147.3	174.3	177.3	214.3	213	1.3	8	2	
	25	□	MPS1-0730-L25C	183.8	211.3	214.3	251.3	250	1.3	8	2	
	30	□	MPS1-0730-L30C	220.3	249.3	252.3	289.3	288	1.3	8	2	
	35	□	MPS1-0730-L35C	256.8	286.3	288.3	325.3	324	1.3	8	2	
	40	●	MPS1-0730-L40C	293.3	321.3	323.3	360.3	359	1.3	8	2	
	7.4	3	□	MPS1-0740S-DIN	30.2	41.3	42.3	79.3	78	1.3	8	4
		3	●	MPS1-0740S-DIN-C	30.2	41.3	42.3	79.3	78	1.3	8	2
5		□	MPS1-0740L-DIN	42.2	53.3	54.3	91.3	90	1.3	8	4	
5		●	MPS1-0740L-DIN-C	42.2	53.3	54.3	91.3	90	1.3	8	2	
2		●	MPS1-0740-PC	16.0	35.2	38.2	80.2	79	1.2	8	2	
8		●	MPS1-0740-L8C	60.7	84.5	87.5	124.5	123	1.5	8	2	
10		□	MPS1-0740-L10C	75.3	99.3	102.3	139.3	138	1.3	8	2	
12		●	MPS1-0740-L12C	90.1	114.3	117.3	154.3	153	1.3	8	2	
15		□	MPS1-0740-L15C	112.3	136.3	139.3	176.3	175	1.3	8	2	
20		□	MPS1-0740-L20C	149.3	174.3	177.3	214.3	213	1.3	8	2	
25		□	MPS1-0740-L25C	186.3	211.3	214.3	251.3	250	1.3	8	2	
30		□	MPS1-0740-L30C	223.3	249.3	252.3	289.3	288	1.3	8	2	
35		□	MPS1-0740-L35C	260.3	286.3	288.3	325.3	324	1.3	8	2	
40		●	MPS1-0740-L40C	297.3	321.3	323.3	360.3	359	1.3	8	2	
7.5		3	□	MPS1-0750S-DIN	30.1	41.4	42.4	79.4	78	1.4	8	4
		3	●	MPS1-0750S-DIN-C	30.1	41.4	42.4	79.4	78	1.4	8	2
	5	□	MPS1-0750L-DIN	42.1	53.4	54.4	91.4	90	1.4	8	4	
	5	●	MPS1-0750L-DIN-C	42.1	53.4	54.4	91.4	90	1.4	8	2	
	2	●	MPS1-0750-PC	16.2	35.2	38.2	80.2	79	1.2	8	2	
	8	●	MPS1-0750-L8C	61.6	84.6	87.6	124.6	123	1.6	8	2	
	10	□	MPS1-0750-L10C	76.4	99.4	102.4	139.4	138	1.4	8	2	
	12	●	MPS1-0750-L12C	91.4	114.4	117.4	154.4	153	1.4	8	2	
	15	●	MPS1-0750-L15C	113.9	136.4	139.4	176.4	175	1.4	8	2	
	20	●	MPS1-0750-L20C	151.4	174.4	177.4	214.4	213	1.4	8	2	
	25	●	MPS1-0750-L25C	188.9	211.4	214.4	251.4	250	1.4	8	2	
	30	●	MPS1-0750-L30C	226.4	249.4	252.4	289.4	288	1.4	8	2	
	35	□	MPS1-0750-L35C	263.9	286.4	288.4	325.4	324	1.4	8	2	
	40	●	MPS1-0750-L40C	301.4	321.4	323.4	360.4	359	1.4	8	2	
	7.6	3	□	MPS1-0760S-DIN	30.0	41.4	42.4	79.4	78	1.4	8	4
		3	●	MPS1-0760S-DIN-C	30.0	41.4	42.4	79.4	78	1.4	8	2
5		□	MPS1-0760L-DIN	42.0	53.4	54.4	91.4	90	1.4	8	4	
5		●	MPS1-0760L-DIN-C	42.0	53.4	54.4	91.4	90	1.4	8	2	
2		●	MPS1-0760-PC	16.4	38.2	38.2	80.2	79	1.2	8	2	
8		●	MPS1-0760-L8C	62.4	89.6	92.6	129.6	128	1.6	8	2	
10		□	MPS1-0760-L10C	77.4	105.4	108.4	145.4	144	1.4	8	2	
12		●	MPS1-0760-L12C	92.6	121.4	124.4	161.4	160	1.4	8	2	
15		●	MPS1-0760-L15C	115.4	145.4	148.4	185.4	184	1.4	8	2	
20		□	MPS1-0760-L20C	153.4	185.4	188.4	225.4	224	1.4	8	2	
25		□	MPS1-0760-L25C	191.4	225.4	228.4	265.4	264	1.4	8	2	
30		□	MPS1-0760-L30C	229.4	265.4	268.4	305.4	304	1.4	8	2	
35		□	MPS1-0760-L35C	267.4	305.4	307.4	344.4	343	1.4	8	2	
40		●	MPS1-0760-L40C	305.4	341.4	342.4	379.4	378	1.4	8	2	

DC	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
7.7	3	□	MPS1-0770S-DIN	29.9	41.4	42.4	79.4	78	1.4	8	4
	3	●	MPS1-0770S-DIN-C	29.9	41.4	42.4	79.4	78	1.4	8	2
	5	□	MPS1-0770L-DIN	41.9	53.4	54.4	91.4	90	1.4	8	4
	5	●	MPS1-0770L-DIN-C	41.9	53.4	54.4	91.4	90	1.4	8	2
	2	●	MPS1-0770-PC	16.6	38.2	38.2	80.2	79	1.2	8	2
	8	●	MPS1-0770-L8C	63.2	89.6	92.6	129.6	128	1.6	8	2
	10	□	MPS1-0770-L10C	78.4	105.4	108.4	145.4	144	1.4	8	2
	12	●	MPS1-0770-L12C	93.8	121.4	124.4	161.4	160	1.4	8	2
	15	●	MPS1-0770-L15C	116.9	145.4	148.4	185.4	184	1.4	8	2
	20	□	MPS1-0770-L20C	155.4	185.4	188.4	225.4	224	1.4	8	2
	25	●	MPS1-0770-L25C	193.9	225.4	228.4	265.4	264	1.4	8	2
	30	□	MPS1-0770-L30C	232.4	265.4	268.4	305.4	304	1.4	8	2
35	□	MPS1-0770-L35C	270.9	305.4	307.4	344.4	343	1.4	8	2	
40	●	MPS1-0770-L40C	309.4	341.4	342.4	379.4	378	1.4	8	2	
7.8	3	□	MPS1-0780S-DIN	29.7	41.4	42.4	79.4	78	1.4	8	4
	3	●	MPS1-0780S-DIN-C	29.7	41.4	42.4	79.4	78	1.4	8	2
	5	□	MPS1-0780L-DIN	41.7	53.4	54.4	91.4	90	1.4	8	4
	5	●	MPS1-0780L-DIN-C	41.7	53.4	54.4	91.4	90	1.4	8	2
	2	●	MPS1-0780-PC	16.8	38.2	38.2	80.2	79	1.2	8	2
	8	●	MPS1-0780-L8C	64.0	89.6	92.6	129.6	128	1.6	8	2
	10	□	MPS1-0780-L10C	79.4	105.4	108.4	145.4	144	1.4	8	2
	12	●	MPS1-0780-L12C	95.0	121.4	124.4	161.4	160	1.4	8	2
	15	●	MPS1-0780-L15C	118.4	145.4	148.4	185.4	184	1.4	8	2
	20	□	MPS1-0780-L20C	157.4	185.4	188.4	225.4	224	1.4	8	2
	25	□	MPS1-0780-L25C	196.4	225.4	228.4	265.4	264	1.4	8	2
	30	●	MPS1-0780-L30C	235.4	265.4	268.4	305.4	304	1.4	8	2
35	□	MPS1-0780-L35C	274.4	305.4	307.4	344.4	343	1.4	8	2	
40	●	MPS1-0780-L40C	313.4	341.4	342.4	379.4	378	1.4	8	2	
7.9	3	□	MPS1-0790S-DIN	29.6	41.4	42.4	79.4	78	1.4	8	4
	3	●	MPS1-0790S-DIN-C	29.6	41.4	42.4	79.4	78	1.4	8	2
	5	□	MPS1-0790L-DIN	41.6	53.4	54.4	91.4	90	1.4	8	4
	5	●	MPS1-0790L-DIN-C	41.6	53.4	54.4	91.4	90	1.4	8	2
	2	●	MPS1-0790-PC	17.0	38.2	38.2	80.2	79	1.2	8	2
	8	●	MPS1-0790-L8C	64.8	89.6	92.6	129.6	128	1.6	8	2
	10	□	MPS1-0790-L10C	80.4	105.4	108.4	145.4	144	1.4	8	2
	12	●	MPS1-0790-L12C	96.2	121.4	124.4	161.4	160	1.4	8	2
	15	□	MPS1-0790-L15C	119.9	145.4	148.4	185.4	184	1.4	8	2
	20	□	MPS1-0790-L20C	159.4	185.4	188.4	225.4	224	1.4	8	2
	25	●	MPS1-0790-L25C	198.9	225.4	228.4	265.4	264	1.4	8	2
	30	●	MPS1-0790-L30C	238.4	265.4	268.4	305.4	304	1.4	8	2
35	□	MPS1-0790-L35C	277.9	305.4	307.4	344.4	343	1.4	8	2	
40	●	MPS1-0790-L40C	317.4	341.4	342.4	379.4	378	1.4	8	2	
8.0	3	□	MPS1-0800S-DIN	29.5	41.5	42.5	79.5	78	1.5	8	4
	3	●	MPS1-0800S-DIN-C	29.5	41.5	42.5	79.5	78	1.5	8	2
	5	□	MPS1-0800L-DIN	41.5	53.5	54.5	91.5	90	1.5	8	4
	5	●	MPS1-0800L-DIN-C	41.5	53.5	54.5	91.5	90	1.5	8	2
	2	●	MPS1-0800-PC	17.3	38.3	38.3	80.3	79	1.3	8	2
	8	●	MPS1-0800-L8C	65.7	89.7	92.7	129.7	128	1.7	8	2
	10	●	MPS1-0800-L10C	81.5	105.5	108.5	145.5	144	1.5	8	2
	12	●	MPS1-0800-L12C	97.5	121.5	124.5	161.5	160	1.5	8	2
	15	●	MPS1-0800-L15C	121.5	145.5	148.5	185.5	184	1.5	8	2
	20	●	MPS1-0800-L20C	161.5	185.5	188.5	225.5	224	1.5	8	2
	25	●	MPS1-0800-L25C	201.5	225.5	228.5	265.5	264	1.5	8	2
	30	●	MPS1-0800-L30C	241.5	265.5	268.5	305.5	304	1.5	8	2
35	□	MPS1-0800-L35C	281.5	305.5	307.5	344.5	343	1.5	8	2	
40	●	MPS1-0800-L40C	321.5	341.5	342.5	379.5	378	1.5	8	2	

DC	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
8.05	3	□	MPS1-0805S-DIN	34.4	46.5	47.5	88.5	87	1.5	10	4
	3	●	MPS1-0805S-DIN-C	34.4	46.5	47.5	88.5	87	1.5	10	2
	5	□	MPS1-0805L-DIN	48.4	60.5	61.5	102.5	101	1.5	10	4
	5	●	MPS1-0805L-DIN-C	48.4	60.5	61.5	102.5	101	1.5	10	2
8.1	3	□	MPS1-0810S-DIN	34.3	46.5	47.5	88.5	87	1.5	10	4
	3	●	MPS1-0810S-DIN-C	34.3	46.5	47.5	88.5	87	1.5	10	2
	5	□	MPS1-0810L-DIN	48.3	60.5	61.5	102.5	101	1.5	10	4
	5	●	MPS1-0810L-DIN-C	48.3	60.5	61.5	102.5	101	1.5	10	2
	2	●	MPS1-0810-PC	17.5	38.3	41.3	85.3	84	1.3	10	2
	8	●	MPS1-0810-L8C	66.5	95.7	98.7	139.7	138	1.7	10	2
	10	□	MPS1-0810-L10C	82.5	112.5	115.5	156.5	155	1.5	10	2
	12	●	MPS1-0810-L12C	98.7	129.5	132.5	173.5	172	1.5	10	2
	15	●	MPS1-0810-L15C	123.0	154.5	157.5	198.5	197	1.5	10	2
	20	●	MPS1-0810-L20C	163.5	197.5	200.5	241.5	240	1.5	10	2
	25	□	MPS1-0810-L25C	204.0	239.5	242.5	283.5	282	1.5	10	2
	30	□	MPS1-0810-L30C	244.5	282.5	284.5	325.5	324	1.5	10	2
35	□	MPS1-0810-L35C	285.0	324.5	326.5	367.5	366	1.5	10	2	
40	●	MPS1-0810-L40C	325.5	366.5	370.5	411.5	410	1.5	10	2	
8.2	3	□	MPS1-0820S-DIN	34.2	46.5	47.5	88.5	87	1.5	10	4
	3	●	MPS1-0820S-DIN-C	34.2	46.5	47.5	88.5	87	1.5	10	2
	5	□	MPS1-0820L-DIN	48.2	60.5	61.5	102.5	101	1.5	10	4
	5	●	MPS1-0820L-DIN-C	48.2	60.5	61.5	102.5	101	1.5	10	2
	2	●	MPS1-0820-PC	17.7	38.3	41.3	85.3	84	1.3	10	2
	8	●	MPS1-0820-L8C	67.3	95.7	98.7	139.7	138	1.7	10	2
	10	□	MPS1-0820-L10C	83.5	112.5	115.5	156.5	155	1.5	10	2
	12	●	MPS1-0820-L12C	99.9	129.5	132.5	173.5	172	1.5	10	2
	15	●	MPS1-0820-L15C	124.5	154.5	157.5	198.5	197	1.5	10	2
	20	●	MPS1-0820-L20C	165.5	197.5	200.5	241.5	240	1.5	10	2
	25	□	MPS1-0820-L25C	206.5	239.5	242.5	283.5	282	1.5	10	2
	30	□	MPS1-0820-L30C	247.5	282.5	284.5	325.5	324	1.5	10	2
35	□	MPS1-0820-L35C	288.5	324.5	326.5	367.5	366	1.5	10	2	
40	●	MPS1-0820-L40C	329.5	366.5	370.5	411.5	410	1.5	10	2	
8.3	3	□	MPS1-0830S-DIN	34.1	46.5	47.5	88.5	87	1.5	10	4
	3	●	MPS1-0830S-DIN-C	34.1	46.5	47.5	88.5	87	1.5	10	2
	5	□	MPS1-0830L-DIN	48.1	60.5	61.5	102.5	101	1.5	10	4
	5	●	MPS1-0830L-DIN-C	48.1	60.5	61.5	102.5	101	1.5	10	2
	2	●	MPS1-0830-PC	17.9	38.3	41.3	85.3	84	1.3	10	2
	8	●	MPS1-0830-L8C	68.1	95.7	98.7	139.7	138	1.7	10	2
	10	□	MPS1-0830-L10C	84.5	112.5	115.5	156.5	155	1.5	10	2
	12	●	MPS1-0830-L12C	101.1	129.5	132.5	173.5	172	1.5	10	2
	15	□	MPS1-0830-L15C	126.0	154.5	157.5	198.5	197	1.5	10	2
	20	□	MPS1-0830-L20C	167.5	197.5	200.5	241.5	240	1.5	10	2
	25	□	MPS1-0830-L25C	209.0	239.5	242.5	283.5	282	1.5	10	2
	30	□	MPS1-0830-L30C	250.5	282.5	284.5	325.5	324	1.5	10	2
35	□	MPS1-0830-L35C	292.0	324.5	326.5	367.5	366	1.5	10	2	
40	●	MPS1-0830-L40C	333.5	366.5	370.5	411.5	410	1.5	10	2	

● : Avrupa standart stok. □ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
8.4	3	□	MPS1-0840S-DIN	33.9	46.5	47.5	88.5	87	1.5	10	4
	3	●	MPS1-0840S-DIN-C	33.9	46.5	47.5	88.5	87	1.5	10	2
	5	□	MPS1-0840L-DIN	47.9	60.5	61.5	102.5	101	1.5	10	4
	5	●	MPS1-0840L-DIN-C	47.9	60.5	61.5	102.5	101	1.5	10	2
	2	●	MPS1-0840-PC	18.1	38.3	41.3	85.3	84	1.3	10	2
	8	●	MPS1-0840-L8C	68.9	95.7	98.7	139.7	138	1.7	10	2
	10	□	MPS1-0840-L10C	85.5	112.5	115.5	156.5	155	1.5	10	2
	12	●	MPS1-0840-L12C	102.3	129.5	132.5	173.5	172	1.5	10	2
	15	●	MPS1-0840-L15C	127.5	154.5	157.5	198.5	197	1.5	10	2
	20	□	MPS1-0840-L20C	169.5	197.5	200.5	241.5	240	1.5	10	2
	25	□	MPS1-0840-L25C	211.5	239.5	242.5	283.5	282	1.5	10	2
	30	□	MPS1-0840-L30C	253.5	282.5	284.5	325.5	324	1.5	10	2
	35	□	MPS1-0840-L35C	295.5	324.5	326.5	367.5	366	1.5	10	2
	40	●	MPS1-0840-L40C	337.5	366.5	370.5	411.5	410	1.5	10	2
8.5	3	□	MPS1-0850S-DIN	33.8	46.5	47.5	88.5	87	1.5	10	4
	3	●	MPS1-0850S-DIN-C	33.8	46.5	47.5	88.5	87	1.5	10	2
	5	□	MPS1-0850L-DIN	47.8	60.5	61.5	102.5	101	1.5	10	4
	5	●	MPS1-0850L-DIN-C	47.8	60.5	61.5	102.5	101	1.5	10	2
	2	●	MPS1-0850-PC	18.3	38.3	41.3	85.3	84	1.3	10	2
	8	●	MPS1-0850-L8C	69.8	95.8	98.8	139.8	138	1.8	10	2
	10	□	MPS1-0850-L10C	86.5	112.5	115.5	156.5	155	1.5	10	2
	12	●	MPS1-0850-L12C	103.5	129.5	132.5	173.5	172	1.5	10	2
	15	●	MPS1-0850-L15C	129.0	154.5	157.5	198.5	197	1.5	10	2
	20	●	MPS1-0850-L20C	171.5	197.5	200.5	241.5	240	1.5	10	2
	25	●	MPS1-0850-L25C	214.0	239.5	242.5	283.5	282	1.5	10	2
	30	●	MPS1-0850-L30C	256.5	282.5	284.5	325.5	324	1.5	10	2
	35	□	MPS1-0850-L35C	299.0	324.5	326.5	367.5	366	1.5	10	2
	40	●	MPS1-0850-L40C	341.5	366.5	370.5	411.5	410	1.5	10	2
8.6	3	□	MPS1-0860S-DIN	33.7	46.6	47.6	88.6	87	1.6	10	4
	3	●	MPS1-0860S-DIN-C	33.7	46.6	47.6	88.6	87	1.6	10	2
	5	□	MPS1-0860L-DIN	47.7	60.6	61.6	102.6	101	1.6	10	4
	5	●	MPS1-0860L-DIN-C	47.7	60.6	61.6	102.6	101	1.6	10	2
	2	●	MPS1-0860-PC	18.6	41.4	43.4	85.4	84	1.4	10	2
	8	●	MPS1-0860-L8C	70.6	100.8	103.8	144.8	143	1.8	10	2
	10	□	MPS1-0860-L10C	87.6	118.6	121.6	162.6	161	1.6	10	2
	12	●	MPS1-0860-L12C	104.8	136.6	139.6	180.6	179	1.6	10	2
	15	●	MPS1-0860-L15C	130.6	163.6	166.6	207.6	206	1.6	10	2
	20	□	MPS1-0860-L20C	173.6	208.6	211.6	252.6	251	1.6	10	2
	25	●	MPS1-0860-L25C	216.6	253.6	256.6	297.6	296	1.6	10	2
	30	●	MPS1-0860-L30C	259.6	298.6	300.6	341.6	340	1.6	10	2
	35	□	MPS1-0860-L35C	302.6	343.6	345.6	386.6	385	1.6	10	2
	40	●	MPS1-0860-L40C	345.6	391.6	394.6	435.6	434	1.6	10	2
8.7	3	□	MPS1-0870S-DIN	33.5	46.6	47.6	88.6	87	1.6	10	4
	3	●	MPS1-0870S-DIN-C	33.5	46.6	47.6	88.6	87	1.6	10	2
	5	□	MPS1-0870L-DIN	47.5	60.6	61.6	102.6	101	1.6	10	4
	5	●	MPS1-0870L-DIN-C	47.5	60.6	61.6	102.6	101	1.6	10	2
	2	●	MPS1-0870-PC	18.8	41.4	43.4	85.4	84	1.4	10	2
	8	●	MPS1-0870-L8C	71.4	100.8	103.8	144.8	143	1.8	10	2
	10	□	MPS1-0870-L10C	88.6	118.6	121.6	162.6	161	1.6	10	2
	12	●	MPS1-0870-L12C	106.0	136.6	139.6	180.6	179	1.6	10	2
	15	●	MPS1-0870-L15C	132.1	163.6	166.6	207.6	206	1.6	10	2
	20	□	MPS1-0870-L20C	175.6	208.6	211.6	252.6	251	1.6	10	2
	25	●	MPS1-0870-L25C	219.1	253.6	256.6	297.6	296	1.6	10	2
	30	□	MPS1-0870-L30C	262.6	298.6	300.6	341.6	340	1.6	10	2
	35	□	MPS1-0870-L35C	306.1	343.6	345.6	386.6	385	1.6	10	2
	40	●	MPS1-0870-L40C	349.6	391.6	394.6	435.6	434	1.6	10	2

DC	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
8.8	3	□	MPS1-0880S-DIN	33.4	46.6	47.6	88.6	87	1.6	10	4
	3	●	MPS1-0880S-DIN-C	33.4	46.6	47.6	88.6	87	1.6	10	2
	5	□	MPS1-0880L-DIN	47.4	60.6	61.6	102.6	101	1.6	10	4
	5	●	MPS1-0880L-DIN-C	47.4	60.6	61.6	102.6	101	1.6	10	2
	2	●	MPS1-0880-PC	19.0	41.4	43.4	85.4	84	1.4	10	2
	8	●	MPS1-0880-L8C	72.2	100.8	103.8	144.8	143	1.8	10	2
	10	□	MPS1-0880-L10C	89.6	118.6	121.6	162.6	161	1.6	10	2
	12	●	MPS1-0880-L12C	107.2	136.6	139.6	180.6	179	1.6	10	2
	15	●	MPS1-0880-L15C	133.6	163.6	166.6	207.6	206	1.6	10	2
	20	●	MPS1-0880-L20C	177.6	208.6	211.6	252.6	251	1.6	10	2
	25	●	MPS1-0880-L25C	221.6	253.6	256.6	297.6	296	1.6	10	2
	30	●	MPS1-0880-L30C	265.6	298.6	300.6	341.6	340	1.6	10	2
	35	□	MPS1-0880-L35C	309.6	343.6	345.6	386.6	385	1.6	10	2
	40	●	MPS1-0880-L40C	353.6	391.6	394.6	435.6	434	1.6	10	2
8.9	3	□	MPS1-0890S-DIN	33.3	46.6	47.6	88.6	87	1.6	10	4
	3	●	MPS1-0890S-DIN-C	33.3	46.6	47.6	88.6	87	1.6	10	2
	5	□	MPS1-0890L-DIN	47.3	60.6	61.6	102.6	101	1.6	10	4
	5	●	MPS1-0890L-DIN-C	47.3	60.6	61.6	102.6	101	1.6	10	2
	2	●	MPS1-0890-PC	19.2	41.4	43.4	85.4	84	1.4	10	2
	8	●	MPS1-0890-L8C	73.0	100.8	103.8	144.8	143	1.8	10	2
	10	□	MPS1-0890-L10C	90.6	118.6	121.6	162.6	161	1.6	10	2
	12	●	MPS1-0890-L12C	108.4	136.6	139.6	180.6	179	1.6	10	2
	15	□	MPS1-0890-L15C	135.1	163.6	166.6	207.6	206	1.6	10	2
	20	□	MPS1-0890-L20C	179.6	208.6	211.6	252.6	251	1.6	10	2
	25	□	MPS1-0890-L25C	224.1	253.6	256.6	297.6	296	1.6	10	2
	30	□	MPS1-0890-L30C	268.6	298.6	300.6	341.6	340	1.6	10	2
	35	□	MPS1-0890-L35C	313.1	343.6	345.6	386.6	385	1.6	10	2
	40	●	MPS1-0890-L40C	357.6	391.6	394.6	435.6	434	1.6	10	2
9.0	3	□	MPS1-0900S-DIN	33.1	46.6	47.6	88.6	87	1.6	10	4
	3	●	MPS1-0900S-DIN-C	33.1	46.6	47.6	88.6	87	1.6	10	2
	5	□	MPS1-0900L-DIN	47.1	60.6	61.6	102.6	101	1.6	10	4
	5	●	MPS1-0900L-DIN-C	47.1	60.6	61.6	102.6	101	1.6	10	2
	2	●	MPS1-0900-PC	19.4	41.4	43.4	85.4	84	1.4	10	2
	8	●	MPS1-0900-L8C	73.9	100.9	103.9	144.9	143	1.9	10	2
	10	□	MPS1-0900-L10C	91.6	118.6	121.6	162.6	161	1.6	10	2
	12	●	MPS1-0900-L12C	109.6	136.6	139.6	180.6	179	1.6	10	2
	15	●	MPS1-0900-L15C	136.6	163.6	166.6	207.6	206	1.6	10	2
	20	●	MPS1-0900-L20C	181.6	208.6	211.6	252.6	251	1.6	10	2
	25	●	MPS1-0900-L25C	226.6	253.6	256.6	297.6	296	1.6	10	2
	30	●	MPS1-0900-L30C	271.6	298.6	300.6	341.6	340	1.6	10	2
	35	□	MPS1-0900-L35C	316.6	343.6	345.6	386.6	385	1.6	10	2
	40	●	MPS1-0900-L40C	361.6	391.6	394.6	435.6	434	1.6	10	2
9.1	3	□	MPS1-0910S-DIN	33.0	46.7	47.7	88.7	87	1.7	10	4
	3	●	MPS1-0910S-DIN-C	33.0	46.7	47.7	88.7	87	1.7	10	2
	5	□	MPS1-0910L-DIN	47.0	60.7	61.7	102.7	101	1.7	10	4
	5	●	MPS1-0910L-DIN-C	47.0	60.7	61.7	102.7	101	1.7	10	2
	2	●	MPS1-0910-PC	19.6	41.4	44.4	90.4	89	1.4	10	2
	8	●	MPS1-0910-L8C	74.7	106.9	109.9	150.9	149	1.9	10	2
	10	□	MPS1-0910-L10C	92.7	125.7	128.7	169.7	168	1.7	10	2
	12	●	MPS1-0910-L12C	110.9	144.7	147.7	188.7	187	1.7	10	2
	15	●	MPS1-0910-L15C	138.2	172.7	175.7	216.7	215	1.7	10	2
	20	□	MPS1-0910-L20C	183.7	220.7	223.7	264.7	263	1.7	10	2
	25	□	MPS1-0910-L25C	229.2	267.7	270.7	311.7	310	1.7	10	2
	30	●	MPS1-0910-L30C	274.7	315.7	318.7	359.7	358	1.7	10	2
	35	□	MPS1-0910-L35C	320.2	362.7	364.7	405.7	404	1.7	10	2

DC (mm)	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCNMMS	
9.2	3	<input type="checkbox"/>	MPS1-0920S-DIN	32.9	46.7	47.7	88.7	87	1.7	10	4
	3	<input checked="" type="checkbox"/>	MPS1-0920S-DIN-C	32.9	46.7	47.7	88.7	87	1.7	10	2
	5	<input type="checkbox"/>	MPS1-0920L-DIN	46.9	60.7	61.7	102.7	101	1.7	10	4
	5	<input checked="" type="checkbox"/>	MPS1-0920L-DIN-C	46.9	60.7	61.7	102.7	101	1.7	10	2
	2	<input checked="" type="checkbox"/>	MPS1-0920-PC	19.9	41.5	44.5	90.5	89	1.5	10	2
	8	<input checked="" type="checkbox"/>	MPS1-0920-L8C	75.5	106.9	109.9	150.9	149	1.9	10	2
	10	<input type="checkbox"/>	MPS1-0920-L10C	93.7	125.7	128.7	169.7	168	1.7	10	2
	12	<input checked="" type="checkbox"/>	MPS1-0920-L12C	112.1	144.7	147.7	188.7	187	1.7	10	2
	15	<input checked="" type="checkbox"/>	MPS1-0920-L15C	139.7	172.7	175.7	216.7	215	1.7	10	2
	20	<input type="checkbox"/>	MPS1-0920-L20C	185.7	220.7	223.7	264.7	263	1.7	10	2
	25	<input type="checkbox"/>	MPS1-0920-L25C	231.7	267.7	270.7	311.7	310	1.7	10	2
	30	<input type="checkbox"/>	MPS1-0920-L30C	277.7	315.7	318.7	359.7	358	1.7	10	2
	35	<input type="checkbox"/>	MPS1-0920-L35C	323.7	362.7	364.7	405.7	404	1.7	10	2
9.3	3	<input type="checkbox"/>	MPS1-0930S-DIN	32.7	46.7	47.7	88.7	87	1.7	10	4
	3	<input checked="" type="checkbox"/>	MPS1-0930S-DIN-C	32.7	46.7	47.7	88.7	87	1.7	10	2
	5	<input type="checkbox"/>	MPS1-0930L-DIN	46.7	60.7	61.7	102.7	101	1.7	10	4
	5	<input checked="" type="checkbox"/>	MPS1-0930L-DIN-C	46.7	60.7	61.7	102.7	101	1.7	10	2
	2	<input checked="" type="checkbox"/>	MPS1-0930-PC	20.1	41.5	44.5	90.5	89	1.5	10	2
	8	<input checked="" type="checkbox"/>	MPS1-0930-L8C	76.3	106.9	109.9	150.9	149	1.9	10	2
	10	<input type="checkbox"/>	MPS1-0930-L10C	94.7	125.7	128.7	169.7	168	1.7	10	2
	12	<input checked="" type="checkbox"/>	MPS1-0930-L12C	113.3	144.7	147.7	188.7	187	1.7	10	2
	15	<input type="checkbox"/>	MPS1-0930-L15C	141.2	172.7	175.7	216.7	215	1.7	10	2
	20	<input type="checkbox"/>	MPS1-0930-L20C	187.7	220.7	223.7	264.7	263	1.7	10	2
	25	<input type="checkbox"/>	MPS1-0930-L25C	234.2	267.7	270.7	311.7	310	1.7	10	2
	30	<input type="checkbox"/>	MPS1-0930-L30C	280.7	315.7	318.7	359.7	358	1.7	10	2
	35	<input type="checkbox"/>	MPS1-0930-L35C	327.2	362.7	364.7	405.7	404	1.7	10	2
9.4	3	<input type="checkbox"/>	MPS1-0940S-DIN	32.6	46.7	47.7	88.7	87	1.7	10	4
	3	<input checked="" type="checkbox"/>	MPS1-0940S-DIN-C	32.6	46.7	47.7	88.7	87	1.7	10	2
	5	<input type="checkbox"/>	MPS1-0940L-DIN	46.6	60.7	61.7	102.7	101	1.7	10	4
	5	<input checked="" type="checkbox"/>	MPS1-0940L-DIN-C	46.6	60.7	61.7	102.7	101	1.7	10	2
	2	<input checked="" type="checkbox"/>	MPS1-0940-PC	20.3	41.5	44.5	90.5	89	1.5	10	2
	8	<input checked="" type="checkbox"/>	MPS1-0940-L8C	77.1	106.9	109.9	150.9	149	1.9	10	2
	10	<input type="checkbox"/>	MPS1-0940-L10C	95.7	125.7	128.7	169.7	168	1.7	10	2
	12	<input checked="" type="checkbox"/>	MPS1-0940-L12C	114.5	144.7	147.7	188.7	187	1.7	10	2
	15	<input type="checkbox"/>	MPS1-0940-L15C	142.7	172.7	175.7	216.7	215	1.7	10	2
	20	<input type="checkbox"/>	MPS1-0940-L20C	189.7	220.7	223.7	264.7	263	1.7	10	2
	25	<input type="checkbox"/>	MPS1-0940-L25C	236.7	267.7	270.7	311.7	310	1.7	10	2
	30	<input type="checkbox"/>	MPS1-0940-L30C	283.7	315.7	318.7	359.7	358	1.7	10	2
	35	<input type="checkbox"/>	MPS1-0940-L35C	330.7	362.7	364.7	405.7	404	1.7	10	2
9.5	3	<input type="checkbox"/>	MPS1-0950S-DIN	32.5	46.7	47.7	88.7	87	1.7	10	4
	3	<input checked="" type="checkbox"/>	MPS1-0950S-DIN-C	32.5	46.7	47.7	88.7	87	1.7	10	2
	5	<input type="checkbox"/>	MPS1-0950L-DIN	46.5	60.7	61.7	102.7	101	1.7	10	4
	5	<input checked="" type="checkbox"/>	MPS1-0950L-DIN-C	46.5	60.7	61.7	102.7	101	1.7	10	2
	2	<input checked="" type="checkbox"/>	MPS1-0950-PC	20.5	41.5	44.5	90.5	89	1.5	10	2
	8	<input checked="" type="checkbox"/>	MPS1-0950-L8C	78.0	107.0	110.0	151.0	149	2.0	10	2
	10	<input type="checkbox"/>	MPS1-0950-L10C	96.7	125.7	128.7	169.7	168	1.7	10	2
	12	<input checked="" type="checkbox"/>	MPS1-0950-L12C	115.7	144.7	147.7	188.7	187	1.7	10	2
	15	<input checked="" type="checkbox"/>	MPS1-0950-L15C	144.2	172.7	175.7	216.7	215	1.7	10	2
	20	<input checked="" type="checkbox"/>	MPS1-0950-L20C	191.7	220.7	223.7	264.7	263	1.7	10	2
	25	<input checked="" type="checkbox"/>	MPS1-0950-L25C	239.2	267.7	270.7	311.7	310	1.7	10	2
	30	<input checked="" type="checkbox"/>	MPS1-0950-L30C	286.7	315.7	318.7	359.7	358	1.7	10	2
	35	<input type="checkbox"/>	MPS1-0950-L35C	334.2	362.7	364.7	405.7	404	1.7	10	2

DC (mm)	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCNMMS	
9.6	3	<input type="checkbox"/>	MPS1-0960S-DIN	32.3	46.7	47.7	88.7	87	1.7	10	4
	3	<input checked="" type="checkbox"/>	MPS1-0960S-DIN-C	32.3	46.7	47.7	88.7	87	1.7	10	2
	5	<input type="checkbox"/>	MPS1-0960L-DIN	46.3	60.7	61.7	102.7	101	1.7	10	4
	5	<input checked="" type="checkbox"/>	MPS1-0960L-DIN-C	46.3	60.7	61.7	102.7	101	1.7	10	2
	2	<input checked="" type="checkbox"/>	MPS1-0960-PC	20.7	44.5	44.5	90.5	89	1.5	10	2
	8	<input checked="" type="checkbox"/>	MPS1-0960-L8C	78.8	112.0	115.0	156.0	154	2.0	10	2
	10	<input type="checkbox"/>	MPS1-0960-L10C	97.7	131.7	134.7	175.7	174	1.7	10	2
	12	<input checked="" type="checkbox"/>	MPS1-0960-L12C	116.9	151.7	154.7	195.7	194	1.7	10	2
	15	<input checked="" type="checkbox"/>	MPS1-0960-L15C	145.7	181.7	184.7	225.7	224	1.7	10	2
	20	<input type="checkbox"/>	MPS1-0960-L20C	193.7	231.7	234.7	275.7	274	1.7	10	2
	25	<input type="checkbox"/>	MPS1-0960-L25C	241.7	281.7	284.7	325.7	324	1.7	10	2
	30	<input type="checkbox"/>	MPS1-0960-L30C	289.7	331.7	334.7	375.7	374	1.7	10	2
	35	<input type="checkbox"/>	MPS1-0960-L35C	337.7	381.7	383.7	424.7	423	1.7	10	2
9.7	3	<input type="checkbox"/>	MPS1-0970S-DIN	32.2	46.8	47.8	88.8	87	1.8	10	4
	3	<input checked="" type="checkbox"/>	MPS1-0970S-DIN-C	32.2	46.8	47.8	88.8	87	1.8	10	2
	5	<input type="checkbox"/>	MPS1-0970L-DIN	46.2	60.8	61.8	102.8	101	1.8	10	4
	5	<input checked="" type="checkbox"/>	MPS1-0970L-DIN-C	46.2	60.8	61.8	102.8	101	1.8	10	2
	2	<input checked="" type="checkbox"/>	MPS1-0970-PC	20.9	44.5	44.5	90.5	89	1.5	10	2
	8	<input checked="" type="checkbox"/>	MPS1-0970-L8C	79.6	112.0	115.0	156.0	154	2.0	10	2
	10	<input type="checkbox"/>	MPS1-0970-L10C	98.8	131.8	134.8	175.8	174	1.8	10	2
	12	<input checked="" type="checkbox"/>	MPS1-0970-L12C	118.2	151.8	154.8	195.8	194	1.8	10	2
	15	<input checked="" type="checkbox"/>	MPS1-0970-L15C	147.3	181.8	184.8	225.8	224	1.8	10	2
	20	<input type="checkbox"/>	MPS1-0970-L20C	195.8	231.8	234.8	275.8	274	1.8	10	2
	25	<input type="checkbox"/>	MPS1-0970-L25C	244.3	281.8	284.8	325.8	324	1.8	10	2
	30	<input type="checkbox"/>	MPS1-0970-L30C	292.8	331.8	334.8	375.8	374	1.8	10	2
	35	<input type="checkbox"/>	MPS1-0970-L35C	341.3	381.8	383.8	424.8	423	1.8	10	2
9.8	3	<input type="checkbox"/>	MPS1-0980S-DIN	32.1	46.8	47.8	88.8	87	1.8	10	4
	3	<input checked="" type="checkbox"/>	MPS1-0980S-DIN-C	32.1	46.8	47.8	88.8	87	1.8	10	2
	5	<input type="checkbox"/>	MPS1-0980L-DIN	46.1	60.8	61.8	102.8	101	1.8	10	4
	5	<input checked="" type="checkbox"/>	MPS1-0980L-DIN-C	46.1	60.8	61.8	102.8	101	1.8	10	2
	2	<input checked="" type="checkbox"/>	MPS1-0980-PC	21.1	44.5	44.5	90.5	89	1.5	10	2
	8	<input checked="" type="checkbox"/>	MPS1-0980-L8C	80.4	112.0	115.0	156.0	154	2.0	10	2
	10	<input type="checkbox"/>	MPS1-0980-L10C	99.8	131.8	134.8	175.8	174	1.8	10	2
	12	<input checked="" type="checkbox"/>	MPS1-0980-L12C	119.4	151.8	154.8	195.8	194	1.8	10	2
	15	<input checked="" type="checkbox"/>	MPS1-0980-L15C	148.8	181.8	184.8	225.8	224	1.8	10	2
	20	<input checked="" type="checkbox"/>	MPS1-0980-L20C	197.8	231.8	234.8	275.8	274	1.8	10	2
	25	<input type="checkbox"/>	MPS1-0980-L25C	246.8	281.8	284.8	325.8	324	1.8	10	2
	30	<input checked="" type="checkbox"/>	MPS1-0980-L30C	295.8	331.8	334.8	375.8	374	1.8	10	2
	35	<input type="checkbox"/>	MPS1-0980-L35C	344.8	381.8	383.8	424.8	423	1.8	10	2
9.9	3	<input type="checkbox"/>	MPS1-0990S-DIN	32.0	46.8	47.8	88.8	87	1.8	10	4
	3	<input checked="" type="checkbox"/>	MPS1-0990S-DIN-C	32.0	46.8	47.8	88.8	87	1.8	10	2
	5	<input type="checkbox"/>	MPS1-0990L-DIN	46.0	60.8	61.8	102.8	101	1.8	10	4
	5	<input checked="" type="checkbox"/>	MPS1-0990L-DIN-C	46.0	60.8	61.8	102.8	101	1.8	10	2
	2	<input checked="" type="checkbox"/>	MPS1-0990-PC	21.4	44.6	44.6	90.6	89	1.6	10	2
	8	<input checked="" type="checkbox"/>	MPS1-0990-L8C	81.3	112.1	115.1	156.1	154	2.1	10	2
	10	<input type="checkbox"/>	MPS1-0990-L10C	100.8	131.8	134.8	175.8	174	1.8	10	2
	12	<input checked="" type="checkbox"/>	MPS1-0990-L12C	120.6	151.8	154.8	195.8	194	1.8	10	2
	15	<input checked="" type="checkbox"/>	MPS1-0990-L15C	150.3	181.8	184.8	225.8	224	1.8	10	2
	20	<input type="checkbox"/>	MPS1-0990-L20C	199.8	231.8	234.8	275.8	274	1.8	10	2
	25	<input type="checkbox"/>	MPS1-0990-L25C	249.3	281.8	284.8	325.8	324	1.8	10	2
	30	<input type="checkbox"/>	MPS1-0990-L30C	298.8	331.8	334.8	375.8	374	1.8	10	2
	35	<input type="checkbox"/>	MPS1-0990-L35C	348.3	381.8	383.8	424.8	423	1.8	10	2

● : Avrupa standart stok. □ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
10.0	3	□	MPS1-1000S-DIN	31.8	46.8	47.8	88.8	87	1.8	10	4
	3	●	MPS1-1000S-DIN-C	31.8	46.8	47.8	88.8	87	1.8	10	2
	5	□	MPS1-1000L-DIN	45.8	60.8	61.8	102.8	101	1.8	10	4
	5	●	MPS1-1000L-DIN-C	45.8	60.8	61.8	102.8	101	1.8	10	2
	2	●	MPS1-1000-PC	21.6	44.6	44.6	90.6	89	1.6	10	2
	8	●	MPS1-1000-L8C	82.1	112.1	115.1	156.1	154	2.1	10	2
	10	●	MPS1-1000-L10C	101.8	131.8	134.8	175.8	174	1.8	10	2
	12	●	MPS1-1000-L12C	121.8	151.8	154.8	195.8	194	1.8	10	2
	15	●	MPS1-1000-L15C	151.8	181.8	184.8	225.8	224	1.8	10	2
	20	●	MPS1-1000-L20C	201.8	231.8	234.8	275.8	274	1.8	10	2
	25	●	MPS1-1000-L25C	251.8	281.8	284.8	325.8	324	1.8	10	2
	30	●	MPS1-1000-L30C	301.8	331.8	334.8	375.8	374	1.8	10	2
	35	□	MPS1-1000-L35C	351.8	381.8	383.8	424.8	423	1.8	10	2
	10.05	3	□	MPS1-1005S-DIN	39.8	54.8	55.8	101.8	100	1.8	12
3		●	MPS1-1005S-DIN-C	39.8	54.8	55.8	101.8	100	1.8	12	2
5		□	MPS1-1005L-DIN	55.8	70.8	71.8	117.8	116	1.8	12	4
5		●	MPS1-1005L-DIN-C	55.8	70.8	71.8	117.8	116	1.8	12	2
5		□	MPS1-1010S-DIN	39.7	54.8	55.8	101.8	100	1.8	12	4
10.1	3	●	MPS1-1010S-DIN-C	39.7	54.8	55.8	101.8	100	1.8	12	2
	5	□	MPS1-1010L-DIN	55.7	70.8	71.8	117.8	116	1.8	12	4
	5	●	MPS1-1010L-DIN-C	55.7	70.8	71.8	117.8	116	1.8	12	2
	2	●	MPS1-1010-PC	21.8	44.6	47.6	96.6	95	1.6	12	2
	8	●	MPS1-1010-L8C	82.9	118.1	121.1	167.1	165	2.1	12	2
	10	□	MPS1-1010-L10C	102.8	138.8	141.8	187.8	186	1.8	12	2
	12	●	MPS1-1010-L12C	123.0	159.8	162.8	208.8	207	1.8	12	2
	15	●	MPS1-1010-L15C	153.3	190.8	193.8	239.8	238	1.8	12	2
	20	●	MPS1-1010-L20C	203.8	243.8	246.8	292.8	291	1.8	12	2
	25	□	MPS1-1010-L25C	254.3	295.8	298.8	344.8	343	1.8	12	2
	10.2	3	□	MPS1-1020S-DIN	39.6	54.9	55.9	101.9	100	1.9	12
3		●	MPS1-1020S-DIN-C	39.6	54.9	55.9	101.9	100	1.9	12	2
5		□	MPS1-1020L-DIN	55.6	70.9	71.9	117.9	116	1.9	12	4
5		●	MPS1-1020L-DIN-C	55.6	70.9	71.9	117.9	116	1.9	12	2
2		●	MPS1-1020-PC	22.0	44.6	47.6	96.6	95	1.6	12	2
8		●	MPS1-1020-L8C	83.7	118.1	121.1	167.1	165	2.1	12	2
10		□	MPS1-1020-L10C	103.9	138.9	141.9	187.9	186	1.9	12	2
12		●	MPS1-1020-L12C	124.3	159.9	162.9	208.9	207	1.9	12	2
15		●	MPS1-1020-L15C	154.9	190.9	193.9	239.9	238	1.9	12	2
20		●	MPS1-1020-L20C	205.9	243.9	246.9	292.9	291	1.9	12	2
25		□	MPS1-1020-L25C	256.9	295.9	298.9	344.9	343	1.9	12	2
10.3	3	□	MPS1-1030S-DIN	39.4	54.9	55.9	101.9	100	1.9	12	4
	3	●	MPS1-1030S-DIN-C	39.4	54.9	55.9	101.9	100	1.9	12	2
	5	□	MPS1-1030L-DIN	55.4	70.9	71.9	117.9	116	1.9	12	4
	5	●	MPS1-1030L-DIN-C	55.4	70.9	71.9	117.9	116	1.9	12	2
	2	●	MPS1-1030-PC	22.2	44.6	47.6	96.6	95	1.6	12	2
	8	●	MPS1-1030-L8C	84.5	118.1	121.1	167.1	165	2.1	12	2
	10	□	MPS1-1030-L10C	104.9	138.9	141.9	187.9	186	1.9	12	2
	12	●	MPS1-1030-L12C	125.5	159.9	162.9	208.9	207	1.9	12	2
	15	□	MPS1-1030-L15C	156.4	190.9	193.9	239.9	238	1.9	12	2
	20	□	MPS1-1030-L20C	207.9	243.9	246.9	292.9	291	1.9	12	2
	25	□	MPS1-1030-L25C	259.4	295.9	298.9	344.9	343	1.9	12	2

DC	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip	
				LU	LCF	LH	OAL	LF	PL	DCONMS		
10.4	3	□	MPS1-1040S-DIN	39.3	54.9	55.9	101.9	100	1.9	12	4	
	3	●	MPS1-1040S-DIN-C	39.3	54.9	55.9	101.9	100	1.9	12	2	
	5	□	MPS1-1040L-DIN	55.3	70.9	71.9	117.9	116	1.9	12	4	
	5	●	MPS1-1040L-DIN-C	55.3	70.9	71.9	117.9	116	1.9	12	2	
	2	●	MPS1-1040-PC	22.4	44.6	47.6	96.6	95	1.6	12	2	
	8	●	MPS1-1040-L8C	85.4	118.2	121.2	167.2	165	2.2	12	2	
	10	□	MPS1-1040-L10C	105.9	138.9	141.9	187.9	186	1.9	12	2	
	12	●	MPS1-1040-L12C	126.7	159.9	162.9	208.9	207	1.9	12	2	
	15	□	MPS1-1040-L15C	157.9	190.9	193.9	239.9	238	1.9	12	2	
	20	□	MPS1-1040-L20C	209.9	243.9	246.9	292.9	291	1.9	12	2	
	25	□	MPS1-1040-L25C	261.9	295.9	298.9	344.9	343	1.9	12	2	
	10.5	3	□	MPS1-1050S-DIN	39.2	54.9	55.9	101.9	100	1.9	12	4
		3	●	MPS1-1050S-DIN-C	39.2	54.9	55.9	101.9	100	1.9	12	2
		5	□	MPS1-1050L-DIN	55.2	70.9	71.9	117.9	116	1.9	12	4
5		●	MPS1-1050L-DIN-C	55.2	70.9	71.9	117.9	116	1.9	12	2	
2		●	MPS1-1050-PC	22.7	44.7	47.7	96.7	95	1.7	12	2	
8		●	MPS1-1050-L8C	86.2	118.2	121.2	167.2	165	2.2	12	2	
10		□	MPS1-1050-L10C	106.9	138.9	141.9	187.9	186	1.9	12	2	
12		●	MPS1-1050-L12C	127.9	159.9	162.9	208.9	207	1.9	12	2	
15		●	MPS1-1050-L15C	159.4	190.9	193.9	239.9	238	1.9	12	2	
20		●	MPS1-1050-L20C	211.9	243.9	246.9	292.9	291	1.9	12	2	
25		●	MPS1-1050-L25C	264.4	295.9	298.9	344.9	343	1.9	12	2	
10.6	3	□	MPS1-1060S-DIN	39.0	54.9	55.9	101.9	100	1.9	12	4	
	3	●	MPS1-1060S-DIN-C	39.0	54.9	55.9	101.9	100	1.9	12	2	
	5	□	MPS1-1060L-DIN	55.0	70.9	71.9	117.9	116	1.9	12	4	
	5	●	MPS1-1060L-DIN-C	55.0	70.9	71.9	117.9	116	1.9	12	2	
	2	□	MPS1-1060-PC	22.9	48.7	49.7	96.7	95	1.7	12	2	
	8	●	MPS1-1060-L8C	87.0	123.2	126.2	172.2	170	2.2	12	2	
	10	□	MPS1-1060-L10C	107.9	144.9	147.9	193.9	192	1.9	12	2	
	12	□	MPS1-1060-L12C	129.1	166.9	169.9	215.9	214	1.9	12	2	
	15	□	MPS1-1060-L15C	160.9	199.9	202.9	248.9	247	1.9	12	2	
	20	□	MPS1-1060-L20C	213.9	254.9	257.9	303.9	302	1.9	12	2	
	25	□	MPS1-1060-L25C	266.9	309.9	312.9	358.9	357	1.9	12	2	
10.7	3	□	MPS1-1070S-DIN	38.9	54.9	55.9	101.9	100	1.9	12	4	
	3	●	MPS1-1070S-DIN-C	38.9	54.9	55.9	101.9	100	1.9	12	2	
	5	□	MPS1-1070L-DIN	54.9	70.9	71.9	117.9	116	1.9	12	4	
	5	●	MPS1-1070L-DIN-C	54.9	70.9	71.9	117.9	116	1.9	12	2	
	2	●	MPS1-1070-PC	23.1	48.7	49.7	96.7	95	1.7	12	2	
	8	●	MPS1-1070-L8C	87.8	123.2	126.2	172.2	170	2.2	12	2	
	10	□	MPS1-1070-L10C	108.9	144.9	147.9	193.9	192	1.9	12	2	
	12	●	MPS1-1070-L12C	130.3	166.9	169.9	215.9	214	1.9	12	2	
	15	□	MPS1-1070-L15C	162.4	199.9	202.9	248.9	247	1.9	12	2	
	20	□	MPS1-1070-L20C	215.9	254.9	257.9	303.9	302	1.9	12	2	
	25	□	MPS1-1070-L25C	269.4	309.9	312.9	358.9	357	1.9	12	2	
10.8	3	□	MPS1-1080S-DIN	38.8	55.0	56.0	102.0	100	2.0	12	4	
	3	●	MPS1-1080S-DIN-C	38.8	55.0	56.0	102.0	100	2.0	12	2	
	5	□	MPS1-1080L-DIN	54.8	71.0	72.0	118.0	116	2.0	12	4	
	5	●	MPS1-1080L-DIN-C	54.8	71.0	72.0	118.0	116	2.0	12	2	
	2	●	MPS1-1080-PC	23.3	48.7	49.7	96.7	95	1.7	12	2	
	8	●	MPS1-1080-L8C	88.6	123.2	126.2	172.2	170	2.2	12	2	
	10	□	MPS1-1080-L10C	110.0	145.0	148.0	194.0	192	2.0	12	2	
	12	●	MPS1-1080-L12C	131.6	167.0	170.0	216.0	214	2.0	12	2	
	15	□	MPS1-1080-L15C	164.0	200.0	203.0	249.0	247	2.0	12	2	
	20	□	MPS1-1080-L20C	218.0	255.0	258.0	304.0	302	2.0	12	2	
	25	□	MPS1-1080-L25C	272.0	310.0	313.0	359.0	357	2.0	12	2	

DELME (YEKPARE KARBÜR)

MPS1

4 Zırlı ve Süper Uzun Matkap Ucu

KARBÜR

M
DELME

DC	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCNMS	
10.9	3	<input type="checkbox"/>	MPS1-1090S-DIN	38.6	55.0	56.0	102.0	100	2.0	12	4
	3	<input checked="" type="checkbox"/>	MPS1-1090S-DIN-C	38.6	55.0	56.0	102.0	100	2.0	12	2
	5	<input type="checkbox"/>	MPS1-1090L-DIN	54.6	71.0	72.0	118.0	116	2.0	12	4
	5	<input checked="" type="checkbox"/>	MPS1-1090L-DIN-C	54.6	71.0	72.0	118.0	116	2.0	12	2
	2	<input type="checkbox"/>	MPS1-1090-PC	23.5	48.7	49.7	96.7	95	1.7	12	2
	8	<input checked="" type="checkbox"/>	MPS1-1090-L8C	89.5	123.3	126.3	172.3	170	2.3	12	2
	10	<input type="checkbox"/>	MPS1-1090-L10C	111.0	145.0	148.0	194.0	192	2.0	12	2
	12	<input type="checkbox"/>	MPS1-1090-L12C	132.8	167.0	170.0	216.0	214	2.0	12	2
	15	<input type="checkbox"/>	MPS1-1090-L15C	165.5	200.0	203.0	249.0	247	2.0	12	2
	20	<input type="checkbox"/>	MPS1-1090-L20C	220.0	255.0	258.0	304.0	302	2.0	12	2
	25	<input type="checkbox"/>	MPS1-1090-L25C	274.5	310.0	313.0	359.0	357	2.0	12	2
	11.0	3	<input type="checkbox"/>	MPS1-1100S-DIN	38.5	55.0	56.0	102.0	100	2.0	12
3		<input checked="" type="checkbox"/>	MPS1-1100S-DIN-C	38.5	55.0	56.0	102.0	100	2.0	12	2
5		<input type="checkbox"/>	MPS1-1100L-DIN	54.5	71.0	72.0	118.0	116	2.0	12	4
5		<input checked="" type="checkbox"/>	MPS1-1100L-DIN-C	54.5	71.0	72.0	118.0	116	2.0	12	2
2		<input checked="" type="checkbox"/>	MPS1-1100-PC	23.7	48.7	49.7	96.7	95	1.7	12	2
8		<input checked="" type="checkbox"/>	MPS1-1100-L8C	90.3	123.3	126.3	172.3	170	2.3	12	2
10		<input type="checkbox"/>	MPS1-1100-L10C	112.0	145.0	148.0	194.0	192	2.0	12	2
12		<input checked="" type="checkbox"/>	MPS1-1100-L12C	134.0	167.0	170.0	216.0	214	2.0	12	2
15		<input checked="" type="checkbox"/>	MPS1-1100-L15C	167.0	200.0	203.0	249.0	247	2.0	12	2
20		<input checked="" type="checkbox"/>	MPS1-1100-L20C	222.0	255.0	258.0	304.0	302	2.0	12	2
25		<input checked="" type="checkbox"/>	MPS1-1100-L25C	277.0	310.0	313.0	359.0	357	2.0	12	2
11.1		3	<input type="checkbox"/>	MPS1-1110S-DIN	38.4	55.0	56.0	102.0	100	2.0	12
	3	<input checked="" type="checkbox"/>	MPS1-1110S-DIN-C	38.4	55.0	56.0	102.0	100	2.0	12	2
	5	<input type="checkbox"/>	MPS1-1110L-DIN	54.4	71.0	72.0	118.0	116	2.0	12	4
	5	<input checked="" type="checkbox"/>	MPS1-1110L-DIN-C	54.4	71.0	72.0	118.0	116	2.0	12	2
	2	<input checked="" type="checkbox"/>	MPS1-1110-PC	23.9	48.7	51.7	96.7	95	1.7	12	2
	8	<input checked="" type="checkbox"/>	MPS1-1110-L8C	91.1	129.3	132.3	178.3	176	2.3	12	2
	10	<input type="checkbox"/>	MPS1-1110-L10C	113.0	152.0	155.0	201.0	199	2.0	12	2
	12	<input checked="" type="checkbox"/>	MPS1-1110-L12C	135.2	175.0	178.0	224.0	222	2.0	12	2
	15	<input checked="" type="checkbox"/>	MPS1-1110-L15C	168.5	209.0	212.0	258.0	256	2.0	12	2
	20	<input type="checkbox"/>	MPS1-1110-L20C	224.0	267.0	270.0	316.0	314	2.0	12	2
	25	<input checked="" type="checkbox"/>	MPS1-1110-L25C	279.5	324.0	327.0	373.0	371	2.0	12	2
	11.2	3	<input type="checkbox"/>	MPS1-1120S-DIN	38.2	55.0	56.0	102.0	100	2.0	12
3		<input checked="" type="checkbox"/>	MPS1-1120S-DIN-C	38.2	55.0	56.0	102.0	100	2.0	12	2
5		<input type="checkbox"/>	MPS1-1120L-DIN	54.2	71.0	72.0	118.0	116	2.0	12	4
5		<input checked="" type="checkbox"/>	MPS1-1120L-DIN-C	54.2	71.0	72.0	118.0	116	2.0	12	2
2		<input checked="" type="checkbox"/>	MPS1-1120-PC	24.2	48.8	51.8	96.8	95	1.8	12	2
8		<input checked="" type="checkbox"/>	MPS1-1120-L8C	91.9	129.3	132.3	178.3	176	2.3	12	2
10		<input type="checkbox"/>	MPS1-1120-L10C	114.0	152.0	155.0	201.0	199	2.0	12	2
12		<input type="checkbox"/>	MPS1-1120-L12C	136.4	175.0	178.0	224.0	222	2.0	12	2
15		<input checked="" type="checkbox"/>	MPS1-1120-L15C	170.0	209.0	212.0	258.0	256	2.0	12	2
20		<input type="checkbox"/>	MPS1-1120-L20C	226.0	267.0	270.0	316.0	314	2.0	12	2
25		<input type="checkbox"/>	MPS1-1120-L25C	282.0	324.0	327.0	373.0	371	2.0	12	2
11.3		3	<input type="checkbox"/>	MPS1-1130S-DIN	38.1	55.1	56.1	102.1	100	2.1	12
	3	<input checked="" type="checkbox"/>	MPS1-1130S-DIN-C	38.1	55.1	56.1	102.1	100	2.1	12	2
	5	<input type="checkbox"/>	MPS1-1130L-DIN	54.1	71.1	72.1	118.1	116	2.1	12	4
	5	<input checked="" type="checkbox"/>	MPS1-1130L-DIN-C	54.1	71.1	72.1	118.1	116	2.1	12	2
	2	<input type="checkbox"/>	MPS1-1130-PC	24.4	48.8	51.8	96.8	95	1.8	12	2
	8	<input checked="" type="checkbox"/>	MPS1-1130-L8C	92.7	129.3	132.3	178.3	176	2.3	12	2
	10	<input type="checkbox"/>	MPS1-1130-L10C	115.1	152.1	155.1	201.1	199	2.1	12	2
	12	<input type="checkbox"/>	MPS1-1130-L12C	137.7	175.1	178.1	224.1	222	2.1	12	2
	15	<input checked="" type="checkbox"/>	MPS1-1130-L15C	171.6	209.1	212.1	258.1	256	2.1	12	2
	20	<input type="checkbox"/>	MPS1-1130-L20C	228.1	267.1	270.1	316.1	314	2.1	12	2
	25	<input type="checkbox"/>	MPS1-1130-L25C	284.6	324.1	327.1	373.1	371	2.1	12	2

DC	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCNMS	
11.4	3	<input type="checkbox"/>	MPS1-1140S-DIN	38.0	55.1	56.1	102.1	100	2.1	12	4
	3	<input checked="" type="checkbox"/>	MPS1-1140S-DIN-C	38.0	55.1	56.1	102.1	100	2.1	12	2
	5	<input type="checkbox"/>	MPS1-1140L-DIN	54.0	71.1	72.1	118.1	116	2.1	12	4
	5	<input checked="" type="checkbox"/>	MPS1-1140L-DIN-C	54.0	71.1	72.1	118.1	116	2.1	12	2
	2	<input type="checkbox"/>	MPS1-1140-PC	24.6	48.8	51.8	96.8	95	1.8	12	2
	8	<input checked="" type="checkbox"/>	MPS1-1140-L8C	93.6	129.4	132.4	178.4	176	2.4	12	2
	10	<input type="checkbox"/>	MPS1-1140-L10C	116.1	152.1	155.1	201.1	199	2.1	12	2
	12	<input type="checkbox"/>	MPS1-1140-L12C	138.9	175.1	178.1	224.1	222	2.1	12	2
	15	<input type="checkbox"/>	MPS1-1140-L15C	173.1	209.1	212.1	258.1	256	2.1	12	2
	20	<input type="checkbox"/>	MPS1-1140-L20C	230.1	267.1	270.1	316.1	314	2.1	12	2
	25	<input type="checkbox"/>	MPS1-1140-L25C	287.1	324.1	327.1	373.1	371	2.1	12	2
	11.5	3	<input type="checkbox"/>	MPS1-1150S-DIN	37.8	55.1	56.1	102.1	100	2.1	12
3		<input checked="" type="checkbox"/>	MPS1-1150S-DIN-C	37.8	55.1	56.1	102.1	100	2.1	12	2
5		<input type="checkbox"/>	MPS1-1150L-DIN	53.8	71.1	72.1	118.1	116	2.1	12	4
5		<input checked="" type="checkbox"/>	MPS1-1150L-DIN-C	53.8	71.1	72.1	118.1	116	2.1	12	2
2		<input checked="" type="checkbox"/>	MPS1-1150-PC	24.8	48.8	51.8	96.8	95	1.8	12	2
8		<input checked="" type="checkbox"/>	MPS1-1150-L8C	94.4	129.4	132.4	178.4	176	2.4	12	2
10		<input type="checkbox"/>	MPS1-1150-L10C	117.1	152.1	155.1	201.1	199	2.1	12	2
12		<input checked="" type="checkbox"/>	MPS1-1150-L12C	140.1	175.1	178.1	224.1	222	2.1	12	2
15		<input checked="" type="checkbox"/>	MPS1-1150-L15C	174.6	209.1	212.1	258.1	256	2.1	12	2
20		<input checked="" type="checkbox"/>	MPS1-1150-L20C	232.1	267.1	270.1	316.1	314	2.1	12	2
25		<input checked="" type="checkbox"/>	MPS1-1150-L25C	289.6	324.1	327.1	373.1	371	2.1	12	2
11.6		3	<input type="checkbox"/>	MPS1-1160S-DIN	37.7	55.1	56.1	102.1	100	2.1	12
	3	<input checked="" type="checkbox"/>	MPS1-1160S-DIN-C	37.7	55.1	56.1	102.1	100	2.1	12	2
	5	<input type="checkbox"/>	MPS1-1160L-DIN	53.7	71.1	72.1	118.1	116	2.1	12	4
	5	<input checked="" type="checkbox"/>	MPS1-1160L-DIN-C	53.7	71.1	72.1	118.1	116	2.1	12	2
	2	<input type="checkbox"/>	MPS1-1160-PC	25.0	48.8	48.8	96.8	95	1.8	12	2
	8	<input checked="" type="checkbox"/>	MPS1-1160-L8C	95.2	134.4	137.4	183.4	181	2.4	12	2
	10	<input type="checkbox"/>	MPS1-1160-L10C	118.1	158.1	161.1	207.1	205	2.1	12	2
	12	<input type="checkbox"/>	MPS1-1160-L12C	141.3	182.1	185.1	231.1	229	2.1	12	2
	15	<input type="checkbox"/>	MPS1-1160-L15C	176.1	218.1	221.1	267.1	265	2.1	12	2
	20	<input type="checkbox"/>	MPS1-1160-L20C	234.1	278.1	281.1	327.1	325	2.1	12	2
	25	<input type="checkbox"/>	MPS1-1160-L25C	292.1	338.1	341.1	387.1	385	2.1	12	2
	11.7	3	<input type="checkbox"/>	MPS1-1170S-DIN	37.6	55.1	56.1	102.1	100	2.1	12
3		<input checked="" type="checkbox"/>	MPS1-1170S-DIN-C	37.6	55.1	56.1	102.1	100	2.1	12	2
5		<input type="checkbox"/>	MPS1-1170L-DIN	53.6	71.1	72.1	118.1	116	2.1	12	4
5		<input checked="" type="checkbox"/>	MPS1-1170L-DIN-C	53.6	71.1	72.1	118.1	116	2.1	12	2
2		<input checked="" type="checkbox"/>	MPS1-1170-PC	25.2	48.8	48.8	96.8	95	1.8	12	2
8		<input checked="" type="checkbox"/>	MPS1-1170-L8C	96.0	134.4	137.4	183.4	181	2.4	12	2
10		<input type="checkbox"/>	MPS1-1170-L10C	119.1	158.1	161.1	207.1	205	2.1	12	2
12		<input checked="" type="checkbox"/>	MPS1-1170-L12C	142.5	182.1	185.1	231.1	229	2.1	12	2
15		<input checked="" type="checkbox"/>	MPS1-1170-L15C	177.6	218.1	221.1	267.1	265	2.1	12	2
20		<input type="checkbox"/>	MPS1-1170-L20C	236.1	278.1	281.1	327.1	325	2.1	12	2
25		<input type="checkbox"/>	MPS1-1170-L25C	294.6	338.1	341.1	387.1	385	2.1	12	2
11.8		3	<input type="checkbox"/>	MPS1-1180S-DIN	37.4	55.1	56.1	102.1	100	2.1	12
	3	<input checked="" type="checkbox"/>	MPS1-1180S-DIN-C	37.4	55.1	56.1	102.1	100	2.1	12	2
	5	<input type="checkbox"/>	MPS1-1180L-DIN	53.4	71.1	72.1	118.1	116	2.1	12	4
	5	<input checked="" type="checkbox"/>	MPS1-1180L-DIN-C	53.4	71.1	72.1	118.1	116	2.1	12	2
	2	<input checked="" type="checkbox"/>	MPS1-1180-PC	25.5	48.9	48.9	96.9	95	1.9	12	2
	8	<input checked="" type="checkbox"/>	MPS1-1180-L8C	96.8	134.4	137.4	183.4	181	2.4	12	2
	10	<input type="checkbox"/>	MPS1-1180-L10C	120.1	158.1	161.1	207.1	205	2.1	12	2
	12	<input checked="" type="checkbox"/>	MPS1-1180-L12C	143.7	182.1	185.1	231.1	229	2.1	12	2
	15	<input checked="" type="checkbox"/>	MPS1-1180-L15C	179.1	218.1	221.1	267.1	265	2.1	12	2
	20	<input type="checkbox"/>	MPS1-1180-L20C	238.1	278.1	281.1	327.1	325	2.1	12	2
	25	<input type="checkbox"/>	MPS1-1180-L25C	297.1	338.1	341.1	387.1	385	2.1	12	2

● : Avrupa standart stok. □ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)								Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS		
11.9	3	□	MPS1-1190S-DIN	37.3	55.2	56.2	102.2	100	2.2	12	4	
	3	●	MPS1-1190S-DIN-C	37.3	55.2	56.2	102.2	100	2.2	12	2	
	5	□	MPS1-1190L-DIN	53.3	71.2	72.2	118.2	116	2.2	12	4	
	5	●	MPS1-1190L-DIN-C	53.3	71.2	72.2	118.2	116	2.2	12	2	
	2	□	MPS1-1190-PC	25.7	48.9	48.9	96.9	95	1.9	12	2	
	8	●	MPS1-1190-L8C	97.7	134.5	137.5	183.5	181	2.5	12	2	
	10	□	MPS1-1190-L10C	121.2	158.2	161.2	207.2	205	2.2	12	2	
	12	□	MPS1-1190-L12C	145.0	182.2	185.2	231.2	229	2.2	12	2	
	15	□	MPS1-1190-L15C	180.7	218.2	221.2	267.2	265	2.2	12	2	
	20	□	MPS1-1190-L20C	240.2	278.2	281.2	327.2	325	2.2	12	2	
	25	□	MPS1-1190-L25C	299.7	338.2	341.2	387.2	385	2.2	12	2	
	12.0	3	□	MPS1-1200S-DIN	37.2	55.2	56.2	102.2	100	2.2	12	4
3		●	MPS1-1200S-DIN-C	37.2	55.2	56.2	102.2	100	2.2	12	2	
5		□	MPS1-1200L-DIN	53.2	71.2	72.2	118.2	116	2.2	12	4	
5		●	MPS1-1200L-DIN-C	53.2	71.2	72.2	118.2	116	2.2	12	2	
2		●	MPS1-1200-PC	25.9	48.9	48.9	96.9	95	1.9	12	2	
8		●	MPS1-1200-L8C	98.5	134.5	137.5	183.5	181	2.5	12	2	
10		□	MPS1-1200-L10C	122.2	158.2	161.2	207.2	205	2.2	12	2	
12		●	MPS1-1200-L12C	146.2	182.2	185.2	231.2	229	2.2	12	2	
15		●	MPS1-1200-L15C	182.2	218.2	221.2	267.2	265	2.2	12	2	
20		●	MPS1-1200-L20C	242.2	278.2	281.2	327.2	325	2.2	12	2	
25		●	MPS1-1200-L25C	302.2	338.2	341.2	387.2	385	2.2	12	2	
12.05		3	□	MPS1-1205S-DIN	42.1	60.2	61.2	107.2	105	2.2	14	4
	3	●	MPS1-1205S-DIN-C	42.1	60.2	61.2	107.2	105	2.2	14	2	
	5	□	MPS1-1205L-DIN	59.1	77.2	78.2	124.2	122	2.2	14	4	
	5	●	MPS1-1205L-DIN-C	59.1	77.2	78.2	124.2	122	2.2	14	2	
12.1	3	□	MPS1-1210S-DIN	42.1	60.2	61.2	107.2	105	2.2	14	4	
	3	●	MPS1-1210S-DIN-C	42.1	60.2	61.2	107.2	105	2.2	14	2	
	5	□	MPS1-1210L-DIN	59.1	77.2	78.2	124.2	122	2.2	14	4	
	5	●	MPS1-1210L-DIN-C	59.1	77.2	78.2	124.2	122	2.2	14	2	
	2	●	MPS1-1210-PC	26.1	52.9	55.9	103.9	102	1.9	14	2	
	8	●	MPS1-1210-L8C	99.3	140.5	143.5	189.5	187	2.5	14	2	
	10	□	MPS1-1210-L10C	123.2	165.2	168.2	214.2	212	2.2	14	2	
	12	●	MPS1-1210-L12C	147.4	190.2	193.2	239.2	237	2.2	14	2	
	15	●	MPS1-1210-L15C	183.7	227.2	230.2	276.2	274	2.2	14	2	
	20	□	MPS1-1210-L20C	244.2	290.2	293.2	339.2	337	2.2	14	2	
12.2	3	□	MPS1-1220S-DIN	41.9	60.2	61.2	107.2	105	2.2	14	4	
	3	●	MPS1-1220S-DIN-C	41.9	60.2	61.2	107.2	105	2.2	14	2	
	5	□	MPS1-1220L-DIN	58.9	77.2	78.2	124.2	122	2.2	14	4	
	5	●	MPS1-1220L-DIN-C	58.9	77.2	78.2	124.2	122	2.2	14	2	
	2	●	MPS1-1220-PC	26.3	52.9	55.9	103.9	102	1.9	14	2	
	8	●	MPS1-1220-L8C	100.1	140.5	143.5	189.5	187	2.5	14	2	
	10	□	MPS1-1220-L10C	124.2	165.2	168.2	214.2	212	2.2	14	2	
	12	●	MPS1-1220-L12C	148.6	190.2	193.2	239.2	237	2.2	14	2	
	15	●	MPS1-1220-L15C	185.2	227.2	230.2	276.2	274	2.2	14	2	
	20	□	MPS1-1220-L20C	246.2	290.2	293.2	339.2	337	2.2	14	2	
12.3	3	□	MPS1-1230S-DIN	41.8	60.2	61.2	107.2	105	2.2	14	4	
	3	●	MPS1-1230S-DIN-C	41.8	60.2	61.2	107.2	105	2.2	14	2	
	5	□	MPS1-1230L-DIN	58.8	77.2	78.2	124.2	122	2.2	14	4	
	5	●	MPS1-1230L-DIN-C	58.8	77.2	78.2	124.2	122	2.2	14	2	
	2	□	MPS1-1230-PC	26.5	52.9	55.9	103.9	102	1.9	14	2	
	8	●	MPS1-1230-L8C	100.9	140.5	143.5	189.5	187	2.5	14	2	
	10	□	MPS1-1230-L10C	125.2	165.2	168.2	214.2	212	2.2	14	2	
	12	□	MPS1-1230-L12C	149.8	190.2	193.2	239.2	237	2.2	14	2	
	15	□	MPS1-1230-L15C	186.7	227.2	230.2	276.2	274	2.2	14	2	
	20	□	MPS1-1230-L20C	248.2	290.2	293.2	339.2	337	2.2	14	2	

DC	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)								Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS		
12.4	3	□	MPS1-1240S-DIN	41.7	60.3	61.3	107.3	105	2.3	14	4	
	3	●	MPS1-1240S-DIN-C	41.7	60.3	61.3	107.3	105	2.3	14	2	
	5	□	MPS1-1240L-DIN	58.7	77.3	78.3	124.3	122	2.3	14	4	
	5	●	MPS1-1240L-DIN-C	58.7	77.3	78.3	124.3	122	2.3	14	2	
	2	□	MPS1-1240-PC	26.8	53.0	56.0	104.0	102	2.0	14	2	
	8	●	MPS1-1240-L8C	101.8	140.6	143.6	189.6	187	2.6	14	2	
	10	□	MPS1-1240-L10C	126.3	165.3	168.3	214.3	212	2.3	14	2	
	12	□	MPS1-1240-L12C	151.1	190.3	193.3	239.3	237	2.3	14	2	
	15	□	MPS1-1240-L15C	188.3	227.3	230.3	276.3	274	2.3	14	2	
	20	□	MPS1-1240-L20C	250.3	290.3	293.3	339.3	337	2.3	14	2	
	12.5	3	□	MPS1-1250S-DIN	41.5	60.3	61.3	107.3	105	2.3	14	4
		3	●	MPS1-1250S-DIN-C	41.5	60.3	61.3	107.3	105	2.3	14	2
5		□	MPS1-1250L-DIN	58.5	77.3	78.3	124.3	122	2.3	14	4	
5		●	MPS1-1250L-DIN-C	58.5	77.3	78.3	124.3	122	2.3	14	2	
2		●	MPS1-1250-PC	27.0	53.0	56.0	104.0	102	2.0	14	2	
8		●	MPS1-1250-L8C	102.6	140.6	143.6	189.6	187	2.6	14	2	
10		□	MPS1-1250-L10C	127.3	165.3	168.3	214.3	212	2.3	14	2	
12		●	MPS1-1250-L12C	152.3	190.3	193.3	239.3	237	2.3	14	2	
15		●	MPS1-1250-L15C	189.8	227.3	230.3	276.3	274	2.3	14	2	
20		□	MPS1-1250-L20C	252.3	290.3	293.3	339.3	337	2.3	14	2	
12.6	3	□	MPS1-1260S-DIN	41.4	60.3	61.3	107.3	105	2.3	14	4	
	3	●	MPS1-1260S-DIN-C	41.4	60.3	61.3	107.3	105	2.3	14	2	
	5	□	MPS1-1260L-DIN	58.4	77.3	78.3	124.3	122	2.3	14	4	
	5	●	MPS1-1260L-DIN-C	58.4	77.3	78.3	124.3	122	2.3	14	2	
	2	□	MPS1-1260-PC	27.2	53.0	55.0	104.0	102	2.0	14	2	
	8	●	MPS1-1260-L8C	103.4	145.6	148.6	194.6	192	2.6	14	2	
	10	□	MPS1-1260-L10C	128.3	171.3	174.3	220.3	218	2.3	14	2	
	12	□	MPS1-1260-L12C	153.5	197.3	200.3	246.3	244	2.3	14	2	
	15	□	MPS1-1260-L15C	191.3	236.3	239.3	285.3	283	2.3	14	2	
	20	□	MPS1-1260-L20C	254.3	301.3	304.3	350.3	348	2.3	14	2	
12.7	3	□	MPS1-1270S-DIN	41.3	60.3	61.3	107.3	105	2.3	14	4	
	3	●	MPS1-1270S-DIN-C	41.3	60.3	61.3	107.3	105	2.3	14	2	
	5	□	MPS1-1270L-DIN	58.3	77.3	78.3	124.3	122	2.3	14	4	
	5	●	MPS1-1270L-DIN-C	58.3	77.3	78.3	124.3	122	2.3	14	2	
	2	□	MPS1-1270-PC	27.4	53.0	55.0	104.0	102	2.0	14	2	
	8	●	MPS1-1270-L8C	104.2	145.6	148.6	194.6	192	2.6	14	2	
	10	□	MPS1-1270-L10C	129.3	171.3	174.3	220.3	218	2.3	14	2	
	12	●	MPS1-1270-L12C	154.7	197.3	200.3	246.3	244	2.3	14	2	
	15	□	MPS1-1270-L15C	192.8	236.3	239.3	285.3	283	2.3	14	2	
	20	□	MPS1-1270-L20C	256.3	301.3	304.3	350.3	348	2.3	14	2	
12.8	3	□	MPS1-1280S-DIN	41.1	60.3	61.3	107.3	105	2.3	14	4	
	3	●	MPS1-1280S-DIN-C	41.1	60.3	61.3	107.3	105	2.3	14	2	
	5	□	MPS1-1280L-DIN	58.1	77.3	78.3	124.3	122	2.3	14	4	
	5	●	MPS1-1280L-DIN-C	58.1	77.3	78.3	124.3	122	2.3	14	2	
	2	●	MPS1-1280-PC	27.6	53.0	55.0	104.0	102	2.0	14	2	
	8	●	MPS1-1280-L8C	105.1	145.7	148.7	194.7	192	2.7	14	2	
	10	□	MPS1-1280-L10C	130.3	171.3	174.3	220.3	218	2.3	14	2	
	12	●	MPS1-1280-L12C	155.9	197.3	200.3	246.3	244	2.3	14	2	
	15	□	MPS1-1280-L15C	194.3	236.3	239.3	285.3	283	2.3	14	2	
	20	□	MPS1-1280-L20C	258.3	301.3	304.3	350.3	348	2.3	14	2	

DC	Delik Derinliği (mm)	DP1021	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCNMMS	
12.9	3	□	MPS1-1290S-DIN	41.0	60.3	61.3	107.3	105	2.3	14	4
	3	●	MPS1-1290S-DIN-C	41.0	60.3	61.3	107.3	105	2.3	14	2
	5	□	MPS1-1290L-DIN	58.0	77.3	78.3	124.3	122	2.3	14	4
	5	●	MPS1-1290L-DIN-C	58.0	77.3	78.3	124.3	122	2.3	14	2
	2	□	MPS1-1290-PC	27.8	53.0	55.0	104.0	102	2.0	14	2
	8	●	MPS1-1290-L8C	105.9	145.7	148.7	194.7	192	2.7	14	2
	10	□	MPS1-1290-L10C	131.3	171.3	174.3	220.3	218	2.3	14	2
	12	□	MPS1-1290-L12C	157.1	197.3	200.3	246.3	244	2.3	14	2
	15	□	MPS1-1290-L15C	195.8	236.3	239.3	285.3	283	2.3	14	2
	20	□	MPS1-1290-L20C	260.3	301.3	304.3	350.3	348	2.3	14	2
13.0	3	□	MPS1-1300S-DIN	40.9	60.4	61.4	107.4	105	2.4	14	4
	3	●	MPS1-1300S-DIN-C	40.9	60.4	61.4	107.4	105	2.4	14	2
	5	□	MPS1-1300L-DIN	57.9	77.4	78.4	124.4	122	2.4	14	4
	5	●	MPS1-1300L-DIN-C	57.9	77.4	78.4	124.4	122	2.4	14	2
	2	●	MPS1-1300-PC	28.0	53.0	55.0	104.0	102	2.0	14	2
	8	●	MPS1-1300-L8C	106.7	145.7	148.7	194.7	192	2.7	14	2
	10	□	MPS1-1300-L10C	132.4	171.4	174.4	220.4	218	2.4	14	2
	12	●	MPS1-1300-L12C	158.4	197.4	200.4	246.4	244	2.4	14	2
	15	●	MPS1-1300-L15C	197.4	236.4	239.4	285.4	283	2.4	14	2
	20	●	MPS1-1300-L20C	262.4	301.4	304.4	350.4	348	2.4	14	2
13.1	3	□	MPS1-1310S-DIN	40.7	60.4	61.4	107.4	105	2.4	14	4
	3	●	MPS1-1310S-DIN-C	40.7	60.4	61.4	107.4	105	2.4	14	2
	5	□	MPS1-1310L-DIN	57.7	77.4	78.4	124.4	122	2.4	14	4
	5	●	MPS1-1310L-DIN-C	57.7	77.4	78.4	124.4	122	2.4	14	2
	2	□	MPS1-1310-PC	28.3	56.1	59.1	109.1	107	2.1	14	2
	8	●	MPS1-1310-L8C	107.5	151.7	154.7	200.7	198	2.7	14	2
	10	□	MPS1-1310-L10C	133.4	178.4	181.4	227.4	225	2.4	14	2
	12	□	MPS1-1310-L12C	159.6	205.4	208.4	254.4	252	2.4	14	2
	15	□	MPS1-1310-L15C	198.9	245.4	248.4	294.4	292	2.4	14	2
	20	□	MPS1-1310-L20C	264.4	313.4	316.4	362.4	360	2.4	14	2
13.2	3	□	MPS1-1320S-DIN	40.6	60.4	61.4	107.4	105	2.4	14	4
	3	●	MPS1-1320S-DIN-C	40.6	60.4	61.4	107.4	105	2.4	14	2
	5	□	MPS1-1320L-DIN	57.6	77.4	78.4	124.4	122	2.4	14	4
	5	●	MPS1-1320L-DIN-C	57.6	77.4	78.4	124.4	122	2.4	14	2
	2	□	MPS1-1320-PC	28.5	56.1	59.1	109.1	107	2.1	14	2
	8	●	MPS1-1320-L8C	108.3	151.7	154.7	200.7	198	2.7	14	2
	10	□	MPS1-1320-L10C	134.4	178.4	181.4	227.4	225	2.4	14	2
	12	●	MPS1-1320-L12C	160.8	205.4	208.4	254.4	252	2.4	14	2
	15	□	MPS1-1320-L15C	200.4	245.4	248.4	294.4	292	2.4	14	2
	20	□	MPS1-1320-L20C	266.4	313.4	316.4	362.4	360	2.4	14	2
13.3	3	□	MPS1-1330S-DIN	40.5	60.4	61.4	107.4	105	2.4	14	4
	3	●	MPS1-1330S-DIN-C	40.5	60.4	61.4	107.4	105	2.4	14	2
	5	□	MPS1-1330L-DIN	57.5	77.4	78.4	124.4	122	2.4	14	4
	5	●	MPS1-1330L-DIN-C	57.5	77.4	78.4	124.4	122	2.4	14	2
	2	□	MPS1-1330-PC	28.7	56.1	59.1	109.1	107	2.1	14	2
	8	●	MPS1-1330-L8C	109.2	151.8	154.8	200.8	198	2.8	14	2
	10	□	MPS1-1330-L10C	135.4	178.4	181.4	227.4	225	2.4	14	2
	12	□	MPS1-1330-L12C	162.0	205.4	208.4	254.4	252	2.4	14	2
	15	□	MPS1-1330-L15C	201.9	245.4	248.4	294.4	292	2.4	14	2
	20	□	MPS1-1330-L20C	268.4	313.4	316.4	362.4	360	2.4	14	2

DC	Delik Derinliği (mm)	DP1021	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCNMMS	
13.4	3	□	MPS1-1340S-DIN	40.3	60.4	61.4	107.4	105	2.4	14	4
	3	●	MPS1-1340S-DIN-C	40.3	60.4	61.4	107.4	105	2.4	14	2
	5	□	MPS1-1340L-DIN	57.3	77.4	78.4	124.4	122	2.4	14	4
	5	●	MPS1-1340L-DIN-C	57.3	77.4	78.4	124.4	122	2.4	14	2
	2	□	MPS1-1340-PC	28.9	56.1	59.1	109.1	107	2.1	14	2
	8	●	MPS1-1340-L8C	110.0	151.8	154.8	200.8	198	2.8	14	2
	10	□	MPS1-1340-L10C	136.4	178.4	181.4	227.4	225	2.4	14	2
	12	□	MPS1-1340-L12C	163.2	205.4	208.4	254.4	252	2.4	14	2
	15	□	MPS1-1340-L15C	203.4	245.4	248.4	294.4	292	2.4	14	2
	20	□	MPS1-1340-L20C	270.4	313.4	316.4	362.4	360	2.4	14	2
13.5	3	□	MPS1-1350S-DIN	40.2	60.5	61.5	107.5	105	2.5	14	4
	3	●	MPS1-1350S-DIN-C	40.2	60.5	61.5	107.5	105	2.5	14	2
	5	□	MPS1-1350L-DIN	57.2	77.5	78.5	124.5	122	2.5	14	4
	5	●	MPS1-1350L-DIN-C	57.2	77.5	78.5	124.5	122	2.5	14	2
	2	●	MPS1-1350-PC	29.1	56.1	59.1	109.1	107	2.1	14	2
	8	●	MPS1-1350-L8C	110.8	151.8	154.8	200.8	198	2.8	14	2
	10	□	MPS1-1350-L10C	137.5	178.5	181.5	227.5	225	2.5	14	2
	12	●	MPS1-1350-L12C	164.5	205.5	208.5	254.5	252	2.5	14	2
	15	□	MPS1-1350-L15C	205.0	245.5	248.5	294.5	292	2.5	14	2
	20	□	MPS1-1350-L20C	272.5	313.5	316.5	362.5	360	2.5	14	2
13.6	3	□	MPS1-1360S-DIN	40.1	60.5	61.5	107.5	105	2.5	14	4
	3	●	MPS1-1360S-DIN-C	40.1	60.5	61.5	107.5	105	2.5	14	2
	5	□	MPS1-1360L-DIN	57.1	77.5	78.5	124.5	122	2.5	14	4
	5	●	MPS1-1360L-DIN-C	57.1	77.5	78.5	124.5	122	2.5	14	2
	2	□	MPS1-1360-PC	29.3	56.1	59.1	109.1	107	2.1	14	2
	8	●	MPS1-1360-L8C	111.6	156.8	159.8	205.8	203	2.8	14	2
	10	□	MPS1-1360-L10C	138.5	184.5	187.5	233.5	231	2.5	14	2
	12	□	MPS1-1360-L12C	165.7	212.5	215.5	261.5	259	2.5	14	2
	15	□	MPS1-1360-L15C	206.5	254.5	257.5	303.5	301	2.5	14	2
	20	□	MPS1-1360-L20C	274.5	324.5	327.5	373.5	371	2.5	14	2
13.7	3	□	MPS1-1370S-DIN	39.9	60.5	61.5	107.5	105	2.5	14	4
	3	●	MPS1-1370S-DIN-C	39.9	60.5	61.5	107.5	105	2.5	14	2
	5	□	MPS1-1370L-DIN	56.9	77.5	78.5	124.5	122	2.5	14	4
	5	●	MPS1-1370L-DIN-C	56.9	77.5	78.5	124.5	122	2.5	14	2
	2	□	MPS1-1370-PC	29.6	56.2	59.2	109.2	107	2.2	14	2
	8	●	MPS1-1370-L8C	112.4	156.8	159.8	205.8	203	2.8	14	2
	10	□	MPS1-1370-L10C	139.5	184.5	187.5	233.5	231	2.5	14	2
	12	□	MPS1-1370-L12C	166.9	212.5	215.5	261.5	259	2.5	14	2
	15	□	MPS1-1370-L15C	208.0	254.5	257.5	303.5	301	2.5	14	2
	20	□	MPS1-1370-L20C	276.5	324.5	327.5	373.5	371	2.5	14	2
13.8	3	□	MPS1-1380S-DIN	39.8	60.5	61.5	107.5	105	2.5	14	4
	3	●	MPS1-1380S-DIN-C	39.8	60.5	61.5	107.5	105	2.5	14	2
	5	□	MPS1-1380L-DIN	56.8	77.5	78.5	124.5	122	2.5	14	4
	5	●	MPS1-1380L-DIN-C	56.8	77.5	78.5	124.5	122	2.5	14	2
	2	□	MPS1-1380-PC	29.8	56.2	59.2	109.2	107	2.2	14	2
	8	●	MPS1-1380-L8C	113.3	156.9	159.9	205.9	203	2.9	14	2
	10	□	MPS1-1380-L10C	140.5	184.5	187.5	233.5	231	2.5	14	2
	12	□	MPS1-1380-L12C	168.1	212.5	215.5	261.5	259	2.5	14	2
	15	□	MPS1-1380-L15C	209.5	254.5	257.5	303.5	301	2.5	14	2
	20	□	MPS1-1380-L20C	278.5	324.5	327.5	373.5	371	2.5	14	2

● : Avrupa standart stok. □ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC (mm)	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
13.9	3	□	MPS1-1390S-DIN	39.7	60.5	61.5	107.5	105	2.5	14	4
	3	●	MPS1-1390S-DIN-C	39.7	60.5	61.5	107.5	105	2.5	14	2
	5	□	MPS1-1390L-DIN	56.7	77.5	78.5	124.5	122	2.5	14	4
	5	●	MPS1-1390L-DIN-C	56.7	77.5	78.5	124.5	122	2.5	14	2
	2	□	MPS1-1390-PC	30.0	56.2	56.2	109.2	107	2.2	14	2
	8	●	MPS1-1390-L8C	114.1	156.9	159.9	205.9	203	2.9	14	2
	10	□	MPS1-1390-L10C	141.5	184.5	187.5	233.5	231	2.5	14	2
	12	□	MPS1-1390-L12C	169.3	212.5	215.5	261.5	259	2.5	14	2
	15	□	MPS1-1390-L15C	211.0	254.5	257.5	303.5	301	2.5	14	2
	20	□	MPS1-1390-L20C	280.5	324.5	327.5	373.5	371	2.5	14	2
14.0	3	□	MPS1-1400S-DIN	39.5	60.5	61.5	107.5	105	2.5	14	4
	3	●	MPS1-1400S-DIN-C	39.5	60.5	61.5	107.5	105	2.5	14	2
	5	□	MPS1-1400L-DIN	56.5	77.5	78.5	124.5	122	2.5	14	4
	5	●	MPS1-1400L-DIN-C	56.5	77.5	78.5	124.5	122	2.5	14	2
	2	●	MPS1-1400-PC	30.2	56.2	56.2	109.2	107	2.2	14	2
	8	●	MPS1-1400-L8C	114.9	156.9	159.9	205.9	203	2.9	14	2
	10	□	MPS1-1400-L10C	142.5	184.5	187.5	233.5	231	2.5	14	2
	12	●	MPS1-1400-L12C	170.5	212.5	215.5	261.5	259	2.5	14	2
	15	□	MPS1-1400-L15C	212.5	254.5	257.5	303.5	301	2.5	14	2
	20	●	MPS1-1400-L20C	282.5	324.5	327.5	373.5	371	2.5	14	2
14.2	3	□	MPS1-1420S-DIN	43.3	64.6	65.6	114.6	112	2.6	16	4
	3	●	MPS1-1420S-DIN-C	43.3	64.6	65.6	114.6	112	2.6	16	2
	5	□	MPS1-1420L-DIN	61.3	82.6	83.6	132.6	130	2.6	16	4
	5	●	MPS1-1420L-DIN-C	61.3	82.6	83.6	132.6	130	2.6	16	2
14.5	3	□	MPS1-1450S-DIN	42.9	64.6	65.6	114.6	112	2.6	16	4
	3	●	MPS1-1450S-DIN-C	42.9	64.6	65.6	114.6	112	2.6	16	2
	5	□	MPS1-1450L-DIN	60.9	82.6	83.6	132.6	130	2.6	16	4
	5	●	MPS1-1450L-DIN-C	60.9	82.6	83.6	132.6	130	2.6	16	2
15.0	3	□	MPS1-1500S-DIN	42.2	64.7	65.7	114.7	112	2.7	16	4
	3	●	MPS1-1500S-DIN-C	42.2	64.7	65.7	114.7	112	2.7	16	2
	5	□	MPS1-1500L-DIN	60.2	82.7	83.7	132.7	130	2.7	16	4
	5	●	MPS1-1500L-DIN-C	60.2	82.7	83.7	132.7	130	2.7	16	2
15.5	3	□	MPS1-1550S-DIN	41.6	64.8	65.8	114.8	112	2.8	16	4
	3	●	MPS1-1550S-DIN-C	41.6	64.8	65.8	114.8	112	2.8	16	2
	5	□	MPS1-1550L-DIN	59.6	82.8	83.8	132.8	130	2.8	16	4
	5	●	MPS1-1550L-DIN-C	59.6	82.8	83.8	132.8	130	2.8	16	2
16.0	3	□	MPS1-1600S-DIN	40.9	64.9	65.9	114.9	112	2.9	16	4
	3	●	MPS1-1600S-DIN-C	40.9	64.9	65.9	114.9	112	2.9	16	2
	5	□	MPS1-1600L-DIN	58.9	82.9	83.9	132.9	130	2.9	16	4
	5	●	MPS1-1600L-DIN-C	58.9	82.9	83.9	132.9	130	2.9	16	2
16.5	3	□	MPS1-1650S-DIN	48.3	73.0	74.0	123.0	120	3.0	18	4
	3	●	MPS1-1650S-DIN-C	48.3	73.0	74.0	123.0	120	3.0	18	2
	5	□	MPS1-1650L-DIN	68.3	93.0	94.0	143.0	140	3.0	18	4
	5	●	MPS1-1650L-DIN-C	68.3	93.0	94.0	143.0	140	3.0	18	2
17.0	3	□	MPS1-1700S-DIN	47.6	73.1	74.1	123.1	120	3.1	18	4
	3	●	MPS1-1700S-DIN-C	47.6	73.1	74.1	123.1	120	3.1	18	2
	5	□	MPS1-1700L-DIN	67.6	93.1	94.1	143.1	140	3.1	18	4
	5	●	MPS1-1700L-DIN-C	67.6	93.1	94.1	143.1	140	3.1	18	2
17.5	3	□	MPS1-1750S-DIN	46.9	73.2	74.2	123.2	120	3.2	18	4
	3	●	MPS1-1750S-DIN-C	46.9	73.2	74.2	123.2	120	3.2	18	2
	5	□	MPS1-1750L-DIN	66.9	93.2	94.2	143.2	140	3.2	18	4
	5	●	MPS1-1750L-DIN-C	66.9	93.2	94.2	143.2	140	3.2	18	2
18.0	3	□	MPS1-1800S-DIN	46.3	73.3	74.3	123.3	120	3.3	18	4
	3	●	MPS1-1800S-DIN-C	46.3	73.3	74.3	123.3	120	3.3	18	2
	5	□	MPS1-1800L-DIN	66.3	93.3	94.3	143.3	140	3.3	18	4
	5	●	MPS1-1800L-DIN-C	66.3	93.3	94.3	143.3	140	3.3	18	2

DC (mm)	Delik Derinliği (L/D)	DP1021	Sipariş No	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
18.5	3	□	MPS1-1850S-DIN	51.6	79.4	80.4	131.4	128	3.4	20	4
	3	●	MPS1-1850S-DIN-C	51.6	79.4	80.4	131.4	128	3.4	20	2
	5	□	MPS1-1850L-DIN	73.6	101.4	102.4	153.4	150	3.4	20	4
	5	●	MPS1-1850L-DIN-C	73.6	101.4	102.4	153.4	150	3.4	20	2
19.0	3	□	MPS1-1900S-DIN	51.0	79.5	80.5	131.5	128	3.5	20	4
	3	●	MPS1-1900S-DIN-C	51.0	79.5	80.5	131.5	128	3.5	20	2
	5	□	MPS1-1900L-DIN	73.0	101.5	102.5	153.5	150	3.5	20	4
	5	●	MPS1-1900L-DIN-C	73.0	101.5	102.5	153.5	150	3.5	20	2
19.5	3	□	MPS1-1950S-DIN	50.3	79.5	80.5	131.5	128	3.5	20	4
	3	●	MPS1-1950S-DIN-C	50.3	79.5	80.5	131.5	128	3.5	20	2
	5	□	MPS1-1950L-DIN	72.3	101.5	102.5	153.5	150	3.5	20	4
20.0	5	●	MPS1-1950L-DIN-C	72.3	101.5	102.5	153.5	150	3.5	20	2
	3	□	MPS1-2000S-DIN	49.6	79.6	80.6	131.6	128	3.6	20	4
	3	●	MPS1-2000S-DIN-C	49.6	79.6	80.6	131.6	128	3.6	20	2
20.0	5	□	MPS1-2000L-DIN	71.6	101.6	102.6	153.6	150	3.6	20	4
	5	●	MPS1-2000L-DIN-C	71.6	101.6	102.6	153.6	150	3.6	20	2

M

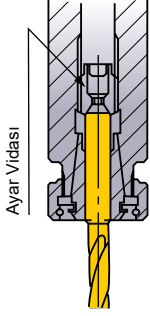
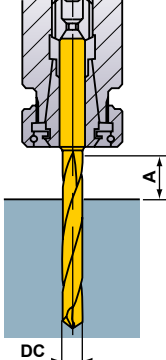
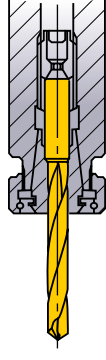
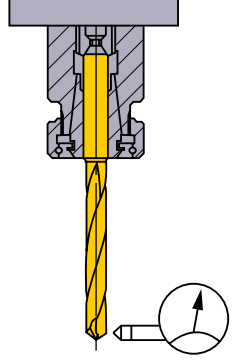
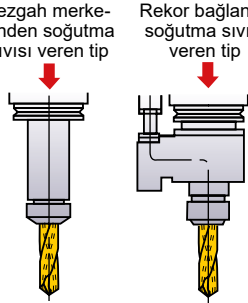
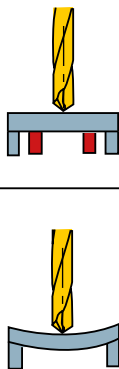
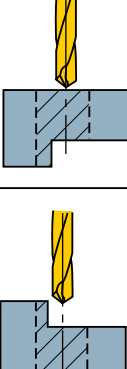
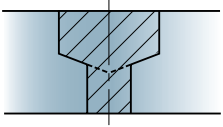
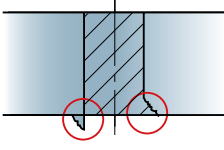
DELME

ÖNERİLEN KESME KOŞULLARI

● **MPS1 MATKAP (3xDC – 40xDC)**

DC	L x DC		P			M	K		
			Yumuşak Çelik, Karbon Çelik, Alaşımli Çelik			Paslanmaz Çelik	Dökme Demir		
			≤ 180 HB	180–250 HB	280–350 HB		≤ 350 MPa	≤ 450 MPa	≤ 800 MPa
3	3–8	Vc m/dak	100 (60–150)	90 (60–140)	80 (50–110)	40 (20–50)	90 (60–100)	80 (50–90)	60 (40–80)
		f mm/dev	0.15 (0.1–0.2)	0.15 (0.1–0.19)	0.12 (0.1–0.14)	0.08 (0.06–0.12)	0.15 (0.1–0.2)	0.12 (0.08–0.16)	0.09 (0.06–0.12)
	10–25	Vc m/dak	90 (40–110)	90 (40–110)	80 (40–90)	40 (20–60)	90 (40–110)	90 (40–110)	—
		f mm/dev	0.17 (0.1–0.24)	0.17 (0.1–0.24)	0.15 (0.09–0.22)	0.07 (0.05–0.09)	0.19 (0.11–0.26)	0.17 (0.1–0.24)	—
	30–40	Vc m/dak	75 (40–95)	75 (40–85)	65 (40–75)	30 (20–50)	75 (45–95)	30 (20–50)	—
		f mm/dev	0.14 (0.08–0.19)	0.14 (0.08–0.19)	0.15 (0.07–0.18)	0.06 (0.04–0.07)	0.15 (0.09–0.21)	0.14 (0.08–0.19)	—
4	3–8	Vc m/dak	120 (70–170)	100 (70–160)	90 (60–120)	40 (30–50)	100 (70–110)	90 (60–100)	70 (50–90)
		f mm/dev	0.19 (0.12–0.25)	0.18 (0.12–0.24)	0.15 (0.12–0.18)	0.09 (0.07–0.13)	0.21 (0.12–0.3)	0.17 (0.1–0.24)	0.13 (0.08–0.18)
	10–25	Vc m/dak	90 (40–110)	90 (40–110)	80 (40–90)	40 (20–60)	90 (40–110)	90 (40–110)	—
		f mm/dev	0.2 (0.12–0.3)	0.2 (0.12–0.3)	0.18 (0.11–0.27)	0.08 (0.06–0.1)	0.22(0.13–0.33)	0.2 (0.12–0.3)	—
	30–40	Vc m/dak	75 (40–95)	75 (40–85)	65 (40–75)	30 (20–50)	75 (45–95)	30 (20–50)	—
		f mm/dev	0.16 (0.1–0.24)	0.16 (0.1–0.24)	0.18 (0.09–0.22)	0.06 (0.05–0.08)	0.18 (0.1–0.26)	0.16 (0.1–0.24)	—
5	3–8	Vc m/dak	130 (80–190)	110 (80–180)	90 (70–140)	40 (30–50)	110 (80–130)	90 (70–120)	70 (60–100)
		f mm/dev	0.23 (0.15–0.3)	0.22 (0.15–0.29)	0.19 (0.15–0.22)	0.11 (0.08–0.16)	0.25 (0.15–0.35)	0.21 (0.14–0.28)	0.17 (0.12–0.22)
	10–25	Vc m/dak	90 (40–110)	90 (40–110)	80 (40–90)	40 (20–60)	90 (40–110)	90 (40–110)	—
		f mm/dev	0.25 (0.15–0.35)	0.25 (0.15–0.35)	0.22 (0.14–0.32)	0.1 (0.07–0.12)	0.28 (0.17–0.39)	0.25 (0.15–0.35)	—
	30–40	Vc m/dak	75 (40–95)	75 (40–85)	65 (40–75)	30 (20–50)	75 (45–95)	30 (20–50)	—
		f mm/dev	0.2 (0.12–0.28)	0.2 (0.12–0.28)	0.22 (0.11–0.26)	0.08 (0.06–0.1)	0.22 (0.13–0.31)	0.2 (0.12–0.28)	—
6	3–8	Vc m/dak	140 (90–210)	120 (90–190)	100 (80–150)	50 (40–70)	120 (90–140)	100 (80–130)	80 (70–110)
		f mm/dev	0.27 (0.18–0.35)	0.26 (0.18–0.33)	0.22 (0.18–0.25)	0.14 (0.11–0.18)	0.29 (0.18–0.4)	0.25 (0.16–0.34)	0.2 (0.14–0.26)
	10–25	Vc m/dak	110 (70–120)	100 (60–110)	90 (40–110)	50 (20–60)	100 (60–110)	100 (60–110)	—
		f mm/dev	0.27 (0.17–0.37)	0.24 (0.15–0.33)	0.24 (0.15–0.33)	0.12 (0.08–0.16)	0.3 (0.19–0.41)	0.27 (0.17–0.37)	—
	30–40	Vc m/dak	90 (40–110)	80 (40–90)	75 (40–85)	40 (20–60)	90 (60–110)	40 (30–60)	—
		f mm/dev	0.22 (0.14–0.3)	0.22 (0.14–0.3)	0.24 (0.12–0.26)	0.1 (0.06–0.13)	0.24 (0.15–0.33)	0.22 (0.14–0.3)	—
8	3–8	Vc m/dak	160 (100–240)	140 (100–220)	120 (90–170)	50 (40–70)	140 (100–160)	120 (90–150)	100 (80–130)
		f mm/dev	0.3 (0.2–0.4)	0.29 (0.2–0.38)	0.24 (0.2–0.27)	0.15 (0.12–0.2)	0.33 (0.2–0.45)	0.28 (0.18–0.38)	0.23 (0.16–0.3)
	10–25	Vc m/dak	110 (70–120)	100 (60–110)	90 (40–110)	50 (20–60)	100 (60–110)	100 (60–110)	—
		f mm/dev	0.3 (0.2–0.4)	0.3 (0.2–0.4)	0.27 (0.18–0.36)	0.14 (0.1–0.17)	0.33 (0.22–0.44)	0.3 (0.2–0.4)	—
	30–40	Vc m/dak	90 (40–110)	80 (40–90)	75 (40–85)	40 (20–50)	90 (60–100)	40 (30–60)	—
		f mm/dev	0.24 (0.16–0.32)	0.24 (0.16–0.32)	0.27 (0.14–0.29)	0.11 (0.08–0.14)	0.26 (0.18–0.35)	0.24 (0.16–0.32)	—
10	3–8	Vc m/dak	170 (100–250)	150 (100–230)	130 (90–180)	50 (40–70)	150 (100–170)	130 (90–160)	110 (80–140)
		f mm/dev	0.33 (0.2–0.45)	0.32 (0.2–0.43)	0.25 (0.2–0.3)	0.16 (0.12–0.22)	0.35 (0.2–0.5)	0.29 (0.18–0.4)	0.24 (0.16–0.32)
	10–25	Vc m/dak	110 (70–120)	100 (60–110)	90 (40–110)	50 (20–60)	100 (60–110)	100 (60–110)	—
		f mm/dev	0.32 (0.22–0.42)	0.32 (0.22–0.42)	0.29 (0.2–0.38)	0.15 (0.12–0.18)	0.35 (0.24–0.46)	0.32 (0.22–0.42)	—
	30–40	Vc m/dak	90 (40–110)	80 (40–90)	75 (40–95)	40 (20–50)	90 (60–100)	40 (30–60)	—
		f mm/dev	0.26 (0.18–0.34)	0.26 (0.18–0.34)	0.29 (0.16–0.3)	0.12 (0.1–0.14)	0.28 (0.19–0.37)	0.26 (0.18–0.34)	—
12	3–8	Vc m/dak	180 (100–250)	160 (100–230)	140 (90–180)	50 (40–70)	160 (100–170)	140 (90–160)	110 (80–140)
		f mm/dev	0.35 (0.2–0.5)	0.34 (0.2–0.48)	0.27 (0.2–0.34)	0.18 (0.14–0.24)	0.4 (0.2–0.6)	0.31 (0.18–0.44)	0.25 (0.16–0.34)
	10–25	Vc m/dak	130 (90–150)	120 (80–140)	100 (60–110)	60 (25–65)	120 (90–140)	120 (90–140)	—
		f mm/dev	0.34 (0.24–0.44)	0.34 (0.24–0.44)	0.3 (0.22–0.4)	0.17 (0.14–0.19)	0.37 (0.26–0.48)	0.34 (0.24–0.44)	—
	30–40	Vc m/dak	105 (55–125)	95 (55–105)	80 (40–100)	50 (20–60)	105 (65–115)	50 (40–70)	—
		f mm/dev	0.27 (0.19–0.35)	0.27 (0.19–0.35)	0.3 (0.18–0.32)	0.14 (0.11–0.15)	0.3 (0.21–0.38)	0.27 (0.19–0.35)	—
16	3–8	Vc m/dak	180 (100–250)	160 (100–230)	140 (90–180)	50 (40–70)	160 (100–170)	140 (90–160)	110 (80–140)
		f mm/dev	0.38 (0.2–0.55)	0.36 (0.2–0.52)	0.28 (0.2–0.36)	0.19 (0.15–0.26)	0.43 (0.2–0.65)	0.33 (0.18–0.48)	0.27 (0.16–0.38)
	10–25	Vc m/dak	130 (90–150)	120 (80–140)	100 (60–110)	60 (25–65)	120 (90–140)	120 (90–140)	—
		f mm/dev	0.36 (0.26–0.46)	0.36 (0.26–0.46)	0.32 (0.23–0.41)	0.17 (0.14–0.19)	0.4 (0.29–0.48)	0.36 (0.26–0.46)	—
20	3–8	Vc m/dak	180 (100–250)	160 (100–230)	140 (90–180)	50 (40–70)	160 (100–170)	140 (90–160)	110 (80–140)
		f mm/dev	0.4 (0.2–0.6)	0.39 (0.2–0.57)	0.3 (0.2–0.4)	0.21 (0.16–0.28)	0.45 (0.2–0.7)	0.35 (0.18–0.52)	0.28 (0.16–0.4)

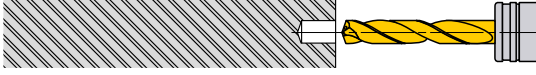
■ MPS1 UZUN TİP MATKAP UCU İÇİN ÇALIŞMA KILAVUZU

<p>Matkap Tutucusu</p>  <p>Bilyalı tip pens başlığı matkabi güvenli bir şekilde bağlar.</p>	<p>Serbest Boy</p>  <p>$A \geq DC \times 1.5$</p>	<p>Matkap Montajı</p>  <p>Matkap kanallarından bağlamayınız.</p>	<p>Montaj Toleransı</p>  <p>Salgı ≤ 0.03 mm</p>
<p>Boydan Boya soğutma Sıvısı Veren Tip</p>  <p>Tezgah merkezinden soğutma sıvısı veren tip</p> <p>Rekor bağlantılı soğutma sıvısı veren tip</p> <p>Yaklaşık Soğutma sıvısı basıncı 5–10 bar'dır ($< \varnothing 5:2-30$ bar).</p>	<p>Soğutma Suyu Kullanımı</p> <ol style="list-style-type: none"> 1) Küçük talaş parçacıkları küçük çaplı matkapların soğutma deliğinde sıkışabilir. Koruyucu bir önlem olarak her zaman ince elekli filtre kullanın. 2) Kir ve toz parçacıkları kullanılan eski soğutma sıvısındaki yağa yapışır ve etkili akışı önler. Düzenli soğutma sıvısı değişimi önerilir. 	<p>İnce İş Parçası</p>  <p>OK</p> <p>İş Parçasını Destekleyin</p> <p>X</p> <p>Esneme Oluşursa</p>	<p>Darbeli Kesme</p>  <p>Bir Metot OK</p> <p>① Darbeli parçayı ilerletirken ilerlemeyi düşürün.</p> <p>Ön işleme Gerekir</p> <p>① Delmeden önce Parmak freze ile yüzeyi düzleştirin.</p>
<p>Kademeli Delikler</p>  <p>① İki işlem uygulayın. ② Önce büyük deliği delin. *Hem pah hem de spot yüzeyin işlenmesi için özel tasarım bir takım üretilemek üzere sipariş edilebilir.</p>	<p>Çapaklanma ve İş parçasında çentik oluşması</p>  <p>① Delme işlemi sonuna doğru ilerlemeyi %50 oranında düşürün. ② 45° pah yapın. ③ Ağız açısını değiştirin.</p>		

UZUN TİP MATKAP UCU NASIL KULLANILIR

DÜZ YÜZEY DELME ● Bir kör delik delme

1. Bir pilot deliği delme



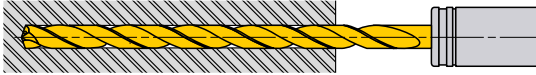
- 1 Süper uzun tipten daha büyük (düz) uç açılı bir matkap ucu kullanın. Olası en kısa helis kanallığı kullanın.
- 2 Yataklama için yüksek hassasiyetli deliğin delindiğinden emin olun.
- 3 Matkap ucu derinliği : Yaklaşık 1DC veya daha derin. (Pilot Delik Derinliğini süper uzun tip matkap ucu uzunluğuna göre ayarlayın.)

2. Uzun tip matkap ucu ile kesmeye başlama



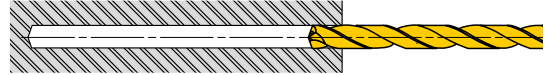
- 1 Pilot deliğe düşük devirde nüfuz edin. (Devir 1000dak⁻¹, ilerleme oranı 0.2–0.3mm/dev)
- 2 Uzun tip matkap ucunu pilot delik tabanına 0.5–1mm kala durdurun.

3. Derin deliğin delinmesi



- 1 Önerilen hızda ve ilerleme oranıyla gagalama yapmadan (düz ilerleme) çevrimi ile kesmeye başlayın.

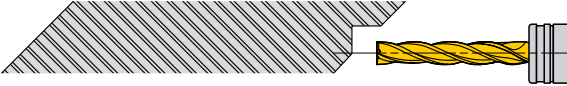
4. Matkap ucunu geriye çekme



- 1 Deldikten sonra, kesme devrini delik ucundan yaklaşık 0.5–1mm daha gerisinde düşürün (Devir yaklaşık 1000dak⁻¹)
- 2 3000mm/dak ilerleme hızıyla matkap ucunu pilot Delik Derinliği başlangıç noktasına geri çekin.
- 3 Son olarak, 20–30m/dak kesme hızında ve 0.2–0.3mm/dev ilerleme oranında deliği temizleyin.

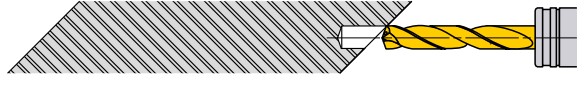
DARBELİ DELME ● Üzerinde düzensiz veya açılı yüzler bulunan parçaları delme ve boşa çıkma

1. Spot yüzeyi açma



- 1 Bir parmak frezeyi veya spot yüzeyi açma özellikli spot matkap ucunu kullanarak düz veya düzensiz bir yüzeyi işleyin. İşlenecek derin delik çapı ile aynı çapta bir düz yüzey yapın.

2. Bir pilot deliği delme



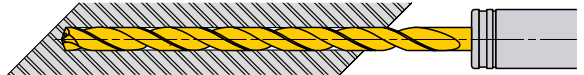
- 1 Süper uzun tipten daha büyük (düz) bir uç açılı bir matkap ucu kullanın. Olası en kısa helis kanallığı kullanın.
- 2 Yataklama için yüksek hassasiyetli deliğin delindiğinden emin olun.
- 3 Matkap ucu derinliği : Yaklaşık 1DC veya daha uzun. (Pilot Delik Derinliğini süper uzun tip matkap ucu uzunluğuna göre ayarlayın.)

3. Uzun tip matkap ucu ile kesmeye başlama



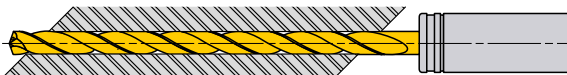
- 1 Yataklama deliğine düşük devirde nüfuz edin. (Devir 1000dak⁻¹, ilerleme oranı 0.2–0.3mm/dev)
- 2 Uzun tip matkap ucunu pilot delik tabanına 0.5–1mm kala durdurun.

4. Derin deliğin delinmesi



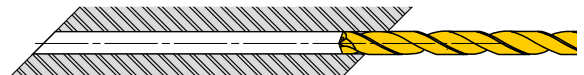
- 1 Önerilen hızda ve ilerleme oranıyla gagalama yapmadan (düz ilerleme) çevrimi ile kesmeye başlayın.

5. Boşa çıkma



- 1 Boşa çıkma işlemi sırasında, kesme kenarı hasar görebilir.
- 2 Yüzeğe yakın ilerleme oranını düşürün.

6. Matkap ucunu geriye çekme



- 1 Son olarak 20–30m/dak kesme hızında ve 0.2–0.3mm/dev ilerleme oranında deliği temizleyin.
- 2 3000mm/dak ilerleme hızında matkap ucunu pilot Delik Derinliği başlangıç noktasına geri çekin.

MICRO-MGS

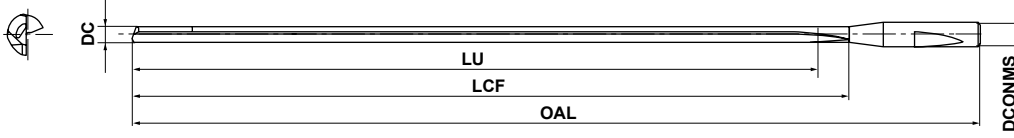
- Mikro derin delik delme mümkündür.
- Mükemmel salgı doğruluğu yüksek hassasiyetli delmeyi sağlar.



KARBÜR

P M K N S H

İçten Soğutma



DC ≤ 3

0
-0.005

- MGS matkap ucu ısıtmalı tutucular ile kullanım için uygundur.

DC (mm)	Delik Derinliği (L/D)	HT110	Sipariş No	Boyutlar (mm)			
				LU	LCF	OAL	DCONMS
0.7	50	★	MGS0070L040B	35.0	40	80	3
	80	★	MGS0070L060B	56.0	60	100	3
0.8	45	★	MGS0080L040B	36.0	40	80	3
	70	★	MGS0080L060B	56.0	60	100	3
0.9	40	★	MGS0090L040B	36.0	40	80	3
	60	★	MGS0090L060B	54.0	60	100	3
1.0	35	★	MGS0100L040B	35.0	40	80	3
	55	★	MGS0100L060B	55.0	60	100	3
	75	★	MGS0100L080B	75.0	80	120	3
1.1	30	★	MGS0110L040B	33.0	40	80	3
	50	★	MGS0110L060B	55.0	60	100	3
	65	★	MGS0110L080B	71.5	80	120	3
1.2	30	★	MGS0120L040B	36.0	40	80	3
	45	★	MGS0120L060B	54.0	60	100	3
	60	★	MGS0120L080B	72.0	80	120	3
1.3	40	★	MGS0130L060B	52.0	60	100	3
	55	★	MGS0130L080B	71.5	80	120	3
	70	★	MGS0130L100B	91.0	100	140	3
1.4	35	★	MGS0140L060B	49.0	60	100	3
	50	★	MGS0140L080B	70.0	80	120	3
	65	★	MGS0140L100B	91.0	100	140	3
1.5	35	★	MGS0150L060B	52.5	60	100	3
	50	★	MGS0150L080B	75.0	80	120	3
	60	★	MGS0150L100B	90.0	100	140	3
1.6	30	★	MGS0160L060B	48.0	60	100	3
	45	★	MGS0160L080B	72.0	80	120	3
	55	★	MGS0160L100B	88.0	100	140	3
1.7	30	★	MGS0170L060B	51.0	60	100	3
	40	★	MGS0170L080B	68.0	80	120	3
	55	★	MGS0170L100B	93.5	100	140	3

DC (mm)	Delik Derinliği (L/D)	HT110	Sipariş No	Boyutlar (mm)			
				LU	LCF	OAL	DCONMS
1.8	30	★	MGS0180L060B	54.0	60	100	3
	40	★	MGS0180L080B	72.0	80	120	3
1.9	50	★	MGS0180L100B	90.0	100	140	3
	25	★	MGS0190L060B	47.5	60	100	3
	35	★	MGS0190L080B	66.5	80	120	3
2.0	45	★	MGS0190L100B	85.5	100	140	3
	25	★	MGS0200L060B	50.0	60	100	3
2.1	35	★	MGS0200L080B	70.0	80	120	3
	45	★	MGS0200L100B	90.0	100	140	3
2.2	35	★	MGS0210L080B	73.5	80	120	3
	40	★	MGS0210L100B	84.0	100	140	3
2.3	30	★	MGS0220L080B	66.0	80	120	3
	40	★	MGS0220L100B	88.0	100	140	3
2.4	30	★	MGS0230L080B	69.0	80	120	3
	40	★	MGS0230L100B	92.0	100	140	3
2.5	30	★	MGS0240L080B	72.0	80	120	3
	35	★	MGS0240L100B	84.0	100	140	3
2.6	25	★	MGS0250L080B	62.5	80	120	3
	35	★	MGS0250L100B	87.5	100	140	3
2.7	25	★	MGS0260L080B	65.0	80	120	3
	35	★	MGS0260L100B	91.0	100	140	3
2.8	25	★	MGS0270L080B	67.5	80	120	3
	30	★	MGS0270L100B	81.0	100	140	3
2.9	25	★	MGS0280L080B	70.0	80	120	3
	30	★	MGS0280L100B	84.0	100	140	3
3.0	20	★	MGS0290L080B	58.0	80	120	3
	30	★	MGS0290L100B	87.0	100	140	3
3.0	20	★	MGS0300L080B	60.0	80	120	3
	30	★	MGS0300L100B	90.0	100	140	3

Not 1) Lütfen kaplamalı tip matkap ucuna ilişkin bize danışın (VP, GP ve UP kaplamalı karbür).

★ : Japonya standart stok.

KESME KOŞULLARI > M076
TEKNİK VERİLER > P001

M075

M

DELME

ÖNERİLEN KESME KOŞULLARI

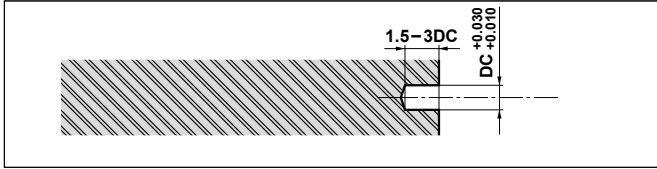
Çalışma Malzemesi	N							
	Alüminyum Alaşım (Si<5%)				Bakır, Bakır alaşım			
Soğutma tipi	Suda çözünmez kesme yağı • Suda çözünebilir kesme yağı				Suda çözünmez kesme yağı • Suda çözünebilir kesme yağı			
Matkap Ucu Çapı DC (mm)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	İlerleme Hızı (mm/dak)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	İlerleme Hızı (mm/dak)
0.8	50	19800	0.01 (0.008—0.016)	195	40	15900	0.01 (0.008—0.016)	155
1.0	60	19000	0.015 (0.010—0.020)	285	50	15900	0.015 (0.010—0.020)	235
1.2	70	18500	0.015 (0.012—0.024)	275	60	15900	0.015 (0.012—0.024)	235
1.6	80	15900	0.02 (0.016—0.032)	315	70	13900	0.02 (0.016—0.032)	275
2.0	90	14300	0.03 (0.020—0.040)	425	80	12700	0.03 (0.020—0.040)	380
2.5	100	12700	0.035 (0.025—0.050)	440	90	11400	0.035 (0.025—0.050)	395
3.0	100	10600	0.045 (0.030—0.060)	475	100	10600	0.045 (0.030—0.060)	475

Not 1) Güvenlik ve başarı için, Yüksek basınçlı soğutma suyu gereklidir. (Minimum soğutma suyu basıncı =70 bar)

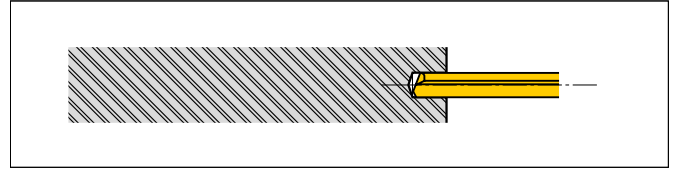
Not 2) Soğutma suyu filtresi 5 mikrondan az olmalıdır. Soğutma suyu deliklerinin tıkanmasını önlemek için hassas filtreleme gereklidir.

Not 3) Pilot bir delik veya yataklama kovani gereklidir.

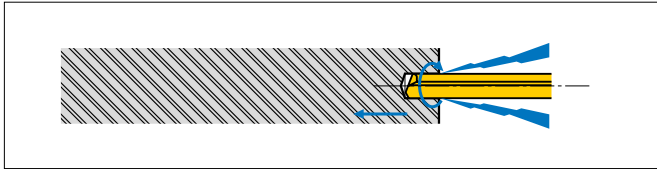
NASIL KULLANILIR



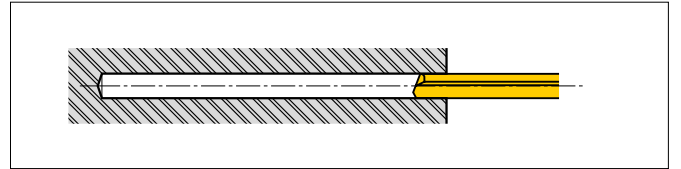
1. Pilot deliğin delinmesi.
(Mitsubishi Materials MWE veya MWS tavsiye edilir.)



2. Döndürmeden veya 300 dev/dak altında tezgah dönüşü ile pilot deliğe nüfuz edin.
MGS gun matkap ucunu pilot delik tabanına 1 mm-2 mm kala durdurun.



3. Soğutma suyunu açın, kesme hızını ve önerilen kesme koşulunu yükseltin ve delmeyi başlatın.



4. Deldikten sonra "Poz 2"ye dönün, soğutma suyunu kapatın ve delme ucu dönüşünü durdurun.

DELME (YEKPARE KARBÜR)

MMS

- Paslanmaz çeliğin delinmesinde yüksek hassasiyet ve verimlilik.
- Üçgen geometriyi soğutma kanalları 4.60 mm çaptan başlar.



P

M

K

N

S

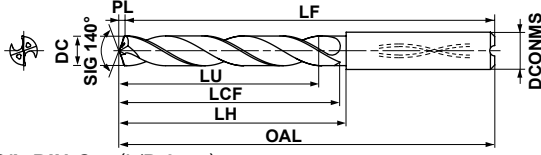
H

İçten Soğutma



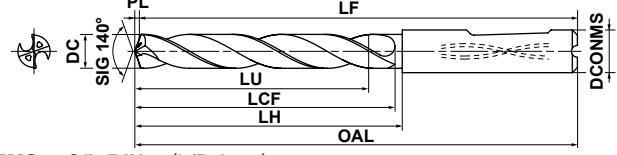
	DC=3	3<DC≤6	6<DC≤10	10<DC≤18	18<DC≤20
DIN tipi (m7)	+0.012 +0.002	+0.016 +0.004	+0.021 +0.006	+0.025 +0.007	+0.029 +0.008
Diğerleri (h8)	0 -0.014	0 -0.018	0 -0.022	0 -0.027	0 -0.033
h6		0 -0.008	0 -0.009	0 -0.011	0 -0.013

●Tip 1 Silindirik şaftlı tip



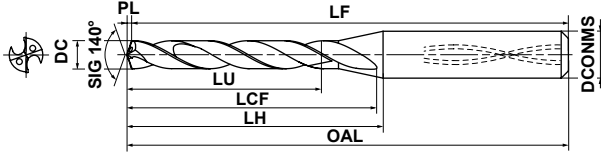
MMS---S/L-DIN-C (L/D 3-5)
MMS---X3/X5DB (L/D 3-5)

●Tip 2 Whistle notch şaftlı tip



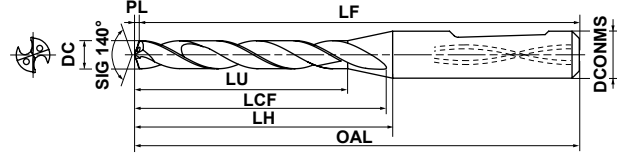
MMS---S/L-DIN (L/D 3-5)

●Tip 3 Konik boyunlu silindirik şaftlı tip



MMS---S/L-DIN-C (L/D 3-5)
MMS---X3/X5DB (L/D 3-5)

●Tip 4 Konik boyunlu Whistle notch şaftlı tip



MMS---S/L-DIN (L/D 3-5)

DC (mm)	Delik Derinliği (L/D)	DP7020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCOMMS	
3.0	3	□	MMS0300S-DIN	15.0	19.5	24.5	61.5	61	0.5	6	4
	3	●	MMS0300S-DIN-C	15.0	19.5	24.5	61.5	61	0.5	6	3
	5	□	MMS0300L-DIN	23.0	27.5	28.5	65.5	65	0.5	6	4
	5	●	MMS0300L-DIN-C	23.0	27.5	28.5	65.5	65	0.5	6	3
	3	★	MMS0300X3DB	9.5	21.5	23.5	70.5	70	0.5	6	3
	5	★	MMS0300X5DB	15.5	28.5	31.5	78.5	78	0.5	6	3
3.05	3	□	MMS0305S-DIN	15.0	19.6	24.6	61.6	61	0.6	6	4
	3	●	MMS0305S-DIN-C	15.0	19.6	24.6	61.6	61	0.6	6	3
	5	□	MMS0305L-DIN	23.0	27.6	28.6	65.6	65	0.6	6	4
	5	●	MMS0305L-DIN-C	23.0	27.6	28.6	65.6	65	0.6	6	3
3.1	3	□	MMS0310S-DIN	14.9	19.6	24.6	61.6	61	0.6	6	4
	3	●	MMS0310S-DIN-C	14.9	19.6	24.6	61.6	61	0.6	6	3
	5	□	MMS0310L-DIN	22.9	27.6	28.6	65.6	65	0.6	6	4
	5	●	MMS0310L-DIN-C	22.9	27.6	28.6	65.6	65	0.6	6	3
	3	★	MMS0310X3DB	9.9	21.6	23.6	70.6	70	0.6	6	3
	5	★	MMS0310X5DB	16.1	28.6	31.6	78.6	78	0.6	6	3
3.2	3	□	MMS0320S-DIN	14.8	19.6	24.6	61.6	61	0.6	6	4
	3	●	MMS0320S-DIN-C	14.8	19.6	24.6	61.6	61	0.6	6	3
	5	□	MMS0320L-DIN	22.8	27.6	28.6	65.6	65	0.6	6	4
	5	●	MMS0320L-DIN-C	22.8	27.6	28.6	65.6	65	0.6	6	3
	3	★	MMS0320X3DB	10.2	21.6	23.6	70.6	70	0.6	6	3
	5	★	MMS0320X5DB	16.6	28.6	31.6	78.6	78	0.6	6	3
3.3	3	□	MMS0330S-DIN	14.7	19.6	24.6	61.6	61	0.6	6	4
	3	●	MMS0330S-DIN-C	14.7	19.6	24.6	61.6	61	0.6	6	3
	5	□	MMS0330L-DIN	22.7	27.6	28.6	65.6	65	0.6	6	4
	5	●	MMS0330L-DIN-C	22.7	27.6	28.6	65.6	65	0.6	6	3
	3	★	MMS0330X3DB	10.5	21.6	23.6	70.6	70	0.6	6	3
	5	★	MMS0330X5DB	17.1	28.6	31.6	78.6	78	0.6	6	3
3.4	3	□	MMS0340S-DIN	14.5	19.6	24.6	61.6	61	0.6	6	4
	3	●	MMS0340S-DIN-C	14.5	19.6	24.6	61.6	61	0.6	6	3
	5	□	MMS0340L-DIN	22.5	27.6	28.6	65.6	65	0.6	6	4
	5	●	MMS0340L-DIN-C	22.5	27.6	28.6	65.6	65	0.6	6	3

DC (mm)	Delik Derinliği (L/D)	DP7020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCOMMS	
3.4	3	★	MMS0340X3DB	10.8	21.6	23.6	70.6	70	0.6	6	3
	5	★	MMS0340X5DB	17.6	28.6	31.6	78.6	78	0.6	6	3
3.5	3	□	MMS0350S-DIN	14.4	19.6	24.6	61.6	61	0.6	6	4
	3	●	MMS0350S-DIN-C	14.4	19.6	24.6	61.6	61	0.6	6	3
	5	□	MMS0350L-DIN	22.4	27.6	28.6	65.6	65	0.6	6	4
	5	●	MMS0350L-DIN-C	22.4	27.6	28.6	65.6	65	0.6	6	3
	3	★	MMS0350X3DB	11.1	21.6	23.6	70.6	70	0.6	6	3
	5	★	MMS0350X5DB	18.1	28.6	31.6	78.6	78	0.6	6	3
3.6	3	□	MMS0360S-DIN	14.3	19.7	24.7	61.7	61	0.7	6	4
	3	●	MMS0360S-DIN-C	14.3	19.7	24.7	61.7	61	0.7	6	3
	5	□	MMS0360L-DIN	22.3	27.7	28.7	65.7	65	0.7	6	4
	5	●	MMS0360L-DIN-C	22.3	27.7	28.7	65.7	65	0.7	6	3
	3	★	MMS0360X3DB	11.5	22.7	23.7	70.7	70	0.7	6	3
	5	★	MMS0360X5DB	18.7	30.7	31.7	78.7	78	0.7	6	3
3.7	3	□	MMS0370S-DIN	14.1	19.7	24.7	61.7	61	0.7	6	4
	3	●	MMS0370S-DIN-C	14.1	19.7	24.7	61.7	61	0.7	6	3
	5	□	MMS0370L-DIN	22.1	27.7	28.7	65.7	65	0.7	6	4
	5	●	MMS0370L-DIN-C	22.1	27.7	28.7	65.7	65	0.7	6	3
	3	★	MMS0370X3DB	11.8	22.7	23.7	70.7	70	0.7	6	3
	5	★	MMS0370X5DB	19.2	30.7	31.7	78.7	78	0.7	6	3
3.8	3	□	MMS0380S-DIN	18.0	23.7	28.7	65.7	65	0.7	6	4
	3	●	MMS0380S-DIN-C	18.0	23.7	28.7	65.7	65	0.7	6	3
	5	□	MMS0380L-DIN	30.0	35.7	36.7	73.7	73	0.7	6	4
	5	●	MMS0380L-DIN-C	30.0	35.7	36.7	73.7	73	0.7	6	3
	3	★	MMS0380X3DB	12.1	22.7	23.7	70.7	70	0.7	6	3
	5	★	MMS0380X5DB	19.7	30.7	31.7	78.7	78	0.7	6	3
3.9	3	□	MMS0390S-DIN	17.9	23.7	28.7	65.7	65	0.7	6	4
	3	●	MMS0390S-DIN-C	17.9	23.7	28.7	65.7	65	0.7	6	3
	5	□	MMS0390L-DIN	29.9	35.7	36.7	73.7	73	0.7	6	4
	5	●	MMS0390L-DIN-C	29.9	35.7	36.7	73.7	73	0.7	6	3
	3	★	MMS0390X3DB	12.4	22.7	23.7	70.7	70	0.7	6	3
	5	★	MMS0390X5DB	20.2	30.7	31.7	78.7	78	0.7	6	3

● : Avrupa standart stok. ★ : Japonya standart stok.

□ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC	Delik Derinliği (L/D)	DP7020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
4.0	3	□	MMS0400S-DIN	17.7	23.7	28.7	65.7	65	0.7	6	4
	3	●	MMS0400S-DIN-C	17.7	23.7	28.7	65.7	65	0.7	6	3
	5	□	MMS0400L-DIN	29.7	35.7	36.7	73.7	73	0.7	6	4
	5	●	MMS0400L-DIN-C	29.7	35.7	36.7	73.7	73	0.7	6	3
	3	★	MMS0400X3DB	12.7	22.7	23.7	70.7	70	0.7	6	3
	5	★	MMS0400X5DB	20.7	30.7	31.7	78.7	78	0.7	6	3
4.05	3	□	MMS0405S-DIN	17.7	23.7	28.7	65.7	65	0.7	6	4
	3	●	MMS0405S-DIN-C	17.7	23.7	28.7	65.7	65	0.7	6	3
	5	□	MMS0405L-DIN	29.7	35.7	36.7	73.7	73	0.7	6	4
	5	●	MMS0405L-DIN-C	29.7	35.7	36.7	73.7	73	0.7	6	3
4.1	3	□	MMS0410S-DIN	17.6	23.7	28.7	65.7	65	0.7	6	4
	3	●	MMS0410S-DIN-C	17.6	23.7	28.7	65.7	65	0.7	6	3
	5	□	MMS0410L-DIN	29.6	35.7	36.7	73.7	73	0.7	6	4
	5	●	MMS0410L-DIN-C	29.6	35.7	36.7	73.7	73	0.7	6	3
	3	★	MMS0410X3DB	13.0	24.7	26.7	73.7	73	0.7	6	3
5	★	MMS0410X5DB	21.2	33.7	35.7	82.7	82	0.7	6	3	
4.2	3	□	MMS0420S-DIN	17.5	23.8	28.8	65.8	65	0.8	6	4
	3	●	MMS0420S-DIN-C	17.5	23.8	28.8	65.8	65	0.8	6	3
	5	□	MMS0420L-DIN	29.5	35.8	36.8	73.8	73	0.8	6	4
	5	●	MMS0420L-DIN-C	29.5	35.8	36.8	73.8	73	0.8	6	3
	3	★	MMS0420X3DB	13.4	24.8	26.8	73.8	73	0.8	6	3
5	★	MMS0420X5DB	21.8	33.8	35.8	82.8	82	0.8	6	3	
4.3	3	□	MMS0430S-DIN	17.3	23.8	28.8	65.8	65	0.8	6	4
	3	●	MMS0430S-DIN-C	17.3	23.8	28.8	65.8	65	0.8	6	3
	5	□	MMS0430L-DIN	29.3	35.8	36.8	73.8	73	0.8	6	4
	5	●	MMS0430L-DIN-C	29.3	35.8	36.8	73.8	73	0.8	6	3
	3	★	MMS0430X3DB	13.7	24.8	26.8	73.8	73	0.8	6	3
5	★	MMS0430X5DB	22.3	33.8	35.8	82.8	82	0.8	6	3	
4.4	3	□	MMS0440S-DIN	17.2	23.8	28.8	65.8	65	0.8	6	4
	3	●	MMS0440S-DIN-C	17.2	23.8	28.8	65.8	65	0.8	6	3
	5	□	MMS0440L-DIN	29.2	35.8	36.8	73.8	73	0.8	6	4
	5	●	MMS0440L-DIN-C	29.2	35.8	36.8	73.8	73	0.8	6	3
	3	★	MMS0440X3DB	14.0	24.8	26.8	73.8	73	0.8	6	3
5	★	MMS0440X5DB	22.8	33.8	35.8	82.8	82	0.8	6	3	
4.5	3	□	MMS0450S-DIN	17.1	23.8	28.8	65.8	65	0.8	6	4
	3	●	MMS0450S-DIN-C	17.1	23.8	28.8	65.8	65	0.8	6	3
	5	□	MMS0450L-DIN	29.1	35.8	36.8	73.8	73	0.8	6	4
	5	●	MMS0450L-DIN-C	29.1	35.8	36.8	73.8	73	0.8	6	3
	3	★	MMS0450X3DB	14.3	24.8	26.8	73.8	73	0.8	6	3
5	★	MMS0450X5DB	23.3	33.8	35.8	82.8	82	0.8	6	3	
4.6	3	□	MMS0460S-DIN	16.9	23.8	28.8	65.8	65	0.8	6	2
	3	●	MMS0460S-DIN-C	16.9	23.8	28.8	65.8	65	0.8	6	1
	5	□	MMS0460L-DIN	28.9	35.8	36.8	73.8	73	0.8	6	2
	5	●	MMS0460L-DIN-C	28.9	35.8	36.8	73.8	73	0.8	6	1
	3	★	MMS0460X3DB	14.6	25.8	28.8	75.8	75	0.8	6	1
5	★	MMS0460X5DB	23.8	35.8	38.8	85.8	85	0.8	6	1	
4.65	3	□	MMS0465S-DIN	16.9	23.8	28.8	65.8	65	0.8	6	2
	3	●	MMS0465S-DIN-C	16.9	23.8	28.8	65.8	65	0.8	6	1
	5	□	MMS0465L-DIN	28.9	35.8	36.8	73.8	73	0.8	6	2
	5	●	MMS0465L-DIN-C	28.9	35.8	36.8	73.8	73	0.8	6	1

DC	Delik Derinliği (L/D)	DP7020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
4.7	3	□	MMS0470S-DIN	16.8	23.9	28.9	65.9	65	0.9	6	2
	3	●	MMS0470S-DIN-C	16.8	23.9	28.9	65.9	65	0.9	6	1
	5	□	MMS0470L-DIN	28.8	35.9	36.9	73.9	73	0.9	6	2
	5	●	MMS0470L-DIN-C	28.8	35.9	36.9	73.9	73	0.9	6	1
	3	★	MMS0470X3DB	15.0	25.9	28.9	75.9	75	0.9	6	1
	5	★	MMS0470X5DB	24.4	35.9	38.9	85.9	85	0.9	6	1
4.8	3	□	MMS0480S-DIN	20.7	27.9	28.9	65.9	65	0.9	6	2
	3	●	MMS0480S-DIN-C	20.7	27.9	28.9	65.9	65	0.9	6	1
	5	□	MMS0480L-DIN	36.7	43.9	44.9	81.9	81	0.9	6	2
	5	●	MMS0480L-DIN-C	36.7	43.9	44.9	81.9	81	0.9	6	1
	3	★	MMS0480X3DB	15.3	25.9	28.9	75.9	75	0.9	6	1
5	★	MMS0480X5DB	24.9	35.9	38.9	85.9	85	0.9	6	1	
4.9	3	□	MMS0490S-DIN	20.5	27.9	28.9	65.9	65	0.9	6	2
	3	●	MMS0490S-DIN-C	20.5	27.9	28.9	65.9	65	0.9	6	1
	5	□	MMS0490L-DIN	36.5	43.9	44.9	81.9	81	0.9	6	2
	5	●	MMS0490L-DIN-C	36.5	43.9	44.9	81.9	81	0.9	6	1
	3	★	MMS0490X3DB	15.6	25.9	28.9	75.9	75	0.9	6	1
5	★	MMS0490X5DB	25.4	35.9	38.9	85.9	85	0.9	6	1	
5.0	3	□	MMS0500S-DIN	20.4	27.9	28.9	65.9	65	0.9	6	2
	3	●	MMS0500S-DIN-C	20.4	27.9	28.9	65.9	65	0.9	6	1
	5	□	MMS0500L-DIN	36.4	43.9	44.9	81.9	81	0.9	6	2
	5	●	MMS0500L-DIN-C	36.4	43.9	44.9	81.9	81	0.9	6	1
	3	★	MMS0500X3DB	15.9	25.9	28.9	75.9	75	0.9	6	1
5	★	MMS0500X5DB	25.9	35.9	38.9	85.9	85	0.9	6	1	
5.05	3	□	MMS0505S-DIN	20.3	27.9	28.9	65.9	65	0.9	6	2
	3	●	MMS0505S-DIN-C	20.3	27.9	28.9	65.9	65	0.9	6	1
	5	□	MMS0505L-DIN	36.3	43.9	44.9	81.9	81	0.9	6	2
5	●	MMS0505L-DIN-C	36.3	43.9	44.9	81.9	81	0.9	6	1	
5.1	3	□	MMS0510S-DIN	20.3	27.9	28.9	65.9	65	0.9	6	2
	3	●	MMS0510S-DIN-C	20.3	27.9	28.9	65.9	65	0.9	6	1
	5	□	MMS0510L-DIN	36.3	43.9	44.9	81.9	81	0.9	6	2
	5	●	MMS0510L-DIN-C	36.3	43.9	44.9	81.9	81	0.9	6	1
	3	★	MMS0510X3DB	16.2	28.9	30.9	81.9	81	0.9	6	1
5	★	MMS0510X5DB	26.4	39.9	42.9	89.9	89	0.9	6	1	
5.2	3	□	MMS0520S-DIN	20.1	27.9	28.9	65.9	65	0.9	6	2
	3	●	MMS0520S-DIN-C	20.1	27.9	28.9	65.9	65	0.9	6	1
	5	□	MMS0520L-DIN	36.1	43.9	44.9	81.9	81	0.9	6	2
	5	●	MMS0520L-DIN-C	36.1	43.9	44.9	81.9	81	0.9	6	1
	3	★	MMS0520X3DB	16.5	28.9	30.9	81.9	81	0.9	6	1
5	★	MMS0520X5DB	26.9	39.9	42.9	89.9	89	0.9	6	1	
5.3	3	□	MMS0530S-DIN	20.0	28.0	29.0	66.0	65	1.0	6	2
	3	●	MMS0530S-DIN-C	20.0	28.0	29.0	66.0	65	1.0	6	1
	5	□	MMS0530L-DIN	36.0	44.0	45.0	82.0	81	1.0	6	2
	5	●	MMS0530L-DIN-C	36.0	44.0	45.0	82.0	81	1.0	6	1
	3	★	MMS0530X3DB	16.9	29.0	31.0	82.0	81	1.0	6	1
5	★	MMS0530X5DB	27.5	40.0	43.0	90.0	89	1.0	6	1	
5.4	3	□	MMS0540S-DIN	19.9	28.0	29.0	66.0	65	1.0	6	2
	3	●	MMS0540S-DIN-C	19.9	28.0	29.0	66.0	65	1.0	6	1
	5	□	MMS0540L-DIN	35.9	44.0	45.0	82.0	81	1.0	6	2
	5	●	MMS0540L-DIN-C	35.9	44.0	45.0	82.0	81	1.0	6	1
	3	★	MMS0540X3DB	17.2	29.0	31.0	82.0	81	1.0	6	1
5	★	MMS0540X5DB	28.0	40.0	43.0	90.0	89	1.0	6	1	

M

DELME

DC	Delik Derinliği (mm)	DP7020 (L/D)	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
5.5	3	□	MMS0550S-DIN	19.8	28.0	29.0	66.0	65	1.0	6	2
	3	●	MMS0550S-DIN-C	19.8	28.0	29.0	66.0	65	1.0	6	1
	5	□	MMS0550L-DIN	35.8	44.0	45.0	82.0	81	1.0	6	2
	5	●	MMS0550L-DIN-C	35.8	44.0	45.0	82.0	81	1.0	6	1
	3	★	MMS0550X3DB	17.5	29.0	31.0	82.0	81	1.0	6	1
	5	★	MMS0550X5DB	28.5	40.0	43.0	90.0	89	1.0	6	1
5.55	3	□	MMS0555S-DIN	19.7	28.0	29.0	66.0	65	1.0	6	2
	3	●	MMS0555S-DIN-C	19.7	28.0	29.0	66.0	65	1.0	6	1
	5	●	MMS0555L-DIN-C	35.7	44.0	45.0	82.0	81	1.0	6	1
5.6	3	□	MMS0560S-DIN	19.6	28.0	29.0	66.0	65	1.0	6	2
	3	●	MMS0560S-DIN-C	19.6	28.0	29.0	66.0	65	1.0	6	1
	5	□	MMS0560L-DIN	35.6	44.0	45.0	82.0	81	1.0	6	2
	5	●	MMS0560L-DIN-C	35.6	44.0	45.0	82.0	81	1.0	6	1
	3	★	MMS0560X3DB	17.8	31.0	31.0	82.0	81	1.0	6	1
	5	★	MMS0560X5DB	29.0	43.0	43.0	90.0	89	1.0	6	1
5.7	3	□	MMS0570S-DIN	19.5	28.0	29.0	66.0	65	1.0	6	2
	3	●	MMS0570S-DIN-C	19.5	28.0	29.0	66.0	65	1.0	6	1
	5	□	MMS0570L-DIN	35.5	44.0	45.0	82.0	81	1.0	6	2
	5	●	MMS0570L-DIN-C	35.5	44.0	45.0	82.0	81	1.0	6	1
	3	★	MMS0570X3DB	18.1	31.0	31.0	82.0	81	1.0	6	1
	5	★	MMS0570X5DB	29.5	43.0	43.0	90.0	89	1.0	6	1
5.8	3	□	MMS0580S-DIN	19.4	28.1	29.1	66.1	65	1.1	6	2
	3	●	MMS0580S-DIN-C	19.4	28.1	29.1	66.1	65	1.1	6	1
	5	□	MMS0580L-DIN	35.4	44.1	45.1	82.1	81	1.1	6	2
	5	●	MMS0580L-DIN-C	35.4	44.1	45.1	82.1	81	1.1	6	1
	3	★	MMS0580X3DB	18.5	31.1	31.1	82.1	81	1.1	6	1
	5	★	MMS0580X5DB	30.1	43.1	43.1	90.1	89	1.1	6	1
5.9	3	□	MMS0590S-DIN	19.2	28.1	29.1	66.1	65	1.1	6	2
	3	□	MMS0590S-DIN-C	19.2	28.1	29.1	66.1	65	1.1	6	1
	5	□	MMS0590L-DIN	35.2	44.1	45.1	82.1	81	1.1	6	2
	5	□	MMS0590L-DIN-C	35.2	44.1	45.1	82.1	81	1.1	6	1
	3	★	MMS0590X3DB	18.8	31.1	31.1	82.1	81	1.1	6	1
	5	★	MMS0590X5DB	30.6	43.1	43.1	90.1	89	1.1	6	1
6.0	3	□	MMS0600S-DIN	19.1	28.1	29.1	66.1	65	1.1	6	2
	3	●	MMS0600S-DIN-C	19.1	28.1	29.1	66.1	65	1.1	6	1
	5	□	MMS0600L-DIN	35.1	44.1	45.1	82.1	81	1.1	6	2
	5	●	MMS0600L-DIN-C	35.1	44.1	45.1	82.1	81	1.1	6	1
	3	★	MMS0600X3DB	19.1	31.1	31.1	82.1	81	1.1	6	1
	5	★	MMS0600X5DB	31.1	43.1	43.1	90.1	89	1.1	6	1
6.05	3	□	MMS0605S-DIN	25.0	34.1	42.1	79.1	78	1.1	8	2
	3	●	MMS0605S-DIN-C	25.0	34.1	42.1	79.1	78	1.1	8	1
	5	□	MMS0605L-DIN	44.0	53.1	54.1	91.1	90	1.1	8	2
	5	●	MMS0605L-DIN-C	44.0	53.1	54.1	91.1	90	1.1	8	1
6.1	3	□	MMS0610S-DIN	25.0	34.1	42.1	79.1	78	1.1	8	2
	3	●	MMS0610S-DIN-C	25.0	34.1	42.1	79.1	78	1.1	8	1
	5	□	MMS0610L-DIN	44.0	53.1	54.1	91.1	90	1.1	8	2
	5	●	MMS0610L-DIN-C	44.0	53.1	54.1	91.1	90	1.1	8	1
	3	★	MMS0610X3DB	19.4	34.1	36.1	87.1	86	1.1	8	1
	5	★	MMS0610X5DB	31.6	47.1	49.1	96.1	95	1.1	8	1

DC	Delik Derinliği (mm)	DP7020 (L/D)	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
6.2	3	□	MMS0620S-DIN	24.8	34.1	42.1	79.1	78	1.1	8	2
	3	●	MMS0620S-DIN-C	24.8	34.1	42.1	79.1	78	1.1	8	1
	5	□	MMS0620L-DIN	43.8	53.1	54.1	91.1	90	1.1	8	2
	5	●	MMS0620L-DIN-C	43.8	53.1	54.1	91.1	90	1.1	8	1
	3	★	MMS0620X3DB	19.7	34.1	36.1	87.1	86	1.1	8	1
	5	★	MMS0620X5DB	32.1	47.1	49.1	96.1	95	1.1	8	1
6.3	3	□	MMS0630S-DIN	24.7	34.1	42.1	79.1	78	1.1	8	2
	3	□	MMS0630S-DIN-C	24.7	34.1	42.1	79.1	78	1.1	8	1
	5	□	MMS0630L-DIN	43.7	53.1	54.1	91.1	90	1.1	8	2
	5	□	MMS0630L-DIN-C	43.7	53.1	54.1	91.1	90	1.1	8	1
	3	★	MMS0630X3DB	20.0	34.1	36.1	87.1	86	1.1	8	1
	5	★	MMS0630X5DB	32.6	47.1	49.1	96.1	95	1.1	8	1
6.4	3	□	MMS0640S-DIN	24.6	34.2	42.2	79.2	78	1.2	8	2
	3	□	MMS0640S-DIN-C	24.6	34.2	42.2	79.2	78	1.2	8	1
	5	□	MMS0640L-DIN	43.6	53.2	54.2	91.2	90	1.2	8	2
	5	□	MMS0640L-DIN-C	43.6	53.2	54.2	91.2	90	1.2	8	1
	3	★	MMS0640X3DB	20.4	34.2	36.2	87.2	86	1.2	8	1
	5	★	MMS0640X5DB	33.2	47.2	49.2	96.2	95	1.2	8	1
6.5	3	□	MMS0650S-DIN	24.4	34.2	42.2	79.2	78	1.2	8	2
	3	●	MMS0650S-DIN-C	24.4	34.2	42.2	79.2	78	1.2	8	1
	5	□	MMS0650L-DIN	43.4	53.2	54.2	91.2	90	1.2	8	2
	5	●	MMS0650L-DIN-C	43.4	53.2	54.2	91.2	90	1.2	8	1
	3	★	MMS0650X3DB	20.7	34.2	36.2	87.2	86	1.2	8	1
	5	★	MMS0650X5DB	33.7	47.2	49.2	96.2	95	1.2	8	1
6.6	3	□	MMS0660S-DIN	24.3	34.2	42.2	79.2	78	1.2	8	2
	3	●	MMS0660S-DIN-C	24.3	34.2	42.2	79.2	78	1.2	8	1
	5	□	MMS0660L-DIN	43.3	53.2	54.2	91.2	90	1.2	8	2
	5	●	MMS0660L-DIN-C	43.3	53.2	54.2	91.2	90	1.2	8	1
	3	★	MMS0660X3DB	21.0	36.2	38.2	91.2	90	1.2	8	1
	5	★	MMS0660X5DB	34.2	50.2	52.2	99.2	98	1.2	8	1
6.7	3	□	MMS0670S-DIN	24.2	34.2	42.2	79.2	78	1.2	8	2
	3	□	MMS0670S-DIN-C	24.2	34.2	42.2	79.2	78	1.2	8	1
	5	□	MMS0670L-DIN	43.2	53.2	54.2	91.2	90	1.2	8	2
	5	□	MMS0670L-DIN-C	43.2	53.2	54.2	91.2	90	1.2	8	1
	3	★	MMS0670X3DB	21.3	36.2	38.2	91.2	90	1.2	8	1
	5	★	MMS0670X5DB	34.7	50.2	52.2	99.2	98	1.2	8	1
6.8	3	□	MMS0680S-DIN	24.0	34.2	42.2	79.2	78	1.2	8	2
	3	●	MMS0680S-DIN-C	24.0	34.2	42.2	79.2	78	1.2	8	1
	5	□	MMS0680L-DIN	43.0	53.2	54.2	91.2	90	1.2	8	2
	5	●	MMS0680L-DIN-C	43.0	53.2	54.2	91.2	90	1.2	8	1
	3	★	MMS0680X3DB	21.6	36.2	38.2	91.2	90	1.2	8	1
	5	★	MMS0680X5DB	35.2	50.2	52.2	99.2	98	1.2	8	1
6.9	3	□	MMS0690S-DIN	23.9	34.3	42.3	79.3	78	1.3	8	2
	3	●	MMS0690S-DIN-C	23.9	34.3	42.3	79.3	78	1.3	8	1
	5	□	MMS0690L-DIN	42.9	53.3	54.3	91.3	90	1.3	8	2
	5	●	MMS0690L-DIN-C	42.9	53.3	54.3	91.3	90	1.3	8	1
	3	★	MMS0690X3DB	22.0	36.3	38.3	91.3	90	1.3	8	1
	5	★	MMS0690X5DB	35.8	50.3	52.3	99.3	98	1.3	8	1

● : Avrupa standart stok. ★ : Japonya standart stok.

□ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC (mm)	Delik Derinliği (L/D)	DP7020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
7.0	3	□	MMS0700S-DIN	23.8	34.3	42.3	79.3	78	1.3	8	2
	3	●	MMS0700S-DIN-C	23.8	34.3	42.3	79.3	78	1.3	8	1
	5	□	MMS0700L-DIN	42.8	53.3	54.3	91.3	90	1.3	8	2
	5	●	MMS0700L-DIN-C	42.8	53.3	54.3	91.3	90	1.3	8	1
	3	★	MMS0700X3DB	22.3	36.3	38.3	91.3	90	1.3	8	1
	5	★	MMS0700X5DB	36.3	50.3	52.3	99.3	98	1.3	8	1
7.1	3	□	MMS0710S-DIN	30.6	41.3	42.3	79.3	78	1.3	8	2
	3	□	MMS0710S-DIN-C	30.6	41.3	42.3	79.3	78	1.3	8	1
	5	□	MMS0710L-DIN	42.6	53.3	54.3	91.3	90	1.3	8	2
	5	□	MMS0710L-DIN-C	42.6	53.3	54.3	91.3	90	1.3	8	1
	3	★	MMS0710X3DB	22.6	39.3	40.3	91.3	90	1.3	8	1
	5	★	MMS0710X5DB	36.8	54.3	57.3	104.3	103	1.3	8	1
7.2	3	□	MMS0720S-DIN	30.5	41.3	42.3	79.3	78	1.3	8	2
	3	□	MMS0720S-DIN-C	30.5	41.3	42.3	79.3	78	1.3	8	1
	5	□	MMS0720L-DIN	42.5	53.3	54.3	91.3	90	1.3	8	2
	5	□	MMS0720L-DIN-C	42.5	53.3	54.3	91.3	90	1.3	8	1
	3	★	MMS0720X3DB	22.9	39.3	40.3	91.3	90	1.3	8	1
	5	★	MMS0720X5DB	37.3	54.3	57.3	104.3	103	1.3	8	1
7.3	3	□	MMS0730S-DIN	30.4	41.3	42.3	79.3	78	1.3	8	2
	3	●	MMS0730S-DIN-C	30.4	41.3	42.3	79.3	78	1.3	8	1
	5	□	MMS0730L-DIN	42.4	53.3	54.3	91.3	90	1.3	8	2
	5	●	MMS0730L-DIN-C	42.4	53.3	54.3	91.3	90	1.3	8	1
	3	★	MMS0730X3DB	23.2	39.3	40.3	91.3	90	1.3	8	1
	5	★	MMS0730X5DB	37.8	54.3	57.3	104.3	103	1.3	8	1
7.4	3	□	MMS0740S-DIN	30.2	41.3	42.3	79.3	78	1.3	8	2
	3	●	MMS0740S-DIN-C	30.2	41.3	42.3	79.3	78	1.3	8	1
	5	□	MMS0740L-DIN	42.2	53.3	54.3	91.3	90	1.3	8	2
	5	●	MMS0740L-DIN-C	42.2	53.3	54.3	91.3	90	1.3	8	1
	3	★	MMS0740X3DB	23.5	39.3	40.3	91.3	90	1.3	8	1
	5	★	MMS0740X5DB	38.3	54.3	57.3	104.3	103	1.3	8	1
7.5	3	□	MMS0750S-DIN	30.1	41.4	42.4	79.4	78	1.4	8	2
	3	●	MMS0750S-DIN-C	30.1	41.4	42.4	79.4	78	1.4	8	1
	5	□	MMS0750L-DIN	42.1	53.4	54.4	91.4	90	1.4	8	2
	5	●	MMS0750L-DIN-C	42.1	53.4	54.4	91.4	90	1.4	8	1
	3	★	MMS0750X3DB	23.9	39.4	40.4	91.4	90	1.4	8	1
	5	★	MMS0750X5DB	38.9	54.4	57.4	104.4	103	1.4	8	1
7.6	3	□	MMS0760S-DIN	30.0	41.4	42.4	79.4	78	1.4	8	2
	3	□	MMS0760S-DIN-C	30.0	41.4	42.4	79.4	78	1.4	8	1
	5	□	MMS0760L-DIN	42.0	53.4	54.4	91.4	90	1.4	8	2
	5	□	MMS0760L-DIN-C	42.0	53.4	54.4	91.4	90	1.4	8	1
	3	★	MMS0760X3DB	24.2	41.4	41.4	91.4	90	1.4	8	1
	5	★	MMS0760X5DB	39.4	57.4	57.4	104.4	103	1.4	8	1
7.7	3	□	MMS0770S-DIN	29.9	41.4	42.4	79.4	78	1.4	8	2
	3	□	MMS0770S-DIN-C	29.9	41.4	42.4	79.4	78	1.4	8	1
	5	□	MMS0770L-DIN	41.9	53.4	54.4	91.4	90	1.4	8	2
	5	□	MMS0770L-DIN-C	41.9	53.4	54.4	91.4	90	1.4	8	1
	3	★	MMS0770X3DB	24.5	41.4	41.4	91.4	90	1.4	8	1
	5	★	MMS0770X5DB	39.9	57.4	57.4	104.4	103	1.4	8	1

DC (mm)	Delik Derinliği (L/D)	DP7020	Sipariş No.	Boyutlar (mm)							Tip	
				LU	LCF	LH	OAL	LF	PL	DCONMS		
7.8	3	□	MMS0780S-DIN	29.7	41.4	42.4	79.4	78	1.4	8	2	
	3	●	MMS0780S-DIN-C	29.7	41.4	42.4	79.4	78	1.4	8	1	
	5	□	MMS0780L-DIN	41.7	53.4	54.4	91.4	90	1.4	8	2	
	5	●	MMS0780L-DIN-C	41.7	53.4	54.4	91.4	90	1.4	8	1	
	3	★	MMS0780X3DB	24.8	41.4	41.4	91.4	90	1.4	8	1	
	5	★	MMS0780X5DB	40.4	57.4	57.4	104.4	103	1.4	8	1	
7.9	3	□	MMS0790S-DIN	29.6	41.4	42.4	79.4	78	1.4	8	2	
	3	□	MMS0790S-DIN-C	29.6	41.4	42.4	79.4	78	1.4	8	1	
	5	□	MMS0790L-DIN	41.6	53.4	54.4	91.4	90	1.4	8	2	
	5	□	MMS0790L-DIN-C	41.6	53.4	54.4	91.4	90	1.4	8	1	
	3	★	MMS0790X3DB	25.1	41.4	41.4	91.4	90	1.4	8	1	
	5	★	MMS0790X5DB	40.9	57.4	57.4	104.4	103	1.4	8	1	
8.0	3	□	MMS0800S-DIN	29.5	41.5	42.5	79.5	78	1.5	8	2	
	3	●	MMS0800S-DIN-C	29.5	41.5	42.5	79.5	78	1.5	8	1	
	5	□	MMS0800L-DIN	41.5	53.5	54.5	91.5	90	1.5	8	2	
	5	●	MMS0800L-DIN-C	41.5	53.5	54.5	91.5	90	1.5	8	1	
	3	★	MMS0800X3DB	25.5	41.5	41.5	91.5	90	1.5	8	1	
	5	★	MMS0800X5DB	41.5	57.5	57.5	104.5	103	1.5	8	1	
8.05	3	□	MMS0805S-DIN	34.4	46.5	47.5	88.5	87	1.5	10	2	
	3	●	MMS0805S-DIN-C	34.4	46.5	47.5	88.5	87	1.5	10	1	
	5	□	MMS0805L-DIN	48.4	60.5	61.5	102.5	101	1.5	10	2	
	5	●	MMS0805L-DIN-C	48.4	60.5	61.5	102.5	101	1.5	10	1	
	8.1	3	□	MMS0810S-DIN	34.3	46.5	47.5	88.5	87	1.5	10	2
		3	□	MMS0810S-DIN-C	34.3	46.5	47.5	88.5	87	1.5	10	1
5		□	MMS0810L-DIN	48.3	60.5	61.5	102.5	101	1.5	10	2	
5		□	MMS0810L-DIN-C	48.3	60.5	61.5	102.5	101	1.5	10	1	
3		★	MMS0810X3DB	25.8	44.5	46.5	97.5	96	1.5	10	1	
5		★	MMS0810X5DB	42.0	61.5	63.5	114.5	113	1.5	10	1	
8.2	3	□	MMS0820S-DIN	34.2	46.5	47.5	88.5	87	1.5	10	2	
	3	□	MMS0820S-DIN-C	34.2	46.5	47.5	88.5	87	1.5	10	1	
	5	□	MMS0820L-DIN	48.2	60.5	61.5	102.5	101	1.5	10	2	
	5	□	MMS0820L-DIN-C	48.2	60.5	61.5	102.5	101	1.5	10	1	
	3	★	MMS0820X3DB	26.1	44.5	46.5	97.5	96	1.5	10	1	
	5	★	MMS0820X5DB	42.5	61.5	63.5	114.5	113	1.5	10	1	
8.3	3	□	MMS0830S-DIN	34.1	46.5	47.5	88.5	87	1.5	10	2	
	3	●	MMS0830S-DIN-C	34.1	46.5	47.5	88.5	87	1.5	10	1	
	5	□	MMS0830L-DIN	48.1	60.5	61.5	102.5	101	1.5	10	2	
	5	●	MMS0830L-DIN-C	48.1	60.5	61.5	102.5	101	1.5	10	1	
	3	★	MMS0830X3DB	26.4	44.5	46.5	97.5	96	1.5	10	1	
	5	★	MMS0830X5DB	43.0	61.5	63.5	114.5	113	1.5	10	1	
8.4	3	□	MMS0840S-DIN	33.9	46.5	47.5	88.5	87	1.5	10	2	
	3	□	MMS0840S-DIN-C	33.9	46.5	47.5	88.5	87	1.5	10	1	
	5	□	MMS0840L-DIN	47.9	60.5	61.5	102.5	101	1.5	10	2	
	5	□	MMS0840L-DIN-C	47.9	60.5	61.5	102.5	101	1.5	10	1	
	3	★	MMS0840X3DB	26.7	44.5	46.5	97.5	96	1.5	10	1	
	5	★	MMS0840X5DB	43.5	61.5	63.5	114.5	113	1.5	10	1	
8.5	3	□	MMS0850S-DIN	33.8	46.5	47.5	88.5	87	1.5	10	2	
	3	●	MMS0850S-DIN-C	33.8	46.5	47.5	88.5	87	1.5	10	1	
	5	□	MMS0850L-DIN	47.8	60.5	61.5	102.5	101	1.5	10	2	
	5	●	MMS0850L-DIN-C	47.8	60.5	61.5	102.5	101	1.5	10	1	
	3	★	MMS0850X3DB	27.0	44.5	46.5	97.5	96	1.5	10	1	
	5	★	MMS0850X5DB	44.0	61.5	63.5	114.5	113	1.5	10	1	

M

DELME

DC (mm)	Delik Derinliği (L/D)	DP7020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
8.6	3	□	MMS0860S-DIN	33.7	46.6	47.6	88.6	87	1.6	10	2
	3	●	MMS0860S-DIN-C	33.7	46.6	47.6	88.6	87	1.6	10	1
	5	□	MMS0860L-DIN	47.7	60.6	61.6	102.6	101	1.6	10	2
	5	●	MMS0860L-DIN-C	47.7	60.6	61.6	102.6	101	1.6	10	1
	3	★	MMS0860X3DB	27.4	46.6	48.6	102.6	101	1.6	10	1
	5	★	MMS0860X5DB	44.6	64.6	66.6	117.6	116	1.6	10	1
8.7	3	□	MMS0870S-DIN	33.5	46.6	47.6	88.6	87	1.6	10	2
	3	●	MMS0870S-DIN-C	33.5	46.6	47.6	88.6	87	1.6	10	1
	5	□	MMS0870L-DIN	47.5	60.6	61.6	102.6	101	1.6	10	2
	5	●	MMS0870L-DIN-C	47.5	60.6	61.6	102.6	101	1.6	10	1
	3	★	MMS0870X3DB	27.7	46.6	48.6	102.6	101	1.6	10	1
	5	★	MMS0870X5DB	45.1	64.6	66.6	117.6	116	1.6	10	1
8.8	3	□	MMS0880S-DIN	33.4	46.6	47.6	88.6	87	1.6	10	2
	3	●	MMS0880S-DIN-C	33.4	46.6	47.6	88.6	87	1.6	10	1
	5	□	MMS0880L-DIN	47.4	60.6	61.6	102.6	101	1.6	10	2
	5	●	MMS0880L-DIN-C	47.4	60.6	61.6	102.6	101	1.6	10	1
	3	★	MMS0880X3DB	28.0	46.6	48.6	102.6	101	1.6	10	1
	5	★	MMS0880X5DB	45.6	64.6	66.6	117.6	116	1.6	10	1
8.9	3	□	MMS0890S-DIN	33.3	46.6	47.6	88.6	87	1.6	10	2
	3	●	MMS0890S-DIN-C	33.3	46.6	47.6	88.6	87	1.6	10	1
	5	□	MMS0890L-DIN	47.3	60.6	61.6	102.6	101	1.6	10	2
	5	●	MMS0890L-DIN-C	47.3	60.6	61.6	102.6	101	1.6	10	1
	3	★	MMS0890X3DB	28.3	46.6	48.6	102.6	101	1.6	10	1
	5	★	MMS0890X5DB	46.1	64.6	66.6	117.6	116	1.6	10	1
9.0	3	□	MMS0900S-DIN	33.1	46.6	47.6	88.6	87	1.6	10	2
	3	●	MMS0900S-DIN-C	33.1	46.6	47.6	88.6	87	1.6	10	1
	5	□	MMS0900L-DIN	47.1	60.6	61.6	102.6	101	1.6	10	2
	5	●	MMS0900L-DIN-C	47.1	60.6	61.6	102.6	101	1.6	10	1
	3	★	MMS0900X3DB	28.6	46.6	48.6	102.6	101	1.6	10	1
	5	★	MMS0900X5DB	46.6	64.6	66.6	117.6	116	1.6	10	1
9.1	3	□	MMS0910S-DIN	33.0	46.7	47.7	88.7	87	1.7	10	2
	3	●	MMS0910S-DIN-C	33.0	46.7	47.7	88.7	87	1.7	10	1
	5	□	MMS0910L-DIN	47.0	60.7	61.7	102.7	101	1.7	10	2
	5	●	MMS0910L-DIN-C	47.0	60.7	61.7	102.7	101	1.7	10	1
	3	★	MMS0910X3DB	29.0	49.7	51.7	102.7	101	1.7	10	1
	5	★	MMS0910X5DB	47.2	68.7	71.7	122.7	121	1.7	10	1
9.2	3	□	MMS0920S-DIN	32.9	46.7	47.7	88.7	87	1.7	10	2
	3	●	MMS0920S-DIN-C	32.9	46.7	47.7	88.7	87	1.7	10	1
	5	□	MMS0920L-DIN	46.9	60.7	61.7	102.7	101	1.7	10	2
	5	●	MMS0920L-DIN-C	46.9	60.7	61.7	102.7	101	1.7	10	1
	3	★	MMS0920X3DB	29.3	49.7	51.7	102.7	101	1.7	10	1
	5	★	MMS0920X5DB	47.7	68.7	71.7	122.7	121	1.7	10	1
9.3	3	□	MMS0930S-DIN	32.7	46.7	47.7	88.7	87	1.7	10	2
	3	●	MMS0930S-DIN-C	32.7	46.7	47.7	88.7	87	1.7	10	1
	5	□	MMS0930L-DIN	46.7	60.7	61.7	102.7	101	1.7	10	2
	5	●	MMS0930L-DIN-C	46.7	60.7	61.7	102.7	101	1.7	10	1
	3	★	MMS0930X3DB	29.6	49.7	51.7	102.7	101	1.7	10	1
	5	★	MMS0930X5DB	48.2	68.7	71.7	122.7	121	1.7	10	1

DC (mm)	Delik Derinliği (L/D)	DP7020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
9.4	3	□	MMS0940S-DIN	32.6	46.7	47.7	88.7	87	1.7	10	2
	3	●	MMS0940S-DIN-C	32.6	46.7	47.7	88.7	87	1.7	10	1
	5	□	MMS0940L-DIN	46.6	60.7	61.7	102.7	101	1.7	10	2
	5	●	MMS0940L-DIN-C	46.6	60.7	61.7	102.7	101	1.7	10	1
	3	★	MMS0940X3DB	29.9	49.7	51.7	102.7	101	1.7	10	1
	5	★	MMS0940X5DB	48.7	68.7	71.7	122.7	121	1.7	10	1
9.5	3	□	MMS0950S-DIN	32.5	46.7	47.7	88.7	87	1.7	10	2
	3	●	MMS0950S-DIN-C	32.5	46.7	47.7	88.7	87	1.7	10	1
	5	□	MMS0950L-DIN	46.5	60.7	61.7	102.7	101	1.7	10	2
	5	●	MMS0950L-DIN-C	46.5	60.7	61.7	102.7	101	1.7	10	1
	3	★	MMS0950X3DB	30.2	49.7	51.7	102.7	101	1.7	10	1
	5	★	MMS0950X5DB	49.2	68.7	71.7	122.7	121	1.7	10	1
9.6	3	□	MMS0960S-DIN	32.3	46.7	47.7	88.7	87	1.7	10	2
	3	●	MMS0960S-DIN-C	32.3	46.7	47.7	88.7	87	1.7	10	1
	5	□	MMS0960L-DIN	46.3	60.7	61.7	102.7	101	1.7	10	2
	5	●	MMS0960L-DIN-C	46.3	60.7	61.7	102.7	101	1.7	10	1
	3	★	MMS0960X3DB	30.5	51.7	51.7	102.7	101	1.7	10	1
	5	★	MMS0960X5DB	49.7	71.7	71.7	122.7	121	1.7	10	1
9.7	3	□	MMS0970S-DIN	32.2	46.8	47.8	88.8	87	1.8	10	2
	3	●	MMS0970S-DIN-C	32.2	46.8	47.8	88.8	87	1.8	10	1
	5	□	MMS0970L-DIN	46.2	60.8	61.8	102.8	101	1.8	10	2
	5	●	MMS0970L-DIN-C	46.2	60.8	61.8	102.8	101	1.8	10	1
	3	★	MMS0970X3DB	30.9	51.8	51.8	102.8	101	1.8	10	1
	5	★	MMS0970X5DB	50.3	71.8	71.8	122.8	121	1.8	10	1
9.8	3	□	MMS0980S-DIN	32.1	46.8	47.8	88.8	87	1.8	10	2
	3	●	MMS0980S-DIN-C	32.1	46.8	47.8	88.8	87	1.8	10	1
	5	□	MMS0980L-DIN	46.1	60.8	61.8	102.8	101	1.8	10	2
	5	●	MMS0980L-DIN-C	46.1	60.8	61.8	102.8	101	1.8	10	1
	3	★	MMS0980X3DB	31.2	51.8	51.8	102.8	101	1.8	10	1
	5	★	MMS0980X5DB	50.8	71.8	71.8	122.8	121	1.8	10	1
9.9	3	□	MMS0990S-DIN	32.0	46.8	47.8	88.8	87	1.8	10	2
	3	●	MMS0990S-DIN-C	32.0	46.8	47.8	88.8	87	1.8	10	1
	5	□	MMS0990L-DIN	46.0	60.8	61.8	102.8	101	1.8	10	2
	5	●	MMS0990L-DIN-C	46.0	60.8	61.8	102.8	101	1.8	10	1
	3	★	MMS0990X3DB	31.5	51.8	51.8	102.8	101	1.8	10	1
	5	★	MMS0990X5DB	51.3	71.8	71.8	122.8	121	1.8	10	1
10.0	3	□	MMS1000S-DIN	31.8	46.8	47.8	88.8	87	1.8	10	2
	3	●	MMS1000S-DIN-C	31.8	46.8	47.8	88.8	87	1.8	10	1
	5	□	MMS1000L-DIN	45.8	60.8	61.8	102.8	101	1.8	10	2
	5	●	MMS1000L-DIN-C	45.8	60.8	61.8	102.8	101	1.8	10	1
	3	★	MMS1000X3DB	31.8	51.8	51.8	102.8	101	1.8	10	1
	5	★	MMS1000X5DB	51.8	71.8	71.8	122.8	121	1.8	10	1
10.05	3	□	MMS1005S-DIN	39.8	54.8	55.8	101.8	100	1.8	12	2
	3	●	MMS1005S-DIN-C	39.8	54.8	55.8	101.8	100	1.8	12	1
	5	□	MMS1005L-DIN	55.8	70.8	71.8	117.8	116	1.8	12	2
	5	●	MMS1005L-DIN-C	55.8	70.8	71.8	117.8	116	1.8	12	1

● : Avrupa standart stok. ★ : Japonya standart stok.

□ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC	Delik Derinliği (mm)	DP7020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
10.1	3	□	MMS1010S-DIN	39.7	54.8	55.8	101.8	100	1.8	12	2
	3	□	MMS1010S-DIN-C	39.7	54.8	55.8	101.8	100	1.8	12	1
	5	□	MMS1010L-DIN	55.7	70.8	71.8	117.8	116	1.8	12	2
	5	□	MMS1010L-DIN-C	55.7	70.8	71.8	117.8	116	1.8	12	1
	3	★	MMS1010X3DB	32.1	54.8	56.8	112.8	111	1.8	12	1
	5	★	MMS1010X5DB	52.3	75.8	79.8	135.8	134	1.8	12	1
10.2	3	□	MMS1020S-DIN	39.6	54.9	55.9	101.9	100	1.9	12	2
	3	●	MMS1020S-DIN-C	39.6	54.9	55.9	101.9	100	1.9	12	1
	5	□	MMS1020L-DIN	55.6	70.9	71.9	117.9	116	1.9	12	2
	5	●	MMS1020L-DIN-C	55.6	70.9	71.9	117.9	116	1.9	12	1
	3	★	MMS1020X3DB	32.5	54.9	56.9	112.9	111	1.9	12	1
	5	★	MMS1020X5DB	52.9	75.9	79.9	135.9	134	1.9	12	1
10.3	3	□	MMS1030S-DIN	39.4	54.9	55.9	101.9	100	1.9	12	2
	3	●	MMS1030S-DIN-C	39.4	54.9	55.9	101.9	100	1.9	12	1
	5	□	MMS1030L-DIN	55.4	70.9	71.9	117.9	116	1.9	12	2
	5	●	MMS1030L-DIN-C	55.4	70.9	71.9	117.9	116	1.9	12	1
	3	★	MMS1030X3DB	32.8	54.9	56.9	112.9	111	1.9	12	1
	5	★	MMS1030X5DB	53.4	75.9	79.9	135.9	134	1.9	12	1
10.4	3	□	MMS1040S-DIN	39.3	54.9	55.9	101.9	100	1.9	12	2
	3	●	MMS1040S-DIN-C	39.3	54.9	55.9	101.9	100	1.9	12	1
	5	□	MMS1040L-DIN	55.3	70.9	71.9	117.9	116	1.9	12	2
	5	●	MMS1040L-DIN-C	55.3	70.9	71.9	117.9	116	1.9	12	1
	3	★	MMS1040X3DB	33.1	54.9	56.9	112.9	111	1.9	12	1
	5	★	MMS1040X5DB	53.9	75.9	79.9	135.9	134	1.9	12	1
10.5	3	□	MMS1050S-DIN	39.2	54.9	55.9	101.9	100	1.9	12	2
	3	●	MMS1050S-DIN-C	39.2	54.9	55.9	101.9	100	1.9	12	1
	5	□	MMS1050L-DIN	55.2	70.9	71.9	117.9	116	1.9	12	2
	5	●	MMS1050L-DIN-C	55.2	70.9	71.9	117.9	116	1.9	12	1
	3	★	MMS1050X3DB	33.4	54.9	56.9	112.9	111	1.9	12	1
	5	★	MMS1050X5DB	54.4	75.9	79.9	135.9	134	1.9	12	1
10.6	3	□	MMS1060S-DIN	39.0	54.9	55.9	101.9	100	1.9	12	2
	3	□	MMS1060S-DIN-C	39.0	54.9	55.9	101.9	100	1.9	12	1
	5	□	MMS1060L-DIN	55.0	70.9	71.9	117.9	116	1.9	12	2
	5	□	MMS1060L-DIN-C	55.0	70.9	71.9	117.9	116	1.9	12	1
	3	★	MMS1060X3DB	33.7	56.9	57.9	117.9	116	1.9	12	1
	5	★	MMS1060X5DB	54.9	78.9	79.9	135.9	134	1.9	12	1
10.7	3	□	MMS1070S-DIN	38.9	54.9	55.9	101.9	100	1.9	12	2
	3	●	MMS1070S-DIN-C	38.9	54.9	55.9	101.9	100	1.9	12	1
	5	□	MMS1070L-DIN	54.9	70.9	71.9	117.9	116	1.9	12	2
	5	●	MMS1070L-DIN-C	54.9	70.9	71.9	117.9	116	1.9	12	1
	3	★	MMS1070X3DB	34.0	56.9	57.9	117.9	116	1.9	12	1
	5	★	MMS1070X5DB	55.4	78.9	79.9	135.9	134	1.9	12	1
10.8	3	□	MMS1080S-DIN	38.8	55.0	56.0	102.0	100	2.0	12	2
	3	●	MMS1080S-DIN-C	38.8	55.0	56.0	102.0	100	2.0	12	1
	5	□	MMS1080L-DIN	54.8	71.0	72.0	118.0	116	2.0	12	2
	5	●	MMS1080L-DIN-C	54.8	71.0	72.0	118.0	116	2.0	12	1
	3	★	MMS1080X3DB	34.4	57.0	58.0	118.0	116	2.0	12	1
	5	★	MMS1080X5DB	56.0	79.0	80.0	136.0	134	2.0	12	1

DC	Delik Derinliği (mm)	DP7020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
10.9	3	□	MMS1090S-DIN	38.6	55.0	56.0	102.0	100	2.0	12	2
	3	□	MMS1090S-DIN-C	38.6	55.0	56.0	102.0	100	2.0	12	1
	5	□	MMS1090L-DIN	54.6	71.0	72.0	118.0	116	2.0	12	2
	5	□	MMS1090L-DIN-C	54.6	71.0	72.0	118.0	116	2.0	12	1
	3	★	MMS1090X3DB	34.7	57.0	58.0	118.0	116	2.0	12	1
	5	★	MMS1090X5DB	56.5	79.0	80.0	136.0	134	2.0	12	1
11.0	3	□	MMS1100S-DIN	38.5	55.0	56.0	102.0	100	2.0	12	2
	3	●	MMS1100S-DIN-C	38.5	55.0	56.0	102.0	100	2.0	12	1
	5	□	MMS1100L-DIN	54.5	71.0	72.0	118.0	116	2.0	12	2
	5	●	MMS1100L-DIN-C	54.5	71.0	72.0	118.0	116	2.0	12	1
	3	★	MMS1100X3DB	35.0	57.0	58.0	118.0	116	2.0	12	1
	5	★	MMS1100X5DB	57.0	79.0	80.0	136.0	134	2.0	12	1
11.1	3	□	MMS1110S-DIN	38.4	55.0	56.0	102.0	100	2.0	12	2
	3	□	MMS1110S-DIN-C	38.4	55.0	56.0	102.0	100	2.0	12	1
	5	□	MMS1110L-DIN	54.4	71.0	72.0	118.0	116	2.0	12	2
	5	□	MMS1110L-DIN-C	54.4	71.0	72.0	118.0	116	2.0	12	1
	3	★	MMS1110X3DB	35.3	60.0	62.0	118.0	116	2.0	12	1
	5	★	MMS1110X5DB	57.5	83.0	86.0	142.0	140	2.0	12	1
11.2	3	□	MMS1120S-DIN	38.2	55.0	56.0	102.0	100	2.0	12	2
	3	●	MMS1120S-DIN-C	38.2	55.0	56.0	102.0	100	2.0	12	1
	5	□	MMS1120L-DIN	54.2	71.0	72.0	118.0	116	2.0	12	2
	5	●	MMS1120L-DIN-C	54.2	71.0	72.0	118.0	116	2.0	12	1
	3	★	MMS1120X3DB	35.6	60.0	62.0	118.0	116	2.0	12	1
	5	★	MMS1120X5DB	58.0	83.0	86.0	142.0	140	2.0	12	1
11.3	3	□	MMS1130S-DIN	38.1	55.1	56.1	102.1	100	2.1	12	2
	3	□	MMS1130S-DIN-C	38.1	55.1	56.1	102.1	100	2.1	12	1
	5	□	MMS1130L-DIN	54.1	71.1	72.1	118.1	116	2.1	12	2
	5	□	MMS1130L-DIN-C	54.1	71.1	72.1	118.1	116	2.1	12	1
	3	★	MMS1130X3DB	36.0	60.1	62.1	118.1	116	2.1	12	1
	5	★	MMS1130X5DB	58.6	83.1	86.1	142.1	140	2.1	12	1
11.4	3	□	MMS1140S-DIN	38.0	55.1	56.1	102.1	100	2.1	12	2
	3	●	MMS1140S-DIN-C	38.0	55.1	56.1	102.1	100	2.1	12	1
	5	□	MMS1140L-DIN	54.0	71.1	72.1	118.1	116	2.1	12	2
	5	●	MMS1140L-DIN-C	54.0	71.1	72.1	118.1	116	2.1	12	1
	3	★	MMS1140X3DB	36.3	60.1	62.1	118.1	116	2.1	12	1
	5	★	MMS1140X5DB	59.1	83.1	86.1	142.1	140	2.1	12	1
11.5	3	□	MMS1150S-DIN	37.8	55.1	56.1	102.1	100	2.1	12	2
	3	●	MMS1150S-DIN-C	37.8	55.1	56.1	102.1	100	2.1	12	1
	5	□	MMS1150L-DIN	53.8	71.1	72.1	118.1	116	2.1	12	2
	5	●	MMS1150L-DIN-C	53.8	71.1	72.1	118.1	116	2.1	12	1
	3	★	MMS1150X3DB	36.6	60.1	62.1	118.1	116	2.1	12	1
	5	★	MMS1150X5DB	59.6	83.1	86.1	142.1	140	2.1	12	1
11.6	3	□	MMS1160S-DIN	37.7	55.1	56.1	102.1	100	2.1	12	2
	3	□	MMS1160S-DIN-C	37.7	55.1	56.1	102.1	100	2.1	12	1
	5	□	MMS1160L-DIN	53.7	71.1	72.1	118.1	116	2.1	12	2
	5	□	MMS1160L-DIN-C	53.7	71.1	72.1	118.1	116	2.1	12	1
	3	★	MMS1160X3DB	36.9	62.1	62.1	118.1	116	2.1	12	1
	5	★	MMS1160X5DB	60.1	86.1	86.1	142.1	140	2.1	12	1

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DELME

DC	Delik Derinliği (L/D)	DP7020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
13.2	3	□	MMS1320S-DIN	40.6	60.4	61.4	107.4	105	2.4	14	2
	3	□	MMS1320S-DIN-C	40.6	60.4	61.4	107.4	105	2.4	14	1
	5	□	MMS1320L-DIN	57.6	77.4	78.4	124.4	122	2.4	14	2
	5	□	MMS1320L-DIN-C	57.6	77.4	78.4	124.4	122	2.4	14	1
	3	★	MMS1320X3DB	42.0	70.4	72.4	128.4	126	2.4	14	1
	5	★	MMS1320X5DB	68.4	97.4	100.4	156.4	154	2.4	14	1
13.3	3	□	MMS1330S-DIN	40.5	60.4	61.4	107.4	105	2.4	14	2
	3	□	MMS1330S-DIN-C	40.5	60.4	61.4	107.4	105	2.4	14	1
	5	□	MMS1330L-DIN	57.5	77.4	78.4	124.4	122	2.4	14	2
	5	□	MMS1330L-DIN-C	57.5	77.4	78.4	124.4	122	2.4	14	1
	3	★	MMS1330X3DB	42.3	70.4	72.4	128.4	126	2.4	14	1
	5	★	MMS1330X5DB	68.9	97.4	100.4	156.4	154	2.4	14	1
13.4	3	□	MMS1340S-DIN	40.3	60.4	61.4	107.4	105	2.4	14	2
	3	□	MMS1340S-DIN-C	40.3	60.4	61.4	107.4	105	2.4	14	1
	5	□	MMS1340L-DIN	57.3	77.4	78.4	124.4	122	2.4	14	2
	5	□	MMS1340L-DIN-C	57.3	77.4	78.4	124.4	122	2.4	14	1
	3	★	MMS1340X3DB	42.6	70.4	72.4	128.4	126	2.4	14	1
	5	★	MMS1340X5DB	69.4	97.4	100.4	156.4	154	2.4	14	1
13.5	3	□	MMS1350S-DIN	40.2	60.5	61.5	107.5	105	2.5	14	2
	3	●	MMS1350S-DIN-C	40.2	60.5	61.5	107.5	105	2.5	14	1
	5	□	MMS1350L-DIN	57.2	77.5	78.5	124.5	122	2.5	14	2
	5	●	MMS1350L-DIN-C	57.2	77.5	78.5	124.5	122	2.5	14	1
	3	★	MMS1350X3DB	43.0	70.5	72.5	128.5	126	2.5	14	1
	5	★	MMS1350X5DB	70.0	97.5	100.5	156.5	154	2.5	14	1
13.6	3	□	MMS1360S-DIN	40.1	60.5	61.5	107.5	105	2.5	14	2
	3	□	MMS1360S-DIN-C	40.1	60.5	61.5	107.5	105	2.5	14	1
	5	□	MMS1360L-DIN	57.1	77.5	78.5	124.5	122	2.5	14	2
	5	□	MMS1360L-DIN-C	57.1	77.5	78.5	124.5	122	2.5	14	1
	3	★	MMS1360X3DB	43.3	72.5	72.5	128.5	126	2.5	14	1
	5	★	MMS1360X5DB	70.5	100.5	100.5	156.5	154	2.5	14	1
13.7	3	□	MMS1370S-DIN	39.9	60.5	61.5	107.5	105	2.5	14	2
	3	●	MMS1370S-DIN-C	39.9	60.5	61.5	107.5	105	2.5	14	1
	5	□	MMS1370L-DIN	56.9	77.5	78.5	124.5	122	2.5	14	2
	5	●	MMS1370L-DIN-C	56.9	77.5	78.5	124.5	122	2.5	14	1
	3	★	MMS1370X3DB	43.6	72.5	72.5	128.5	126	2.5	14	1
	5	★	MMS1370X5DB	71.0	100.5	100.5	156.5	154	2.5	14	1
13.8	3	□	MMS1380S-DIN	39.8	60.5	61.5	107.5	105	2.5	14	2
	3	□	MMS1380S-DIN-C	39.8	60.5	61.5	107.5	105	2.5	14	1
	5	□	MMS1380L-DIN	56.8	77.5	78.5	124.5	122	2.5	14	2
	5	□	MMS1380L-DIN-C	56.8	77.5	78.5	124.5	122	2.5	14	1
	3	★	MMS1380X3DB	43.9	72.5	72.5	128.5	126	2.5	14	1
	5	★	MMS1380X5DB	71.5	100.5	100.5	156.5	154	2.5	14	1
13.9	3	□	MMS1390S-DIN	39.7	60.5	61.5	107.5	105	2.5	14	2
	3	□	MMS1390S-DIN-C	39.7	60.5	61.5	107.5	105	2.5	14	1
	5	□	MMS1390L-DIN	56.7	77.5	78.5	124.5	122	2.5	14	2
	5	□	MMS1390L-DIN-C	56.7	77.5	78.5	124.5	122	2.5	14	1
	3	★	MMS1390X3DB	44.2	72.5	72.5	128.5	126	2.5	14	1
	5	★	MMS1390X5DB	72.0	100.5	100.5	156.5	154	2.5	14	1

DC	Delik Derinliği (L/D)	DP7020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
14.0	3	□	MMS1400S-DIN	39.5	60.5	61.5	107.5	105	2.5	14	2
	3	●	MMS1400S-DIN-C	39.5	60.5	61.5	107.5	105	2.5	14	1
	5	□	MMS1400L-DIN	56.5	77.5	78.5	124.5	122	2.5	14	2
	5	●	MMS1400L-DIN-C	56.5	77.5	78.5	124.5	122	2.5	14	1
	3	★	MMS1400X3DB	44.5	72.5	72.5	128.5	126	2.5	14	1
	5	★	MMS1400X5DB	72.5	100.5	100.5	156.5	154	2.5	14	1
14.05	3	□	MMS1405S-DIN	43.5	64.6	65.6	114.6	112	2.6	16	2
	3	□	MMS1405S-DIN-C	43.5	64.6	65.6	114.6	112	2.6	16	1
	5	□	MMS1405L-DIN	61.5	82.6	83.6	132.6	130	2.6	16	2
	5	□	MMS1405L-DIN-C	61.5	82.6	83.6	132.6	130	2.6	16	1
14.1	3	□	MMS1410S-DIN	43.4	64.6	65.6	114.6	112	2.6	16	2
	3	□	MMS1410S-DIN-C	43.4	64.6	65.6	114.6	112	2.6	16	1
	5	□	MMS1410L-DIN	61.4	82.6	83.6	132.6	130	2.6	16	2
	5	□	MMS1410L-DIN-C	61.4	82.6	83.6	132.6	130	2.6	16	1
	3	★	MMS1410X3DB	44.9	75.6	78.6	137.6	135	2.6	16	1
5	★	MMS1410X5DB	73.1	104.6	108.6	167.6	165	2.6	16	1	
14.2	3	□	MMS1420S-DIN	43.3	64.6	65.6	114.6	112	2.6	16	2
	3	□	MMS1420S-DIN-C	43.3	64.6	65.6	114.6	112	2.6	16	1
	5	□	MMS1420L-DIN	61.3	82.6	83.6	132.6	130	2.6	16	2
	5	□	MMS1420L-DIN-C	61.3	82.6	83.6	132.6	130	2.6	16	1
	3	★	MMS1420X3DB	45.2	75.6	78.6	137.6	135	2.6	16	1
5	★	MMS1420X5DB	73.6	104.6	108.6	167.6	165	2.6	16	1	
14.3	3	□	MMS1430S-DIN	43.2	64.6	65.6	114.6	112	2.6	16	2
	3	□	MMS1430S-DIN-C	43.2	64.6	65.6	114.6	112	2.6	16	1
	5	□	MMS1430L-DIN	61.2	82.6	83.6	132.6	130	2.6	16	2
	5	□	MMS1430L-DIN-C	61.2	82.6	83.6	132.6	130	2.6	16	1
	3	★	MMS1430X3DB	45.5	75.6	78.6	137.6	135	2.6	16	1
5	★	MMS1430X5DB	74.1	104.6	108.6	167.6	165	2.6	16	1	
14.4	3	□	MMS1440S-DIN	43.0	64.6	65.6	114.6	112	2.6	16	2
	3	□	MMS1440S-DIN-C	43.0	64.6	65.6	114.6	112	2.6	16	1
	5	□	MMS1440L-DIN	61.0	82.6	83.6	132.6	130	2.6	16	2
	5	□	MMS1440L-DIN-C	61.0	82.6	83.6	132.6	130	2.6	16	1
	3	★	MMS1440X3DB	45.8	75.6	78.6	137.6	135	2.6	16	1
5	★	MMS1440X5DB	74.6	104.6	108.6	167.6	165	2.6	16	1	
14.5	3	□	MMS1450S-DIN	42.9	64.6	65.6	114.6	112	2.6	16	2
	3	□	MMS1450S-DIN-C	42.9	64.6	65.6	114.6	112	2.6	16	1
	5	□	MMS1450L-DIN	60.9	82.6	83.6	132.6	130	2.6	16	2
	5	□	MMS1450L-DIN-C	60.9	82.6	83.6	132.6	130	2.6	16	1
	3	★	MMS1450X3DB	46.1	75.6	78.6	137.6	135	2.6	16	1
5	★	MMS1450X5DB	75.1	104.6	108.6	167.6	165	2.6	16	1	
14.6	3	□	MMS1460S-DIN	42.8	64.7	65.7	114.7	112	2.7	16	2
	3	□	MMS1460S-DIN-C	42.8	64.7	65.7	114.7	112	2.7	16	1
	5	□	MMS1460L-DIN	60.8	82.7	83.7	132.7	130	2.7	16	2
	5	□	MMS1460L-DIN-C	60.8	82.7	83.7	132.7	130	2.7	16	1
	3	★	MMS1460X3DB	46.5	77.7	78.7	137.7	135	2.7	16	1
5	★	MMS1460X5DB	75.7	107.7	108.7	167.7	165	2.7	16	1	
14.7	3	□	MMS1470S-DIN	42.6	64.7	65.7	114.7	112	2.7	16	2
	3	□	MMS1470S-DIN-C	42.6	64.7	65.7	114.7	112	2.7	16	1
	5	□	MMS1470L-DIN	60.6	82.7	83.7	132.7	130	2.7	16	2
	5	□	MMS1470L-DIN-C	60.6	82.7	83.7	132.7	130	2.7	16	1
	3	★	MMS1470X3DB	46.8	77.7	78.7	137.7	135	2.7	16	1
5	★	MMS1470X5DB	76.2	107.7	108.7	167.7	165	2.7	16	1	

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DELME

DC (mm)	Delik Derinliği (L/D)	DP7020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
14.8	3	<input type="checkbox"/>	MMS1480S-DIN	42.5	64.7	65.7	114.7	112	2.7	16	2
	3	<input type="checkbox"/>	MMS1480S-DIN-C	42.5	64.7	65.7	114.7	112	2.7	16	1
	5	<input type="checkbox"/>	MMS1480L-DIN	60.5	82.7	83.7	132.7	130	2.7	16	2
	5	<input type="checkbox"/>	MMS1480L-DIN-C	60.5	82.7	83.7	132.7	130	2.7	16	1
	3	★	MMS1480X3DB	47.1	77.7	78.7	137.7	135	2.7	16	1
	5	★	MMS1480X5DB	76.7	107.7	108.7	167.7	165	2.7	16	1
14.9	3	<input type="checkbox"/>	MMS1490S-DIN	42.4	64.7	65.7	114.7	112	2.7	16	2
	3	<input type="checkbox"/>	MMS1490S-DIN-C	42.4	64.7	65.7	114.7	112	2.7	16	1
	5	<input type="checkbox"/>	MMS1490L-DIN	60.4	82.7	83.7	132.7	130	2.7	16	2
	5	<input type="checkbox"/>	MMS1490L-DIN-C	60.4	82.7	83.7	132.7	130	2.7	16	1
	3	★	MMS1490X3DB	47.4	77.7	78.7	137.7	135	2.7	16	1
	5	★	MMS1490X5DB	77.2	107.7	108.7	167.7	165	2.7	16	1
15.0	3	<input type="checkbox"/>	MMS1500S-DIN	42.2	64.7	65.7	114.7	112	2.7	16	2
	3	<input type="checkbox"/>	MMS1500S-DIN-C	42.2	64.7	65.7	114.7	112	2.7	16	1
	5	<input type="checkbox"/>	MMS1500L-DIN	60.2	82.7	83.7	132.7	130	2.7	16	2
	5	<input type="checkbox"/>	MMS1500L-DIN-C	60.2	82.7	83.7	132.7	130	2.7	16	1
	3	★	MMS1500X3DB	47.7	77.7	78.7	137.7	135	2.7	16	1
	5	★	MMS1500X5DB	77.7	107.7	108.7	167.7	165	2.7	16	1
15.1	3	<input type="checkbox"/>	MMS1510S-DIN	42.1	64.7	65.7	114.7	112	2.7	16	2
	3	<input type="checkbox"/>	MMS1510S-DIN-C	42.1	64.7	65.7	114.7	112	2.7	16	1
	5	<input type="checkbox"/>	MMS1510L-DIN	60.1	82.7	83.7	132.7	130	2.7	16	2
	5	<input type="checkbox"/>	MMS1510L-DIN-C	60.1	82.7	83.7	132.7	130	2.7	16	1
	3	★	MMS1510X3DB	48.0	80.7	82.7	141.7	139	2.7	16	1
	5	★	MMS1510X5DB	78.2	111.7	114.7	173.7	171	2.7	16	1
15.2	3	<input type="checkbox"/>	MMS1520S-DIN	42.0	64.8	65.8	114.8	112	2.8	16	2
	3	<input type="checkbox"/>	MMS1520S-DIN-C	42.0	64.8	65.8	114.8	112	2.8	16	1
	5	<input type="checkbox"/>	MMS1520L-DIN	60.0	82.8	83.8	132.8	130	2.8	16	2
	5	<input type="checkbox"/>	MMS1520L-DIN-C	60.0	82.8	83.8	132.8	130	2.8	16	1
	3	★	MMS1520X3DB	48.4	80.8	82.8	141.8	139	2.8	16	1
	5	★	MMS1520X5DB	78.8	111.8	114.8	173.8	171	2.8	16	1
15.3	3	<input type="checkbox"/>	MMS1530S-DIN	41.8	64.8	65.8	114.8	112	2.8	16	2
	3	<input type="checkbox"/>	MMS1530S-DIN-C	41.8	64.8	65.8	114.8	112	2.8	16	1
	5	<input type="checkbox"/>	MMS1530L-DIN	59.8	82.8	83.8	132.8	130	2.8	16	2
	5	<input type="checkbox"/>	MMS1530L-DIN-C	59.8	82.8	83.8	132.8	130	2.8	16	1
	3	★	MMS1530X3DB	48.7	80.8	82.8	141.8	139	2.8	16	1
	5	★	MMS1530X5DB	79.3	111.8	114.8	173.8	171	2.8	16	1
15.4	3	<input type="checkbox"/>	MMS1540S-DIN	41.7	64.8	65.8	114.8	112	2.8	16	2
	3	<input type="checkbox"/>	MMS1540S-DIN-C	41.7	64.8	65.8	114.8	112	2.8	16	1
	5	<input type="checkbox"/>	MMS1540L-DIN	59.7	82.8	83.8	132.8	130	2.8	16	2
	5	<input type="checkbox"/>	MMS1540L-DIN-C	59.7	82.8	83.8	132.8	130	2.8	16	1
	3	★	MMS1540X3DB	49.0	80.8	82.8	141.8	139	2.8	16	1
	5	★	MMS1540X5DB	79.8	111.8	114.8	173.8	171	2.8	16	1
15.5	3	<input type="checkbox"/>	MMS1550S-DIN	41.6	64.8	65.8	114.8	112	2.8	16	2
	3	<input type="checkbox"/>	MMS1550S-DIN-C	41.6	64.8	65.8	114.8	112	2.8	16	1
	5	<input type="checkbox"/>	MMS1550L-DIN	59.6	82.8	83.8	132.8	130	2.8	16	2
	5	<input type="checkbox"/>	MMS1550L-DIN-C	59.6	82.8	83.8	132.8	130	2.8	16	1
	3	★	MMS1550X3DB	49.3	80.8	82.8	141.8	139	2.8	16	1
	5	★	MMS1550X5DB	80.3	111.8	114.8	173.8	171	2.8	16	1

DC (mm)	Delik Derinliği (L/D)	DP7020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
15.6	3	<input type="checkbox"/>	MMS1560S-DIN	41.4	64.8	65.8	114.8	112	2.8	16	2
	3	<input type="checkbox"/>	MMS1560S-DIN-C	41.4	64.8	65.8	114.8	112	2.8	16	1
	5	<input type="checkbox"/>	MMS1560L-DIN	59.4	82.8	83.8	132.8	130	2.8	16	2
	5	<input type="checkbox"/>	MMS1560L-DIN-C	59.4	82.8	83.8	132.8	130	2.8	16	1
	3	★	MMS1560X3DB	49.6	82.8	82.8	141.8	139	2.8	16	1
	5	★	MMS1560X5DB	80.8	114.8	114.8	173.8	171	2.8	16	1
15.7	3	<input type="checkbox"/>	MMS1570S-DIN	41.3	64.9	65.9	114.9	112	2.9	16	2
	3	<input type="checkbox"/>	MMS1570S-DIN-C	41.3	64.9	65.9	114.9	112	2.9	16	1
	5	<input type="checkbox"/>	MMS1570L-DIN	59.3	82.9	83.9	132.9	130	2.9	16	2
	5	<input type="checkbox"/>	MMS1570L-DIN-C	59.3	82.9	83.9	132.9	130	2.9	16	1
	3	★	MMS1570X3DB	50.0	82.9	82.9	141.9	139	2.9	16	1
	5	★	MMS1570X5DB	81.4	114.9	114.9	173.9	171	2.9	16	1
15.8	3	<input type="checkbox"/>	MMS1580S-DIN	41.2	64.9	65.9	114.9	112	2.9	16	2
	3	<input type="checkbox"/>	MMS1580S-DIN-C	41.2	64.9	65.9	114.9	112	2.9	16	1
	5	<input type="checkbox"/>	MMS1580L-DIN	59.2	82.9	83.9	132.9	130	2.9	16	2
	5	<input type="checkbox"/>	MMS1580L-DIN-C	59.2	82.9	83.9	132.9	130	2.9	16	1
	3	★	MMS1580X3DB	50.3	82.9	82.9	141.9	139	2.9	16	1
	5	★	MMS1580X5DB	81.9	114.9	114.9	173.9	171	2.9	16	1
15.9	3	<input type="checkbox"/>	MMS1590S-DIN	41.0	64.9	65.9	114.9	112	2.9	16	2
	3	<input type="checkbox"/>	MMS1590S-DIN-C	41.0	64.9	65.9	114.9	112	2.9	16	1
	5	<input type="checkbox"/>	MMS1590L-DIN	59.0	82.9	83.9	132.9	130	2.9	16	2
	5	<input type="checkbox"/>	MMS1590L-DIN-C	59.0	82.9	83.9	132.9	130	2.9	16	1
	3	★	MMS1590X3DB	50.6	82.9	82.9	141.9	139	2.9	16	1
	5	★	MMS1590X5DB	82.4	114.9	114.9	173.9	171	2.9	16	1
16.0	3	<input type="checkbox"/>	MMS1600S-DIN	40.9	64.9	65.9	114.9	112	2.9	16	2
	3	<input type="checkbox"/>	MMS1600S-DIN-C	40.9	64.9	65.9	114.9	112	2.9	16	1
	5	<input type="checkbox"/>	MMS1600L-DIN	58.9	82.9	83.9	132.9	130	2.9	16	2
	5	<input type="checkbox"/>	MMS1600L-DIN-C	58.9	82.9	83.9	132.9	130	2.9	16	1
	3	★	MMS1600X3DB	50.9	82.9	82.9	141.9	139	2.9	16	1
	5	★	MMS1600X5DB	82.9	114.9	114.9	173.9	171	2.9	16	1
16.1	3	<input type="checkbox"/>	MMS1610S-DIN	48.8	72.9	73.9	122.9	120	2.9	18	2
	3	<input type="checkbox"/>	MMS1610S-DIN-C	48.8	72.9	73.9	122.9	120	2.9	18	1
	5	<input type="checkbox"/>	MMS1610L-DIN	68.8	92.9	93.9	142.9	140	2.9	18	2
	5	<input type="checkbox"/>	MMS1610L-DIN-C	68.8	92.9	93.9	142.9	140	2.9	18	1
	3	<input type="checkbox"/>	MMS1610X3DB	51.2	85.9	88.9	147.9	145	2.9	18	1
	5	<input type="checkbox"/>	MMS1610X5DB	83.4	118.9	122.9	181.9	179	2.9	18	1
16.2	3	<input type="checkbox"/>	MMS1620S-DIN	48.6	72.9	73.9	122.9	120	2.9	18	2
	3	<input type="checkbox"/>	MMS1620S-DIN-C	48.6	72.9	73.9	122.9	120	2.9	18	1
	5	<input type="checkbox"/>	MMS1620L-DIN	68.6	92.9	93.9	142.9	140	2.9	18	2
	5	<input type="checkbox"/>	MMS1620L-DIN-C	68.6	92.9	93.9	142.9	140	2.9	18	1
	3	<input type="checkbox"/>	MMS1620X3DB	51.5	85.9	88.9	147.9	145	2.9	18	1
	5	<input type="checkbox"/>	MMS1620X5DB	83.9	118.9	122.9	181.9	179	2.9	18	1
16.3	3	<input type="checkbox"/>	MMS1630S-DIN	48.5	73.0	74.0	123.0	120	3.0	18	2
	3	<input type="checkbox"/>	MMS1630S-DIN-C	48.5	73.0	74.0	123.0	120	3.0	18	1
	5	<input type="checkbox"/>	MMS1630L-DIN	68.5	93.0	94.0	143.0	140	3.0	18	2
	5	<input type="checkbox"/>	MMS1630L-DIN-C	68.5	93.0	94.0	143.0	140	3.0	18	1
	3	<input type="checkbox"/>	MMS1630X3DB	51.9	86.0	89.0	148.0	145	3.0	18	1
	5	<input type="checkbox"/>	MMS1630X5DB	84.5	119.0	123.0	182.0	179	3.0	18	1

★ : Japonya standart stok. □ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC	Delik Derinliği (L/D)	DP7020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
16.4	3	□	MMS1640S-DIN	48.4	73.0	74.0	123.0	120	3.0	18	2
	3	□	MMS1640S-DIN-C	48.4	73.0	74.0	123.0	120	3.0	18	1
	5	□	MMS1640L-DIN	68.4	93.0	94.0	143.0	140	3.0	18	2
	5	□	MMS1640L-DIN-C	68.4	93.0	94.0	143.0	140	3.0	18	1
	3	□	MMS1640X3DB	52.2	86.0	89.0	148.0	145	3.0	18	1
	5	□	MMS1640X5DB	85.0	119.0	123.0	182.0	179	3.0	18	1
16.5	3	□	MMS1650S-DIN	48.3	73.0	74.0	123.0	120	3.0	18	2
	3	□	MMS1650S-DIN-C	48.3	73.0	74.0	123.0	120	3.0	18	1
	5	□	MMS1650L-DIN	68.3	93.0	94.0	143.0	140	3.0	18	2
	5	□	MMS1650L-DIN-C	68.3	93.0	94.0	143.0	140	3.0	18	1
	3	★	MMS1650X3DB	52.5	86.0	89.0	148.0	145	3.0	18	1
	5	★	MMS1650X5DB	85.5	119.0	123.0	182.0	179	3.0	18	1
16.6	3	□	MMS1660S-DIN	48.1	73.0	74.0	123.0	120	3.0	18	2
	3	□	MMS1660S-DIN-C	48.1	73.0	74.0	123.0	120	3.0	18	1
	5	□	MMS1660L-DIN	68.1	93.0	94.0	143.0	140	3.0	18	2
	5	□	MMS1660L-DIN-C	68.1	93.0	94.0	143.0	140	3.0	18	1
	3	□	MMS1660X3DB	52.8	88.0	89.0	148.0	145	3.0	18	1
	5	□	MMS1660X5DB	86.0	122.0	123.0	182.0	179	3.0	18	1
16.7	3	□	MMS1670S-DIN	48.0	73.0	74.0	123.0	120	3.0	18	2
	3	□	MMS1670S-DIN-C	48.0	73.0	74.0	123.0	120	3.0	18	1
	5	□	MMS1670L-DIN	68.0	93.0	94.0	143.0	140	3.0	18	2
	5	□	MMS1670L-DIN-C	68.0	93.0	94.0	143.0	140	3.0	18	1
	3	□	MMS1670X3DB	53.1	88.0	89.0	148.0	145	3.0	18	1
	5	□	MMS1670X5DB	86.5	122.0	123.0	182.0	179	3.0	18	1
16.8	3	□	MMS1680S-DIN	47.9	73.1	74.1	123.1	120	3.1	18	2
	3	□	MMS1680S-DIN-C	47.9	73.1	74.1	123.1	120	3.1	18	1
	5	□	MMS1680L-DIN	67.9	93.1	94.1	143.1	140	3.1	18	2
	5	□	MMS1680L-DIN-C	67.9	93.1	94.1	143.1	140	3.1	18	1
	3	□	MMS1680X3DB	53.5	88.1	89.1	148.1	145	3.1	18	1
	5	□	MMS1680X5DB	87.1	122.1	123.1	182.1	179	3.1	18	1
16.9	3	□	MMS1690S-DIN	47.7	73.1	74.1	123.1	120	3.1	18	2
	3	□	MMS1690S-DIN-C	47.7	73.1	74.1	123.1	120	3.1	18	1
	5	□	MMS1690L-DIN	67.7	93.1	94.1	143.1	140	3.1	18	2
	5	□	MMS1690L-DIN-C	67.7	93.1	94.1	143.1	140	3.1	18	1
	3	□	MMS1690X3DB	53.8	88.1	89.1	148.1	145	3.1	18	1
	5	□	MMS1690X5DB	87.6	122.1	123.1	182.1	179	3.1	18	1
17.0	3	□	MMS1700S-DIN	47.6	73.1	74.1	123.1	120	3.1	18	2
	3	□	MMS1700S-DIN-C	47.6	73.1	74.1	123.1	120	3.1	18	1
	5	□	MMS1700L-DIN	67.6	93.1	94.1	143.1	140	3.1	18	2
	5	□	MMS1700L-DIN-C	67.6	93.1	94.1	143.1	140	3.1	18	1
	3	★	MMS1700X3DB	54.1	88.1	89.1	148.1	145	3.1	18	1
	5	★	MMS1700X5DB	88.1	122.1	123.1	182.1	179	3.1	18	1
17.1	3	□	MMS1710S-DIN	47.5	73.1	74.1	123.1	120	3.1	18	2
	3	□	MMS1710S-DIN-C	47.5	73.1	74.1	123.1	120	3.1	18	1
	5	□	MMS1710L-DIN	67.5	93.1	94.1	143.1	140	3.1	18	2
	5	□	MMS1710L-DIN-C	67.5	93.1	94.1	143.1	140	3.1	18	1
	3	□	MMS1710X3DB	54.4	91.1	93.1	152.1	149	3.1	18	1
	5	□	MMS1710X5DB	88.6	126.1	129.1	188.1	185	3.1	18	1

DC	Delik Derinliği (L/D)	DP7020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
17.2	3	□	MMS1720S-DIN	47.3	73.1	74.1	123.1	120	3.1	18	2
	3	□	MMS1720S-DIN-C	47.3	73.1	74.1	123.1	120	3.1	18	1
	5	□	MMS1720L-DIN	67.3	93.1	94.1	143.1	140	3.1	18	2
	5	□	MMS1720L-DIN-C	67.3	93.1	94.1	143.1	140	3.1	18	1
	3	□	MMS1720X3DB	54.7	91.1	93.1	152.1	149	3.1	18	1
	5	□	MMS1720X5DB	89.1	126.1	129.1	188.1	185	3.1	18	1
17.3	3	□	MMS1730S-DIN	47.2	73.1	74.1	123.1	120	3.1	18	2
	3	□	MMS1730S-DIN-C	47.2	73.1	74.1	123.1	120	3.1	18	1
	5	□	MMS1730L-DIN	67.2	93.1	94.1	143.1	140	3.1	18	2
	5	□	MMS1730L-DIN-C	67.2	93.1	94.1	143.1	140	3.1	18	1
	3	□	MMS1730X3DB	55.0	91.1	93.1	152.1	149	3.1	18	1
	5	□	MMS1730X5DB	89.6	126.1	129.1	188.1	185	3.1	18	1
17.4	3	□	MMS1740S-DIN	47.1	73.2	74.2	123.2	120	3.2	18	2
	3	□	MMS1740S-DIN-C	47.1	73.2	74.2	123.2	120	3.2	18	1
	5	□	MMS1740L-DIN	67.1	93.2	94.2	143.2	140	3.2	18	2
	5	□	MMS1740L-DIN-C	67.1	93.2	94.2	143.2	140	3.2	18	1
	3	□	MMS1740X3DB	55.4	91.2	93.2	152.2	149	3.2	18	1
	5	□	MMS1740X5DB	90.2	126.2	129.2	188.2	185	3.2	18	1
17.5	3	□	MMS1750S-DIN	46.9	73.2	74.2	123.2	120	3.2	18	2
	3	□	MMS1750S-DIN-C	46.9	73.2	74.2	123.2	120	3.2	18	1
	5	□	MMS1750L-DIN	66.9	93.2	94.2	143.2	140	3.2	18	2
	5	□	MMS1750L-DIN-C	66.9	93.2	94.2	143.2	140	3.2	18	1
	3	★	MMS1750X3DB	55.7	91.2	93.2	152.2	149	3.2	18	1
	5	★	MMS1750X5DB	90.7	126.2	129.2	188.2	185	3.2	18	1
17.6	3	□	MMS1760S-DIN	46.8	73.2	74.2	123.2	120	3.2	18	2
	3	□	MMS1760S-DIN-C	46.8	73.2	74.2	123.2	120	3.2	18	1
	5	□	MMS1760L-DIN	66.8	93.2	94.2	143.2	140	3.2	18	2
	5	□	MMS1760L-DIN-C	66.8	93.2	94.2	143.2	140	3.2	18	1
	3	□	MMS1760X3DB	56.0	93.2	93.2	152.2	149	3.2	18	1
	5	□	MMS1760X5DB	91.2	129.2	129.2	188.2	185	3.2	18	1
17.7	3	□	MMS1770S-DIN	46.7	73.2	74.2	123.2	120	3.2	18	2
	3	□	MMS1770S-DIN-C	46.7	73.2	74.2	123.2	120	3.2	18	1
	5	□	MMS1770L-DIN	66.7	93.2	94.2	143.2	140	3.2	18	2
	5	□	MMS1770L-DIN-C	66.7	93.2	94.2	143.2	140	3.2	18	1
	3	□	MMS1770X3DB	56.3	93.2	93.2	152.2	149	3.2	18	1
	5	□	MMS1770X5DB	91.7	129.2	129.2	188.2	185	3.2	18	1
17.8	3	□	MMS1780S-DIN	46.5	73.2	74.2	123.2	120	3.2	18	2
	3	□	MMS1780S-DIN-C	46.5	73.2	74.2	123.2	120	3.2	18	1
	5	□	MMS1780L-DIN	66.5	93.2	94.2	143.2	140	3.2	18	2
	5	□	MMS1780L-DIN-C	66.5	93.2	94.2	143.2	140	3.2	18	1
	3	□	MMS1780X3DB	56.6	93.2	93.2	152.2	149	3.2	18	1
	5	□	MMS1780X5DB	92.2	129.2	129.2	188.2	185	3.2	18	1
17.9	3	□	MMS1790S-DIN	46.4	73.3	74.3	123.3	120	3.3	18	2
	3	□	MMS1790S-DIN-C	46.4	73.3	74.3	123.3	120	3.3	18	1
	5	□	MMS1790L-DIN	66.4	93.3	94.3	143.3	140	3.3	18	2
	5	□	MMS1790L-DIN-C	66.4	93.3	94.3	143.3	140	3.3	18	1
	3	□	MMS1790X3DB	57.0	93.3	93.3	152.3	149	3.3	18	1
	5	□	MMS1790X5DB	92.8	129.3	129.3	188.3	185	3.3	18	1

M

DELME

DC (mm)	Delik Derinliği (L/D)	DP7020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
18.0	3	<input type="checkbox"/>	MMS1800S-DIN	46.3	73.3	74.3	123.3	120	3.3	18	2
	3	<input type="checkbox"/>	MMS1800S-DIN-C	46.3	73.3	74.3	123.3	120	3.3	18	1
	5	<input type="checkbox"/>	MMS1800L-DIN	66.3	93.3	94.3	143.3	140	3.3	18	2
	5	<input type="checkbox"/>	MMS1800L-DIN-C	66.3	93.3	94.3	143.3	140	3.3	18	1
	3	★	MMS1800X3DB	57.3	93.3	93.3	152.3	149	3.3	18	1
	5	★	MMS1800X5DB	93.3	129.3	129.3	188.3	185	3.3	18	1
18.1	3	<input type="checkbox"/>	MMS1810S-DIN	52.1	79.3	80.3	131.3	128	3.3	20	2
	3	<input type="checkbox"/>	MMS1810S-DIN-C	52.1	79.3	80.3	131.3	128	3.3	20	1
	5	<input type="checkbox"/>	MMS1810L-DIN	74.1	101.3	102.3	153.3	150	3.3	20	2
	5	<input type="checkbox"/>	MMS1810L-DIN-C	74.1	101.3	102.3	153.3	150	3.3	20	1
	3	<input type="checkbox"/>	MMS1810X3DB	57.6	96.3	99.3	160.3	157	3.3	20	1
	5	<input type="checkbox"/>	MMS1810X5DB	93.8	133.3	137.3	198.3	195	3.3	20	1
18.2	3	<input type="checkbox"/>	MMS1820S-DIN	52.0	79.3	80.3	131.3	128	3.3	20	2
	3	<input type="checkbox"/>	MMS1820S-DIN-C	52.0	79.3	80.3	131.3	128	3.3	20	1
	5	<input type="checkbox"/>	MMS1820L-DIN	74.0	101.3	102.3	153.3	150	3.3	20	2
	5	<input type="checkbox"/>	MMS1820L-DIN-C	74.0	101.3	102.3	153.3	150	3.3	20	1
	3	<input type="checkbox"/>	MMS1820X3DB	57.9	96.3	99.3	160.3	157	3.3	20	1
	5	<input type="checkbox"/>	MMS1820X5DB	94.3	133.3	137.3	198.3	195	3.3	20	1
18.3	3	<input type="checkbox"/>	MMS1830S-DIN	51.9	79.3	80.3	131.3	128	3.3	20	2
	3	<input type="checkbox"/>	MMS1830S-DIN-C	51.9	79.3	80.3	131.3	128	3.3	20	1
	5	<input type="checkbox"/>	MMS1830L-DIN	73.9	101.3	102.3	153.3	150	3.3	20	2
	5	<input type="checkbox"/>	MMS1830L-DIN-C	73.9	101.3	102.3	153.3	150	3.3	20	1
	3	<input type="checkbox"/>	MMS1830X3DB	58.2	96.3	99.3	160.3	157	3.3	20	1
	5	<input type="checkbox"/>	MMS1830X5DB	94.8	133.3	137.3	198.3	195	3.3	20	1
18.4	3	<input type="checkbox"/>	MMS1840S-DIN	51.7	79.3	80.3	131.3	128	3.3	20	2
	3	<input type="checkbox"/>	MMS1840S-DIN-C	51.7	79.3	80.3	131.3	128	3.3	20	1
	5	<input type="checkbox"/>	MMS1840L-DIN	73.7	101.3	102.3	153.3	150	3.3	20	2
	5	<input type="checkbox"/>	MMS1840L-DIN-C	73.7	101.3	102.3	153.3	150	3.3	20	1
	3	<input type="checkbox"/>	MMS1840X3DB	58.5	96.3	99.3	160.3	157	3.3	20	1
	5	<input type="checkbox"/>	MMS1840X5DB	95.3	133.3	137.3	198.3	195	3.3	20	1
18.5	3	<input type="checkbox"/>	MMS1850S-DIN	51.6	79.4	80.4	131.4	128	3.4	20	2
	3	<input type="checkbox"/>	MMS1850S-DIN-C	51.6	79.4	80.4	131.4	128	3.4	20	1
	5	<input type="checkbox"/>	MMS1850L-DIN	73.6	101.4	102.4	153.4	150	3.4	20	2
	5	<input type="checkbox"/>	MMS1850L-DIN-C	73.6	101.4	102.4	153.4	150	3.4	20	1
	3	★	MMS1850X3DB	58.9	96.4	99.4	160.4	157	3.4	20	1
	5	★	MMS1850X5DB	95.9	133.4	137.4	198.4	195	3.4	20	1
18.6	3	<input type="checkbox"/>	MMS1860S-DIN	51.5	79.4	80.4	131.4	128	3.4	20	2
	3	<input type="checkbox"/>	MMS1860S-DIN-C	51.5	79.4	80.4	131.4	128	3.4	20	1
	5	<input type="checkbox"/>	MMS1860L-DIN	73.5	101.4	102.4	153.4	150	3.4	20	2
	5	<input type="checkbox"/>	MMS1860L-DIN-C	73.5	101.4	102.4	153.4	150	3.4	20	1
	3	<input type="checkbox"/>	MMS1860X3DB	59.2	98.4	99.4	160.4	157	3.4	20	1
	5	<input type="checkbox"/>	MMS1860X5DB	96.4	136.4	137.4	198.4	195	3.4	20	1
18.7	3	<input type="checkbox"/>	MMS1870S-DIN	51.4	79.4	80.4	131.4	128	3.4	20	2
	3	<input type="checkbox"/>	MMS1870S-DIN-C	51.4	79.4	80.4	131.4	128	3.4	20	1
	5	<input type="checkbox"/>	MMS1870L-DIN	73.4	101.4	102.4	153.4	150	3.4	20	2
	5	<input type="checkbox"/>	MMS1870L-DIN-C	73.4	101.4	102.4	153.4	150	3.4	20	1
	3	<input type="checkbox"/>	MMS1870X3DB	59.5	98.4	99.4	160.4	157	3.4	20	1
	5	<input type="checkbox"/>	MMS1870X5DB	96.9	136.4	137.4	198.4	195	3.4	20	1

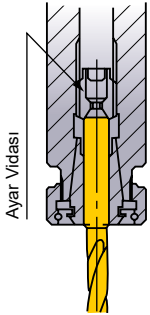
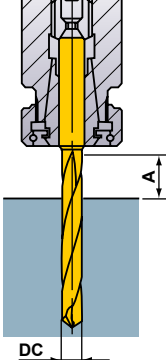
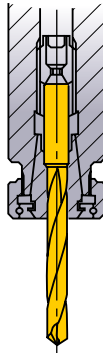
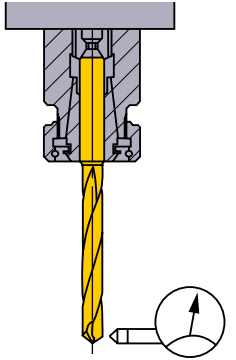
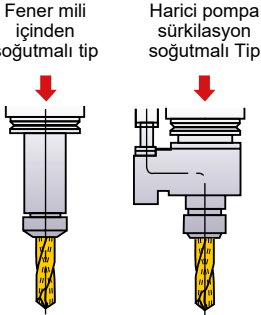
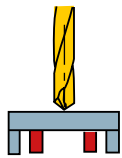
DC (mm)	Delik Derinliği (L/D)	DP7020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
18.8	3	<input type="checkbox"/>	MMS1880S-DIN	51.2	79.4	80.4	131.4	128	3.4	20	2
	3	<input type="checkbox"/>	MMS1880S-DIN-C	51.2	79.4	80.4	131.4	128	3.4	20	1
	5	<input type="checkbox"/>	MMS1880L-DIN	73.2	101.4	102.4	153.4	150	3.4	20	2
	5	<input type="checkbox"/>	MMS1880L-DIN-C	73.2	101.4	102.4	153.4	150	3.4	20	1
	3	<input type="checkbox"/>	MMS1880X3DB	59.8	98.4	99.4	160.4	157	3.4	20	1
	5	<input type="checkbox"/>	MMS1880X5DB	97.4	136.4	137.4	198.4	195	3.4	20	1
18.9	3	<input type="checkbox"/>	MMS1890S-DIN	51.1	79.4	80.4	131.4	128	3.4	20	2
	3	<input type="checkbox"/>	MMS1890S-DIN-C	51.1	79.4	80.4	131.4	128	3.4	20	1
	5	<input type="checkbox"/>	MMS1890L-DIN	73.1	101.4	102.4	153.4	150	3.4	20	2
	5	<input type="checkbox"/>	MMS1890L-DIN-C	73.1	101.4	102.4	153.4	150	3.4	20	1
	3	<input type="checkbox"/>	MMS1890X3DB	60.1	98.4	99.4	160.4	157	3.4	20	1
	5	<input type="checkbox"/>	MMS1890X5DB	97.9	136.4	137.4	198.4	195	3.4	20	1
19.0	3	<input type="checkbox"/>	MMS1900S-DIN	51.0	79.5	80.5	131.5	128	3.5	20	2
	3	<input type="checkbox"/>	MMS1900S-DIN-C	51.0	79.5	80.5	131.5	128	3.5	20	1
	5	<input type="checkbox"/>	MMS1900L-DIN	73.0	101.5	102.5	153.5	150	3.5	20	2
	5	<input type="checkbox"/>	MMS1900L-DIN-C	73.0	101.5	102.5	153.5	150	3.5	20	1
	3	★	MMS1900X3DB	60.5	98.5	99.5	160.5	157	3.5	20	1
	5	★	MMS1900X5DB	98.5	136.5	137.5	198.5	195	3.5	20	1
19.1	3	<input type="checkbox"/>	MMS1910S-DIN	50.8	79.5	80.5	131.5	128	3.5	20	2
	3	<input type="checkbox"/>	MMS1910S-DIN-C	50.8	79.5	80.5	131.5	128	3.5	20	1
	5	<input type="checkbox"/>	MMS1910L-DIN	72.8	101.5	102.5	153.5	150	3.5	20	2
	5	<input type="checkbox"/>	MMS1910L-DIN-C	72.8	101.5	102.5	153.5	150	3.5	20	1
	3	<input type="checkbox"/>	MMS1910X3DB	60.8	101.5	103.5	164.5	161	3.5	20	1
	5	<input type="checkbox"/>	MMS1910X5DB	99.0	140.5	143.5	204.5	201	3.5	20	1
19.2	3	<input type="checkbox"/>	MMS1920S-DIN	50.7	79.5	80.5	131.5	128	3.5	20	2
	3	<input type="checkbox"/>	MMS1920S-DIN-C	50.7	79.5	80.5	131.5	128	3.5	20	1
	5	<input type="checkbox"/>	MMS1920L-DIN	72.7	101.5	102.5	153.5	150	3.5	20	2
	5	<input type="checkbox"/>	MMS1920L-DIN-C	72.7	101.5	102.5	153.5	150	3.5	20	1
	3	<input type="checkbox"/>	MMS1920X3DB	61.1	101.5	103.5	164.5	161	3.5	20	1
	5	<input type="checkbox"/>	MMS1920X5DB	99.5	140.5	143.5	204.5	201	3.5	20	1
19.3	3	<input type="checkbox"/>	MMS1930S-DIN	50.6	79.5	80.5	131.5	128	3.5	20	2
	3	<input type="checkbox"/>	MMS1930S-DIN-C	50.6	79.5	80.5	131.5	128	3.5	20	1
	5	<input type="checkbox"/>	MMS1930L-DIN	72.6	101.5	102.5	153.5	150	3.5	20	2
	5	<input type="checkbox"/>	MMS1930L-DIN-C	72.6	101.5	102.5	153.5	150	3.5	20	1
	3	<input type="checkbox"/>	MMS1930X3DB	61.4	101.5	103.5	164.5	161	3.5	20	1
	5	<input type="checkbox"/>	MMS1930X5DB	100.0	140.5	143.5	204.5	201	3.5	20	1
19.4	3	<input type="checkbox"/>	MMS1940S-DIN	50.4	79.5	80.5	131.5	128	3.5	20	2
	3	<input type="checkbox"/>	MMS1940S-DIN-C	50.4	79.5	80.5	131.5	128	3.5	20	1
	5	<input type="checkbox"/>	MMS1940L-DIN	72.4	101.5	102.5	153.5	150	3.5	20	2
	5	<input type="checkbox"/>	MMS1940L-DIN-C	72.4	101.5	102.5	153.5	150	3.5	20	1
	3	<input type="checkbox"/>	MMS1940X3DB	61.7	101.5	103.5	164.5	161	3.5	20	1
	5	<input type="checkbox"/>	MMS1940X5DB	100.5	140.5	143.5	204.5	201	3.5	20	1
19.5	3	<input type="checkbox"/>	MMS1950S-DIN	50.3	79.5	80.5	131.5	128	3.5	20	2
	3	<input type="checkbox"/>	MMS1950S-DIN-C	50.3	79.5	80.5	131.5	128	3.5	20	1
	5	<input type="checkbox"/>	MMS1950L-DIN	72.3	101.5	102.5	153.5	150	3.5	20	2
	5	<input type="checkbox"/>	MMS1950L-DIN-C	72.3	101.5	102.5	153.5	150	3.5	20	1
	3	★	MMS1950X3DB	62.0	101.5	103.5	164.5	161	3.5	20	1
	5	★	MMS1950X5DB	101.0	140.5	143.5	204.5	201	3.5	20	1

★ : Japonya standart stok. □ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC (mm)	Delik Derinliği (L/D)	DP 7020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
19.6	3	□	MMS1960S-DIN	50.2	79.6	80.6	131.6	128	3.6	20	2
	3	□	MMS1960S-DIN-C	50.2	79.6	80.6	131.6	128	3.6	20	1
	5	□	MMS1960L-DIN	72.2	101.6	102.6	153.6	150	3.6	20	2
	5	□	MMS1960L-DIN-C	72.2	101.6	102.6	153.6	150	3.6	20	1
	3	□	MMS1960X3DB	62.4	103.6	103.6	164.6	161	3.6	20	1
	5	□	MMS1960X5DB	101.6	143.6	143.6	204.6	201	3.6	20	1
19.7	3	□	MMS1970S-DIN	50.0	79.6	80.6	131.6	128	3.6	20	2
	3	□	MMS1970S-DIN-C	50.0	79.6	80.6	131.6	128	3.6	20	1
	5	□	MMS1970L-DIN	72.0	101.6	102.6	153.6	150	3.6	20	2
	5	□	MMS1970L-DIN-C	72.0	101.6	102.6	153.6	150	3.6	20	1
	3	□	MMS1970X3DB	62.7	103.6	103.6	164.6	161	3.6	20	1
	5	□	MMS1970X5DB	102.1	143.6	143.6	204.6	201	3.6	20	1
19.8	3	□	MMS1980S-DIN	49.9	79.6	80.6	131.6	128	3.6	20	2
	3	□	MMS1980S-DIN-C	49.9	79.6	80.6	131.6	128	3.6	20	1
	5	□	MMS1980L-DIN	71.9	101.6	102.6	153.6	150	3.6	20	2
	5	□	MMS1980L-DIN-C	71.9	101.6	102.6	153.6	150	3.6	20	1
	3	□	MMS1980X3DB	63.0	103.6	103.6	164.6	161	3.6	20	1
	5	□	MMS1980X5DB	102.6	143.6	143.6	204.6	201	3.6	20	1

DC (mm)	Delik Derinliği (L/D)	DP 7020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
19.9	3	□	MMS1990S-DIN	49.8	79.6	80.6	131.6	128	3.6	20	2
	3	□	MMS1990S-DIN-C	49.8	79.6	80.6	131.6	128	3.6	20	1
	5	□	MMS1990L-DIN	71.8	101.6	102.6	153.6	150	3.6	20	2
	5	□	MMS1990L-DIN-C	71.8	101.6	102.6	153.6	150	3.6	20	1
	3	□	MMS1990X3DB	63.3	103.6	103.6	164.6	161	3.6	20	1
	5	□	MMS1990X5DB	103.1	143.6	143.6	204.6	201	3.6	20	1
20.0	3	□	MMS2000S-DIN	49.6	79.6	80.6	131.6	128	3.6	20	2
	3	□	MMS2000S-DIN-C	49.6	79.6	80.6	131.6	128	3.6	20	1
	5	□	MMS2000L-DIN	71.6	101.6	102.6	153.6	150	3.6	20	2
	5	□	MMS2000L-DIN-C	71.6	101.6	102.6	153.6	150	3.6	20	1
	3	★	MMS2000X3DB	63.6	103.6	103.6	164.6	161	3.6	20	1
	5	★	MMS2000X5DB	103.6	143.6	143.6	204.6	201	3.6	20	1

ÇALIŞMA KILAVUZU

<p>Matkap Ucunu Tutma</p>  <p>Bilya sıkıştırırmalı pensli tip takım tutucu Matkap Ucunu güvenli bir şekilde tutar.</p>	<p>Matkap Ucu Uzunluğu</p>  <p>$A \geq DC \times 1.5$</p>	<p>Matkap Ucunu Takma</p>  <p>Helis kanallarından tutturmayınız.</p>	<p>Takma Toleransı</p>  <p>Salgı $\leq 0.03\text{mm}$</p>
<p>Boyan boy Soğutma Tipi</p> <p>Fener mili içinden soğutmalı tip</p> <p>Harici pompa sirkülasyon soğutmalı Tip</p>  <p>Soğutma suyu basıncı yaklaşık 5 bar—70 bar'dır</p>	<p>Soğutma Suyu Kullanımı</p> <ol style="list-style-type: none"> 1) Eski soğutma suyundaki kir ve toz parçacıkları yağ deliğini tıkayabilir ve etkili akışı önleyebilir. Düzenli soğutma suyu değişimi önerilir. 2) Küçük talaş parçacıkları yağ deliğine sıkışır. Koruyucu önlem olarak filtre kullanın. Küçük çaplı matkap uçları kullanırken, ince elekli filtre kullanın. 	<p>İnce Çalışma Parçası</p>  <p>X</p> <p>Bükülme Olasılığı</p>	<p>Kesintili Kesme</p> <p>Tek Proses</p> <p>OK</p> <p>① Darbe oluşabilecek parçayı delerken ilerlemeyi düşürün.</p> <p>Önceden işleme gerektirir</p> <p>① Delmeden önce parmak freze ile yüzeyi düzeltin.</p>

ÖNERİLEN KESME KOŞULLARI

Çalışma Malzemesi	M							
	Ostenitli Paslanmaz Çelik ($\leq 200\text{HB}$)				Ostenitli Paslanmaz Çelik ($>200\text{HB}$)			
	X5CrNi1810, X5CrNiMo17-12-2				X2CrNiN1810, X2CrNiMoN17-12-2			
Matkap Ucu Çapı DC (mm)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Tabla Hızı (mm/dak)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Tabla Hızı (mm/dak)
3.2	80	7900	0.13 (0.08—0.18)	1025	60	5900	0.10 (0.05—0.15)	590
4.0	80	6300	0.15 (0.10—0.20)	945	60	4700	0.12 (0.08—0.18)	560
5.0	80	5000	0.15 (0.10—0.20)	750	60	3800	0.12 (0.08—0.18)	455
6.3	80	4000	0.17 (0.12—0.22)	680	60	3000	0.15 (0.10—0.20)	450
8.0	80	3100	0.19 (0.14—0.24)	585	60	2300	0.17 (0.12—0.22)	390
10.0	60	1900	0.20 (0.15—0.25)	380	50	1500	0.18 (0.13—0.23)	270
12.0	60	1500	0.21 (0.16—0.26)	315	50	1300	0.19 (0.14—0.24)	245
16.0	60	1100	0.22 (0.17—0.27)	240	50	900	0.20 (0.15—0.25)	180
20.0	60	900	0.23 (0.18—0.28)	205	50	700	0.21 (0.16—0.26)	145

Çalışma Malzemesi	M							
	İki Fazlı Paslanmaz Çelik ($\leq 280\text{HB}$)				Ferritik ve Martensitik Paslanmaz Çelik ($\leq 200\text{HB}$)			
	X3CrNiMoN27-5-2				X10Cr13, X6Cr17			
Matkap Ucu Çapı DC (mm)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Tabla Hızı (mm/dak)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Tabla Hızı (mm/dak)
3.2	50	4900	0.10 (0.05—0.15)	490	80	7900	0.13 (0.08—0.18)	1025
4.0	50	3900	0.12 (0.08—0.18)	465	80	6300	0.15 (0.10—0.20)	945
5.0	50	3100	0.12 (0.08—0.18)	370	80	5000	0.15 (0.10—0.20)	750
6.3	50	2500	0.15 (0.10—0.20)	375	80	4000	0.17 (0.12—0.22)	680
8.0	50	1900	0.17 (0.12—0.22)	320	80	3100	0.19 (0.14—0.24)	585
10.0	40	1200	0.18 (0.13—0.23)	215	60	1900	0.20 (0.15—0.25)	380
12.0	40	1000	0.19 (0.14—0.24)	190	60	1500	0.21 (0.16—0.26)	315
16.0	40	700	0.20 (0.15—0.25)	140	60	1100	0.22 (0.17—0.27)	240
20.0	40	600	0.21 (0.16—0.26)	125	60	900	0.23 (0.18—0.28)	205

Çalışma Malzemesi	M							
	Ferritik ve Martensitik Paslanmaz Çelik ($>200\text{HB}$)				Sertleştirilmiş Paslanmaz Çelik ($<450\text{HB}$)			
	X20CrNi17-2, X30Cr13				X5CrNiCuNb164, X7CrNiAl177, 17-4PH, 17-7PH			
Matkap Ucu Çapı DC (mm)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Tabla Hızı (mm/dak)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Tabla Hızı (mm/dak)
3.2	60	5900	0.10 (0.05—0.15)	590	50	4900	0.10 (0.05—0.15)	490
4.0	60	4700	0.12 (0.08—0.18)	560	50	3900	0.12 (0.08—0.18)	465
5.0	60	3800	0.12 (0.08—0.18)	455	50	3100	0.12 (0.08—0.18)	370
6.3	60	3000	0.15 (0.10—0.20)	450	50	2500	0.15 (0.10—0.20)	375
8.0	60	2300	0.17 (0.12—0.22)	390	50	1900	0.17 (0.12—0.22)	320
10.0	50	1500	0.18 (0.13—0.23)	270	40	1200	0.18 (0.13—0.23)	215
12.0	50	1300	0.19 (0.14—0.24)	245	40	1000	0.19 (0.14—0.24)	190
16.0	50	900	0.20 (0.15—0.25)	180	40	700	0.20 (0.15—0.25)	140
20.0	50	700	0.21 (0.16—0.26)	145	40	600	0.21 (0.16—0.26)	125

Not 1) Yüksek basınçlı, boydan boya içten soğutma suyu sisteminin kullanılması önerilir.

Not 2) Suda çözünebilir tip su bazlı soğutma sıvısı tavsiye edilir.

Not 3) Su bazlı soğutma sıvısı dışında soğutucu kullanıldığında, devri %10-%20 oranında düşürün.

■ PASLANMAZ ÇELİK KARŞILAŞTIRMA REFERANS LİSTESİ

Çalışma Malzemesi		Almanya		ABD	Japonya
		W-no.	DIN	AISI/SAE	JIS
Ferritik, Martensitik Paslanmaz Çelik	≤200HB	1.4005	X12CrS3	416	SUS416
		1.4006	X10Cr13	410	SUS410
		1.4016	X6Cr17	430	SUS430
		1.4113	X6CrMo17	434	SUS434
		1.4510	X6CrTi17	430Ti	SUS430LX
	>200HB	1.4512	X6CrTi12	409	—
		1.4021	X20Cr13	420	SUS420J1
		1.4057	X20CrNi17-2	431	SUS431
		1.4028	X30Cr13	420	SUS420J2
		1.4125	X10CrMo17	440C	SUS440C
PH Paslanmaz Çelik	<450HB	1.4542	X5CrNiCuNb16 4	630 (17-4PH)	SUS630
		1.4545	—	S15500 (15-5PH)	—
		1.4568	X7CrNiAl17 7	631 (17-7PH)	SUS631
Ostenitik Paslanmaz Çelik	≤200HB	1.4301	X5CrNi18 10	304	SUS304
		1.4303	X5CrNi8-12	305	SUS305
		1.4305	X12CrNiS18-9	303	SUS303
		1.4307	X2CrNi19-11	304L	SUS304L
		1.4401	X5CrNiMo17 12 2	316	SUS316
	>200HB	1.4311	X2CrNiN18 10	304LN	SUS304LN
		1.4404	X2CrNiMo17 12 2	316L	SUS316L
		1.4406	X2CrNiMoN17 12 2	316LN	SUS316LN
		1.4435	X2CrNiMo18 14 3	—	SUS316L
		1.4438	X2CrNiMo18 15 4	317L	SUS317L
		1.4529	X1NiCrMoCuN25 20 7	N08926	—
		1.4541	X6CrNiTi18-10	321	SUS321
		1.4550	X6CrNiNb18-10	347	SUS347
		1.4571	X6CrNiMoTi17 12 2	316Ti	SUS316Ti
Dupleks Çelik	≤280HB	1.4362	X2CrNiN23 4	—	—
		1.4410	X2CrNiMoN25 7 4	S32750	SCS14A
		1.4460	X3CrNiMoN27 5 2	329	SUS329J1
		1.4462	X2CrNiMoN22 5 3	S31803	SUS329J3L



P

M

K

N

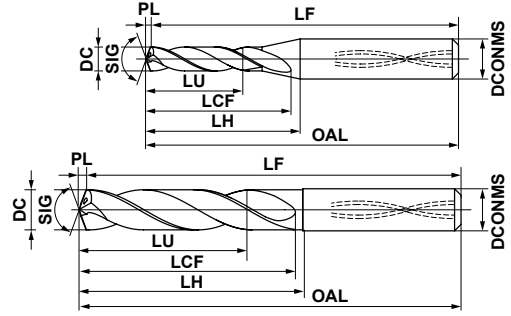
S

H

İçten Soğutma



Bakış yönüne göre kaplama rengi farklılık gösterebilir.
Bunun matkabın performansı üzerinde herhangi bir etkisi yoktur.



Tip1

Tip2

DC=3	3<DC≤6	6<DC≤10	10<DC≤15
⁰ / _{-0.018}	⁰ / _{-0.018}	⁰ / _{-0.022}	⁰ / _{-0.027}
DCONMS=6	6<DCONMS≤10	10<DCONMS≤16	
⁰ / _{-0.018}	⁰ / _{-0.009}	⁰ / _{-0.011}	



DC (mm)	Delik Derinliği (L/D)	DP9020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
3.00	3	●	DSAS0300X03S060	9.5	21.5	23.5	70.5	70	0.5	6	1
3.00	5	●	DSAS0300X05S060	15.5	28.5	31.5	78.5	78	0.5	6	1
3.10	3	●	DSAS0310X03S060	9.9	21.6	23.6	70.6	70	0.6	6	1
3.10	5	●	DSAS0310X05S060	16.1	28.6	31.6	78.6	78	0.6	6	1
3.18	3	●	DSAS0318X03S060	10.1	21.6	23.6	70.6	70	0.6	6	1
3.18	5	●	DSAS0318X05S060	16.5	28.6	31.6	78.6	78	0.6	6	1
3.20	3	●	DSAS0320X03S060	10.2	21.6	23.6	70.6	70	0.6	6	1
3.20	5	●	DSAS0320X05S060	16.6	28.6	31.6	78.6	78	0.6	6	1
3.26	3	●	DSAS0326X03S060	10.4	21.6	23.6	70.6	70	0.6	6	1
3.26	5	●	DSAS0326X05S060	16.9	28.6	31.6	78.6	78	0.6	6	1
3.30	3	●	DSAS0330X03S060	10.5	21.6	23.6	70.6	70	0.6	6	1
3.30	5	●	DSAS0330X05S060	17.1	28.6	31.6	78.6	78	0.6	6	1
3.40	3	●	DSAS0340X03S060	10.8	21.6	23.6	70.6	70	0.6	6	1
3.40	5	●	DSAS0340X05S060	17.6	28.6	31.6	78.6	78	0.6	6	1
3.50	3	●	DSAS0350X03S060	11.1	21.6	23.6	70.6	70	0.6	6	1
3.50	5	●	DSAS0350X05S060	18.1	28.6	31.6	78.6	78	0.6	6	1
3.57	3	●	DSAS0357X03S060	11.4	22.7	23.7	70.7	70	0.7	6	1
3.57	5	●	DSAS0357X05S060	18.6	30.7	31.7	78.7	78	0.7	6	1
3.60	3	●	DSAS0360X03S060	11.5	22.7	23.7	70.7	70	0.7	6	1
3.60	5	●	DSAS0360X05S060	18.7	30.7	31.7	78.7	78	0.7	6	1
3.70	3	●	DSAS0370X03S060	11.8	22.7	23.7	70.7	70	0.7	6	1
3.70	5	●	DSAS0370X05S060	19.2	30.7	31.7	78.7	78	0.7	6	1
3.80	3	●	DSAS0380X03S060	12.1	22.7	23.7	70.7	70	0.7	6	1
3.80	5	●	DSAS0380X05S060	19.7	30.7	31.7	78.7	78	0.7	6	1
3.90	3	●	DSAS0390X03S060	12.4	22.7	23.7	70.7	70	0.7	6	1
3.90	5	●	DSAS0390X05S060	20.2	30.7	31.7	78.7	78	0.7	6	1
3.97	3	●	DSAS0397X03S060	12.6	22.7	23.7	70.7	70	0.7	6	1
3.97	5	●	DSAS0397X05S060	20.5	30.7	31.7	78.7	78	0.7	6	1
4.00	3	●	DSAS0400X03S060	12.7	22.7	23.7	70.7	70	0.7	6	1
4.00	5	●	DSAS0400X05S060	20.7	30.7	31.7	78.7	78	0.7	6	1
4.10	3	●	DSAS0410X03S060	13.0	24.7	26.7	73.7	73	0.7	6	1
4.10	5	●	DSAS0410X05S060	21.2	33.7	35.7	82.7	82	0.7	6	1
4.20	3	●	DSAS0420X03S060	13.4	24.8	26.8	73.8	73	0.8	6	1
4.20	5	●	DSAS0420X05S060	21.8	33.8	35.8	82.8	82	0.8	6	1
4.30	3	●	DSAS0430X03S060	13.7	24.8	26.8	73.8	73	0.8	6	1
4.30	5	●	DSAS0430X05S060	22.3	33.8	35.8	82.8	82	0.8	6	1
4.37	3	●	DSAS0437X03S060	13.9	24.8	26.8	73.8	73	0.8	6	1
4.37	5	●	DSAS0437X05S060	22.6	33.8	35.8	82.8	82	0.8	6	1
4.40	3	●	DSAS0440X03S060	14.0	24.8	26.8	73.8	73	0.8	6	1
4.40	5	●	DSAS0440X05S060	22.8	33.8	35.8	82.8	82	0.8	6	1

Not 1) Ø5 mm veya daha küçük matkapların içten soğutma sıvısı delikleri yuvaraktır..

● : Avrupa standart stok.

DC (mm)	Delik Derinliği (L/D)	DP9020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
4.50	3	●	DSAS0450X03S060	14.3	24.8	26.8	73.8	73	0.8	6	1
4.50	5	●	DSAS0450X05S060	23.3	33.8	35.8	82.8	82	0.8	6	1
4.60	3	●	DSAS0460X03S060	14.6	25.8	28.8	75.8	75	0.8	6	1
4.60	5	●	DSAS0460X05S060	23.8	35.8	38.8	85.8	85	0.8	6	1
4.70	3	●	DSAS0470X03S060	15.0	25.9	28.9	75.9	75	0.9	6	1
4.70	5	●	DSAS0470X05S060	24.4	35.9	38.9	85.9	85	0.9	6	1
4.76	3	●	DSAS0476X03S060	15.2	25.9	28.9	75.9	75	0.9	6	1
4.76	5	●	DSAS0476X05S060	24.7	35.9	38.9	85.9	85	0.9	6	1
4.80	3	●	DSAS0480X03S060	15.3	25.9	28.9	75.9	75	0.9	6	1
4.80	5	●	DSAS0480X05S060	24.9	35.9	38.9	85.9	85	0.9	6	1
4.86	3	●	DSAS0486X03S060	15.5	25.9	28.9	75.9	75	0.9	6	1
4.86	5	●	DSAS0486X05S060	25.2	35.9	38.9	85.9	85	0.9	6	1
4.90	3	●	DSAS0490X03S060	15.6	25.9	28.9	75.9	75	0.9	6	1
4.90	5	●	DSAS0490X05S060	25.4	35.9	38.9	85.9	85	0.9	6	1
5.00	3	●	DSAS0500X03S060	15.9	28.9	29.9	81.9	81	0.9	6	2
5.00	5	●	DSAS0500X05S060	25.9	39.9	42.9	89.9	89	0.9	6	2
5.10	3	●	DSAS0510X03S060	16.2	28.9	29.9	81.9	81	0.9	6	2
5.10	5	●	DSAS0510X05S060	26.4	39.9	42.9	89.9	89	0.9	6	2
5.16	3	●	DSAS0516X03S060	16.5	29.0	30.0	82.0	81	1.0	6	2
5.16	5	●	DSAS0516X05S060	26.8	40.0	43.0	90.0	89	1.0	6	2
5.20	3	●	DSAS0520X03S060	16.6	29.0	30.0	82.0	81	1.0	6	2
5.20	5	●	DSAS0520X05S060	27.0	40.0	43.0	90.0	89	1.0	6	2
5.30	3	●	DSAS0530X03S060	16.9	29.0	30.0	82.0	81	1.0	6	2
5.30	5	●	DSAS0530X05S060	27.5	40.0	43.0	90.0	89	1.0	6	2
5.40	3	●	DSAS0540X03S060	17.2	29.0	30.0	82.0	81	1.0	6	2
5.40	5	●	DSAS0540X05S060	28.0	40.0	43.0	90.0	89	1.0	6	2
5.50	3	●	DSAS0550X03S060	17.5	29.0	30.0	82.0	81	1.0	6	2
5.50	5	●	DSAS0550X05S060	28.5	40.0	43.0	90.0	89	1.0	6	2
5.56	3	●	DSAS0556X03S060	17.8	31.1	31.1	82.1	81	1.1	6	2
5.56	5	●	DSAS0556X05S060	28.9	43.1	43.1	90.1	89	1.1	6	2
5.60	3	●	DSAS0560X03S060	17.9	31.1	31.1	82.1	81	1.1	6	2
5.60	5	●	DSAS0560X05S060	29.1	43.1	43.1	90.1	89	1.1	6	2
5.70	3	●	DSAS0570X03S060	18.2	31.1	31.1	82.1	81	1.1	6	2
5.70	5	●	DSAS0570X05S060	29.6	43.1	43.1	90.1	89	1.1	6	2
5.80	3	●	DSAS0580X03S060	18.5	31.1	31.1	82.1	81	1.1	6	2
5.80	5	●	DSAS0580X05S060	30.1	43.1	43.1	90.1	89	1.1	6	2
5.90	3	●	DSAS0590X03S060	18.8	31.1	31.1	82.1	81	1.1	6	2
5.90	5	●	DSAS0590X05S060	30.6	43.1	43.1	90.1	89	1.1	6	2
5.95	3	●	DSAS0595X03S060	19.0	31.1	31.1	82.1	81	1.1	6	2
5.95	5	●	DSAS0595X05S060	30.9	43.1	43.1	90.1	89	1.1	6	2
6.00	3	●	DSAS0600X03S060	19.1	31.1	31.1	82.1	81	1.1	6	2
6.00	5	●	DSAS0600X05S060	31.1	43.1	43.1	90.1	89	1.1	6	2
6.10	3	●	DSAS0610X03S080	19.5	34.2	37.2	87.2	86	1.2	8	2
6.10	5	●	DSAS0610X05S080	31.7	47.2	49.2	96.2	95	1.2	8	2
6.20	3	●	DSAS0620X03S080	19.8	34.2	37.2	87.2	86	1.2	8	2
6.20	5	●	DSAS0620X05S080	32.2	47.2	49.2	96.2	95	1.2	8	2
6.30	3	●	DSAS0630X03S080	20.1	34.2	37.2	87.2	86	1.2	8	2
6.30	5	●	DSAS0630X05S080	32.7	47.2	49.2	96.2	95	1.2	8	2
6.35	3	●	DSAS0635X03S080	20.3	34.2	37.2	87.2	86	1.2	8	2
6.35	5	●	DSAS0635X05S080	33.0	47.2	49.2	96.2	95	1.2	8	2
6.40	3	●	DSAS0640X03S080	20.4	34.2	37.2	87.2	86	1.2	8	2
6.40	5	●	DSAS0640X05S080	33.2	47.2	49.2	96.2	95	1.2	8	2
6.50	3	●	DSAS0650X03S080	20.7	34.2	37.2	87.2	86	1.2	8	2
6.50	5	●	DSAS0650X05S080	33.7	47.2	49.2	96.2	95	1.2	8	2
6.60	3	●	DSAS0660X03S080	21.1	36.3	38.3	91.3	90	1.3	8	2
6.60	5	●	DSAS0660X05S080	34.3	50.3	52.3	99.3	98	1.3	8	2
6.70	3	●	DSAS0670X03S080	21.4	36.3	38.3	91.3	90	1.3	8	2
6.70	5	●	DSAS0670X05S080	34.8	50.3	52.3	99.3	98	1.3	8	2

M

DELME

DC (mm)	Delik Derinliği (L/D)	DP9020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
6.75	3	●	DSAS0675X03S080	21.5	36.3	38.3	91.3	90	1.3	8	2
6.75	5	●	DSAS0675X05S080	35.0	50.3	52.3	99.3	98	1.3	8	2
6.80	3	●	DSAS0680X03S080	21.7	36.3	38.3	91.3	90	1.3	8	2
6.80	5	●	DSAS0680X05S080	35.3	50.3	52.3	99.3	98	1.3	8	2
6.90	3	●	DSAS0690X03S080	22.0	36.3	38.3	91.3	90	1.3	8	2
6.90	5	●	DSAS0690X05S080	35.8	50.3	52.3	99.3	98	1.3	8	2
6.95	3	●	DSAS0695X03S080	22.2	36.3	38.3	91.3	90	1.3	8	2
6.95	5	●	DSAS0695X05S080	36.1	50.3	52.3	99.3	98	1.3	8	2
7.00	3	●	DSAS0700X03S080	22.3	36.3	38.3	91.3	90	1.3	8	2
7.00	5	●	DSAS0700X05S080	36.3	50.3	52.3	99.3	98	1.3	8	2
7.10	3	●	DSAS0710X03S080	22.7	39.4	40.4	91.4	90	1.4	8	2
7.10	5	●	DSAS0710X05S080	36.9	54.4	57.4	104.4	103	1.4	8	2
7.14	3	●	DSAS0714X03S080	22.8	39.4	40.4	91.4	90	1.4	8	2
7.14	5	●	DSAS0714X05S080	37.1	54.4	57.4	104.4	103	1.4	8	2
7.20	3	●	DSAS0720X03S080	23.0	39.4	40.4	91.4	90	1.4	8	2
7.20	5	●	DSAS0720X05S080	37.4	54.4	57.4	104.4	103	1.4	8	2
7.30	3	●	DSAS0730X03S080	23.3	39.4	40.4	91.4	90	1.4	8	2
7.30	5	●	DSAS0730X05S080	37.9	54.4	57.4	104.4	103	1.4	8	2
7.40	3	●	DSAS0740X03S080	23.6	39.4	40.4	91.4	90	1.4	8	2
7.40	5	●	DSAS0740X05S080	38.4	54.4	57.4	104.4	103	1.4	8	2
7.50	3	●	DSAS0750X03S080	23.9	39.4	40.4	91.4	90	1.4	8	2
7.50	5	●	DSAS0750X05S080	38.9	54.4	57.4	104.4	103	1.4	8	2
7.54	3	●	DSAS0754X03S080	24.1	41.5	41.5	91.5	90	1.5	8	2
7.54	5	●	DSAS0754X05S080	39.2	57.5	57.5	104.5	103	1.5	8	2
7.60	3	●	DSAS0760X03S080	24.3	41.5	41.5	91.5	90	1.5	8	2
7.60	5	●	DSAS0760X05S080	39.5	57.5	57.5	104.5	103	1.5	8	2
7.70	3	●	DSAS0770X03S080	24.6	41.5	41.5	91.5	90	1.5	8	2
7.70	5	●	DSAS0770X05S080	40.0	57.5	57.5	104.5	103	1.5	8	2
7.80	3	●	DSAS0780X03S080	24.9	41.5	41.5	91.5	90	1.5	8	2
7.80	5	●	DSAS0780X05S080	40.5	57.5	57.5	104.5	103	1.5	8	2
7.90	3	●	DSAS0790X03S080	25.2	41.5	41.5	91.5	90	1.5	8	2
7.90	5	●	DSAS0790X05S080	41.0	57.5	57.5	104.5	103	1.5	8	2
7.94	3	●	DSAS0794X03S080	25.3	41.5	41.5	91.5	90	1.5	8	2
7.94	5	●	DSAS0794X05S080	41.2	57.5	57.5	104.5	103	1.5	8	2
8.00	3	●	DSAS0800X03S080	25.5	41.5	41.5	91.5	90	1.5	8	2
8.00	5	●	DSAS0800X05S080	41.5	57.5	57.5	104.5	103	1.5	8	2
8.10	3	●	DSAS0810X03S100	25.8	44.5	47.5	97.5	96	1.5	10	2
8.10	5	●	DSAS0810X05S100	42.0	61.5	63.5	114.5	113	1.5	10	2
8.20	3	●	DSAS0820X03S100	26.1	44.5	47.5	97.5	96	1.5	10	2
8.20	5	●	DSAS0820X05S100	42.5	61.5	63.5	114.5	113	1.5	10	2
8.30	3	●	DSAS0830X03S100	26.4	44.5	47.5	97.5	96	1.5	10	2
8.30	5	●	DSAS0830X05S100	43.0	61.5	63.5	114.5	113	1.5	10	2
8.33	3	●	DSAS0833X03S100	26.5	44.5	47.5	97.5	96	1.5	10	2
8.33	5	●	DSAS0833X05S100	43.2	61.5	63.5	114.5	113	1.5	10	2
8.40	3	●	DSAS0840X03S100	26.7	44.5	47.5	97.5	96	1.5	10	2
8.40	5	●	DSAS0840X05S100	43.5	61.5	63.5	114.5	113	1.5	10	2
8.50	3	●	DSAS0850X03S100	27.0	44.5	47.5	97.5	96	1.5	10	2
8.50	5	●	DSAS0850X05S100	44.0	61.5	63.5	114.5	113	1.5	10	2
8.60	3	●	DSAS0860X03S100	27.4	46.6	48.6	102.6	101	1.6	10	2
8.60	5	●	DSAS0860X05S100	44.6	64.6	66.6	117.6	116	1.6	10	2
8.70	3	●	DSAS0870X03S100	27.7	46.6	48.6	102.6	101	1.6	10	2
8.70	5	●	DSAS0870X05S100	45.1	64.6	66.6	117.6	116	1.6	10	2
8.73	3	●	DSAS0873X03S100	27.8	46.6	48.6	102.6	101	1.6	10	2
8.73	5	●	DSAS0873X05S100	45.3	64.6	66.6	117.6	116	1.6	10	2
8.80	3	●	DSAS0880X03S100	28.0	46.6	48.6	102.6	101	1.6	10	2
8.80	5	●	DSAS0880X05S100	45.6	64.6	66.6	117.6	116	1.6	10	2
8.90	3	●	DSAS0890X03S100	28.3	46.6	48.6	102.6	101	1.6	10	2
8.90	5	●	DSAS0890X05S100	46.1	64.6	66.6	117.6	116	1.6	10	2

● : Avrupa standart stok.

DC (mm)	Delik Derinliği (L/D)	DP9020	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
9.00	3	●	DSAS0900X03S100	28.6	46.6	48.6	102.6	101	1.6	10	2
9.00	5	●	DSAS0900X05S100	46.6	64.6	66.6	117.6	116	1.6	10	2
9.10	3	●	DSAS0910X03S100	29.1	49.8	50.8	102.8	101	1.8	10	2
9.10	5	●	DSAS0910X05S100	47.3	68.8	71.8	122.8	121	1.8	10	2
9.20	3	●	DSAS0920X03S100	29.4	49.8	50.8	102.8	101	1.8	10	2
9.20	5	●	DSAS0920X05S100	47.8	68.8	71.8	122.8	121	1.8	10	2
9.30	3	●	DSAS0930X03S100	29.7	49.8	50.8	102.8	101	1.8	10	2
9.30	5	●	DSAS0930X05S100	48.3	68.8	71.8	122.8	121	1.8	10	2
9.40	3	●	DSAS0940X03S100	30.0	49.8	50.8	102.8	101	1.8	10	2
9.40	5	●	DSAS0940X05S100	48.8	68.8	71.8	122.8	121	1.8	10	2
9.50	3	●	DSAS0950X03S100	30.3	49.8	50.8	102.8	101	1.8	10	2
9.50	5	●	DSAS0950X05S100	49.3	68.8	71.8	122.8	121	1.8	10	2
9.53	3	●	DSAS0953X03S100	30.4	49.8	50.8	102.8	101	1.8	10	2
9.53	5	●	DSAS0953X05S100	49.4	68.8	71.8	122.8	121	1.8	10	2
9.60	3	●	DSAS0960X03S100	30.6	49.8	50.8	102.8	101	1.8	10	2
9.60	5	●	DSAS0960X05S100	49.8	68.8	71.8	122.8	121	1.8	10	2
9.70	3	●	DSAS0970X03S100	30.9	49.8	50.8	102.8	101	1.8	10	2
9.70	5	●	DSAS0970X05S100	50.3	68.8	71.8	122.8	121	1.8	10	2
9.80	3	●	DSAS0980X03S100	31.2	51.8	51.8	102.8	101	1.8	10	2
9.80	5	●	DSAS0980X05S100	50.8	71.8	71.8	122.8	121	1.8	10	2
9.90	3	●	DSAS0990X03S100	31.5	51.9	51.8	102.8	101	1.8	10	2
9.90	5	●	DSAS0990X05S100	51.3	71.8	71.8	122.8	121	1.8	10	2
9.92	3	●	DSAS0992X03S100	31.6	51.8	51.8	102.8	101	1.8	10	2
9.92	5	●	DSAS0992X05S100	51.4	71.8	71.8	122.8	121	1.8	10	2
10.00	3	●	DSAS1000X03S100	31.8	51.8	51.8	102.8	101	1.8	10	2
10.00	5	●	DSAS1000X05S100	51.8	71.8	71.8	122.8	121	1.8	10	2
10.10	3	●	DSAS1010X03S120	32.2	54.9	57.9	112.9	111	1.9	12	2
10.10	5	●	DSAS1010X05S120	52.4	75.9	79.9	135.9	134	1.9	12	2
10.20	3	●	DSAS1020X03S120	32.5	54.9	57.9	112.9	111	1.9	12	2
10.20	5	●	DSAS1020X05S120	52.9	75.9	79.9	135.9	134	1.9	12	2
10.30	3	●	DSAS1030X03S120	32.8	54.9	57.9	112.9	111	1.9	12	2
10.30	5	●	DSAS1030X05S120	53.4	75.9	79.9	135.9	134	1.9	12	2
10.32	3	●	DSAS1032X03S120	32.9	54.9	57.9	112.9	111	1.9	12	2
10.32	5	●	DSAS1032X05S120	53.5	75.9	79.9	135.9	134	1.9	12	2
10.40	3	●	DSAS1040X03S120	33.1	54.9	57.9	112.9	111	1.9	12	2
10.40	5	●	DSAS1040X05S120	53.9	75.9	79.9	135.9	134	1.9	12	2
10.50	3	●	DSAS1050X03S120	33.4	54.9	57.9	112.9	111	1.9	12	2
10.50	5	●	DSAS1050X05S120	54.4	75.9	79.9	135.9	134	1.9	12	2
10.60	3	●	DSAS1060X03S120	33.7	54.9	57.9	112.9	111	1.9	12	2
10.60	5	●	DSAS1060X05S120	54.9	75.9	79.9	135.9	134	1.9	12	2
10.70	3	●	DSAS1070X03S120	34.0	54.9	57.9	112.9	111	1.9	12	2
10.70	5	●	DSAS1070X05S120	55.4	75.9	79.9	135.9	134	1.9	12	2
10.72	3	●	DSAS1072X03S120	34.1	57.0	59.0	118.0	116	2.0	12	2
10.72	5	●	DSAS1072X05S120	55.6	79.0	80.0	142.0	140	2.0	12	2
10.80	3	●	DSAS1080X03S120	34.4	57.0	59.0	118.0	116	2.0	12	2
10.80	5	●	DSAS1080X05S120	56.0	79.0	80.0	142.0	140	2.0	12	2
10.90	3	●	DSAS1090X03S120	34.7	57.0	59.0	118.0	116	2.0	12	2
10.90	5	●	DSAS1090X05S120	56.5	79.0	80.0	142.0	140	2.0	12	2
11.00	3	●	DSAS1100X03S120	35.0	57.0	59.0	118.0	116	2.0	12	2
11.00	5	●	DSAS1100X05S120	57.0	79.0	80.0	142.0	140	2.0	12	2
11.10	3	●	DSAS1110X03S120	35.4	60.1	61.1	118.1	116	2.1	12	2
11.10	5	●	DSAS1110X05S120	57.6	83.1	86.1	142.1	140	2.1	12	2
11.11	3	●	DSAS1111X03S120	35.4	60.1	61.1	118.1	116	2.1	12	2
11.11	5	●	DSAS1111X05S120	57.7	83.1	86.1	142.1	140	2.1	12	2
11.20	3	●	DSAS1120X03S120	35.7	60.1	61.1	118.1	116	2.1	12	2
11.20	5	●	DSAS1120X05S120	58.1	83.1	86.1	142.1	140	2.1	12	2
11.30	3	●	DSAS1130X03S120	36.0	60.1	61.1	118.1	116	2.1	12	2
11.30	5	●	DSAS1130X05S120	58.6	83.1	86.1	142.1	140	2.1	12	2

M

DELME

DC (mm)	Delik Derinliđi (L/D)	DP9020	Sipariř No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
11.40	3	●	DSAS1140X03S120	36.3	60.1	61.1	118.1	116	2.1	12	2
11.40	5	●	DSAS1140X05S120	59.1	83.1	86.1	142.1	140	2.1	12	2
11.50	3	●	DSAS1150X03S120	36.6	60.1	61.1	118.1	116	2.1	12	2
11.50	5	●	DSAS1150X05S120	59.6	83.1	86.1	142.1	140	2.1	12	2
11.51	3	●	DSAS1151X03S120	36.7	62.2	62.2	118.2	116	2.2	12	2
11.51	5	●	DSAS1151X05S120	59.7	86.2	86.2	142.2	140	2.2	12	2
11.60	3	●	DSAS1160X03S120	37.0	62.2	62.2	118.2	116	2.2	12	2
11.60	5	●	DSAS1160X05S120	60.2	86.2	86.2	142.2	140	2.2	12	2
11.70	3	●	DSAS1170X03S120	37.3	62.2	62.2	118.2	116	2.2	12	2
11.70	5	●	DSAS1170X05S120	60.7	86.2	86.2	142.2	140	2.2	12	2
11.80	3	●	DSAS1180X03S120	37.6	62.2	62.2	118.2	116	2.2	12	2
11.80	5	●	DSAS1180X05S120	61.2	86.2	86.2	142.2	140	2.2	12	2
11.90	3	●	DSAS1190X03S120	37.9	62.2	62.2	118.2	116	2.2	12	2
11.90	5	●	DSAS1190X05S120	61.7	86.2	86.2	142.2	140	2.2	12	2
12.00	3	●	DSAS1200X03S120	38.2	62.2	62.2	118.2	116	2.2	12	2
12.00	5	●	DSAS1200X05S120	62.2	86.2	86.2	142.2	140	2.2	12	2

● : Avrupa standart stok.

ÖNERİLEN KESME KOŞULLARI

Çalışma Malzemesi		S			
		Isıya Dirençli Alaşımlar		Titanyum Alaşımları	
		Inconel®718 vb.		Ti-6Al-4V vb.	
Matkap Ucu Çapı DC (mm)	L/D	Devir (dak ⁻¹)	İlerleme oranı (Min. – Maks.) (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (Min. – Maks.) (mm/dev)
3	≤ 5	1000	0.06 (0.04–0.10)	4200	0.08 (0.06–0.12)
4	≤ 5	790	0.06 (0.04–0.10)	3100	0.10 (0.08–0.16)
5	≤ 5	760	0.08 (0.06–0.12)	2500	0.12 (0.08–0.20)
6	≤ 5	790	0.10 (0.08–0.15)	2100	0.14 (0.10–0.20)
8	≤ 5	590	0.10 (0.08–0.15)	1600	0.18 (0.15–0.25)
10	≤ 5	570	0.10 (0.08–0.15)	1300	0.22 (0.18–0.28)
12	≤ 5	530	0.12 (0.08–0.15)	1100	0.24 (0.20–0.30)

Not 1) İstikrarlı delme için fener mili içinden yüksek basınçlı soğutma sıvısı püskürtme önerilir.

Not 2) Emülsiyon tipi suda çözünebilir soğutma sıvısı tavsiye edilir.

Not 3) Suda çözünemeyen soğutma sıvısı kullanırken kesme hızını %10-20 oranında düşürün.

Not 4) Dıştan soğutma sıvısı sistemi kullanarak delme yaparken, talaşların kırılmasını kolaylaştırmak için çapın her (DC) x 0,5 mm derinliğin de gagalama / kademeli ilerleme ile delme tavsiye edilir.

M

DELME

DELME (YEKPARE KARBÜR)

MNS



KARBÜR

P M K **N** S H

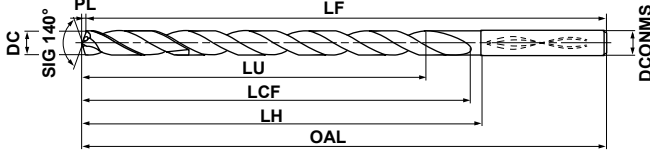
İçten Soğutma



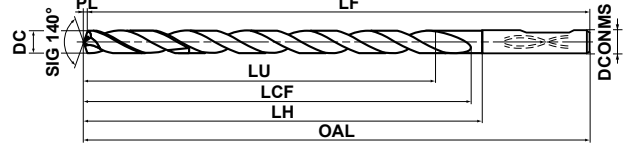
	DC=3	3<DC≤6	6<DC≤10	10<DC≤18	18<DC≤20
DIN tipi	+0.016 +0.004	+0.016 +0.004	+0.021 +0.006	+0.025 +0.007	+0.029 +0.008
Diğerleri	0 -0.014	0 -0.018	0 -0.022	0 -0.027	0 -0.031
h6	0 -0.006	0 -0.008	0 -0.009	0 -0.011	0 -0.013

- 4.5mm ve daha küçük çaplı Matkap Ucları 2 soğutma deliği ile tasarlanmıştır.
- 4.6mm veya daha büyük çaplı matkap ucu, 4 adet soğutma delikleri ile tasarlanmıştır.

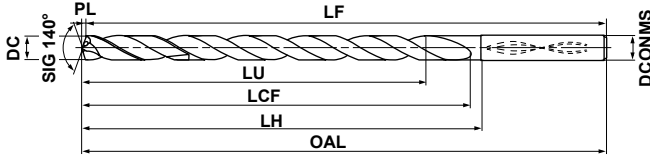
● Tip 1 MNS---DIN-C, MNS-C, MNS---LB, MNS---DB (Silindirik şaftlı tip)



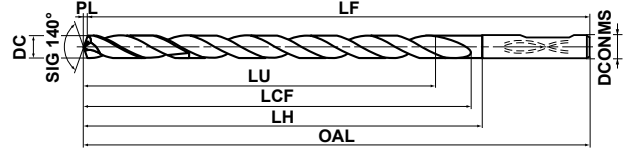
● Tip 2 MNS---S/L-DIN (Whistle notch şaftlı tip)



● Tip 3 MNS---DIN-C, MNS-C, MNS---LB, MNS---DB (Silindirik şaftlı tip)



● Tip 4 MNS---S/L-DIN (Whistle notch şaftlı tip)



● MNS Matkap Ucları ısıtmalı tip tutucular ile kullanım için uygundur.

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
3.0	3	□	MNS0300S-DIN	15.0	19.5	24.5	61.5	61	0.5	6	2
	3	□	MNS0300S-DIN-C	15.0	19.5	24.5	61.5	61	0.5	6	1
	5	□	MNS0300L-DIN	23.0	27.5	28.5	65.5	65	0.5	6	2
	5	●	MNS0300L-DIN-C	23.0	27.5	28.5	65.5	65	0.5	6	1
	8	□	MNS0300-L8C	24.5	33.5	36.5	73.5	73	0.5	6	1
	10	□	MNS0300-L10C	30.5	39.5	42.5	79.5	79	0.5	6	1
	12	●	MNS0300-L12C	36.5	45.5	48.5	85.5	85	0.5	6	1
	15	□	MNS0300-L15C	45.5	54.5	57.5	94.5	94	0.5	6	1
	20	●	MNS0300-L20C	60.5	69.5	72.5	109.5	109	0.5	6	1
	25	□	MNS0300-L25C	75.5	84.5	87.5	124.5	124	0.5	6	1
3.1	30	●	MNS0300-L30C	90.5	99.5	102.5	139.5	139	0.5	6	1
	5	★	MNS0300LB	15.5	33.5	33.5	81.5	81	0.5	3	1
	10	★	MNS0300X10DB	30.5	39.5	42.5	90.5	90	0.5	3	1
	20	★	MNS0300X20DB	60.5	69.5	72.5	120.5	120	0.5	3	1
	30	★	MNS0300X30DB	90.5	99.5	102.5	150.5	150	0.5	3	1
	3	□	MNS0310S-DIN	14.9	19.6	24.6	61.6	61	0.6	6	2
	3	□	MNS0310S-DIN-C	14.9	19.6	24.6	61.6	61	0.6	6	1
	5	□	MNS0310L-DIN	22.9	27.6	28.6	65.6	65	0.6	6	2
	5	□	MNS0310L-DIN-C	22.9	27.6	28.6	65.6	65	0.6	6	1
	8	□	MNS0310-L8C	25.4	39.6	42.6	79.6	79	0.6	6	1
10	□	MNS0310-L10C	31.6	46.6	49.6	86.6	86	0.6	6	1	
12	□	MNS0310-L12C	37.8	53.6	56.6	93.6	93	0.6	6	1	
15	□	MNS0310-L15C	47.1	63.6	66.6	103.6	103	0.6	6	1	
20	□	MNS0310-L20C	62.6	81.6	84.6	121.6	121	0.6	6	1	
25	□	MNS0310-L25C	78.1	98.6	101.6	138.6	138	0.6	6	1	
30	□	MNS0310-L30C	93.6	116.6	119.6	156.6	156	0.6	6	1	
5	★	MNS0310LB	16.1	39.6	39.6	87.6	87	0.6	4	1	
10	□	MNS0310X10DB	31.6	46.6	49.6	97.6	97	0.6	4	1	
20	□	MNS0310X20DB	62.6	81.6	84.6	132.6	132	0.6	4	1	
30	□	MNS0310X30DB	93.6	116.6	119.6	167.6	167	0.6	4	1	

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
3.2	3	□	MNS0320S-DIN	14.8	19.6	24.6	61.6	61	0.6	6	2
	3	□	MNS0320S-DIN-C	14.8	19.6	24.6	61.6	61	0.6	6	1
	5	□	MNS0320L-DIN	22.8	27.6	28.6	65.6	65	0.6	6	2
	5	●	MNS0320L-DIN-C	22.8	27.6	28.6	65.6	65	0.6	6	1
	8	□	MNS0320-L8C	26.2	39.6	42.6	79.6	79	0.6	6	1
	10	□	MNS0320-L10C	32.6	46.6	49.6	86.6	86	0.6	6	1
	12	●	MNS0320-L12C	39.0	53.6	56.6	93.6	93	0.6	6	1
	15	□	MNS0320-L15C	48.6	63.6	66.6	103.6	103	0.6	6	1
	20	●	MNS0320-L20C	64.6	81.6	84.6	121.6	121	0.6	6	1
	25	□	MNS0320-L25C	80.6	98.6	101.6	138.6	138	0.6	6	1
3.3	30	●	MNS0320-L30C	96.6	116.6	119.6	156.6	156	0.6	6	1
	5	★	MNS0320LB	16.6	39.6	39.6	87.6	87	0.6	4	1
	10	★	MNS0320X10DB	32.6	46.6	49.6	97.6	97	0.6	4	1
	20	★	MNS0320X20DB	64.6	81.6	84.6	132.6	132	0.6	4	1
	30	★	MNS0320X30DB	96.6	116.6	119.6	167.6	167	0.6	4	1
	3	□	MNS0330S-DIN	14.7	19.6	24.6	61.6	61	0.6	6	2
	3	□	MNS0330S-DIN-C	14.7	19.6	24.6	61.6	61	0.6	6	1
	5	□	MNS0330L-DIN	22.7	27.6	28.6	65.6	65	0.6	6	2
	5	●	MNS0330L-DIN-C	22.7	27.6	28.6	65.6	65	0.6	6	1
	8	□	MNS0330-L8C	27.0	39.6	42.6	79.6	79	0.6	6	1
10	□	MNS0330-L10C	33.6	46.6	49.6	86.6	86	0.6	6	1	
12	●	MNS0330-L12C	40.2	53.6	56.6	93.6	93	0.6	6	1	
15	□	MNS0330-L15C	50.1	63.6	66.6	103.6	103	0.6	6	1	
20	●	MNS0330-L20C	66.6	81.6	84.6	121.6	121	0.6	6	1	
25	□	MNS0330-L25C	83.1	98.6	101.6	138.6	138	0.6	6	1	
30	●	MNS0330-L30C	99.6	116.6	119.6	156.6	156	0.6	6	1	
5	★	MNS0330LB	17.1	39.6	39.6	87.6	87	0.6	4	1	
10	□	MNS0330X10DB	33.6	46.6	49.6	97.6	97	0.6	4	1	
20	□	MNS0330X20DB	66.6	81.6	84.6	132.6	132	0.6	4	1	
30	□	MNS0330X30DB	99.6	116.6	119.6	167.6	167	0.6	4	1	

Not 1) Lütfen bu katalogta olmayan herhangi bir geometri için bizimle iletişim kurun (örn. farklı çap ve uzunluk).

● : Avrupa standart stok. ★ : Japonya standart stok.

□ : Stokta bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
3.4	3	□	MNS0340S-DIN	14.5	19.6	24.6	61.6	61	0.6	6	2
	3	□	MNS0340S-DIN-C	14.5	19.6	24.6	61.6	61	0.6	6	1
	5	□	MNS0340L-DIN	22.5	27.6	28.6	65.6	65	0.6	6	2
	5	□	MNS0340L-DIN-C	22.5	27.6	28.6	65.6	65	0.6	6	1
	8	□	MNS0340-L8C	27.8	39.6	42.6	79.6	79	0.6	6	1
	10	□	MNS0340-L10C	34.6	46.6	49.6	86.6	86	0.6	6	1
	12	□	MNS0340-L12C	41.4	53.6	56.6	93.6	93	0.6	6	1
	15	□	MNS0340-L15C	51.6	63.6	66.6	103.6	103	0.6	6	1
	20	□	MNS0340-L20C	68.6	81.6	84.6	121.6	121	0.6	6	1
	25	□	MNS0340-L25C	85.6	98.6	101.6	138.6	138	0.6	6	1
	30	□	MNS0340-L30C	102.6	116.6	119.6	156.6	156	0.6	6	1
	5	★	MNS0340LB	17.6	39.6	39.6	87.6	87	0.6	4	1
	10	★	MNS0340X10DB	34.6	46.6	49.6	97.6	97	0.6	4	1
	20	★	MNS0340X20DB	68.6	81.6	84.6	132.6	132	0.6	4	1
	30	★	MNS0340X30DB	102.6	116.6	119.6	167.6	167	0.6	4	1
3.5	3	□	MNS0350S-DIN	14.4	19.6	24.6	61.6	61	0.6	6	2
	3	□	MNS0350S-DIN-C	14.4	19.6	24.6	61.6	61	0.6	6	1
	5	□	MNS0350L-DIN	22.4	27.6	28.6	65.6	65	0.6	6	2
	5	●	MNS0350L-DIN-C	22.4	27.6	28.6	65.6	65	0.6	6	1
	8	□	MNS0350-L8C	28.6	39.6	42.6	79.6	79	0.6	6	1
	10	□	MNS0350-L10C	35.6	46.6	49.6	86.6	86	0.6	6	1
	12	●	MNS0350-L12C	42.6	53.6	56.6	93.6	93	0.6	6	1
	15	□	MNS0350-L15C	53.1	63.6	66.6	103.6	103	0.6	6	1
	20	●	MNS0350-L20C	70.6	81.6	84.6	121.6	121	0.6	6	1
	25	□	MNS0350-L25C	88.1	98.6	101.6	138.6	138	0.6	6	1
	30	●	MNS0350-L30C	105.6	116.6	119.6	156.6	156	0.6	6	1
	5	★	MNS0350LB	18.1	39.6	39.6	87.6	87	0.6	4	1
	10	□	MNS0350X10DB	35.6	46.6	49.6	97.6	97	0.6	4	1
	20	□	MNS0350X20DB	70.6	81.6	84.6	132.6	132	0.6	4	1
	30	□	MNS0350X30DB	105.6	116.6	119.6	167.6	167	0.6	4	1
3.6	3	□	MNS0360S-DIN	14.3	19.7	24.7	61.7	61	0.7	6	2
	3	□	MNS0360S-DIN-C	14.3	19.7	24.7	61.7	61	0.7	6	1
	5	□	MNS0360L-DIN	22.3	27.7	28.7	65.7	65	0.7	6	2
	5	□	MNS0360L-DIN-C	22.3	27.7	28.7	65.7	65	0.7	6	1
	8	□	MNS0360-L8C	29.5	44.7	47.7	84.7	84	0.7	6	1
	10	□	MNS0360-L10C	36.7	52.7	55.7	92.7	92	0.7	6	1
	12	□	MNS0360-L12C	43.9	60.7	63.7	100.7	100	0.7	6	1
	15	□	MNS0360-L15C	54.7	72.7	75.7	112.7	112	0.7	6	1
	20	□	MNS0360-L20C	72.7	92.7	95.7	132.7	132	0.7	6	1
	25	□	MNS0360-L25C	90.7	112.7	115.7	152.7	152	0.7	6	1
	30	□	MNS0360-L30C	108.7	132.7	135.7	172.7	172	0.7	6	1
	5	★	MNS0360LB	18.7	44.7	44.7	92.7	92	0.7	4	1
	10	★	MNS0360X10DB	36.7	52.7	55.7	103.7	103	0.7	4	1
	20	★	MNS0360X20DB	72.7	92.7	95.7	143.7	143	0.7	4	1
	30	★	MNS0360X30DB	108.7	132.7	135.7	183.7	183	0.7	4	1

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
3.7	3	□	MNS0370S-DIN	14.1	19.7	24.7	61.7	61	0.7	6	2
	3	□	MNS0370S-DIN-C	14.1	19.7	24.7	61.7	61	0.7	6	1
	5	□	MNS0370L-DIN	22.1	27.7	28.7	65.7	65	0.7	6	2
	5	□	MNS0370L-DIN-C	22.1	27.7	28.7	65.7	65	0.7	6	1
	8	□	MNS0370-L8C	30.3	44.7	47.7	84.7	84	0.7	6	1
	10	□	MNS0370-L10C	37.7	52.7	55.7	92.7	92	0.7	6	1
	12	□	MNS0370-L12C	45.1	60.7	63.7	100.7	100	0.7	6	1
	15	□	MNS0370-L15C	56.2	72.7	75.7	112.7	112	0.7	6	1
	20	□	MNS0370-L20C	74.7	92.7	95.7	132.7	132	0.7	6	1
	25	□	MNS0370-L25C	93.2	112.7	115.7	152.7	152	0.7	6	1
	30	□	MNS0370-L30C	111.7	132.7	135.7	172.7	172	0.7	6	1
	5	★	MNS0370LB	19.2	44.7	44.7	92.7	92	0.7	4	1
	10	□	MNS0370X10DB	37.7	52.7	55.7	103.7	103	0.7	4	1
	20	□	MNS0370X20DB	74.7	92.7	95.7	143.7	143	0.7	4	1
	30	□	MNS0370X30DB	111.7	132.7	135.7	183.7	183	0.7	4	1
3.8	3	□	MNS0380S-DIN	18.0	23.7	28.7	65.7	65	0.7	6	2
	3	□	MNS0380S-DIN-C	18.0	23.7	28.7	65.7	65	0.7	6	1
	5	□	MNS0380L-DIN	30.0	35.7	36.7	73.7	73	0.7	6	2
	5	□	MNS0380L-DIN-C	30.0	35.7	36.7	73.7	73	0.7	6	1
	8	□	MNS0380-L8C	31.1	44.7	47.7	84.7	84	0.7	6	1
	10	□	MNS0380-L10C	38.7	52.7	55.7	92.7	92	0.7	6	1
	12	□	MNS0380-L12C	46.3	60.7	63.7	100.7	100	0.7	6	1
	15	□	MNS0380-L15C	57.7	72.7	75.7	112.7	112	0.7	6	1
	20	□	MNS0380-L20C	76.7	92.7	95.7	132.7	132	0.7	6	1
	25	□	MNS0380-L25C	95.7	112.7	115.7	152.7	152	0.7	6	1
	30	□	MNS0380-L30C	114.7	132.7	135.7	172.7	172	0.7	6	1
	5	★	MNS0380LB	19.7	44.7	44.7	92.7	92	0.7	4	1
	10	□	MNS0380X10DB	38.7	52.7	55.7	103.7	103	0.7	4	1
	20	□	MNS0380X20DB	76.7	92.7	95.7	143.7	143	0.7	4	1
	30	□	MNS0380X30DB	114.7	132.7	135.7	183.7	183	0.7	4	1
3.9	3	□	MNS0390S-DIN	17.9	23.7	28.7	65.7	65	0.7	6	2
	3	□	MNS0390S-DIN-C	17.9	23.7	28.7	65.7	65	0.7	6	1
	5	□	MNS0390L-DIN	29.9	35.7	36.7	73.7	73	0.7	6	2
	5	□	MNS0390L-DIN-C	29.9	35.7	36.7	73.7	73	0.7	6	1
	8	□	MNS0390-L8C	31.9	44.7	47.7	84.7	84	0.7	6	1
	10	□	MNS0390-L10C	39.7	52.7	55.7	92.7	92	0.7	6	1
	12	□	MNS0390-L12C	47.5	60.7	63.7	100.7	100	0.7	6	1
	15	□	MNS0390-L15C	59.2	72.7	75.7	112.7	112	0.7	6	1
	20	□	MNS0390-L20C	78.7	92.7	95.7	132.7	132	0.7	6	1
	25	□	MNS0390-L25C	98.2	112.7	115.7	152.7	152	0.7	6	1
	30	□	MNS0390-L30C	117.7	132.7	135.7	172.7	172	0.7	6	1
	5	★	MNS0390LB	20.2	44.7	44.7	92.7	92	0.7	4	1
	10	★	MNS0390X10DB	39.7	52.7	55.7	103.7	103	0.7	4	1
	20	★	MNS0390X20DB	78.7	92.7	95.7	143.7	143	0.7	4	1
	30	★	MNS0390X30DB	117.7	132.7	135.7	183.7	183	0.7	4	1

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DELME

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
4.0	3	□	MNS0400S-DIN	17.7	23.7	28.7	65.7	65	0.7	6	2
	3	□	MNS0400S-DIN-C	17.7	23.7	28.7	65.7	65	0.7	6	1
	5	□	MNS0400L-DIN	29.7	35.7	36.7	73.7	73	0.7	6	2
	5	●	MNS0400L-DIN-C	29.7	35.7	36.7	73.7	73	0.7	6	1
	8	□	MNS0400-L8C	32.7	44.7	47.7	84.7	84	0.7	6	1
	10	□	MNS0400-L10C	40.7	52.7	55.7	92.7	92	0.7	6	1
	12	●	MNS0400-L12C	48.7	60.7	63.7	100.7	100	0.7	6	1
	15	□	MNS0400-L15C	60.7	72.7	75.7	112.7	112	0.7	6	1
	20	●	MNS0400-L20C	80.7	92.7	95.7	132.7	132	0.7	6	1
	25	●	MNS0400-L25C	100.7	112.7	115.7	152.7	152	0.7	6	1
	30	●	MNS0400-L30C	120.7	132.7	135.7	172.7	172	0.7	6	1
	5	★	MNS0400LB	20.7	44.7	44.7	92.7	92	0.7	4	1
	10	★	MNS0400X10DB	40.7	52.7	55.7	103.7	103	0.7	4	1
	20	★	MNS0400X20DB	80.7	92.7	95.7	143.7	143	0.7	4	1
30	★	MNS0400X30DB	120.7	132.7	135.7	183.7	183	0.7	4	1	
4.1	3	□	MNS0410S-DIN	17.6	23.7	28.7	65.7	65	0.7	6	2
	3	□	MNS0410S-DIN-C	17.6	23.7	28.7	65.7	65	0.7	6	1
	5	□	MNS0410L-DIN	29.6	35.7	36.7	73.7	73	0.7	6	2
	5	□	MNS0410L-DIN-C	29.6	35.7	36.7	73.7	73	0.7	6	1
	8	□	MNS0410-L8C	33.5	50.7	53.7	90.7	90	0.7	6	1
	10	□	MNS0410-L10C	41.7	59.7	62.7	99.7	99	0.7	6	1
	12	□	MNS0410-L12C	49.9	68.7	71.7	108.7	108	0.7	6	1
	15	□	MNS0410-L15C	62.2	81.7	84.7	121.7	121	0.7	6	1
	20	□	MNS0410-L20C	82.7	104.7	107.7	144.7	144	0.7	6	1
	25	□	MNS0410-L25C	103.2	126.7	129.7	166.7	166	0.7	6	1
	30	□	MNS0410-L30C	123.7	149.7	152.7	189.7	189	0.7	6	1
	5	★	MNS0410LB	21.2	50.7	50.7	100.7	100	0.7	5	1
	10	□	MNS0410X10DB	41.7	59.7	62.7	112.7	112	0.7	5	1
	20	□	MNS0410X20DB	82.7	104.7	107.7	157.7	157	0.7	5	1
30	□	MNS0410X30DB	123.7	149.7	152.7	202.7	202	0.7	5	1	
4.2	3	□	MNS0420S-DIN	17.5	23.8	28.8	65.8	65	0.8	6	2
	3	□	MNS0420S-DIN-C	17.5	23.8	28.8	65.8	65	0.8	6	1
	5	□	MNS0420L-DIN	29.5	35.8	36.8	73.8	73	0.8	6	2
	5	●	MNS0420L-DIN-C	29.5	35.8	36.8	73.8	73	0.8	6	1
	8	□	MNS0420-L8C	34.4	50.8	53.8	90.8	90	0.8	6	1
	10	□	MNS0420-L10C	42.8	59.8	62.8	99.8	99	0.8	6	1
	12	●	MNS0420-L12C	51.2	68.8	71.8	108.8	108	0.8	6	1
	15	□	MNS0420-L15C	63.8	81.8	84.8	121.8	121	0.8	6	1
	20	●	MNS0420-L20C	84.8	104.8	107.8	144.8	144	0.8	6	1
	25	□	MNS0420-L25C	105.8	126.8	129.8	166.8	166	0.8	6	1
	30	●	MNS0420-L30C	126.8	149.8	152.8	189.8	189	0.8	6	1
	5	★	MNS0420LB	21.8	50.8	50.8	100.8	100	0.8	5	1
	10	□	MNS0420X10DB	42.8	59.8	62.8	112.8	112	0.8	5	1
	20	□	MNS0420X20DB	84.8	104.8	107.8	157.8	157	0.8	5	1
30	□	MNS0420X30DB	126.8	149.8	152.8	202.8	202	0.8	5	1	

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
4.3	3	□	MNS0430S-DIN	17.3	23.8	28.8	65.8	65	0.8	6	2
	3	□	MNS0430S-DIN-C	17.3	23.8	28.8	65.8	65	0.8	6	1
	5	□	MNS0430L-DIN	29.3	35.8	36.8	73.8	73	0.8	6	2
	5	□	MNS0430L-DIN-C	29.3	35.8	36.8	73.8	73	0.8	6	1
	8	□	MNS0430-L8C	35.2	50.8	53.8	90.8	90	0.8	6	1
	10	□	MNS0430-L10C	43.8	59.8	62.8	99.8	99	0.8	6	1
	12	□	MNS0430-L12C	52.4	68.8	71.8	108.8	108	0.8	6	1
	15	□	MNS0430-L15C	65.3	81.8	84.8	121.8	121	0.8	6	1
	20	□	MNS0430-L20C	86.8	104.8	107.8	144.8	144	0.8	6	1
	25	□	MNS0430-L25C	108.3	126.8	129.8	166.8	166	0.8	6	1
	30	□	MNS0430-L30C	129.8	149.8	152.8	189.8	189	0.8	6	1
	5	★	MNS0430LB	22.3	50.8	50.8	100.8	100	0.8	5	1
	10	□	MNS0430X10DB	43.8	59.8	62.8	112.8	112	0.8	5	1
	20	□	MNS0430X20DB	86.8	104.8	107.8	157.8	157	0.8	5	1
30	□	MNS0430X30DB	129.8	149.8	152.8	202.8	202	0.8	5	1	
4.4	3	□	MNS0440S-DIN	17.2	23.8	28.8	65.8	65	0.8	6	2
	3	□	MNS0440S-DIN-C	17.2	23.8	28.8	65.8	65	0.8	6	1
	5	□	MNS0440L-DIN	29.2	35.8	36.8	73.8	73	0.8	6	2
	5	□	MNS0440L-DIN-C	29.2	35.8	36.8	73.8	73	0.8	6	1
	8	□	MNS0440-L8C	36.0	50.8	53.8	90.8	90	0.8	6	1
	10	□	MNS0440-L10C	44.8	59.8	62.8	99.8	99	0.8	6	1
	12	□	MNS0440-L12C	53.6	68.8	71.8	108.8	108	0.8	6	1
	15	□	MNS0440-L15C	66.8	81.8	84.8	121.8	121	0.8	6	1
	20	□	MNS0440-L20C	88.8	104.8	107.8	144.8	144	0.8	6	1
	25	□	MNS0440-L25C	110.8	126.8	129.8	166.8	166	0.8	6	1
	30	□	MNS0440-L30C	132.8	149.8	152.8	189.8	189	0.8	6	1
	5	★	MNS0440LB	22.8	50.8	50.8	100.8	100	0.8	5	1
	10	□	MNS0440X10DB	44.8	59.8	62.8	112.8	112	0.8	5	1
	20	□	MNS0440X20DB	88.8	104.8	107.8	157.8	157	0.8	5	1
30	□	MNS0440X30DB	132.8	149.8	152.8	202.8	202	0.8	5	1	
4.5	3	□	MNS0450S-DIN	17.1	23.8	28.8	65.8	65	0.8	6	2
	3	□	MNS0450S-DIN-C	17.1	23.8	28.8	65.8	65	0.8	6	1
	5	□	MNS0450L-DIN	29.1	35.8	36.8	73.8	73	0.8	6	2
	5	●	MNS0450L-DIN-C	29.1	35.8	36.8	73.8	73	0.8	6	1
	8	□	MNS0450-L8C	36.8	50.8	53.8	90.8	90	0.8	6	1
	10	□	MNS0450-L10C	45.8	59.8	62.8	99.8	99	0.8	6	1
	12	●	MNS0450-L12C	54.8	68.8	71.8	108.8	108	0.8	6	1
	15	□	MNS0450-L15C	68.3	81.8	84.8	121.8	121	0.8	6	1
	20	●	MNS0450-L20C	90.8	104.8	107.8	144.8	144	0.8	6	1
	25	□	MNS0450-L25C	113.3	126.8	129.8	166.8	166	0.8	6	1
	30	●	MNS0450-L30C	135.8	149.8	152.8	189.8	189	0.8	6	1
	5	★	MNS0450LB	23.3	50.8	50.8	100.8	100	0.8	5	1
	10	□	MNS0450X10DB	45.8	59.8	62.8	112.8	112	0.8	5	1
	20	□	MNS0450X20DB	90.8	104.8	107.8	157.8	157	0.8	5	1
30	□	MNS0450X30DB	135.8	149.8	152.8	202.8	202	0.8	5	1	

Not 1) Lütfen bu katalogta olmayan herhangi bir geometri için bizimle iletişim kurun (örn. farklı çap ve uzunluk).

● : Avrupa standart stok. ★ : Japonya standart stok.

□ : Stokta bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
4.6	3	□	MNS0460S-DIN	17.1	23.8	28.8	65.8	65	0.8	6	4
	3	□	MNS0460S-DIN-C	16.9	23.8	28.8	65.8	65	0.8	6	3
	5	□	MNS0460L-DIN	28.9	35.8	36.8	73.8	73	0.8	6	4
	5	□	MNS0460L-DIN-C	28.9	35.8	36.8	73.8	73	0.8	6	3
	8	□	MNS0460-L8C	37.6	55.8	58.8	95.8	95	0.8	6	3
	10	□	MNS0460-L10C	46.8	65.8	68.8	105.8	105	0.8	6	3
	12	□	MNS0460-L12C	56.0	75.8	78.8	115.8	115	0.8	6	3
	15	□	MNS0460-L15C	69.8	90.8	93.8	130.8	130	0.8	6	3
	20	□	MNS0460-L20C	92.8	115.8	118.8	155.8	155	0.8	6	3
	25	□	MNS0460-L25C	115.8	140.8	143.8	180.8	180	0.8	6	3
	30	□	MNS0460-L30C	138.8	165.8	168.8	205.8	205	0.8	6	3
	5	★	MNS0460LB	23.8	55.8	55.8	105.8	105	0.8	5	3
	10	□	MNS0460X10DB	46.8	65.8	68.8	118.8	118	0.8	5	3
	20	□	MNS0460X20DB	92.8	115.8	118.8	168.8	168	0.8	5	3
30	□	MNS0460X30DB	138.8	165.8	168.8	218.8	218	0.8	5	3	
4.65	3	□	MNS0465S-DIN	16.9	23.8	28.8	65.8	65	0.8	6	4
	3	□	MNS0465S-DIN-C	16.9	23.8	28.8	65.8	65	0.8	6	3
	5	□	MNS0465L-DIN	28.9	35.8	36.8	73.8	73	0.8	6	4
	5	●	MNS0465L-DIN-C	28.9	35.8	36.8	73.8	73	0.8	6	3
4.7	3	□	MNS0470S-DIN	16.8	23.9	28.9	65.9	65	0.9	6	4
	3	□	MNS0470S-DIN-C	16.8	23.9	28.9	65.9	65	0.9	6	3
	5	□	MNS0470L-DIN	28.8	35.9	36.9	73.9	73	0.9	6	4
	5	□	MNS0470L-DIN-C	28.8	35.9	36.9	73.9	73	0.9	6	3
	8	□	MNS0470-L8C	38.5	55.9	58.9	95.9	95	0.9	6	3
	10	□	MNS0470-L10C	47.9	65.9	68.9	105.9	105	0.9	6	3
	12	□	MNS0470-L12C	57.3	75.9	78.9	115.9	115	0.9	6	3
	15	□	MNS0470-L15C	71.4	90.9	93.9	130.9	130	0.9	6	3
	20	□	MNS0470-L20C	94.9	115.9	118.9	155.9	155	0.9	6	3
	25	□	MNS0470-L25C	118.4	140.9	143.9	180.9	180	0.9	6	3
	30	□	MNS0470-L30C	141.9	165.9	168.9	205.9	205	0.9	6	3
	5	★	MNS0470LB	24.4	55.9	55.9	105.9	105	0.9	5	3
	10	□	MNS0470X10DB	47.9	65.9	68.9	118.9	118	0.9	5	3
	20	□	MNS0470X20DB	94.9	115.9	118.9	168.9	168	0.9	5	3
30	□	MNS0470X30DB	141.9	165.9	168.9	218.9	218	0.9	5	3	
4.8	3	□	MNS0480S-DIN	20.7	27.9	28.9	65.9	65	0.9	6	4
	3	□	MNS0480S-DIN-C	20.7	27.9	28.9	65.9	65	0.9	6	3
	5	□	MNS0480L-DIN	36.7	43.9	44.9	81.9	81	0.9	6	4
	5	□	MNS0480L-DIN-C	36.7	43.9	44.9	81.9	81	0.9	6	3
	8	□	MNS0480-L8C	39.3	55.9	58.9	95.9	95	0.9	6	3
	10	□	MNS0480-L10C	48.9	65.9	68.9	105.9	105	0.9	6	3
	12	□	MNS0480-L12C	58.5	75.9	78.9	115.9	115	0.9	6	3
	15	□	MNS0480-L15C	72.9	90.9	93.9	130.9	130	0.9	6	3
	20	□	MNS0480-L20C	96.9	115.9	118.9	155.9	155	0.9	6	3
	25	□	MNS0480-L25C	120.9	140.9	143.9	180.9	180	0.9	6	3
	30	□	MNS0480-L30C	144.9	165.9	168.9	205.9	205	0.9	6	3
	5	★	MNS0480LB	24.9	55.9	55.9	105.9	105	0.9	5	3
	10	□	MNS0480X10DB	48.9	65.9	68.9	118.9	118	0.9	5	3
	20	□	MNS0480X20DB	96.9	115.9	118.9	168.9	168	0.9	5	3
30	□	MNS0480X30DB	144.9	165.9	168.9	218.9	218	0.9	5	3	

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
4.9	3	□	MNS0490S-DIN	20.5	27.9	28.9	65.9	65	0.9	6	4
	3	□	MNS0490S-DIN-C	20.5	27.9	28.9	65.9	65	0.9	6	3
	5	□	MNS0490L-DIN	36.5	43.9	44.9	81.9	81	0.9	6	4
	5	□	MNS0490L-DIN-C	36.5	43.9	44.9	81.9	81	0.9	6	3
	8	□	MNS0490-L8C	40.1	55.9	58.9	95.9	95	0.9	6	3
	10	□	MNS0490-L10C	49.9	65.9	68.9	105.9	105	0.9	6	3
	12	□	MNS0490-L12C	59.7	75.9	78.9	115.9	115	0.9	6	3
	15	□	MNS0490-L15C	74.4	90.9	93.9	130.9	130	0.9	6	3
	20	□	MNS0490-L20C	98.9	115.9	118.9	155.9	155	0.9	6	3
	25	□	MNS0490-L25C	123.4	140.9	143.9	180.9	180	0.9	6	3
	30	□	MNS0490-L30C	147.9	165.9	168.9	205.9	205	0.9	6	3
	5	★	MNS0490LB	25.4	55.9	55.9	105.9	105	0.9	5	3
	10	★	MNS0490X10DB	49.9	65.9	68.9	118.9	118	0.9	5	3
	20	★	MNS0490X20DB	98.9	115.9	118.9	168.9	168	0.9	5	3
30	★	MNS0490X30DB	147.9	165.9	168.9	218.9	218	0.9	5	3	
5.0	3	□	MNS0500S-DIN	20.4	27.9	28.9	65.9	65	0.9	6	4
	3	□	MNS0500S-DIN-C	20.4	27.9	28.9	65.9	65	0.9	6	3
	5	□	MNS0500L-DIN	36.4	43.9	44.9	81.9	81	0.9	6	4
	5	●	MNS0500L-DIN-C	36.4	43.9	44.9	81.9	81	0.9	6	3
	8	□	MNS0500-L8C	40.9	55.9	58.9	95.9	95	0.9	6	3
	10	□	MNS0500-L10C	50.9	65.9	68.9	105.9	105	0.9	6	3
	12	●	MNS0500-L12C	60.9	75.9	78.9	115.9	115	0.9	6	3
	15	□	MNS0500-L15C	75.9	90.9	93.9	130.9	130	0.9	6	3
	20	●	MNS0500-L20C	100.9	115.9	118.9	155.9	155	0.9	6	3
	25	□	MNS0500-L25C	125.9	140.9	143.9	180.9	180	0.9	6	3
	30	●	MNS0500-L30C	150.9	165.9	168.9	205.9	205	0.9	6	3
	5	★	MNS0500LB	25.9	44.9	44.9	100.9	100	0.9	6	3
	10	★	MNS0500X10DB	50.9	65.9	68.9	118.9	118	0.9	5	3
	20	★	MNS0500X20DB	100.9	115.9	118.9	168.9	168	0.9	5	3
30	★	MNS0500X30DB	150.9	165.9	168.9	218.9	218	0.9	5	3	
5.1	3	□	MNS0510S-DIN	20.3	27.9	28.9	65.9	65	0.9	6	4
	3	□	MNS0510S-DIN-C	20.3	27.9	28.9	65.9	65	0.9	6	3
	5	□	MNS0510L-DIN	36.3	43.9	44.9	81.9	81	0.9	6	4
	5	●	MNS0510L-DIN-C	36.3	43.9	44.9	81.9	81	0.9	6	3
	8	□	MNS0510-L8C	41.7	61.9	64.9	101.9	101	0.9	6	3
	10	□	MNS0510-L10C	51.9	72.9	75.9	112.9	112	0.9	6	3
	12	□	MNS0510-L12C	62.1	83.9	86.9	123.9	123	0.9	6	3
	15	□	MNS0510-L15C	77.4	99.9	102.9	139.9	139	0.9	6	3
	20	□	MNS0510-L20C	102.9	127.9	130.9	167.9	167	0.9	6	3
	25	□	MNS0510-L25C	128.4	154.9	157.9	194.9	194	0.9	6	3
	30	□	MNS0510-L30C	153.9	182.9	185.9	222.9	222	0.9	6	3
	5	★	MNS0510LB	26.4	44.9	44.9	100.9	100	0.9	6	3
	10	★	MNS0510X10DB	51.9	72.9	75.9	127.9	127	0.9	6	3
	20	★	MNS0510X20DB	102.9	127.9	130.9	182.9	182	0.9	6	3
30	★	MNS0510X30DB	153.9	182.9	185.9	237.9	237	0.9	6	3	

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DELME

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
5.2	3	□	MNS0520S-DIN	20.1	27.9	28.9	65.9	65	0.9	6	4
	3	□	MNS0520S-DIN-C	20.1	27.9	28.9	65.9	65	0.9	6	3
	5	□	MNS0520L-DIN	36.1	43.9	44.9	81.9	81	0.9	6	4
	5	□	MNS0520L-DIN-C	36.1	43.9	44.9	81.9	81	0.9	6	3
	8	□	MNS0520-L8C	42.5	61.9	64.9	101.9	101	0.9	6	3
	10	□	MNS0520-L10C	52.9	72.9	75.9	112.9	112	0.9	6	3
	12	□	MNS0520-L12C	63.3	83.9	86.9	123.9	123	0.9	6	3
	15	□	MNS0520-L15C	78.9	99.9	102.9	139.9	139	0.9	6	3
	20	□	MNS0520-L20C	104.9	127.9	130.9	167.9	167	0.9	6	3
	25	□	MNS0520-L25C	130.9	154.9	157.9	194.9	194	0.9	6	3
	30	□	MNS0520-L30C	156.9	182.9	185.9	222.9	222	0.9	6	3
	5	★	MNS0520LB	26.9	44.9	44.9	100.9	100	0.9	6	3
	10	□	MNS0520X10DB	52.9	72.9	75.9	127.9	127	0.9	6	3
	20	□	MNS0520X20DB	104.9	127.9	130.9	182.9	182	0.9	6	3
30	□	MNS0520X30DB	156.9	182.9	185.9	237.9	237	0.9	6	3	
5.3	3	□	MNS0530S-DIN	20.0	28.0	29.0	66.0	65	1.0	6	4
	3	□	MNS0530S-DIN-C	20.0	28.0	29.0	66.0	65	1.0	6	3
	5	□	MNS0530L-DIN	36.0	44.0	45.0	82.0	81	1.0	6	4
	5	□	MNS0530L-DIN-C	36.0	44.0	45.0	82.0	81	1.0	6	3
	8	□	MNS0530-L8C	43.4	62.0	65.0	102.0	101	1.0	6	3
	10	□	MNS0530-L10C	54.0	73.0	76.0	113.0	112	1.0	6	3
	12	□	MNS0530-L12C	64.6	84.0	87.0	124.0	123	1.0	6	3
	15	□	MNS0530-L15C	80.5	100.0	103.0	140.0	139	1.0	6	3
	20	□	MNS0530-L20C	107.0	128.0	131.0	168.0	167	1.0	6	3
	25	□	MNS0530-L25C	133.5	155.0	158.0	195.0	194	1.0	6	3
	30	□	MNS0530-L30C	160.0	183.0	186.0	223.0	222	1.0	6	3
	5	★	MNS0530LB	27.5	45.0	45.0	101.0	100	1.0	6	3
	10	□	MNS0530X10DB	54.0	73.0	76.0	128.0	127	1.0	6	3
	20	□	MNS0530X20DB	107.0	128.0	131.0	183.0	182	1.0	6	3
30	□	MNS0530X30DB	160.0	183.0	186.0	238.0	237	1.0	6	3	
5.4	3	□	MNS0540S-DIN	19.9	28.0	29.0	66.0	65	1.0	6	4
	3	□	MNS0540S-DIN-C	19.9	28.0	29.0	66.0	65	1.0	6	3
	5	□	MNS0540L-DIN	35.9	44.0	45.0	82.0	81	1.0	6	4
	5	□	MNS0540L-DIN-C	35.9	44.0	45.0	82.0	81	1.0	6	3
	8	□	MNS0540-L8C	44.2	62.0	65.0	102.0	101	1.0	6	3
	10	□	MNS0540-L10C	55.0	73.0	76.0	113.0	112	1.0	6	3
	12	□	MNS0540-L12C	65.8	84.0	87.0	124.0	123	1.0	6	3
	15	□	MNS0540-L15C	82.0	100.0	103.0	140.0	139	1.0	6	3
	20	□	MNS0540-L20C	109.0	128.0	131.0	168.0	167	1.0	6	3
	25	□	MNS0540-L25C	136.0	155.0	158.0	195.0	194	1.0	6	3
	30	□	MNS0540-L30C	163.0	183.0	186.0	223.0	222	1.0	6	3
	5	★	MNS0540LB	28.0	45.0	45.0	101.0	100	1.0	6	3
	10	□	MNS0540X10DB	55.0	73.0	76.0	128.0	127	1.0	6	3
	20	□	MNS0540X20DB	109.0	128.0	131.0	183.0	182	1.0	6	3
30	□	MNS0540X30DB	163.0	183.0	186.0	238.0	237	1.0	6	3	

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
5.5	3	□	MNS0550S-DIN	19.8	28.0	29.0	66.0	65	1.0	6	4
	3	□	MNS0550S-DIN-C	19.8	28.0	29.0	66.0	65	1.0	6	3
	5	□	MNS0550L-DIN	35.8	44.0	45.0	82.0	81	1.0	6	4
	5	●	MNS0550L-DIN-C	35.8	44.0	45.0	82.0	81	1.0	6	3
	8	□	MNS0550-L8C	45.0	62.0	65.0	102.0	101	1.0	6	3
	10	□	MNS0550-L10C	56.0	73.0	76.0	113.0	112	1.0	6	3
	12	●	MNS0550-L12C	67.0	84.0	87.0	124.0	123	1.0	6	3
	15	□	MNS0550-L15C	83.5	100.0	103.0	140.0	139	1.0	6	3
	20	●	MNS0550-L20C	111.0	128.0	131.0	168.0	167	1.0	6	3
	25	□	MNS0550-L25C	138.5	155.0	158.0	195.0	194	1.0	6	3
	30	●	MNS0550-L30C	166.0	183.0	186.0	223.0	222	1.0	6	3
	5	★	MNS0550LB	28.5	45.0	45.0	101.0	100	1.0	6	3
	10	★	MNS0550X10DB	56.0	73.0	76.0	128.0	127	1.0	6	3
	20	★	MNS0550X20DB	111.0	128.0	131.0	183.0	182	1.0	6	3
30	★	MNS0550X30DB	166.0	183.0	186.0	238.0	237	1.0	6	3	
5.55	3	□	MNS0555S-DIN	19.7	28.0	29.0	66.0	65	1.0	6	4
	3	□	MNS0555S-DIN-C	19.7	28.0	29.0	66.0	65	1.0	6	3
	5	□	MNS0555L-DIN	35.7	44.0	45.0	82.0	81	1.0	6	4
	5	●	MNS0555L-DIN-C	35.7	44.0	45.0	82.0	81	1.0	6	3
	5	★	MNS0555LB	29.0	49.0	49.0	101.0	100	1.0	6	3
5.6	3	□	MNS0560S-DIN	19.6	28.0	29.0	66.0	65	1.0	6	4
	3	□	MNS0560S-DIN-C	19.6	28.0	29.0	66.0	65	1.0	6	3
	5	□	MNS0560L-DIN	35.6	44.0	45.0	82.0	81	1.0	6	4
	5	□	MNS0560L-DIN-C	35.6	44.0	45.0	82.0	81	1.0	6	3
	8	□	MNS0560-L8C	45.8	67.0	70.0	107.0	106	1.0	6	3
	10	□	MNS0560-L10C	57.0	79.0	82.0	119.0	118	1.0	6	3
	12	□	MNS0560-L12C	68.2	91.0	94.0	131.0	130	1.0	6	3
	15	□	MNS0560-L15C	85.0	109.0	112.0	149.0	148	1.0	6	3
	20	□	MNS0560-L20C	113.0	139.0	142.0	179.0	178	1.0	6	3
	25	□	MNS0560-L25C	141.0	169.0	172.0	209.0	208	1.0	6	3
	30	□	MNS0560-L30C	169.0	199.0	202.0	239.0	238	1.0	6	3
	5	★	MNS0560LB	29.0	49.0	49.0	101.0	100	1.0	6	3
	10	□	MNS0560X10DB	57.0	79.0	82.0	134.0	133	1.0	6	3
	20	□	MNS0560X20DB	113.0	139.0	142.0	194.0	193	1.0	6	3
30	□	MNS0560X30DB	169.0	199.0	202.0	254.0	253	1.0	6	3	
5.7	3	□	MNS0570S-DIN	19.5	28.0	29.0	66.0	65	1.0	6	4
	3	□	MNS0570S-DIN-C	19.5	28.0	29.0	66.0	65	1.0	6	3
	5	□	MNS0570L-DIN	35.5	44.0	45.0	82.0	81	1.0	6	4
	5	□	MNS0570L-DIN-C	35.5	44.0	45.0	82.0	81	1.0	6	3
	8	□	MNS0570-L8C	46.6	67.0	70.0	107.0	106	1.0	6	3
	10	□	MNS0570-L10C	58.0	79.0	82.0	119.0	118	1.0	6	3
	12	□	MNS0570-L12C	69.4	91.0	94.0	131.0	130	1.0	6	3
	15	□	MNS0570-L15C	86.5	109.0	112.0	149.0	148	1.0	6	3
	20	□	MNS0570-L20C	115.0	139.0	142.0	179.0	178	1.0	6	3
	25	□	MNS0570-L25C	143.5	169.0	172.0	209.0	208	1.0	6	3
	30	□	MNS0570-L30C	172.0	199.0	202.0	239.0	238	1.0	6	3
	5	★	MNS0570LB	29.5	49.0	49.0	101.0	100	1.0	6	3
	10	□	MNS0570X10DB	58.0	79.0	82.0	134.0	133	1.0	6	3
	20	□	MNS0570X20DB	115.0	139.0	142.0	194.0	193	1.0	6	3
30	□	MNS0570X30DB	172.0	199.0	202.0	254.0	253	1.0	6	3	

Not 1) Lütfen bu katalogda olmayan herhangi bir geometri için bizimle iletişim kurun (örn. farklı çap ve uzunluk).

● : Avrupa standart stok. ★ : Japonya standart stok.

□ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
5.8	3	□	MNS0580S-DIN	19.4	28.1	29.1	66.1	65	1.1	6	4
	3	□	MNS0580S-DIN-C	19.4	28.1	29.1	66.1	65	1.1	6	3
	5	□	MNS0580L-DIN	35.4	44.1	45.1	82.1	81	1.1	6	4
	5	□	MNS0580L-DIN-C	35.4	44.1	45.1	82.1	81	1.1	6	3
	8	□	MNS0580-L8C	47.5	67.1	70.1	107.1	106	1.1	6	3
	10	□	MNS0580-L10C	59.1	79.1	82.1	119.1	118	1.1	6	3
	12	□	MNS0580-L12C	70.7	91.1	94.1	131.1	130	1.1	6	3
	15	□	MNS0580-L15C	88.1	109.1	112.1	149.1	148	1.1	6	3
	20	□	MNS0580-L20C	117.1	139.1	142.1	179.1	178	1.1	6	3
	25	□	MNS0580-L25C	146.1	169.1	172.1	209.1	208	1.1	6	3
	30	□	MNS0580-L30C	175.1	199.1	202.1	239.1	238	1.1	6	3
	5	★	MNS0580LB	30.1	49.1	49.1	101.1	100	1.1	6	3
	10	□	MNS0580X10DB	59.1	79.1	82.1	134.1	133	1.1	6	3
	20	□	MNS0580X20DB	117.1	139.1	142.1	194.1	193	1.1	6	3
30	□	MNS0580X30DB	175.1	199.1	202.1	254.1	253	1.1	6	3	
5.9	3	□	MNS0590S-DIN	19.2	28.1	29.1	66.1	65	1.1	6	4
	3	□	MNS0590S-DIN-C	19.2	28.1	29.1	66.1	65	1.1	6	3
	5	□	MNS0590L-DIN	35.2	44.1	45.1	82.1	81	1.1	6	4
	5	□	MNS0590L-DIN-C	35.2	44.1	45.1	82.1	81	1.1	6	3
	8	□	MNS0590-L8C	48.3	67.1	70.1	107.1	106	1.1	6	3
	10	□	MNS0590-L10C	60.1	79.1	82.1	119.1	118	1.1	6	3
	12	□	MNS0590-L12C	71.9	91.1	94.1	131.1	130	1.1	6	3
	15	□	MNS0590-L15C	89.6	109.1	112.1	149.1	148	1.1	6	3
	20	□	MNS0590-L20C	119.1	139.1	142.1	179.1	178	1.1	6	3
	25	□	MNS0590-L25C	148.6	169.1	172.1	209.1	208	1.1	6	3
	30	□	MNS0590-L30C	178.1	199.1	202.1	239.1	238	1.1	6	3
	5	★	MNS0590LB	30.6	49.1	49.1	101.1	100	1.1	6	3
	10	□	MNS0590X10DB	60.1	79.1	82.1	134.1	133	1.1	6	3
	20	□	MNS0590X20DB	119.1	139.1	142.1	194.1	193	1.1	6	3
30	□	MNS0590X30DB	178.1	199.1	202.1	254.1	253	1.1	6	3	
6.0	3	□	MNS0600S-DIN	19.1	28.1	29.1	66.1	65	1.1	6	4
	3	□	MNS0600S-DIN-C	19.1	28.1	29.1	66.1	65	1.1	6	3
	5	●	MNS0600L-DIN-C	35.1	44.1	45.1	82.1	81	1.1	6	3
	8	□	MNS0600-L8C	49.1	67.1	70.1	107.1	106	1.1	6	3
	10	□	MNS0600-L10C	61.1	79.1	82.1	119.1	118	1.1	6	3
	12	●	MNS0600-L12C	73.1	91.1	94.1	131.1	130	1.1	6	3
	15	□	MNS0600-L15C	91.1	109.1	112.1	149.1	148	1.1	6	3
	20	●	MNS0600-L20C	121.1	139.1	142.1	179.1	178	1.1	6	3
	25	□	MNS0600-L25C	151.1	169.1	172.1	209.1	208	1.1	6	3
	30	●	MNS0600-L30C	181.1	199.1	202.1	239.1	238	1.1	6	3
	5	★	MNS0600LB	31.1	49.1	49.1	101.1	100	1.1	6	3
	10	★	MNS0600X10DB	61.1	79.1	82.1	134.1	133	1.1	6	3
	20	★	MNS0600X20DB	121.1	139.1	142.1	194.1	193	1.1	6	3
	30	★	MNS0600X30DB	181.1	199.1	202.1	254.1	253	1.1	6	3

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
6.1	3	□	MNS0610S-DIN	25.0	34.1	42.1	79.1	78	1.1	8	4
	3	□	MNS0610S-DIN-C	25.0	34.1	42.1	79.1	78	1.1	8	3
	5	□	MNS0610L-DIN	44.0	53.1	54.1	91.1	90	1.1	8	4
	5	□	MNS0610L-DIN-C	44.0	53.1	54.1	91.1	90	1.1	8	3
	8	□	MNS0610-L8C	49.9	73.1	76.1	113.1	112	1.1	8	3
	10	□	MNS0610-L10C	62.1	86.1	89.1	126.1	125	1.1	8	3
	12	□	MNS0610-L12C	74.3	99.1	102.1	139.1	138	1.1	8	3
	15	□	MNS0610-L15C	92.6	118.1	121.1	158.1	157	1.1	8	3
	20	□	MNS0610-L20C	123.1	151.1	154.1	191.1	190	1.1	8	3
	25	□	MNS0610-L25C	153.6	183.1	186.1	223.1	222	1.1	8	3
	30	□	MNS0610-L30C	184.1	216.1	219.1	256.1	255	1.1	8	3
	5	★	MNS0610LB	31.6	53.1	53.1	110.1	109	1.1	7	3
	10	★	MNS0610X10DB	62.1	86.1	89.1	142.1	141	1.1	7	3
	20	★	MNS0610X20DB	123.1	151.1	154.1	207.1	206	1.1	7	3
30	★	MNS0610X30DB	184.1	216.1	219.1	272.1	271	1.1	7	3	
6.2	3	□	MNS0620S-DIN	24.8	34.1	42.1	79.1	78	1.1	8	4
	3	□	MNS0620S-DIN-C	24.8	34.1	42.1	79.1	78	1.1	8	3
	5	□	MNS0620L-DIN	43.8	53.1	54.1	91.1	90	1.1	8	4
	5	□	MNS0620L-DIN-C	43.8	53.1	54.1	91.1	90	1.1	8	3
	8	□	MNS0620-L8C	50.7	73.1	76.1	113.1	112	1.1	8	3
	10	□	MNS0620-L10C	63.1	86.1	89.1	126.1	125	1.1	8	3
	12	□	MNS0620-L12C	75.5	99.1	102.1	139.1	138	1.1	8	3
	15	□	MNS0620-L15C	94.1	118.1	121.1	158.1	157	1.1	8	3
	20	□	MNS0620-L20C	125.1	151.1	154.1	191.1	190	1.1	8	3
	25	□	MNS0620-L25C	156.1	183.1	186.1	223.1	222	1.1	8	3
	30	□	MNS0620-L30C	187.1	216.1	219.1	256.1	255	1.1	8	3
	5	★	MNS0620LB	32.1	53.1	53.1	110.1	109	1.1	7	3
	10	□	MNS0620X10DB	63.1	86.1	89.1	142.1	141	1.1	7	3
	20	□	MNS0620X20DB	125.1	151.1	154.1	207.1	206	1.1	7	3
30	□	MNS0620X30DB	187.1	216.1	219.1	272.1	271	1.1	7	3	
6.3	3	□	MNS0630S-DIN	24.7	34.1	42.1	79.1	78	1.1	8	4
	3	□	MNS0630S-DIN-C	24.7	34.1	42.1	79.1	78	1.1	8	3
	5	□	MNS0630L-DIN	43.7	53.1	54.1	91.1	90	1.1	8	4
	5	□	MNS0630L-DIN-C	43.7	53.1	54.1	91.1	90	1.1	8	3
	8	□	MNS0630-L8C	51.5	73.1	76.1	113.1	112	1.1	8	3
	10	□	MNS0630-L10C	64.1	86.1	89.1	126.1	125	1.1	8	3
	12	□	MNS0630-L12C	76.7	99.1	102.1	139.1	138	1.1	8	3
	15	□	MNS0630-L15C	95.6	118.1	121.1	158.1	157	1.1	8	3
	20	□	MNS0630-L20C	127.1	151.1	154.1	191.1	190	1.1	8	3
	25	□	MNS0630-L25C	158.6	183.1	186.1	223.1	222	1.1	8	3
	30	□	MNS0630-L30C	190.1	216.1	219.1	256.1	255	1.1	8	3
	5	★	MNS0630LB	32.6	53.1	53.1	110.1	109	1.1	7	3
	10	□	MNS0630X10DB	64.1	86.1	89.1	142.1	141	1.1	7	3
	20	□	MNS0630X20DB	127.1	151.1	154.1	207.1	206	1.1	7	3
30	□	MNS0630X30DB	190.1	216.1	219.1	272.1	271	1.1	7	3	

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DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
6.4	3	□	MNS0640S-DIN	24.6	34.2	42.2	79.2	78	1.2	8	4
	3	□	MNS0640S-DIN-C	24.6	34.2	42.2	79.2	78	1.2	8	3
	5	□	MNS0640L-DIN	43.6	53.2	54.2	91.2	90	1.2	8	4
	5	□	MNS0640L-DIN-C	43.6	53.2	54.2	91.2	90	1.2	8	3
	8	□	MNS0640-L8C	52.4	73.2	76.2	113.2	112	1.2	8	3
	10	□	MNS0640-L10C	65.2	86.2	89.2	126.2	125	1.2	8	3
	12	□	MNS0640-L12C	78.0	99.2	102.2	139.2	138	1.2	8	3
	15	□	MNS0640-L15C	97.2	118.2	121.2	158.2	157	1.2	8	3
	20	□	MNS0640-L20C	129.2	151.2	154.2	191.2	190	1.2	8	3
	25	□	MNS0640-L25C	161.2	183.2	186.2	223.2	222	1.2	8	3
	30	□	MNS0640-L30C	193.2	216.2	219.2	256.2	255	1.2	8	3
	5	★	MNS0640LB	33.2	53.2	53.2	110.2	109	1.2	7	3
	10	□	MNS0640X10DB	65.2	86.2	89.2	142.2	141	1.2	7	3
	20	□	MNS0640X20DB	129.2	151.2	154.2	207.2	206	1.2	7	3
30	□	MNS0640X30DB	193.2	216.2	219.2	272.2	271	1.2	7	3	
6.5	3	□	MNS0650S-DIN	24.4	34.2	42.2	79.2	78	1.2	8	4
	3	□	MNS0650S-DIN-C	24.4	34.2	42.2	79.2	78	1.2	8	3
	5	□	MNS0650L-DIN	43.4	53.2	54.2	91.2	90	1.2	8	4
	5	●	MNS0650L-DIN-C	43.4	53.2	54.2	91.2	90	1.2	8	3
	8	□	MNS0650-L8C	53.2	73.2	76.2	113.2	112	1.2	8	3
	10	□	MNS0650-L10C	66.2	86.2	89.2	126.2	125	1.2	8	3
	12	●	MNS0650-L12C	79.2	99.2	102.2	139.2	138	1.2	8	3
	15	□	MNS0650-L15C	98.7	118.2	121.2	158.2	157	1.2	8	3
	20	●	MNS0650-L20C	131.2	151.2	154.2	191.2	190	1.2	8	3
	25	□	MNS0650-L25C	163.7	183.2	186.2	223.2	222	1.2	8	3
	30	●	MNS0650-L30C	196.2	216.2	219.2	256.2	255	1.2	8	3
	5	★	MNS0650LB	33.7	53.2	53.2	110.2	109	1.2	7	3
	10	★	MNS0650X10DB	66.2	86.2	89.2	142.2	141	1.2	7	3
	20	★	MNS0650X20DB	131.2	151.2	154.2	207.2	206	1.2	7	3
30	★	MNS0650X30DB	196.2	216.2	219.2	272.2	271	1.2	7	3	
6.6	3	□	MNS0660S-DIN	24.3	34.2	42.2	79.2	78	1.2	8	4
	3	□	MNS0660S-DIN-C	24.3	34.2	42.2	79.2	78	1.2	8	3
	5	□	MNS0660L-DIN	43.3	53.2	54.2	91.2	90	1.2	8	4
	5	□	MNS0660L-DIN-C	43.3	53.2	54.2	91.2	90	1.2	8	3
	8	□	MNS0660-L8C	54.0	78.2	81.2	118.2	117	1.2	8	3
	10	□	MNS0660-L10C	67.2	92.2	95.2	132.2	131	1.2	8	3
	12	□	MNS0660-L12C	80.4	106.2	109.2	146.2	145	1.2	8	3
	15	□	MNS0660-L15C	100.2	127.2	130.2	167.2	166	1.2	8	3
	20	□	MNS0660-L20C	133.2	162.2	165.2	202.2	201	1.2	8	3
	25	□	MNS0660-L25C	166.2	197.2	200.2	237.2	236	1.2	8	3
	30	□	MNS0660-L30C	199.2	232.2	235.2	272.2	271	1.2	8	3
	5	★	MNS0660LB	34.2	57.2	57.2	110.2	109	1.2	7	3
	10	□	MNS0660X10DB	67.2	92.2	95.2	148.2	147	1.2	7	3
	20	□	MNS0660X20DB	133.2	162.2	165.2	218.2	217	1.2	7	3
30	□	MNS0660X30DB	199.2	232.2	235.2	288.2	287	1.2	7	3	

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
6.7	3	□	MNS0670S-DIN	24.2	34.2	42.2	79.2	78	1.2	8	4
	3	□	MNS0670S-DIN-C	24.2	34.2	42.2	79.2	78	1.2	8	3
	5	□	MNS0670L-DIN	43.2	53.2	54.2	91.2	90	1.2	8	4
	5	□	MNS0670L-DIN-C	43.2	53.2	54.2	91.2	90	1.2	8	3
	8	□	MNS0670-L8C	54.8	78.2	81.2	118.2	117	1.2	8	3
	10	□	MNS0670-L10C	68.2	92.2	95.2	132.2	131	1.2	8	3
	12	□	MNS0670-L12C	81.6	106.2	109.2	146.2	145	1.2	8	3
	15	□	MNS0670-L15C	101.7	127.2	130.2	167.2	166	1.2	8	3
	20	□	MNS0670-L20C	135.2	162.2	165.2	202.2	201	1.2	8	3
	25	□	MNS0670-L25C	168.7	197.2	200.2	237.2	236	1.2	8	3
	30	□	MNS0670-L30C	202.2	232.2	235.2	272.2	271	1.2	8	3
	5	★	MNS0670LB	34.7	57.2	57.2	110.2	109	1.2	7	3
	10	★	MNS0670X10DB	68.2	92.2	95.2	148.2	147	1.2	7	3
	20	★	MNS0670X20DB	135.2	162.2	165.2	218.2	217	1.2	7	3
30	★	MNS0670X30DB	202.2	232.2	235.2	288.2	287	1.2	7	3	
6.8	3	□	MNS0680S-DIN	24.0	34.2	42.2	79.2	78	1.2	8	4
	3	□	MNS0680S-DIN-C	24.0	34.2	42.2	79.2	78	1.2	8	3
	5	□	MNS0680L-DIN	43.0	53.2	54.2	91.2	90	1.2	8	4
	5	●	MNS0680L-DIN-C	43.0	53.2	54.2	91.2	90	1.2	8	3
	8	□	MNS0680-L8C	55.6	78.2	81.2	118.2	117	1.2	8	3
	10	□	MNS0680-L10C	69.2	92.2	95.2	132.2	131	1.2	8	3
	12	●	MNS0680-L12C	82.8	106.2	109.2	146.2	145	1.2	8	3
	15	□	MNS0680-L15C	103.2	127.2	130.2	167.2	166	1.2	8	3
	20	●	MNS0680-L20C	137.2	162.2	165.2	202.2	201	1.2	8	3
	25	□	MNS0680-L25C	171.2	197.2	200.2	237.2	236	1.2	8	3
	30	●	MNS0680-L30C	205.2	232.2	235.2	272.2	271	1.2	8	3
	5	★	MNS0680LB	35.2	57.2	57.2	110.2	109	1.2	7	3
	10	□	MNS0680X10DB	69.2	92.2	95.2	148.2	147	1.2	7	3
	20	□	MNS0680X20DB	137.2	162.2	165.2	218.2	217	1.2	7	3
30	□	MNS0680X30DB	205.2	232.2	235.2	288.2	287	1.2	7	3	
6.9	3	□	MNS0690S-DIN	23.9	34.3	42.3	79.3	78	1.3	8	4
	3	□	MNS0690S-DIN-C	23.9	34.3	42.3	79.3	78	1.3	8	3
	5	□	MNS0690L-DIN	42.9	53.3	54.3	91.3	90	1.3	8	4
	5	□	MNS0690L-DIN-C	42.9	53.3	54.3	91.3	90	1.3	8	3
	8	□	MNS0690-L8C	56.5	78.3	81.3	118.3	117	1.3	8	3
	10	□	MNS0690-L10C	70.3	92.3	95.3	132.3	131	1.3	8	3
	12	□	MNS0690-L12C	84.1	106.3	109.3	146.3	145	1.3	8	3
	15	□	MNS0690-L15C	104.8	127.3	130.3	167.3	166	1.3	8	3
	20	□	MNS0690-L20C	139.3	162.3	165.3	202.3	201	1.3	8	3
	25	□	MNS0690-L25C	173.8	197.3	200.3	237.3	236	1.3	8	3
	30	□	MNS0690-L30C	208.3	232.3	235.3	272.3	271	1.3	8	3
	5	★	MNS0690LB	35.8	57.3	57.3	110.3	109	1.3	7	3
	10	□	MNS0690X10DB	70.3	92.3	95.3	148.3	147	1.3	7	3
	20	□	MNS0690X20DB	139.3	162.3	165.3	218.3	217	1.3	7	3
30	□	MNS0690X30DB	208.3	232.3	235.3	288.3	287	1.3	7	3	

Not 1) Lütfen bu katalogta olmayan herhangi bir geometri için bizimle iletişim kurun (örn. farklı çap ve uzunluk).

● : Avrupa standart stok. ★ : Japonya standart stok.

□ : Stokta bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
7.0	3	□	MNS0700S-DIN	23.8	34.3	42.3	79.3	78	1.3	8	4
	3	□	MNS0700S-DIN-C	23.8	34.3	42.3	79.3	78	1.3	8	3
	5	□	MNS0700L-DIN	42.8	53.3	54.3	91.3	90	1.3	8	4
	5	●	MNS0700L-DIN-C	42.8	53.3	54.3	91.3	90	1.3	8	3
	8	□	MNS0700-L8C	57.3	78.3	81.3	118.3	117	1.3	8	3
	10	□	MNS0700-L10C	71.3	92.3	95.3	132.3	131	1.3	8	3
	12	●	MNS0700-L12C	85.3	106.3	109.3	146.3	145	1.3	8	3
	15	□	MNS0700-L15C	106.3	127.3	130.3	167.3	166	1.3	8	3
	20	●	MNS0700-L20C	141.3	162.3	165.3	202.3	201	1.3	8	3
	25	□	MNS0700-L25C	176.3	197.3	200.3	237.3	236	1.3	8	3
	30	●	MNS0700-L30C	211.3	232.3	235.3	272.3	271	1.3	8	3
	5	★	MNS0700LB	36.3	57.3	57.3	110.3	109	1.3	7	3
	10	★	MNS0700X10DB	71.3	92.3	95.3	148.3	147	1.3	7	3
	20	★	MNS0700X20DB	141.3	162.3	165.3	218.3	217	1.3	7	3
30	★	MNS0700X30DB	211.3	232.3	235.3	288.3	287	1.3	7	3	
7.1	3	□	MNS0710S-DIN	30.6	41.3	42.3	79.3	78	1.3	8	4
	3	□	MNS0710S-DIN-C	30.6	41.3	42.3	79.3	78	1.3	8	3
	5	□	MNS0710L-DIN	42.6	53.3	54.3	91.3	90	1.3	8	4
	5	□	MNS0710L-DIN-C	42.6	53.3	54.3	91.3	90	1.3	8	3
	8	□	MNS0710-L8C	58.1	84.3	87.3	124.3	123	1.3	8	3
	10	□	MNS0710-L10C	72.3	99.3	102.3	139.3	138	1.3	8	3
	12	□	MNS0710-L12C	86.5	114.3	117.3	154.3	153	1.3	8	3
	15	□	MNS0710-L15C	107.8	136.3	139.3	176.3	175	1.3	8	3
	20	□	MNS0710-L20C	143.3	174.3	177.3	214.3	213	1.3	8	3
	25	□	MNS0710-L25C	178.8	211.3	214.3	251.3	250	1.3	8	3
	30	□	MNS0710-L30C	214.3	249.3	252.3	289.3	288	1.3	8	3
	5	★	MNS0710LB	36.8	61.3	65.3	119.3	118	1.3	8	3
	10	□	MNS0710X10DB	72.3	99.3	102.3	156.3	155	1.3	8	3
	20	□	MNS0710X20DB	143.3	174.3	177.3	231.3	230	1.3	8	3
30	□	MNS0710X30DB	214.3	249.3	252.3	306.3	305	1.3	8	3	
7.2	3	□	MNS0720S-DIN	30.5	41.3	42.3	79.3	78	1.3	8	4
	3	□	MNS0720S-DIN-C	30.5	41.3	42.3	79.3	78	1.3	8	3
	5	□	MNS0720L-DIN	42.5	53.3	54.3	91.3	90	1.3	8	4
	5	□	MNS0720L-DIN-C	42.5	53.3	54.3	91.3	90	1.3	8	3
	8	□	MNS0720-L8C	58.9	84.3	87.3	124.3	123	1.3	8	3
	10	□	MNS0720-L10C	73.3	99.3	102.3	139.3	138	1.3	8	3
	12	□	MNS0720-L12C	87.7	114.3	117.3	154.3	153	1.3	8	3
	15	□	MNS0720-L15C	109.3	136.3	139.3	176.3	175	1.3	8	3
	20	□	MNS0720-L20C	145.3	174.3	177.3	214.3	213	1.3	8	3
	25	□	MNS0720-L25C	181.3	211.3	214.3	251.3	250	1.3	8	3
	30	□	MNS0720-L30C	217.3	249.3	252.3	289.3	288	1.3	8	3
	5	★	MNS0720LB	37.3	61.3	65.3	119.3	118	1.3	8	3
	10	★	MNS0720X10DB	73.3	99.3	102.3	156.3	155	1.3	8	3
	20	★	MNS0720X20DB	145.3	174.3	177.3	231.3	230	1.3	8	3
30	★	MNS0720X30DB	217.3	249.3	252.3	306.3	305	1.3	8	3	

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
7.3	3	□	MNS0730S-DIN	30.4	41.3	42.3	79.3	78	1.3	8	4
	3	□	MNS0730S-DIN-C	30.4	41.3	42.3	79.3	78	1.3	8	3
	5	□	MNS0730L-DIN	42.4	53.3	54.3	91.3	90	1.3	8	4
	5	□	MNS0730L-DIN-C	42.4	53.3	54.3	91.3	90	1.3	8	3
	8	□	MNS0730-L8C	59.7	84.3	87.3	124.3	123	1.3	8	3
	10	□	MNS0730-L10C	74.3	99.3	102.3	139.3	138	1.3	8	3
	12	□	MNS0730-L12C	88.9	114.3	117.3	154.3	153	1.3	8	3
	15	□	MNS0730-L15C	110.8	136.3	139.3	176.3	175	1.3	8	3
	20	□	MNS0730-L20C	147.3	174.3	177.3	214.3	213	1.3	8	3
	25	□	MNS0730-L25C	183.8	211.3	214.3	251.3	250	1.3	8	3
	30	□	MNS0730-L30C	220.3	249.3	252.3	289.3	288	1.3	8	3
	5	★	MNS0730LB	37.8	61.3	65.3	119.3	118	1.3	8	3
	10	□	MNS0730X10DB	74.3	99.3	102.3	156.3	155	1.3	8	3
	20	□	MNS0730X20DB	147.3	174.3	177.3	231.3	230	1.3	8	3
30	□	MNS0730X30DB	220.3	249.3	252.3	306.3	305	1.3	8	3	
7.4	3	□	MNS0740S-DIN	30.2	41.3	42.3	79.3	78	1.3	8	4
	3	□	MNS0740S-DIN-C	30.2	41.3	42.3	79.3	78	1.3	8	3
	5	□	MNS0740L-DIN	42.2	53.3	54.3	91.3	90	1.3	8	4
	5	□	MNS0740L-DIN-C	42.2	53.3	54.3	91.3	90	1.3	8	3
	8	□	MNS0740-L8C	60.5	84.3	87.3	124.3	123	1.3	8	3
	10	□	MNS0740-L10C	75.3	99.3	102.3	139.3	138	1.3	8	3
	12	□	MNS0740-L12C	90.1	114.3	117.3	154.3	153	1.3	8	3
	15	□	MNS0740-L15C	112.3	136.3	139.3	176.3	175	1.3	8	3
	20	□	MNS0740-L20C	149.3	174.3	177.3	214.3	213	1.3	8	3
	25	□	MNS0740-L25C	186.3	211.3	214.3	251.3	250	1.3	8	3
	30	□	MNS0740-L30C	223.3	249.3	252.3	289.3	288	1.3	8	3
	5	★	MNS0740LB	38.3	61.3	65.3	119.3	118	1.3	8	3
	10	□	MNS0740X10DB	75.3	99.3	102.3	156.3	155	1.3	8	3
	20	□	MNS0740X20DB	149.3	174.3	177.3	231.3	230	1.3	8	3
30	□	MNS0740X30DB	223.3	249.3	252.3	306.3	305	1.3	8	3	
7.5	3	□	MNS0750S-DIN	30.1	41.4	42.4	79.4	78	1.4	8	4
	3	□	MNS0750S-DIN-C	30.1	41.4	42.4	79.4	78	1.4	8	3
	5	□	MNS0750L-DIN	42.1	53.4	54.4	91.4	90	1.4	8	4
	5	●	MNS0750L-DIN-C	42.1	53.4	54.4	91.4	90	1.4	8	3
	8	□	MNS0750-L8C	61.4	84.4	87.4	124.4	123	1.4	8	3
	10	□	MNS0750-L10C	76.4	99.4	102.4	139.4	138	1.4	8	3
	12	●	MNS0750-L12C	91.4	114.4	117.4	154.4	153	1.4	8	3
	15	□	MNS0750-L15C	113.9	136.4	139.4	176.4	175	1.4	8	3
	20	●	MNS0750-L20C	151.4	174.4	177.4	214.4	213	1.4	8	3
	25	□	MNS0750-L25C	188.9	211.4	214.4	251.4	250	1.4	8	3
	30	●	MNS0750-L30C	226.4	249.4	252.4	289.4	288	1.4	8	3
	5	★	MNS0750LB	38.9	61.4	65.4	119.4	118	1.4	8	3
	10	□	MNS0750X10DB	76.4	99.4	102.4	156.4	155	1.4	8	3
	20	□	MNS0750X20DB	151.4	174.4	177.4	231.4	230	1.4	8	3
30	□	MNS0750X30DB	226.4	249.4	252.4	306.4	305	1.4	8	3	

M

DELME

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
7.6	3	<input type="checkbox"/>	MNS0760S-DIN	30.0	41.4	42.4	79.4	78	1.4	8	4
	3	<input type="checkbox"/>	MNS0760S-DIN-C	30.0	41.4	42.4	79.4	78	1.4	8	3
	5	<input type="checkbox"/>	MNS0760L-DIN	42.0	53.4	54.4	91.4	90	1.4	8	4
	5	<input type="checkbox"/>	MNS0760L-DIN-C	42.0	53.4	54.4	91.4	90	1.4	8	3
	8	<input type="checkbox"/>	MNS0760-L8C	62.2	89.4	92.4	129.4	128	1.4	8	3
	10	<input type="checkbox"/>	MNS0760-L10C	77.4	105.4	108.4	145.4	144	1.4	8	3
	12	<input type="checkbox"/>	MNS0760-L12C	92.6	121.4	124.4	161.4	160	1.4	8	3
	15	<input type="checkbox"/>	MNS0760-L15C	115.4	145.4	148.4	185.4	184	1.4	8	3
	20	<input type="checkbox"/>	MNS0760-L20C	153.4	185.4	188.4	225.4	224	1.4	8	3
	25	<input type="checkbox"/>	MNS0760-L25C	191.4	225.4	228.4	265.4	264	1.4	8	3
	30	<input type="checkbox"/>	MNS0760-L30C	229.4	265.4	268.4	305.4	304	1.4	8	3
	5	★	MNS0760LB	39.4	65.4	65.4	119.4	118	1.4	8	3
	10	<input type="checkbox"/>	MNS0760X10DB	77.4	105.4	108.4	162.4	161	1.4	8	3
	20	<input type="checkbox"/>	MNS0760X20DB	153.4	185.4	188.4	242.4	241	1.4	8	3
30	<input type="checkbox"/>	MNS0760X30DB	229.4	265.4	268.4	322.4	321	1.4	8	3	
7.7	3	<input type="checkbox"/>	MNS0770S-DIN	29.9	41.4	42.4	79.4	78	1.4	8	4
	3	<input type="checkbox"/>	MNS0770S-DIN-C	29.9	41.4	42.4	79.4	78	1.4	8	3
	5	<input type="checkbox"/>	MNS0770L-DIN	41.9	53.4	54.4	91.4	90	1.4	8	4
	5	<input type="checkbox"/>	MNS0770L-DIN-C	41.9	53.4	54.4	91.4	90	1.4	8	3
	8	<input type="checkbox"/>	MNS0770-L8C	63.0	89.4	92.4	129.4	128	1.4	8	3
	10	<input type="checkbox"/>	MNS0770-L10C	78.4	105.4	108.4	145.4	144	1.4	8	3
	12	<input type="checkbox"/>	MNS0770-L12C	93.8	121.4	124.4	161.4	160	1.4	8	3
	15	<input type="checkbox"/>	MNS0770-L15C	116.9	145.4	148.4	185.4	184	1.4	8	3
	20	<input type="checkbox"/>	MNS0770-L20C	155.4	185.4	188.4	225.4	224	1.4	8	3
	25	<input type="checkbox"/>	MNS0770-L25C	193.9	225.4	228.4	265.4	264	1.4	8	3
	30	<input type="checkbox"/>	MNS0770-L30C	232.4	265.4	268.4	305.4	304	1.4	8	3
	5	★	MNS0770LB	39.9	65.4	65.4	119.4	118	1.4	8	3
	10	<input type="checkbox"/>	MNS0770X10DB	78.4	105.4	108.4	162.4	161	1.4	8	3
	20	<input type="checkbox"/>	MNS0770X20DB	155.4	185.4	188.4	242.4	241	1.4	8	3
30	<input type="checkbox"/>	MNS0770X30DB	232.4	265.4	268.4	322.4	321	1.4	8	3	
7.8	3	<input type="checkbox"/>	MNS0780S-DIN	29.7	41.4	42.4	79.4	78	1.4	8	4
	3	<input type="checkbox"/>	MNS0780S-DIN-C	29.7	41.4	42.4	79.4	78	1.4	8	3
	5	<input type="checkbox"/>	MNS0780L-DIN	41.7	53.4	54.4	91.4	90	1.4	8	4
	5	<input type="checkbox"/>	MNS0780L-DIN-C	41.7	53.4	54.4	91.4	90	1.4	8	3
	8	<input type="checkbox"/>	MNS0780-L8C	63.8	89.4	92.4	129.4	128	1.4	8	3
	10	<input type="checkbox"/>	MNS0780-L10C	79.4	105.4	108.4	145.4	144	1.4	8	3
	12	<input type="checkbox"/>	MNS0780-L12C	95.0	121.4	124.4	161.4	160	1.4	8	3
	15	<input type="checkbox"/>	MNS0780-L15C	118.4	145.4	148.4	185.4	184	1.4	8	3
	20	<input type="checkbox"/>	MNS0780-L20C	157.4	185.4	188.4	225.4	224	1.4	8	3
	25	<input type="checkbox"/>	MNS0780-L25C	196.4	225.4	228.4	265.4	264	1.4	8	3
	30	<input type="checkbox"/>	MNS0780-L30C	235.4	265.4	268.4	305.4	304	1.4	8	3
	5	★	MNS0780LB	40.4	65.4	65.4	119.4	118	1.4	8	3
	10	★	MNS0780X10DB	79.4	105.4	108.4	162.4	161	1.4	8	3
	20	★	MNS0780X20DB	157.4	185.4	188.4	242.4	241	1.4	8	3
30	★	MNS0780X30DB	235.4	265.4	268.4	322.4	321	1.4	8	3	

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
7.9	3	<input type="checkbox"/>	MNS0790S-DIN	29.6	41.4	42.4	79.4	78	1.4	8	4
	3	<input type="checkbox"/>	MNS0790S-DIN-C	29.6	41.4	42.4	79.4	78	1.4	8	3
	5	<input type="checkbox"/>	MNS0790L-DIN	41.6	53.4	54.4	91.4	90	1.4	8	4
	5	<input type="checkbox"/>	MNS0790L-DIN-C	41.6	53.4	54.4	91.4	90	1.4	8	3
	8	<input type="checkbox"/>	MNS0790-L8C	64.6	89.4	92.4	129.4	128	1.4	8	3
	10	<input type="checkbox"/>	MNS0790-L10C	80.4	105.4	108.4	145.4	144	1.4	8	3
	12	<input type="checkbox"/>	MNS0790-L12C	96.2	121.4	124.4	161.4	160	1.4	8	3
	15	<input type="checkbox"/>	MNS0790-L15C	119.9	145.4	148.4	185.4	184	1.4	8	3
	20	<input type="checkbox"/>	MNS0790-L20C	159.4	185.4	188.4	225.4	224	1.4	8	3
	25	<input type="checkbox"/>	MNS0790-L25C	198.9	225.4	228.4	265.4	264	1.4	8	3
	30	<input type="checkbox"/>	MNS0790-L30C	238.4	265.4	268.4	305.4	304	1.4	8	3
	5	★	MNS0790LB	40.9	65.4	65.4	119.4	118	1.4	8	3
	10	<input type="checkbox"/>	MNS0790X10DB	80.4	105.4	108.4	162.4	161	1.4	8	3
	20	<input type="checkbox"/>	MNS0790X20DB	159.4	185.4	188.4	242.4	241	1.4	8	3
30	<input type="checkbox"/>	MNS0790X30DB	238.4	265.4	268.4	322.4	321	1.4	8	3	
8.0	3	<input type="checkbox"/>	MNS0800S-DIN	29.5	41.5	42.5	79.5	78	1.5	8	4
	3	<input type="checkbox"/>	MNS0800S-DIN-C	29.5	41.5	42.5	79.5	78	1.5	8	3
	5	<input type="checkbox"/>	MNS0800L-DIN	41.5	53.5	54.5	91.5	90	1.5	8	4
	5	●	MNS0800L-DIN-C	41.5	53.5	54.5	91.5	90	1.5	8	3
	8	<input type="checkbox"/>	MNS0800-L8C	65.5	89.5	92.5	129.5	128	1.5	8	3
	10	<input type="checkbox"/>	MNS0800-L10C	81.5	105.5	108.5	145.5	144	1.5	8	3
	12	●	MNS0800-L12C	97.5	121.5	124.5	161.5	160	1.5	8	3
	15	<input type="checkbox"/>	MNS0800-L15C	121.5	145.5	148.5	185.5	184	1.5	8	3
	20	●	MNS0800-L20C	161.5	185.5	188.5	225.5	224	1.5	8	3
	25	<input type="checkbox"/>	MNS0800-L25C	201.5	225.5	228.5	265.5	264	1.5	8	3
	30	●	MNS0800-L30C	241.5	265.5	268.5	305.5	304	1.5	8	3
	5	★	MNS0800LB	41.5	65.5	65.5	119.5	118	1.5	8	3
	10	★	MNS0800X10DB	81.5	105.5	108.5	162.5	161	1.5	8	3
	20	★	MNS0800X20DB	161.5	185.5	188.5	242.5	241	1.5	8	3
30	★	MNS0800X30DB	241.5	265.5	268.5	322.5	321	1.5	8	3	
8.1	3	<input type="checkbox"/>	MNS0810S-DIN	34.3	46.5	47.5	88.5	87	1.5	10	4
	3	<input type="checkbox"/>	MNS0810S-DIN-C	34.3	46.5	47.5	88.5	87	1.5	10	3
	5	<input type="checkbox"/>	MNS0810L-DIN	48.3	60.5	61.5	102.5	101	1.5	10	4
	5	<input type="checkbox"/>	MNS0810L-DIN-C	48.3	60.5	61.5	102.5	101	1.5	10	3
	8	<input type="checkbox"/>	MNS0810-L8C	66.3	95.5	98.5	139.5	138	1.5	10	3
	10	<input type="checkbox"/>	MNS0810-L10C	82.5	112.5	115.5	156.5	155	1.5	10	3
	12	<input type="checkbox"/>	MNS0810-L12C	98.7	129.5	132.5	173.5	172	1.5	10	3
	15	<input type="checkbox"/>	MNS0810-L15C	123.0	154.5	157.5	198.5	197	1.5	10	3
	20	<input type="checkbox"/>	MNS0810-L20C	163.5	197.5	200.5	241.5	240	1.5	10	3
	25	<input type="checkbox"/>	MNS0810-L25C	204.0	239.5	242.5	283.5	282	1.5	10	3
	30	<input type="checkbox"/>	MNS0810-L30C	244.5	281.5	284.5	325.5	324	1.5	10	3
	5	★	MNS0810LB	42.0	69.5	73.5	128.5	127	1.5	9	3
	10	<input type="checkbox"/>	MNS0810X10DB	82.5	112.5	115.5	170.5	169	1.5	9	3
	20	<input type="checkbox"/>	MNS0810X20DB	163.5	197.5	200.5	255.5	254	1.5	9	3
30	<input type="checkbox"/>	MNS0810X30DB	244.5	282.5	285.5	340.5	339	1.5	9	3	

Not 1) Lütfen bu katalogta olmayan herhangi bir geometri için bizimle iletişim kurun (örn. farklı çap ve uzunluk).

● : Avrupa standart stok. ★ : Japonya standart stok.

□ : Stokta bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONIMS	
8.2	3	□	MNS0820S-DIN	34.2	46.5	47.5	88.5	87	1.5	10	4
	3	□	MNS0820S-DIN-C	34.2	46.5	47.5	88.5	87	1.5	10	3
	5	□	MNS0820L-DIN	48.2	60.5	61.5	102.5	101	1.5	10	4
	5	□	MNS0820L-DIN-C	48.2	60.5	61.5	102.5	101	1.5	10	3
	8	□	MNS0820-L8C	67.1	95.5	98.5	139.5	138	1.5	10	3
	5	★	MNS0820LB	42.5	69.5	73.5	128.5	127	1.5	9	3
	10	□	MNS0820X10DB	83.5	112.5	115.5	170.5	169	1.5	9	3
	20	□	MNS0820X20DB	165.5	197.5	200.5	255.5	254	1.5	9	3
	30	□	MNS0820X30DB	247.5	282.5	285.5	340.5	339	1.5	9	3
	8.3	3	□	MNS0830S-DIN	34.1	46.5	47.5	88.5	87	1.5	10
3		□	MNS0830S-DIN-C	34.1	46.5	47.5	88.5	87	1.5	10	3
5		□	MNS0830L-DIN-C	48.1	60.5	61.5	102.5	101	1.5	10	3
8		□	MNS0830-L8C	67.9	95.5	98.5	139.5	138	1.5	10	3
10		□	MNS0830-L10C	84.5	112.5	115.5	156.5	155	1.5	10	3
12		□	MNS0830-L12C	101.1	129.5	132.5	173.5	172	1.5	10	3
15		□	MNS0830-L15C	126.0	154.5	157.5	198.5	197	1.5	10	3
20		□	MNS0830-L20C	167.5	197.5	200.5	241.5	240	1.5	10	3
25		□	MNS0830-L25C	209.0	239.5	242.5	283.5	282	1.5	10	3
30		□	MNS0830-L30C	250.5	281.5	284.5	325.5	324	1.5	10	3
5		★	MNS0830LB	43.0	69.5	73.5	128.5	127	1.5	9	3
10		□	MNS0830X10DB	84.5	112.5	115.5	170.5	169	1.5	9	3
20		□	MNS0830X20DB	167.5	197.5	200.5	255.5	254	1.5	9	3
30	□	MNS0830X30DB	250.5	282.5	285.5	340.5	339	1.5	9	3	
8.4	3	□	MNS0840S-DIN	33.9	46.5	47.5	88.5	87	1.5	10	4
	3	□	MNS0840S-DIN-C	33.9	46.5	47.5	88.5	87	1.5	10	3
	5	□	MNS0840L-DIN	47.9	60.5	61.5	102.5	101	1.5	10	4
	5	□	MNS0840L-DIN-C	47.9	60.5	61.5	102.5	101	1.5	10	3
	8	□	MNS0840-L8C	68.7	95.5	98.5	139.5	138	1.5	10	3
	10	□	MNS0840-L10C	85.5	112.5	115.5	156.5	155	1.5	10	3
	12	□	MNS0840-L12C	102.3	129.5	132.5	173.5	172	1.5	10	3
	15	□	MNS0840-L15C	127.5	154.5	157.5	198.5	197	1.5	10	3
	20	□	MNS0840-L20C	169.5	197.5	200.5	241.5	240	1.5	10	3
	25	□	MNS0840-L25C	211.5	239.5	242.5	283.5	282	1.5	10	3
	30	□	MNS0840-L30C	253.5	281.5	284.5	325.5	324	1.5	10	3
	5	★	MNS0840LB	43.5	69.5	73.5	128.5	127	1.5	9	3
	10	□	MNS0840X10DB	85.5	112.5	115.5	170.5	169	1.5	9	3
20	□	MNS0840X20DB	169.5	197.5	200.5	255.5	254	1.5	9	3	
30	□	MNS0840X30DB	253.5	282.5	285.5	340.5	339	1.5	9	3	

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONIMS	
8.5	3	□	MNS0850S-DIN	33.8	46.5	47.5	88.5	87	1.5	10	4
	3	□	MNS0850S-DIN-C	33.8	46.5	47.5	88.5	87	1.5	10	3
	5	□	MNS0850L-DIN	47.8	60.5	61.5	102.5	101	1.5	10	4
	5	●	MNS0850L-DIN-C	47.8	60.5	61.5	102.5	101	1.5	10	3
	8	□	MNS0850-L8C	69.5	95.5	98.5	139.5	138	1.5	10	3
	10	□	MNS0850-L10C	86.5	112.5	115.5	156.5	155	1.5	10	3
	12	●	MNS0850-L12C	103.5	129.5	132.5	173.5	172	1.5	10	3
	15	□	MNS0850-L15C	129.0	154.5	157.5	198.5	197	1.5	10	3
	20	●	MNS0850-L20C	171.5	197.5	200.5	241.5	240	1.5	10	3
	25	□	MNS0850-L25C	214.0	239.5	242.5	283.5	282	1.5	10	3
	30	●	MNS0850-L30C	256.5	281.5	284.5	325.5	324	1.5	10	3
	5	★	MNS0850LB	44.0	69.5	73.5	128.5	127	1.5	9	3
	8.6	10	□	MNS0850X10DB	86.5	112.5	115.5	170.5	169	1.5	9
20		□	MNS0850X20DB	171.5	197.5	200.5	255.5	254	1.5	9	3
30		□	MNS0850X30DB	256.5	282.5	285.5	340.5	339	1.5	9	3
3		□	MNS0860S-DIN	33.7	46.6	47.6	88.6	87	1.6	10	4
3		□	MNS0860S-DIN-C	33.7	46.6	47.6	88.6	87	1.6	10	3
5		□	MNS0860L-DIN-C	47.7	60.6	61.6	102.6	101	1.6	10	3
8		□	MNS0860-L8C	70.4	100.6	103.6	144.6	143	1.6	10	3
10		□	MNS0860-L10C	87.6	118.6	121.6	162.6	161	1.6	10	3
12		□	MNS0860-L12C	104.8	136.6	139.6	180.6	179	1.6	10	3
15		□	MNS0860-L15C	130.6	163.6	166.6	207.6	206	1.6	10	3
20		□	MNS0860-L20C	173.6	208.6	211.6	252.6	251	1.6	10	3
25		□	MNS0860-L25C	216.6	253.6	256.6	297.6	296	1.6	10	3
30		□	MNS0860-L30C	259.6	297.6	300.6	341.6	340	1.6	10	3
5	★	MNS0860LB	44.6	73.6	73.6	128.6	127	1.6	9	3	
8.7	10	□	MNS0860X10DB	87.6	118.6	121.6	176.6	175	1.6	9	3
	20	□	MNS0860X20DB	173.6	208.6	211.6	266.6	265	1.6	9	3
	30	□	MNS0860X30DB	259.6	298.6	301.6	356.6	355	1.6	9	3
	3	□	MNS0870S-DIN	33.5	46.6	47.6	88.6	87	1.6	10	4
	3	□	MNS0870S-DIN-C	33.5	46.6	47.6	88.6	87	1.6	10	3
	5	□	MNS0870L-DIN	47.5	60.6	61.6	102.6	101	1.6	10	4
	5	□	MNS0870L-DIN-C	47.5	60.6	61.6	102.6	101	1.6	10	3
	8	□	MNS0870-L8C	71.2	100.6	103.6	144.6	143	1.6	10	3
	10	□	MNS0870-L10C	88.6	118.6	121.6	162.6	161	1.6	10	3
	12	□	MNS0870-L12C	106.0	136.6	139.6	180.6	179	1.6	10	3
	15	□	MNS0870-L15C	132.1	163.6	166.6	207.6	206	1.6	10	3
	20	□	MNS0870-L20C	175.6	208.6	211.6	252.6	251	1.6	10	3
	25	□	MNS0870-L25C	219.1	253.6	256.6	297.6	296	1.6	10	3
30	□	MNS0870-L30C	262.6	297.6	300.6	341.6	340	1.6	10	3	
5	★	MNS0870LB	45.1	73.6	73.6	128.6	127	1.6	9	3	
10	□	MNS0870X10DB	88.6	118.6	121.6	176.6	175	1.6	9	3	
20	□	MNS0870X20DB	175.6	208.6	211.6	266.6	265	1.6	9	3	
30	□	MNS0870X30DB	262.6	298.6	301.6	356.6	355	1.6	9	3	

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DELME

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
8.8	3	<input type="checkbox"/>	MNS0880S-DIN	33.4	46.6	47.6	88.6	87	1.6	10	4
	3	<input type="checkbox"/>	MNS0880S-DIN-C	33.4	46.6	47.6	88.6	87	1.6	10	3
	5	<input type="checkbox"/>	MNS0880L-DIN	47.4	60.6	61.6	102.6	101	1.6	10	4
	5	<input type="checkbox"/>	MNS0880L-DIN-C	47.4	60.6	61.6	102.6	101	1.6	10	3
	8	<input type="checkbox"/>	MNS0880-L8C	72.0	100.6	103.6	144.6	143	1.6	10	3
	10	<input type="checkbox"/>	MNS0880-L10C	89.6	118.6	121.6	162.6	161	1.6	10	3
	12	<input type="checkbox"/>	MNS0880-L12C	107.2	136.6	139.6	180.6	179	1.6	10	3
	15	<input type="checkbox"/>	MNS0880-L15C	133.6	163.6	166.6	207.6	206	1.6	10	3
	20	<input type="checkbox"/>	MNS0880-L20C	177.6	208.6	211.6	252.6	251	1.6	10	3
	25	<input type="checkbox"/>	MNS0880-L25C	221.6	253.6	256.6	297.6	296	1.6	10	3
	30	<input type="checkbox"/>	MNS0880-L30C	265.6	297.6	300.6	341.6	340	1.6	10	3
	5	★	MNS0880LB	45.6	73.6	73.6	128.6	127	1.6	9	3
	10	<input type="checkbox"/>	MNS0880X10DB	89.6	118.6	121.6	176.6	175	1.6	9	3
	20	<input type="checkbox"/>	MNS0880X20DB	177.6	208.6	211.6	266.6	265	1.6	9	3
30	<input type="checkbox"/>	MNS0880X30DB	265.6	298.6	301.6	356.6	355	1.6	9	3	
8.9	3	<input type="checkbox"/>	MNS0890S-DIN	33.3	46.6	47.6	88.6	87	1.6	10	4
	3	<input type="checkbox"/>	MNS0890S-DIN-C	33.3	46.6	47.6	88.6	87	1.6	10	3
	5	<input type="checkbox"/>	MNS0890L-DIN	47.3	60.6	61.6	102.6	101	1.6	10	4
	5	<input type="checkbox"/>	MNS0890L-DIN-C	47.3	60.6	61.6	102.6	101	1.6	10	3
	8	<input type="checkbox"/>	MNS0890-L8C	72.8	100.6	103.6	144.6	143	1.6	10	3
	10	<input type="checkbox"/>	MNS0890-L10C	90.6	118.6	121.6	162.6	161	1.6	10	3
	12	<input type="checkbox"/>	MNS0890-L12C	108.4	136.6	139.6	180.6	179	1.6	10	3
	15	<input type="checkbox"/>	MNS0890-L15C	135.1	163.6	166.6	207.6	206	1.6	10	3
	20	<input type="checkbox"/>	MNS0890-L20C	179.6	208.6	211.6	252.6	251	1.6	10	3
	25	<input type="checkbox"/>	MNS0890-L25C	224.1	253.6	256.6	297.6	296	1.6	10	3
	30	<input type="checkbox"/>	MNS0890-L30C	268.6	297.6	300.6	341.6	340	1.6	10	3
	5	★	MNS0890LB	46.1	73.6	73.6	128.6	127	1.6	9	3
	10	<input type="checkbox"/>	MNS0890X10DB	90.6	118.6	121.6	176.6	175	1.6	9	3
	20	<input type="checkbox"/>	MNS0890X20DB	179.6	208.6	211.6	266.6	265	1.6	9	3
30	<input type="checkbox"/>	MNS0890X30DB	268.6	298.6	301.6	356.6	355	1.6	9	3	
9.0	3	<input type="checkbox"/>	MNS0900S-DIN	33.1	46.6	47.6	88.6	87	1.6	10	4
	3	<input type="checkbox"/>	MNS0900S-DIN-C	33.1	46.6	47.6	88.6	87	1.6	10	3
	5	<input type="checkbox"/>	MNS0900L-DIN	47.1	60.6	61.6	102.6	101	1.6	10	4
	5	●	MNS0900L-DIN-C	47.1	60.6	61.6	102.6	101	1.6	10	3
	8	<input type="checkbox"/>	MNS0900-L8C	73.6	100.6	103.6	144.6	143	1.6	10	3
	10	<input type="checkbox"/>	MNS0900-L10C	91.6	118.6	121.6	162.6	161	1.6	10	3
	12	●	MNS0900-L12C	109.6	136.6	139.6	180.6	179	1.6	10	3
	15	<input type="checkbox"/>	MNS0900-L15C	136.6	163.6	166.6	207.6	206	1.6	10	3
	20	●	MNS0900-L20C	181.6	208.6	211.6	252.6	251	1.6	10	3
	25	<input type="checkbox"/>	MNS0900-L25C	226.6	253.6	256.6	297.6	296	1.6	10	3
	30	●	MNS0900-L30C	271.6	297.6	300.6	341.6	340	1.6	10	3
	5	★	MNS0900LB	46.6	73.6	73.6	128.6	127	1.6	9	3
	10	★	MNS0900X10DB	91.6	118.6	121.6	176.6	175	1.6	9	3
	20	★	MNS0900X20DB	181.6	208.6	211.6	266.6	265	1.6	9	3
30	★	MNS0900X30DB	271.6	298.6	301.6	356.6	355	1.6	9	3	

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
9.1	3	<input type="checkbox"/>	MNS0910S-DIN	33.0	46.7	47.7	88.7	87	1.7	10	4
	3	<input type="checkbox"/>	MNS0910S-DIN-C	33.0	46.7	47.7	88.7	87	1.7	10	3
	5	<input type="checkbox"/>	MNS0910L-DIN	47.0	60.7	61.7	102.7	101	1.7	10	4
	5	<input type="checkbox"/>	MNS0910L-DIN-C	47.0	60.7	61.7	102.7	101	1.7	10	3
	8	<input type="checkbox"/>	MNS0910-L8C	74.5	106.7	109.7	150.7	149	1.7	10	3
	10	<input type="checkbox"/>	MNS0910-L10C	92.7	125.7	128.7	169.7	168	1.7	10	3
	12	<input type="checkbox"/>	MNS0910-L12C	110.9	144.7	147.7	188.7	187	1.7	10	3
	15	<input type="checkbox"/>	MNS0910-L15C	138.2	172.7	175.7	216.7	215	1.7	10	3
	20	<input type="checkbox"/>	MNS0910-L20C	183.7	220.7	223.7	264.7	263	1.7	10	3
	25	<input type="checkbox"/>	MNS0910-L25C	229.2	267.7	270.7	311.7	310	1.7	10	3
	30	<input type="checkbox"/>	MNS0910-L30C	274.7	315.7	318.7	359.7	358	1.7	10	3
	5	★	MNS0910LB	47.2	77.7	81.7	137.7	136	1.7	10	3
	10	<input type="checkbox"/>	MNS0910X10DB	92.7	125.7	128.7	183.7	182	1.7	10	3
	20	<input type="checkbox"/>	MNS0910X20DB	183.7	220.7	223.7	278.7	277	1.7	10	3
30	<input type="checkbox"/>	MNS0910X30DB	274.7	315.7	318.7	373.7	372	1.7	10	3	
9.2	3	<input type="checkbox"/>	MNS0920S-DIN	32.9	46.7	47.7	88.7	87	1.7	10	4
	3	<input type="checkbox"/>	MNS0920S-DIN-C	32.9	46.7	47.7	88.7	87	1.7	10	3
	5	<input type="checkbox"/>	MNS0920L-DIN	46.9	60.7	61.7	102.7	101	1.7	10	4
	5	<input type="checkbox"/>	MNS0920L-DIN-C	46.9	60.7	61.7	102.7	101	1.7	10	3
	8	<input type="checkbox"/>	MNS0920-L8C	75.3	106.7	109.7	150.7	149	1.7	10	3
	10	<input type="checkbox"/>	MNS0920-L10C	93.7	125.7	128.7	169.7	168	1.7	10	3
	12	<input type="checkbox"/>	MNS0920-L12C	112.1	144.7	147.7	188.7	187	1.7	10	3
	15	<input type="checkbox"/>	MNS0920-L15C	139.7	172.7	175.7	216.7	215	1.7	10	3
	20	<input type="checkbox"/>	MNS0920-L20C	185.7	220.7	223.7	264.7	263	1.7	10	3
	25	<input type="checkbox"/>	MNS0920-L25C	231.7	267.7	270.7	311.7	310	1.7	10	3
	30	<input type="checkbox"/>	MNS0920-L30C	277.7	315.7	318.7	359.7	358	1.7	10	3
	5	★	MNS0920LB	47.7	77.7	81.7	137.7	136	1.7	10	3
	10	<input type="checkbox"/>	MNS0920X10DB	93.7	125.7	128.7	183.7	182	1.7	10	3
	20	<input type="checkbox"/>	MNS0920X20DB	185.7	220.7	223.7	278.7	277	1.7	10	3
30	<input type="checkbox"/>	MNS0920X30DB	277.7	315.7	318.7	373.7	372	1.7	10	3	
9.3	3	<input type="checkbox"/>	MNS0930S-DIN	32.7	46.7	47.7	88.7	87	1.7	10	4
	3	<input type="checkbox"/>	MNS0930S-DIN-C	32.7	46.7	47.7	88.7	87	1.7	10	3
	5	<input type="checkbox"/>	MNS0930L-DIN	46.7	60.7	61.7	102.7	101	1.7	10	4
	5	<input type="checkbox"/>	MNS0930L-DIN-C	46.7	60.7	61.7	102.7	101	1.7	10	3
	8	<input type="checkbox"/>	MNS0930-L8C	76.1	106.7	109.7	150.7	149	1.7	10	3
	10	<input type="checkbox"/>	MNS0930-L10C	94.7	125.7	128.7	169.7	168	1.7	10	3
	12	<input type="checkbox"/>	MNS0930-L12C	113.3	144.7	147.7	188.7	187	1.7	10	3
	15	<input type="checkbox"/>	MNS0930-L15C	141.2	172.7	175.7	216.7	215	1.7	10	3
	20	<input type="checkbox"/>	MNS0930-L20C	187.7	220.7	223.7	264.7	263	1.7	10	3
	25	<input type="checkbox"/>	MNS0930-L25C	234.2	267.7	270.7	311.7	310	1.7	10	3
	30	<input type="checkbox"/>	MNS0930-L30C	280.7	315.7	318.7	359.7	358	1.7	10	3
	5	★	MNS0930LB	48.2	77.7	81.7	137.7	136	1.7	10	3
	10	<input type="checkbox"/>	MNS0930X10DB	94.7	125.7	128.7	183.7	182	1.7	10	3
	20	<input type="checkbox"/>	MNS0930X20DB	187.7	220.7	223.7	278.7	277	1.7	10	3
30	<input type="checkbox"/>	MNS0930X30DB	280.7	315.7	318.7	373.7	372	1.7	10	3	

Not 1) Lütfen bu katalogta olmayan herhangi bir geometri için bizimle iletişime kurun (örn. farklı çap ve uzunluk).

● : Avrupa standart stok. ★ : Japonya standart stok.

□ : Stokta bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
9.4	3	□	MNS0940S-DIN	32.6	46.7	47.7	88.7	87	1.7	10	4
	3	□	MNS0940S-DIN-C	32.6	46.7	47.7	88.7	87	1.7	10	3
	5	□	MNS0940L-DIN	46.6	60.7	61.7	102.7	101	1.7	10	4
	5	□	MNS0940L-DIN-C	46.6	60.7	61.7	102.7	101	1.7	10	3
	8	□	MNS0940-L8C	76.9	106.7	109.7	150.7	149	1.7	10	3
	10	□	MNS0940-L10C	95.7	125.7	128.7	169.7	168	1.7	10	3
	12	□	MNS0940-L12C	114.5	144.7	147.7	188.7	187	1.7	10	3
	15	□	MNS0940-L15C	142.7	172.7	175.7	216.7	215	1.7	10	3
	20	□	MNS0940-L20C	189.7	220.7	223.7	264.7	263	1.7	10	3
	25	□	MNS0940-L25C	236.7	267.7	270.7	311.7	310	1.7	10	3
	30	□	MNS0940-L30C	283.7	315.7	318.7	359.7	358	1.7	10	3
	5	★	MNS0940LB	48.7	77.7	81.7	137.7	136	1.7	10	3
	10	□	MNS0940X10DB	95.7	125.7	128.7	183.7	182	1.7	10	3
	20	□	MNS0940X20DB	189.7	220.7	223.7	278.7	277	1.7	10	3
30	□	MNS0940X30DB	283.7	315.7	318.7	373.7	372	1.7	10	3	
9.5	3	□	MNS0950S-DIN	32.5	46.7	47.7	88.7	87	1.7	10	4
	3	□	MNS0950S-DIN-C	32.5	46.7	47.7	88.7	87	1.7	10	3
	5	□	MNS0950L-DIN	46.5	60.7	61.7	102.7	101	1.7	10	4
	5	●	MNS0950L-DIN-C	46.5	60.7	61.7	102.7	101	1.7	10	3
	8	□	MNS0950-L8C	77.7	106.7	109.7	150.7	149	1.7	10	3
	10	□	MNS0950-L10C	96.7	125.7	128.7	169.7	168	1.7	10	3
	12	●	MNS0950-L12C	115.7	144.7	147.7	188.7	187	1.7	10	3
	15	□	MNS0950-L15C	144.2	172.7	175.7	216.7	215	1.7	10	3
	20	●	MNS0950-L20C	191.7	220.7	223.7	264.7	263	1.7	10	3
	25	□	MNS0950-L25C	239.2	267.7	270.7	311.7	310	1.7	10	3
	30	●	MNS0950-L30C	286.7	315.7	318.7	359.7	358	1.7	10	3
	5	★	MNS0950LB	49.2	77.7	81.7	137.7	136	1.7	10	3
	10	□	MNS0950X10DB	96.7	125.7	128.7	183.7	182	1.7	10	3
	20	□	MNS0950X20DB	191.7	220.7	223.7	278.7	277	1.7	10	3
30	□	MNS0950X30DB	286.7	315.7	318.7	373.7	372	1.7	10	3	
9.6	3	□	MNS0960S-DIN	32.3	46.7	47.7	88.7	87	1.7	10	4
	3	□	MNS0960S-DIN-C	32.3	46.7	47.7	88.7	87	1.7	10	3
	5	□	MNS0960L-DIN	46.3	60.7	61.7	102.7	101	1.7	10	4
	5	□	MNS0960L-DIN-C	46.3	60.7	61.7	102.7	101	1.7	10	3
	8	□	MNS0960-L8C	78.5	111.7	114.7	155.7	154	1.7	10	3
	10	□	MNS0960-L10C	97.7	131.7	134.7	175.7	174	1.7	10	3
	12	□	MNS0960-L12C	116.9	151.7	154.7	195.7	194	1.7	10	3
	15	□	MNS0960-L15C	145.7	181.7	184.7	225.7	224	1.7	10	3
	20	□	MNS0960-L20C	193.7	231.7	234.7	275.7	274	1.7	10	3
	25	□	MNS0960-L25C	241.7	281.7	284.7	325.7	324	1.7	10	3
	30	□	MNS0960-L30C	289.7	331.7	334.7	375.7	374	1.7	10	3
	5	★	MNS0960LB	49.7	81.7	81.7	137.7	136	1.7	10	3
	10	□	MNS0960X10DB	97.7	131.7	134.7	189.7	188	1.7	10	3
	20	□	MNS0960X20DB	193.7	231.7	234.7	289.7	288	1.7	10	3
30	□	MNS0960X30DB	289.7	331.7	334.7	389.7	388	1.7	10	3	

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
9.7	3	□	MNS0970S-DIN	32.2	46.8	47.8	88.8	87	1.8	10	4
	3	□	MNS0970S-DIN-C	32.2	46.8	47.8	88.8	87	1.8	10	3
	5	□	MNS0970L-DIN	46.2	60.8	61.8	102.8	101	1.8	10	4
	5	□	MNS0970L-DIN-C	46.2	60.8	61.8	102.8	101	1.8	10	3
	8	□	MNS0970-L8C	79.4	111.8	114.8	155.8	154	1.8	10	3
	10	□	MNS0970-L10C	98.8	131.8	134.8	175.8	174	1.8	10	3
	12	□	MNS0970-L12C	118.2	151.8	154.8	195.8	194	1.8	10	3
	15	□	MNS0970-L15C	147.3	181.8	184.8	225.8	224	1.8	10	3
	20	□	MNS0970-L20C	195.8	231.8	234.8	275.8	274	1.8	10	3
	25	□	MNS0970-L25C	244.3	281.8	284.8	325.8	324	1.8	10	3
	30	□	MNS0970-L30C	292.8	331.8	334.8	375.8	374	1.8	10	3
	5	★	MNS0970LB	50.3	81.8	81.8	137.8	136	1.8	10	3
	10	□	MNS0970X10DB	98.8	131.8	134.8	189.8	188	1.8	10	3
	20	□	MNS0970X20DB	195.8	231.8	234.8	289.8	288	1.8	10	3
30	□	MNS0970X30DB	292.8	331.8	334.8	389.8	388	1.8	10	3	
9.8	3	□	MNS0980S-DIN	32.1	46.8	47.8	88.8	87	1.8	10	4
	3	□	MNS0980S-DIN-C	32.1	46.8	47.8	88.8	87	1.8	10	3
	5	□	MNS0980L-DIN	46.1	60.8	61.8	102.8	101	1.8	10	4
	5	□	MNS0980L-DIN-C	46.1	60.8	61.8	102.8	101	1.8	10	3
	8	□	MNS0980-L8C	80.2	111.8	114.8	155.8	154	1.8	10	3
	10	□	MNS0980-L10C	99.8	131.8	134.8	175.8	174	1.8	10	3
	12	□	MNS0980-L12C	119.4	151.8	154.8	195.8	194	1.8	10	3
	15	□	MNS0980-L15C	148.8	181.8	184.8	225.8	224	1.8	10	3
	20	□	MNS0980-L20C	197.8	231.8	234.8	275.8	274	1.8	10	3
	25	□	MNS0980-L25C	246.8	281.8	284.8	325.8	324	1.8	10	3
	30	□	MNS0980-L30C	295.8	331.8	334.8	375.8	374	1.8	10	3
	5	★	MNS0980LB	50.8	81.8	81.8	137.8	136	1.8	10	3
	10	★	MNS0980X10DB	99.8	131.8	134.8	189.8	188	1.8	10	3
	20	★	MNS0980X20DB	197.8	231.8	234.8	289.8	288	1.8	10	3
30	★	MNS0980X30DB	295.8	331.8	334.8	389.8	388	1.8	10	3	
9.9	3	□	MNS0990S-DIN	32.0	46.8	47.8	88.8	87	1.8	10	4
	3	□	MNS0990S-DIN-C	32.0	46.8	47.8	88.8	87	1.8	10	3
	5	□	MNS0990L-DIN	46.0	60.8	61.8	102.8	101	1.8	10	4
	5	□	MNS0990L-DIN-C	46.0	60.8	61.8	102.8	101	1.8	10	3
	8	□	MNS0990-L8C	81.0	111.8	114.8	155.8	154	1.8	10	3
	10	□	MNS0990-L10C	100.8	131.8	134.8	175.8	174	1.8	10	3
	12	□	MNS0990-L12C	120.6	151.8	154.8	195.8	194	1.8	10	3
	15	□	MNS0990-L15C	150.3	181.8	184.8	225.8	224	1.8	10	3
	20	□	MNS0990-L20C	199.8	231.8	234.8	275.8	274	1.8	10	3
	25	□	MNS0990-L25C	249.3	281.8	284.8	325.8	324	1.8	10	3
	30	□	MNS0990-L30C	298.8	331.8	334.8	375.8	374	1.8	10	3
	5	★	MNS0990LB	51.3	81.8	81.8	137.8	136	1.8	10	3
	10	□	MNS0990X10DB	100.8	131.8	134.8	189.8	188	1.8	10	3
	20	□	MNS0990X20DB	199.8	231.8	234.8	289.8	288	1.8	10	3
30	□	MNS0990X30DB	298.8	331.8	334.8	389.8	388	1.8	10	3	

M

DELME

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
10.0	3	□	MNS1000S-DIN	31.8	46.8	47.8	88.8	87	1.8	10	4
	3	□	MNS1000S-DIN-C	31.8	46.8	47.8	88.8	87	1.8	10	3
	5	□	MNS1000L-DIN	45.8	60.8	61.8	102.8	101	1.8	10	4
	5	●	MNS1000L-DIN-C	45.8	60.8	61.8	102.8	101	1.8	10	3
	8	□	MNS1000-L8C	81.8	111.8	114.8	155.8	154	1.8	10	3
	10	□	MNS1000-L10C	101.8	131.8	134.8	175.8	174	1.8	10	3
	12	●	MNS1000-L12C	121.8	151.8	154.8	195.8	194	1.8	10	3
	15	□	MNS1000-L15C	151.8	181.8	184.8	225.8	224	1.8	10	3
	20	●	MNS1000-L20C	201.8	231.8	234.8	275.8	274	1.8	10	3
	25	□	MNS1000-L25C	251.8	281.8	284.8	325.8	324	1.8	10	3
	30	●	MNS1000-L30C	301.8	331.8	334.8	375.8	374	1.8	10	3
	5	★	MNS1000LB	51.8	81.8	81.8	137.8	136	1.8	10	3
	10	★	MNS1000X10DB	101.8	131.8	134.8	189.8	188	1.8	10	3
	20	★	MNS1000X20DB	201.8	231.8	234.8	289.8	288	1.8	10	3
30	★	MNS1000X30DB	301.8	331.8	334.8	389.8	388	1.8	10	3	
10.1	3	□	MNS1010S-DIN	39.7	54.8	55.8	101.8	100	1.8	12	4
	3	□	MNS1010S-DIN-C	39.7	54.8	55.8	101.8	100	1.8	12	3
	5	□	MNS1010L-DIN	55.7	70.8	71.8	117.8	116	1.8	12	4
	5	□	MNS1010L-DIN-C	55.7	70.8	71.8	117.8	116	1.8	12	3
	8	□	MNS1010-L8C	82.6	117.8	120.8	166.8	165	1.8	12	3
	10	□	MNS1010-L10C	102.8	138.8	141.8	187.8	186	1.8	12	3
	12	□	MNS1010-L12C	123.0	159.8	162.8	208.8	207	1.8	12	3
	15	□	MNS1010-L15C	153.3	190.8	193.8	239.8	238	1.8	12	3
	20	□	MNS1010-L20C	203.8	243.8	246.8	292.8	291	1.8	12	3
	25	□	MNS1010-L25C	254.3	295.8	298.8	344.8	343	1.8	12	3
	5	★	MNS1010LB	52.3	85.8	89.8	150.8	149	1.8	11	3
	10	□	MNS1010X10DB	102.8	138.8	141.8	202.8	201	1.8	11	3
	20	□	MNS1010X20DB	203.8	243.8	246.8	307.8	306	1.8	11	3
	10.2	3	□	MNS1020S-DIN	39.6	54.9	55.9	101.9	100	1.9	12
3		□	MNS1020S-DIN-C	39.6	54.9	55.9	101.9	100	1.9	12	3
5		□	MNS1020L-DIN	55.6	70.9	71.9	117.9	116	1.9	12	4
5		□	MNS1020L-DIN-C	55.6	70.9	71.9	117.9	116	1.9	12	3
8		□	MNS1020-L8C	83.5	117.9	120.9	166.9	165	1.9	12	3
10		□	MNS1020-L10C	103.9	138.9	141.9	187.9	186	1.9	12	3
12		□	MNS1020-L12C	124.3	159.9	162.9	208.9	207	1.9	12	3
15		□	MNS1020-L15C	154.9	190.9	193.9	239.9	238	1.9	12	3
20		□	MNS1020-L20C	205.9	243.9	246.9	292.9	291	1.9	12	3
25		□	MNS1020-L25C	256.9	295.9	298.9	344.9	343	1.9	12	3
5		★	MNS1020LB	52.9	85.9	89.9	150.9	149	1.9	11	3
10		□	MNS1020X10DB	103.9	138.9	141.9	202.9	201	1.9	11	3
20		□	MNS1020X20DB	205.9	243.9	246.9	307.9	306	1.9	11	3
10.3		3	□	MNS1030S-DIN	39.4	54.9	55.9	101.9	100	1.9	12
	3	□	MNS1030S-DIN-C	39.4	54.9	55.9	101.9	100	1.9	12	3
	5	□	MNS1030L-DIN	55.4	70.9	71.9	117.9	116	1.9	12	4
	5	□	MNS1030L-DIN-C	55.4	70.9	71.9	117.9	116	1.9	12	3
	8	□	MNS1030-L8C	84.3	117.9	120.9	166.9	165	1.9	12	3
	10	□	MNS1030-L10C	104.9	138.9	141.9	187.9	186	1.9	12	3
	12	□	MNS1030-L12C	125.5	159.9	162.9	208.9	207	1.9	12	3

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
10.3	15	□	MNS1030-L15C	156.4	190.9	193.9	239.9	238	1.9	12	3
	20	□	MNS1030-L20C	207.9	243.9	246.9	292.9	291	1.9	12	3
	25	□	MNS1030-L25C	259.4	295.9	298.9	344.9	343	1.9	12	3
	5	★	MNS1030LB	53.4	85.9	89.9	150.9	149	1.9	11	3
	10	□	MNS1030X10DB	104.9	138.9	141.9	202.9	201	1.9	11	3
	20	□	MNS1030X20DB	207.9	243.9	246.9	307.9	306	1.9	11	3
10.4	3	□	MNS1040S-DIN	39.3	54.9	55.9	101.9	100	1.9	12	4
	3	□	MNS1040S-DIN-C	39.3	54.9	55.9	101.9	100	1.9	12	3
	5	□	MNS1040L-DIN	55.3	70.9	71.9	117.9	116	1.9	12	4
	5	□	MNS1040L-DIN-C	55.3	70.9	71.9	117.9	116	1.9	12	3
	8	□	MNS1040-L8C	85.1	117.9	120.9	166.9	165	1.9	12	3
	10	□	MNS1040-L10C	105.9	138.9	141.9	187.9	186	1.9	12	3
	12	□	MNS1040-L12C	126.7	159.9	162.9	208.9	207	1.9	12	3
	15	□	MNS1040-L15C	157.9	190.9	193.9	239.9	238	1.9	12	3
	20	□	MNS1040-L20C	209.9	243.9	246.9	292.9	291	1.9	12	3
	25	□	MNS1040-L25C	261.9	295.9	298.9	344.9	343	1.9	12	3
5	★	MNS1040LB	53.9	85.9	89.9	150.9	149	1.9	11	3	
10	□	MNS1040X10DB	105.9	138.9	141.9	202.9	201	1.9	11	3	
20	□	MNS1040X20DB	209.9	243.9	246.9	307.9	306	1.9	11	3	
10.5	3	□	MNS1050S-DIN	39.2	54.9	55.9	101.9	100	1.9	12	4
	3	□	MNS1050S-DIN-C	39.2	54.9	55.9	101.9	100	1.9	12	3
	5	□	MNS1050L-DIN	55.2	70.9	71.9	117.9	116	1.9	12	4
	5	●	MNS1050L-DIN-C	55.2	70.9	71.9	117.9	116	1.9	12	3
	8	□	MNS1050-L8C	85.9	117.9	120.9	166.9	165	1.9	12	3
	10	□	MNS1050-L10C	106.9	138.9	141.9	187.9	186	1.9	12	3
	12	●	MNS1050-L12C	127.9	159.9	162.9	208.9	207	1.9	12	3
	15	□	MNS1050-L15C	159.4	190.9	193.9	239.9	238	1.9	12	3
	20	●	MNS1050-L20C	211.9	243.9	246.9	292.9	291	1.9	12	3
	25	□	MNS1050-L25C	264.4	295.9	298.9	344.9	343	1.9	12	3
5	★	MNS1050LB	54.4	85.9	89.9	150.9	149	1.9	11	3	
10	★	MNS1050X10DB	106.9	138.9	141.9	202.9	201	1.9	11	3	
20	★	MNS1050X20DB	211.9	243.9	246.9	307.9	306	1.9	11	3	
10.6	3	□	MNS1060S-DIN	39.0	54.9	55.9	101.9	100	1.9	12	4
	3	□	MNS1060S-DIN-C	39.0	54.9	55.9	101.9	100	1.9	12	3
	5	□	MNS1060L-DIN	55.0	70.9	71.9	117.9	116	1.9	12	4
	5	□	MNS1060L-DIN-C	55.0	70.9	71.9	117.9	116	1.9	12	3
	8	□	MNS1060-L8C	86.7	122.9	125.9	171.9	170	1.9	12	3
	10	□	MNS1060-L10C	107.9	144.9	147.9	193.9	192	1.9	12	3
	12	□	MNS1060-L12C	129.1	166.9	169.9	215.9	214	1.9	12	3
	15	□	MNS1060-L15C	160.9	199.9	202.9	248.9	247	1.9	12	3
	20	□	MNS1060-L20C	213.9	254.9	257.9	303.9	302	1.9	12	3
	25	□	MNS1060-L25C	266.9	309.9	312.9	358.9	357	1.9	12	3
5	★	MNS1060LB	54.9	89.9	89.9	150.9	149	1.9	11	3	
10	□	MNS1060X10DB	107.9	144.9	147.9	208.9	207	1.9	11	3	
20	□	MNS1060X20DB	213.9	254.9	257.9	318.9	317	1.9	11	3	

Not 1) Lütfen bu katalogta olmayan herhangi bir geometri için bizimle iletişim kurun (örn. farklı çap ve uzunluk).

● : Avrupa standart stok. ★ : Japonya standart stok.

□ : Stokta bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
10.7	3	□	MNS1070S-DIN	38.9	54.9	55.9	101.9	100	1.9	12	4
	3	□	MNS1070S-DIN-C	38.9	54.9	55.9	101.9	100	1.9	12	3
	5	□	MNS1070L-DIN	54.9	70.9	71.9	117.9	116	1.9	12	4
	5	□	MNS1070L-DIN-C	54.9	70.9	71.9	117.9	116	1.9	12	3
	8	□	MNS1070-L8C	87.5	122.9	125.9	171.9	170	1.9	12	3
	10	□	MNS1070-L10C	108.9	144.9	147.9	193.9	192	1.9	12	3
	12	□	MNS1070-L12C	130.3	166.9	169.9	215.9	214	1.9	12	3
	15	□	MNS1070-L15C	162.4	199.9	202.9	248.9	247	1.9	12	3
	20	□	MNS1070-L20C	215.9	254.9	257.9	303.9	302	1.9	12	3
	25	□	MNS1070-L25C	269.4	309.9	312.9	358.9	357	1.9	12	3
	5	★	MNS1070LB	55.4	89.9	89.9	150.9	149	1.9	11	3
	10	□	MNS1070X10DB	108.9	144.9	147.9	208.9	207	1.9	11	3
20	□	MNS1070X20DB	215.9	254.9	257.9	318.9	317	1.9	11	3	
10.8	3	□	MNS1080S-DIN	38.8	55.0	56.0	102.0	100	2.0	12	4
	3	□	MNS1080S-DIN-C	38.8	55.0	56.0	102.0	100	2.0	12	3
	5	□	MNS1080L-DIN	54.8	71.0	72.0	118.0	116	2.0	12	4
	5	□	MNS1080L-DIN-C	54.8	71.0	72.0	118.0	116	2.0	12	3
	8	□	MNS1080-L8C	88.4	123.0	126.0	172.0	170	2.0	12	3
	10	□	MNS1080-L10C	110.0	145.0	148.0	194.0	192	2.0	12	3
	12	□	MNS1080-L12C	131.6	167.0	170.0	216.0	214	2.0	12	3
	15	□	MNS1080-L15C	164.0	200.0	203.0	249.0	247	2.0	12	3
	20	□	MNS1080-L20C	218.0	255.0	258.0	304.0	302	2.0	12	3
	25	□	MNS1080-L25C	272.0	310.0	313.0	359.0	357	2.0	12	3
	5	★	MNS1080LB	56.0	90.0	90.0	151.0	149	2.0	11	3
	10	□	MNS1080X10DB	110.0	145.0	148.0	209.0	207	2.0	11	3
20	□	MNS1080X20DB	218.0	255.0	258.0	319.0	317	2.0	11	3	
10.9	3	□	MNS1090S-DIN	38.6	55.0	56.0	102.0	100	2.0	12	4
	3	□	MNS1090S-DIN-C	38.6	55.0	56.0	102.0	100	2.0	12	3
	5	□	MNS1090L-DIN	54.6	71.0	72.0	118.0	116	2.0	12	4
	5	□	MNS1090L-DIN-C	54.6	71.0	72.0	118.0	116	2.0	12	3
	8	□	MNS1090-L8C	89.2	123.0	126.0	172.0	170	2.0	12	3
	10	□	MNS1090-L10C	111.0	145.0	148.0	194.0	192	2.0	12	3
	12	□	MNS1090-L12C	132.8	167.0	170.0	216.0	214	2.0	12	3
	15	□	MNS1090-L15C	165.5	200.0	203.0	249.0	247	2.0	12	3
	20	□	MNS1090-L20C	220.0	255.0	258.0	304.0	302	2.0	12	3
	25	□	MNS1090-L25C	274.5	310.0	313.0	359.0	357	2.0	12	3
	5	★	MNS1090LB	56.5	90.0	90.0	151.0	149	2.0	11	3
	10	□	MNS1090X10DB	111.0	145.0	148.0	209.0	207	2.0	11	3
20	□	MNS1090X20DB	220.0	255.0	258.0	319.0	317	2.0	11	3	
11.0	3	□	MNS1100S-DIN	38.5	55.0	56.0	102.0	100	2.0	12	4
	3	□	MNS1100S-DIN-C	38.5	55.0	56.0	102.0	100	2.0	12	3
	5	□	MNS1100L-DIN	54.5	71.0	72.0	118.0	116	2.0	12	4
	5	●	MNS1100L-DIN-C	54.5	71.0	72.0	118.0	116	2.0	12	3
	8	□	MNS1100-L8C	90.0	123.0	126.0	172.0	170	2.0	12	3
	10	□	MNS1100-L10C	112.0	145.0	148.0	194.0	192	2.0	12	3
	12	●	MNS1100-L12C	134.0	167.0	170.0	216.0	214	2.0	12	3

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
11.0	15	□	MNS1100-L15C	167.0	200.0	203.0	249.0	247	2.0	12	3
	20	●	MNS1100-L20C	222.0	255.0	258.0	304.0	302	2.0	12	3
	25	□	MNS1100-L25C	277.0	310.0	313.0	359.0	357	2.0	12	3
	5	★	MNS1100LB	57.0	90.0	90.0	151.0	149	2.0	11	3
	10	★	MNS1100X10DB	112.0	145.0	148.0	209.0	207	2.0	11	3
	20	★	MNS1100X20DB	222.0	255.0	258.0	319.0	317	2.0	11	3
11.1	3	□	MNS1110S-DIN	38.4	55.0	56.0	102.0	100	2.0	12	4
	3	□	MNS1110S-DIN-C	38.4	55.0	56.0	102.0	100	2.0	12	3
	5	□	MNS1110L-DIN	54.4	71.0	72.0	118.0	116	2.0	12	4
	5	□	MNS1110L-DIN-C	54.4	71.0	72.0	118.0	116	2.0	12	3
	8	□	MNS1110-L8C	90.8	129.0	132.0	178.0	176	2.0	12	3
	10	□	MNS1110-L10C	113.0	152.0	155.0	201.0	199	2.0	12	3
	12	□	MNS1110-L12C	135.2	175.0	178.0	224.0	222	2.0	12	3
	15	□	MNS1110-L15C	168.5	209.0	212.0	258.0	256	2.0	12	3
	20	□	MNS1110-L20C	224.0	267.0	270.0	316.0	314	2.0	12	3
	25	□	MNS1110-L25C	279.5	324.0	327.0	373.0	371	2.0	12	3
5	★	MNS1110LB	57.5	94.0	98.0	160.0	158	2.0	12	3	
10	□	MNS1110X10DB	113.0	152.0	155.0	217.0	215	2.0	12	3	
20	□	MNS1110X20DB	224.0	267.0	270.0	332.0	330	2.0	12	3	
11.2	3	□	MNS1120S-DIN	38.2	55.0	56.0	102.0	100	2.0	12	4
	3	□	MNS1120S-DIN-C	38.2	55.0	56.0	102.0	100	2.0	12	3
	5	□	MNS1120L-DIN	54.2	71.0	72.0	118.0	116	2.0	12	4
	5	□	MNS1120L-DIN-C	54.2	71.0	72.0	118.0	116	2.0	12	3
	8	□	MNS1120-L8C	91.6	129.0	132.0	178.0	176	2.0	12	3
	10	□	MNS1120-L10C	114.0	152.0	155.0	201.0	199	2.0	12	3
	12	□	MNS1120-L12C	136.4	175.0	178.0	224.0	222	2.0	12	3
	15	□	MNS1120-L15C	170.0	209.0	212.0	258.0	256	2.0	12	3
	20	□	MNS1120-L20C	226.0	267.0	270.0	316.0	314	2.0	12	3
	25	□	MNS1120-L25C	282.0	324.0	327.0	373.0	371	2.0	12	3
5	★	MNS1120LB	58.0	94.0	98.0	160.0	158	2.0	12	3	
10	□	MNS1120X10DB	114.0	152.0	155.0	217.0	215	2.0	12	3	
20	□	MNS1120X20DB	226.0	267.0	270.0	332.0	330	2.0	12	3	
11.3	3	□	MNS1130S-DIN	38.1	55.1	56.1	102.1	100	2.1	12	4
	3	□	MNS1130S-DIN-C	38.1	55.1	56.1	102.1	100	2.1	12	3
	5	□	MNS1130L-DIN	54.1	71.1	72.1	118.1	116	2.1	12	4
	5	□	MNS1130L-DIN-C	54.1	71.1	72.1	118.1	116	2.1	12	3
	8	□	MNS1130-L8C	92.5	129.1	132.1	178.1	176	2.1	12	3
	10	□	MNS1130-L10C	115.1	152.1	155.1	201.1	199	2.1	12	3
	12	□	MNS1130-L12C	137.7	175.1	178.1	224.1	222	2.1	12	3
	15	□	MNS1130-L15C	171.6	209.1	212.1	258.1	256	2.1	12	3
	20	□	MNS1130-L20C	228.1	267.1	270.1	316.1	314	2.1	12	3
	25	□	MNS1130-L25C	284.6	324.1	327.1	373.1	371	2.1	12	3
5	★	MNS1130LB	58.6	94.1	98.1	160.1	158	2.1	12	3	
10	□	MNS1130X10DB	115.1	152.1	155.1	217.1	215	2.1	12	3	
20	□	MNS1130X20DB	228.1	267.1	270.1	332.1	330	2.1	12	3	

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DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
11.4	3	□	MNS1140S-DIN	38.0	55.1	56.1	102.1	100	2.1	12	4
	3	□	MNS1140S-DIN-C	38.0	55.1	56.1	102.1	100	2.1	12	3
	5	□	MNS1140L-DIN	54.0	71.1	72.1	118.1	116	2.1	12	4
	5	□	MNS1140L-DIN-C	54.0	71.1	72.1	118.1	116	2.1	12	3
	8	□	MNS1140-L8C	93.3	129.1	132.1	178.1	176	2.1	12	3
	10	□	MNS1140-L10C	116.1	152.1	155.1	201.1	199	2.1	12	3
	12	□	MNS1140-L12C	138.9	175.1	178.1	224.1	222	2.1	12	3
	15	□	MNS1140-L15C	173.1	209.1	212.1	258.1	256	2.1	12	3
	20	□	MNS1140-L20C	230.1	267.1	270.1	316.1	314	2.1	12	3
	25	□	MNS1140-L25C	287.1	324.1	327.1	373.1	371	2.1	12	3
	5	★	MNS1140LB	59.1	94.1	98.1	160.1	158	2.1	12	3
	10	□	MNS1140X10DB	116.1	152.1	155.1	217.1	215	2.1	12	3
20	□	MNS1140X20DB	230.1	267.1	270.1	332.1	330	2.1	12	3	
11.5	3	□	MNS1150S-DIN	37.8	55.1	56.1	102.1	100	2.1	12	4
	3	□	MNS1150S-DIN-C	37.8	55.1	56.1	102.1	100	2.1	12	3
	5	□	MNS1150L-DIN	53.8	71.1	72.1	118.1	116	2.1	12	4
	5	●	MNS1150L-DIN-C	53.8	71.1	72.1	118.1	116	2.1	12	3
	8	□	MNS1150-L8C	94.1	129.1	132.1	178.1	176	2.1	12	3
	10	□	MNS1150-L10C	117.1	152.1	155.1	201.1	199	2.1	12	3
	12	●	MNS1150-L12C	140.1	175.1	178.1	224.1	222	2.1	12	3
	15	□	MNS1150-L15C	174.6	209.1	212.1	258.1	256	2.1	12	3
	20	●	MNS1150-L20C	232.1	267.1	270.1	316.1	314	2.1	12	3
	25	□	MNS1150-L25C	289.6	324.1	327.1	373.1	371	2.1	12	3
	5	★	MNS1150LB	59.6	94.1	98.1	160.1	158	2.1	12	3
	10	□	MNS1150X10DB	117.1	152.1	155.1	217.1	215	2.1	12	3
20	□	MNS1150X20DB	232.1	267.1	270.1	332.1	330	2.1	12	3	
11.6	3	□	MNS1160S-DIN	37.7	55.1	56.1	102.1	100	2.1	12	4
	3	□	MNS1160S-DIN-C	37.7	55.1	56.1	102.1	100	2.1	12	3
	5	□	MNS1160L-DIN	53.7	71.1	72.1	118.1	116	2.1	12	4
	5	□	MNS1160L-DIN-C	53.7	71.1	72.1	118.1	116	2.1	12	3
	8	□	MNS1160-L8C	94.9	134.1	137.1	183.1	181	2.1	12	3
	10	□	MNS1160-L10C	118.1	158.1	161.1	207.1	205	2.1	12	3
	12	□	MNS1160-L12C	141.3	182.1	185.1	231.1	229	2.1	12	3
	15	□	MNS1160-L15C	176.1	218.1	221.1	267.1	265	2.1	12	3
	20	□	MNS1160-L20C	234.1	278.1	281.1	327.1	325	2.1	12	3
	25	□	MNS1160-L25C	292.1	338.1	341.1	387.1	385	2.1	12	3
	5	★	MNS1160LB	60.1	98.1	98.1	160.1	158	2.1	12	3
	10	□	MNS1160X10DB	118.1	158.1	161.1	223.1	221	2.1	12	3
20	□	MNS1160X20DB	234.1	278.1	281.1	343.1	341	2.1	12	3	
11.7	3	□	MNS1170S-DIN	37.6	55.1	56.1	102.1	100	2.1	12	4
	3	□	MNS1170S-DIN-C	37.6	55.1	56.1	102.1	100	2.1	12	3
	5	□	MNS1170L-DIN	53.6	71.1	72.1	118.1	116	2.1	12	4
	5	□	MNS1170L-DIN-C	53.6	71.1	72.1	118.1	116	2.1	12	3
	8	□	MNS1170-L8C	95.7	134.1	137.1	183.1	181	2.1	12	3
	10	□	MNS1170-L10C	119.1	158.1	161.1	207.1	205	2.1	12	3
	12	□	MNS1170-L12C	142.5	182.1	185.1	231.1	229	2.1	12	3

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
11.7	15	□	MNS1170-L15C	177.6	218.1	221.1	267.1	265	2.1	12	3
	20	□	MNS1170-L20C	236.1	278.1	281.1	327.1	325	2.1	12	3
	25	□	MNS1170-L25C	294.6	338.1	341.1	387.1	385	2.1	12	3
	5	★	MNS1170LB	60.6	98.1	98.1	160.1	158	2.1	12	3
	10	□	MNS1170X10DB	119.1	158.1	161.1	223.1	221	2.1	12	3
	20	□	MNS1170X20DB	236.1	278.1	281.1	343.1	341	2.1	12	3
11.8	3	□	MNS1180S-DIN	37.4	55.1	56.1	102.1	100	2.1	12	4
	3	□	MNS1180S-DIN-C	37.4	55.1	56.1	102.1	100	2.1	12	3
	5	□	MNS1180L-DIN	53.4	71.1	72.1	118.1	116	2.1	12	4
	5	□	MNS1180L-DIN-C	53.4	71.1	72.1	118.1	116	2.1	12	3
	8	□	MNS1180-L8C	96.5	134.1	137.1	183.1	181	2.1	12	3
	10	□	MNS1180-L10C	120.1	158.1	161.1	207.1	205	2.1	12	3
	12	□	MNS1180-L12C	143.7	182.1	185.1	231.1	229	2.1	12	3
	15	□	MNS1180-L15C	179.1	218.1	221.1	267.1	265	2.1	12	3
	20	□	MNS1180-L20C	238.1	278.1	281.1	327.1	325	2.1	12	3
	25	□	MNS1180-L25C	297.1	338.1	341.1	387.1	385	2.1	12	3
5	★	MNS1180LB	61.1	98.1	98.1	160.1	158	2.1	12	3	
10	□	MNS1180X10DB	120.1	158.1	161.1	223.1	221	2.1	12	3	
20	□	MNS1180X20DB	238.1	278.1	281.1	343.1	341	2.1	12	3	
11.9	3	□	MNS1190S-DIN	37.3	55.2	56.2	102.2	100	2.2	12	4
	3	□	MNS1190S-DIN-C	37.3	55.2	56.2	102.2	100	2.2	12	3
	5	□	MNS1190L-DIN	53.3	71.2	72.2	118.2	116	2.2	12	4
	5	□	MNS1190L-DIN-C	53.3	71.2	72.2	118.2	116	2.2	12	3
	8	□	MNS1190-L8C	97.4	134.2	137.2	183.2	181	2.2	12	3
	10	□	MNS1190-L10C	121.2	158.2	161.2	207.2	205	2.2	12	3
	12	□	MNS1190-L12C	145.0	182.2	185.2	231.2	229	2.2	12	3
	15	□	MNS1190-L15C	180.7	218.2	221.2	267.2	265	2.2	12	3
	20	□	MNS1190-L20C	240.2	278.2	281.2	327.2	325	2.2	12	3
	25	□	MNS1190-L25C	299.7	338.2	341.2	387.2	385	2.2	12	3
5	★	MNS1190LB	61.7	98.2	98.2	160.2	158	2.2	12	3	
10	□	MNS1190X10DB	121.2	158.2	161.2	223.2	221	2.2	12	3	
20	□	MNS1190X20DB	240.2	278.2	281.2	343.2	341	2.2	12	3	
12.0	3	□	MNS1200S-DIN	37.2	55.2	56.2	102.2	100	2.2	12	4
	3	□	MNS1200S-DIN-C	37.2	55.2	56.2	102.2	100	2.2	12	3
	5	□	MNS1200L-DIN	53.2	71.2	72.2	118.2	116	2.2	12	4
	5	●	MNS1200L-DIN-C	53.2	71.2	72.2	118.2	116	2.2	12	3
	8	□	MNS1200-L8C	98.2	134.2	137.2	183.2	181	2.2	12	3
	10	□	MNS1200-L10C	122.2	158.2	161.2	207.2	205	2.2	12	3
	12	●	MNS1200-L12C	146.2	182.2	185.2	231.2	229	2.2	12	3
	15	□	MNS1200-L15C	182.2	218.2	221.2	267.2	265	2.2	12	3
	20	●	MNS1200-L20C	242.2	278.2	281.2	327.2	325	2.2	12	3
	25	□	MNS1200-L25C	302.2	338.2	341.2	387.2	385	2.2	12	3
	5	★	MNS1200LB	62.2	98.2	98.2	160.2	158	2.2	12	3
	10	★	MNS1200X10DB	122.2	158.2	161.2	223.2	221	2.2	12	3
20	★	MNS1200X20DB	242.2	278.2	281.2	343.2	341	2.2	12	3	

Not 1) Lütfen bu katalogta olmayan herhangi bir geometri için bizimle iletişim kurun (örn. farklı çap ve uzunluk).

● : Avrupa standart stok. ★ : Japonya standart stok.

□ : Stokta bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
12.1	3	□	MNS1210S-DIN	42.1	60.2	61.2	107.2	105	2.2	14	4
	3	□	MNS1210S-DIN-C	42.1	60.2	61.2	107.2	105	2.2	14	3
	5	□	MNS1210L-DIN	59.1	77.2	78.2	124.2	122	2.2	14	4
	5	□	MNS1210L-DIN-C	59.1	77.2	78.2	124.2	122	2.2	14	3
	8	□	MNS1210-L8C	99.0	140.2	143.2	189.2	187	2.2	14	3
	10	□	MNS1210-L10C	123.2	165.2	168.2	214.2	212	2.2	14	3
	12	□	MNS1210-L12C	147.4	190.2	193.2	239.2	237	2.2	14	3
	15	□	MNS1210-L15C	183.7	227.2	230.2	276.2	274	2.2	14	3
	20	□	MNS1210-L20C	244.2	290.2	293.2	339.2	337	2.2	14	3
	5	★	MNS1210LB	62.7	102.2	106.2	169.2	167	2.2	13	3
10	□	MNS1210X10DB	123.2	165.2	168.2	231.2	229	2.2	13	3	
20	□	MNS1210X20DB	244.2	290.2	293.2	356.2	354	2.2	13	3	
12.2	3	□	MNS1220S-DIN	41.9	60.2	61.2	107.2	105	2.2	14	4
	3	□	MNS1220S-DIN-C	41.9	60.2	61.2	107.2	105	2.2	14	3
	5	□	MNS1220L-DIN	58.9	77.2	78.2	124.2	122	2.2	14	4
	5	□	MNS1220L-DIN-C	58.9	77.2	78.2	124.2	122	2.2	14	3
	8	□	MNS1220-L8C	99.8	140.2	143.2	189.2	187	2.2	14	3
	10	□	MNS1220-L10C	124.2	165.2	168.2	214.2	212	2.2	14	3
	12	□	MNS1220-L12C	148.6	190.2	193.2	239.2	237	2.2	14	3
	15	□	MNS1220-L15C	185.2	227.2	230.2	276.2	274	2.2	14	3
	20	□	MNS1220-L20C	246.2	290.2	293.2	339.2	337	2.2	14	3
	5	★	MNS1220LB	63.2	102.2	106.2	169.2	167	2.2	13	3
10	□	MNS1220X10DB	124.2	165.2	168.2	231.2	229	2.2	13	3	
20	□	MNS1220X20DB	246.2	290.2	293.2	356.2	354	2.2	13	3	
12.3	3	□	MNS1230S-DIN	41.8	60.2	61.2	107.2	105	2.2	14	4
	3	□	MNS1230S-DIN-C	41.8	60.2	61.2	107.2	105	2.2	14	3
	5	□	MNS1230L-DIN	58.8	77.2	78.2	124.2	122	2.2	14	4
	5	□	MNS1230L-DIN-C	58.8	77.2	78.2	124.2	122	2.2	14	3
	8	□	MNS1230-L8C	100.6	140.2	143.2	189.2	187	2.2	14	3
	10	□	MNS1230-L10C	125.2	165.2	168.2	214.2	212	2.2	14	3
	12	□	MNS1230-L12C	149.8	190.2	193.2	239.2	237	2.2	14	3
	15	□	MNS1230-L15C	186.7	227.2	230.2	276.2	274	2.2	14	3
	20	□	MNS1230-L20C	248.2	290.2	293.2	339.2	337	2.2	14	3
	5	★	MNS1230LB	63.7	102.2	106.2	169.2	167	2.2	13	3
10	□	MNS1230X10DB	125.2	165.2	168.2	231.2	229	2.2	13	3	
20	□	MNS1230X20DB	248.2	290.2	293.2	356.2	354	2.2	13	3	
12.4	3	□	MNS1240S-DIN	41.7	60.3	61.3	107.3	105	2.3	14	4
	3	□	MNS1240S-DIN-C	41.7	60.3	61.3	107.3	105	2.3	14	3
	5	□	MNS1240L-DIN	58.7	77.3	78.3	124.3	122	2.3	14	4
	5	□	MNS1240L-DIN-C	58.7	77.3	78.3	124.3	122	2.3	14	3
	8	□	MNS1240-L8C	101.5	140.3	143.3	189.3	187	2.3	14	3
	10	□	MNS1240-L10C	126.3	165.3	168.3	214.3	212	2.3	14	3
	12	□	MNS1240-L12C	151.1	190.3	193.3	239.3	237	2.3	14	3
	15	□	MNS1240-L15C	188.3	227.3	230.3	276.3	274	2.3	14	3
	20	□	MNS1240-L20C	250.3	290.3	293.3	339.3	337	2.3	14	3
	5	★	MNS1240LB	64.3	102.3	106.3	169.3	167	2.3	13	3
10	□	MNS1240X10DB	126.3	165.3	168.3	231.3	229	2.3	13	3	
20	□	MNS1240X20DB	250.3	290.3	293.3	356.3	354	2.3	13	3	

DC	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
12.5	3	□	MNS1250S-DIN	41.5	60.3	61.3	107.3	105	2.3	14	4
	3	□	MNS1250S-DIN-C	41.5	60.3	61.3	107.3	105	2.3	14	3
	5	□	MNS1250L-DIN	58.5	77.3	78.3	124.3	122	2.3	14	4
	5	●	MNS1250L-DIN-C	58.5	77.3	78.3	124.3	122	2.3	14	3
	8	□	MNS1250-L8C	102.3	140.3	143.3	189.3	187	2.3	14	3
	10	□	MNS1250-L10C	127.3	165.3	168.3	214.3	212	2.3	14	3
	12	●	MNS1250-L12C	152.3	190.3	193.3	239.3	237	2.3	14	3
	15	□	MNS1250-L15C	189.8	227.3	230.3	276.3	274	2.3	14	3
	20	●	MNS1250-L20C	252.3	290.3	293.3	339.3	337	2.3	14	3
	5	★	MNS1250LB	64.8	102.3	106.3	169.3	167	2.3	13	3
10	□	MNS1250X10DB	127.3	165.3	168.3	231.3	229	2.3	13	3	
20	□	MNS1250X20DB	252.3	290.3	293.3	356.3	354	2.3	13	3	
12.6	3	□	MNS1260S-DIN	41.4	60.3	61.3	107.3	105	2.3	14	4
	3	□	MNS1260S-DIN-C	41.4	60.3	61.3	107.3	105	2.3	14	3
	5	□	MNS1260L-DIN	58.4	77.3	78.3	124.3	122	2.3	14	4
	5	□	MNS1260L-DIN-C	58.4	77.3	78.3	124.3	122	2.3	14	3
	8	□	MNS1260-L8C	103.1	145.3	148.3	194.3	192	2.3	14	3
	10	□	MNS1260-L10C	128.3	171.3	174.3	220.3	218	2.3	14	3
	12	□	MNS1260-L12C	153.5	197.3	200.3	246.3	244	2.3	14	3
	15	□	MNS1260-L15C	191.3	236.3	239.3	285.3	283	2.3	14	3
	20	□	MNS1260-L20C	254.3	301.3	304.3	350.3	348	2.3	14	3
	5	★	MNS1260LB	65.3	106.3	106.3	169.3	167	2.3	13	3
10	□	MNS1260X10DB	128.3	171.3	174.3	237.3	235	2.3	13	3	
20	□	MNS1260X20DB	254.3	301.3	304.3	367.3	365	2.3	13	3	
12.7	3	□	MNS1270S-DIN	41.3	60.3	61.3	107.3	105	2.3	14	4
	3	□	MNS1270S-DIN-C	41.3	60.3	61.3	107.3	105	2.3	14	3
	5	□	MNS1270L-DIN	58.3	77.3	78.3	124.3	122	2.3	14	4
	5	□	MNS1270L-DIN-C	58.3	77.3	78.3	124.3	122	2.3	14	3
	8	□	MNS1270-L8C	103.9	145.3	148.3	194.3	192	2.3	14	3
	10	□	MNS1270-L10C	129.3	171.3	174.3	220.3	218	2.3	14	3
	12	□	MNS1270-L12C	154.7	197.3	200.3	246.3	244	2.3	14	3
	15	□	MNS1270-L15C	192.8	236.3	239.3	285.3	283	2.3	14	3
	20	□	MNS1270-L20C	256.3	301.3	304.3	350.3	348	2.3	14	3
	5	★	MNS1270LB	65.8	106.3	106.3	169.3	167	2.3	13	3
10	□	MNS1270X10DB	129.3	171.3	174.3	237.3	235	2.3	13	3	
20	□	MNS1270X20DB	256.3	301.3	304.3	367.3	365	2.3	13	3	
12.8	3	□	MNS1280S-DIN	41.1	60.3	61.3	107.3	105	2.3	14	4
	3	□	MNS1280S-DIN-C	41.1	60.3	61.3	107.3	105	2.3	14	3
	5	□	MNS1280L-DIN	58.1	77.3	78.3	124.3	122	2.3	14	4
	5	□	MNS1280L-DIN-C	58.1	77.3	78.3	124.3	122	2.3	14	3
	8	□	MNS1280-L8C	104.7	145.3	148.3	194.3	192	2.3	14	3
	10	□	MNS1280-L10C	130.3	171.3	174.3	220.3	218	2.3	14	3
	12	□	MNS1280-L12C	155.9	197.3	200.3	246.3	244	2.3	14	3
	15	□	MNS1280-L15C	194.3	236.3	239.3	285.3	283	2.3	14	3
	20	□	MNS1280-L20C	258.3	301.3	304.3	350.3	348	2.3	14	3
	5	★	MNS1280LB	66.3	106.3	106.3	169.3	167	2.3	13	3
10	□	MNS1280X10DB	130.3	171.3	174.3	237.3	235	2.3	13	3	
20	□	MNS1280X20DB	258.3	301.3	304.3	367.3	365	2.3	13	3	

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DELME

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
12.9	3	□	MNS1290S-DIN	41.0	60.3	61.3	107.3	105	2.3	14	4
	3	□	MNS1290S-DIN-C	41.0	60.3	61.3	107.3	105	2.3	14	3
	5	□	MNS1290L-DIN	58.0	77.3	78.3	124.3	122	2.3	14	4
	5	□	MNS1290L-DIN-C	58.0	77.3	78.3	124.3	122	2.3	14	3
	8	□	MNS1290-L8C	105.5	145.3	148.3	194.3	192	2.3	14	3
	10	□	MNS1290-L10C	131.3	171.3	174.3	220.3	218	2.3	14	3
	12	□	MNS1290-L12C	157.1	197.3	200.3	246.3	244	2.3	14	3
	15	□	MNS1290-L15C	195.8	236.3	239.3	285.3	283	2.3	14	3
	20	□	MNS1290-L20C	260.3	301.3	304.3	350.3	348	2.3	14	3
	5	★	MNS1290LB	66.8	106.3	106.3	169.3	167	2.3	13	3
10	□	MNS1290X10DB	131.3	171.3	174.3	237.3	235	2.3	13	3	
20	□	MNS1290X20DB	260.3	301.3	304.3	367.3	365	2.3	13	3	
13.0	3	□	MNS1300S-DIN	40.9	60.4	61.4	107.4	105	2.4	14	4
	3	□	MNS1300S-DIN-C	40.9	60.4	61.4	107.4	105	2.4	14	3
	5	□	MNS1300L-DIN	57.9	77.4	78.4	124.4	122	2.4	14	4
	5	●	MNS1300L-DIN-C	57.9	77.4	78.4	124.4	122	2.4	14	3
	8	□	MNS1300-L8C	106.4	145.4	148.4	194.4	192	2.4	14	3
	10	□	MNS1300-L10C	132.4	171.4	174.4	220.4	218	2.4	14	3
	12	●	MNS1300-L12C	158.4	197.4	200.4	246.4	244	2.4	14	3
	15	□	MNS1300-L15C	197.4	236.4	239.4	285.4	283	2.4	14	3
	20	●	MNS1300-L20C	262.4	301.4	304.4	350.4	348	2.4	14	3
	5	★	MNS1300LB	67.4	106.4	106.4	169.4	167	2.4	13	3
10	★	MNS1300X10DB	132.4	171.4	174.4	237.4	235	2.4	13	3	
20	★	MNS1300X20DB	262.4	301.4	304.4	367.4	365	2.4	13	3	
13.1	3	□	MNS1310S-DIN	40.7	60.4	61.4	107.4	105	2.4	14	4
	3	□	MNS1310S-DIN-C	40.7	60.4	61.4	107.4	105	2.4	14	3
	5	□	MNS1310L-DIN	57.7	77.4	78.4	124.4	122	2.4	14	4
	5	□	MNS1310L-DIN-C	57.7	77.4	78.4	124.4	122	2.4	14	3
	8	□	MNS1310-L8C	107.2	151.4	154.4	200.4	198	2.4	14	3
	10	□	MNS1310-L10C	133.4	178.4	181.4	227.4	225	2.4	14	3
	12	□	MNS1310-L12C	159.6	205.4	208.4	254.4	252	2.4	14	3
	15	□	MNS1310-L15C	198.9	245.4	248.4	294.4	292	2.4	14	3
	20	□	MNS1310-L20C	264.4	313.4	316.4	362.4	360	2.4	14	3
	5	★	MNS1310LB	67.9	110.4	114.4	178.4	176	2.4	14	3
10	□	MNS1310X10DB	133.4	178.4	181.4	245.4	243	2.4	14	3	
20	□	MNS1310X20DB	264.4	313.4	316.4	380.4	378	2.4	14	3	
13.2	3	□	MNS1320S-DIN	40.6	60.4	61.4	107.4	105	2.4	14	4
	3	□	MNS1320S-DIN-C	40.6	60.4	61.4	107.4	105	2.4	14	3
	5	□	MNS1320L-DIN	57.6	77.4	78.4	124.4	122	2.4	14	4
	5	□	MNS1320L-DIN-C	57.6	77.4	78.4	124.4	122	2.4	14	3
	8	□	MNS1320-L8C	108.0	151.4	154.4	200.4	198	2.4	14	3
	10	□	MNS1320-L10C	134.4	178.4	181.4	227.4	225	2.4	14	3
	12	□	MNS1320-L12C	160.8	205.4	208.4	254.4	252	2.4	14	3
	15	□	MNS1320-L15C	200.4	245.4	248.4	294.4	292	2.4	14	3
	20	□	MNS1320-L20C	266.4	313.4	316.4	362.4	360	2.4	14	3
	5	★	MNS1320LB	68.4	110.4	114.4	178.4	176	2.4	14	3
10	□	MNS1320X10DB	134.4	178.4	181.4	245.4	243	2.4	14	3	
20	□	MNS1320X20DB	266.4	313.4	316.4	380.4	378	2.4	14	3	

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
13.3	3	□	MNS1330S-DIN	40.5	60.4	61.4	107.4	105	2.4	14	4
	3	□	MNS1330S-DIN-C	40.5	60.4	61.4	107.4	105	2.4	14	3
	5	□	MNS1330L-DIN	57.5	77.4	78.4	124.4	122	2.4	14	4
	5	□	MNS1330L-DIN-C	57.5	77.4	78.4	124.4	122	2.4	14	3
	8	□	MNS1330-L8C	108.8	151.4	154.4	200.4	198	2.4	14	3
	10	□	MNS1330-L10C	135.4	178.4	181.4	227.4	225	2.4	14	3
	12	□	MNS1330-L12C	162.0	205.4	208.4	254.4	252	2.4	14	3
	15	□	MNS1330-L15C	201.9	245.4	248.4	294.4	292	2.4	14	3
	20	□	MNS1330-L20C	268.4	313.4	316.4	362.4	360	2.4	14	3
	5	★	MNS1330LB	68.9	110.4	114.4	178.4	176	2.4	14	3
10	□	MNS1330X10DB	135.4	178.4	181.4	245.4	243	2.4	14	3	
20	□	MNS1330X20DB	268.4	313.4	316.4	380.4	378	2.4	14	3	
13.4	3	□	MNS1340S-DIN	40.3	60.4	61.4	107.4	105	2.4	14	4
	3	□	MNS1340S-DIN-C	40.3	60.4	61.4	107.4	105	2.4	14	3
	5	□	MNS1340L-DIN	57.3	77.4	78.4	124.4	122	2.4	14	4
	5	□	MNS1340L-DIN-C	57.3	77.4	78.4	124.4	122	2.4	14	3
	8	□	MNS1340-L8C	109.6	151.4	154.4	200.4	198	2.4	14	3
	10	□	MNS1340-L10C	136.4	178.4	181.4	227.4	225	2.4	14	3
	12	□	MNS1340-L12C	163.2	205.4	208.4	254.4	252	2.4	14	3
	15	□	MNS1340-L15C	203.4	245.4	248.4	294.4	292	2.4	14	3
	20	□	MNS1340-L20C	270.4	313.4	316.4	362.4	360	2.4	14	3
	5	★	MNS1340LB	69.4	110.4	114.4	178.4	176	2.4	14	3
10	□	MNS1340X10DB	136.4	178.4	181.4	245.4	243	2.4	14	3	
20	□	MNS1340X20DB	270.4	313.4	316.4	380.4	378	2.4	14	3	
13.5	3	□	MNS1350S-DIN	40.2	60.5	61.5	107.5	105	2.5	14	4
	3	□	MNS1350S-DIN-C	40.2	60.5	61.5	107.5	105	2.5	14	3
	5	□	MNS1350L-DIN	57.2	77.5	78.5	124.5	122	2.5	14	4
	5	●	MNS1350L-DIN-C	57.2	77.5	78.5	124.5	122	2.5	14	3
	8	□	MNS1350-L8C	110.5	151.5	154.5	200.5	198	2.5	14	3
	10	□	MNS1350-L10C	137.5	178.5	181.5	227.5	225	2.5	14	3
	12	●	MNS1350-L12C	164.5	205.5	208.5	254.5	252	2.5	14	3
	15	□	MNS1350-L15C	205.0	245.5	248.5	294.5	292	2.5	14	3
	20	●	MNS1350-L20C	272.5	313.5	316.5	362.5	360	2.5	14	3
	5	★	MNS1350LB	70.0	110.5	114.5	178.5	176	2.5	14	3
10	□	MNS1350X10DB	137.5	178.5	181.5	245.5	243	2.5	14	3	
20	□	MNS1350X20DB	272.5	313.5	316.5	380.5	378	2.5	14	3	
13.6	3	□	MNS1360S-DIN	40.1	60.5	61.5	107.5	105	2.5	14	4
	3	□	MNS1360S-DIN-C	40.1	60.5	61.5	107.5	105	2.5	14	3
	5	□	MNS1360L-DIN	57.1	77.5	78.5	124.5	122	2.5	14	4
	5	□	MNS1360L-DIN-C	57.1	77.5	78.5	124.5	122	2.5	14	3
	8	□	MNS1360-L8C	111.3	156.5	159.5	205.5	203	2.5	14	3
	10	□	MNS1360-L10C	138.5	184.5	187.5	233.5	231	2.5	14	3
	12	□	MNS1360-L12C	165.7	212.5	215.5	261.5	259	2.5	14	3
	15	□	MNS1360-L15C	206.5	254.5	257.5	303.5	301	2.5	14	3
	20	□	MNS1360-L20C	274.5	324.5	327.5	373.5	371	2.5	14	3
	5	★	MNS1360LB	70.5	114.5	114.5	178.5	176	2.5	14	3
10	□	MNS1360X10DB	138.5	184.5	187.5	251.5	249	2.5	14	3	
20	□	MNS1360X20DB	274.5	324.5	327.5	391.5	389	2.5	14	3	

Not 1) Lütfen bu katalogta olmayan herhangi bir geometri için bizimle iletişim kurun (örn. farklı çap ve uzunluk).

● : Avrupa standart stok. ★ : Japonya standart stok.

□ : Stokta bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC	Delik Derinliği (L/D)	TF/15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
13.7	3	□	MNS1370S-DIN	39.9	60.5	61.5	107.5	105	2.5	14	4
	3	□	MNS1370S-DIN-C	39.9	60.5	61.5	107.5	105	2.5	14	3
	5	□	MNS1370L-DIN	56.9	77.5	78.5	124.5	122	2.5	14	4
	5	□	MNS1370L-DIN-C	56.9	77.5	78.5	124.5	122	2.5	14	3
	8	□	MNS1370-L8C	112.1	156.5	159.5	205.5	203	2.5	14	3
	10	□	MNS1370-L10C	139.5	184.5	187.5	233.5	231	2.5	14	3
	12	□	MNS1370-L12C	166.9	212.5	215.5	261.5	259	2.5	14	3
	15	□	MNS1370-L15C	208.0	254.5	257.5	303.5	301	2.5	14	3
	20	□	MNS1370-L20C	276.5	324.5	327.5	373.5	371	2.5	14	3
	5	★	MNS1370LB	71.0	114.5	114.5	178.5	176	2.5	14	3
	10	□	MNS1370X10DB	139.5	184.5	187.5	251.5	249	2.5	14	3
	20	□	MNS1370X20DB	276.5	324.5	327.5	391.5	389	2.5	14	3
13.8	3	□	MNS1380S-DIN	39.8	60.5	61.5	107.5	105	2.5	14	4
	3	□	MNS1380S-DIN-C	39.8	60.5	61.5	107.5	105	2.5	14	3
	5	□	MNS1380L-DIN	56.8	77.5	78.5	124.5	122	2.5	14	4
	5	□	MNS1380L-DIN-C	56.8	77.5	78.5	124.5	122	2.5	14	3
	8	□	MNS1380-L8C	112.9	156.5	159.5	205.5	203	2.5	14	3
	10	□	MNS1380-L10C	140.5	184.5	187.5	233.5	231	2.5	14	3
	12	□	MNS1380-L12C	168.1	212.5	215.5	261.5	259	2.5	14	3
	15	□	MNS1380-L15C	209.5	254.5	257.5	303.5	301	2.5	14	3
	20	□	MNS1380-L20C	278.5	324.5	327.5	373.5	371	2.5	14	3
	5	★	MNS1380LB	71.5	114.5	114.5	178.5	176	2.5	14	3
	10	□	MNS1380X10DB	140.5	184.5	187.5	251.5	249	2.5	14	3
	20	□	MNS1380X20DB	278.5	324.5	327.5	391.5	389	2.5	14	3
13.9	3	□	MNS1390S-DIN	39.7	60.5	61.5	107.5	105	2.5	14	4
	3	□	MNS1390S-DIN-C	39.7	60.5	61.5	107.5	105	2.5	14	3
	5	□	MNS1390L-DIN	56.7	77.5	78.5	124.5	122	2.5	14	4
	5	□	MNS1390L-DIN-C	56.7	77.5	78.5	124.5	122	2.5	14	3
	8	□	MNS1390-L8C	113.7	156.5	159.5	205.5	203	2.5	14	3
	10	□	MNS1390-L10C	141.5	184.5	187.5	233.5	231	2.5	14	3
	12	□	MNS1390-L12C	169.3	212.5	215.5	261.5	259	2.5	14	3
	15	□	MNS1390-L15C	211.0	254.5	257.5	303.5	301	2.5	14	3
	20	□	MNS1390-L20C	280.5	324.5	327.5	373.5	371	2.5	14	3
	5	★	MNS1390LB	72.0	114.5	114.5	178.5	176	2.5	14	3
	10	□	MNS1390X10DB	141.5	184.5	187.5	251.5	249	2.5	14	3
	20	□	MNS1390X20DB	280.5	324.5	327.5	391.5	389	2.5	14	3
14.0	3	□	MNS1400S-DIN	39.5	60.5	61.5	107.5	105	2.5	14	4
	3	□	MNS1400S-DIN-C	39.5	60.5	61.5	107.5	105	2.5	14	3
	5	□	MNS1400L-DIN	56.5	77.5	78.5	124.5	122	2.5	14	4
	5	●	MNS1400L-DIN-C	56.5	77.5	78.5	124.5	122	2.5	14	3
	8	□	MNS1400-L8C	114.5	156.5	159.5	205.5	203	2.5	14	3
	10	□	MNS1400-L10C	142.5	184.5	187.5	233.5	231	2.5	14	3
	12	●	MNS1400-L12C	170.5	212.5	215.5	261.5	259	2.5	14	3
	15	□	MNS1400-L15C	212.5	254.5	257.5	303.5	301	2.5	14	3
	20	●	MNS1400-L20C	282.5	324.5	327.5	373.5	371	2.5	14	3
	5	★	MNS1400LB	72.5	114.5	114.5	178.5	176	2.5	14	3
	10	★	MNS1400X10DB	142.5	184.5	187.5	251.5	249	2.5	14	3
	20	★	MNS1400X20DB	282.5	324.5	327.5	391.5	389	2.5	14	3

DC	Delik Derinliği (L/D)	TF/15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
14.1	3	□	MNS1410S-DIN	43.4	64.6	65.6	114.6	112	2.6	16	4
	3	□	MNS1410S-DIN-C	43.4	64.6	65.6	114.6	112	2.6	16	3
	5	□	MNS1410L-DIN	61.4	82.6	83.6	132.6	130	2.6	16	4
	5	□	MNS1410L-DIN-C	61.4	82.6	83.6	132.6	130	2.6	16	3
14.2	3	□	MNS1420S-DIN	43.3	64.6	65.6	114.6	112	2.6	16	4
	3	□	MNS1420S-DIN-C	43.3	64.6	65.6	114.6	112	2.6	16	3
	5	□	MNS1420L-DIN	61.3	82.6	83.6	132.6	130	2.6	16	4
14.3	3	□	MNS1430S-DIN	43.2	64.6	65.6	114.6	112	2.6	16	4
	3	□	MNS1430S-DIN-C	43.2	64.6	65.6	114.6	112	2.6	16	3
	5	□	MNS1430L-DIN	61.2	82.6	83.6	132.6	130	2.6	16	4
14.4	3	□	MNS1440S-DIN	43.0	64.6	65.6	114.6	112	2.6	16	4
	3	□	MNS1440S-DIN-C	43.0	64.6	65.6	114.6	112	2.6	16	3
	5	□	MNS1440L-DIN	61.0	82.6	83.6	132.6	130	2.6	16	4
	5	□	MNS1440L-DIN-C	61.0	82.6	83.6	132.6	130	2.6	16	3
14.5	3	□	MNS1450S-DIN	42.9	64.6	65.6	114.6	112	2.6	16	4
	3	□	MNS1450S-DIN-C	42.9	64.6	65.6	114.6	112	2.6	16	3
	5	□	MNS1450L-DIN	60.9	82.6	83.6	132.6	130	2.6	16	4
14.6	3	□	MNS1460S-DIN	42.8	64.7	65.7	114.7	112	2.7	16	4
	3	□	MNS1460S-DIN-C	42.8	64.7	65.7	114.7	112	2.7	16	3
	5	□	MNS1460L-DIN	60.8	82.7	83.7	132.7	130	2.7	16	4
	5	□	MNS1460L-DIN-C	60.8	82.7	83.7	132.7	130	2.7	16	3
14.7	3	□	MNS1470S-DIN	42.6	64.7	65.7	114.7	112	2.7	16	4
	3	□	MNS1470S-DIN-C	42.6	64.7	65.7	114.7	112	2.7	16	3
	5	□	MNS1470L-DIN	60.6	82.7	83.7	132.7	130	2.7	16	4
	5	□	MNS1470L-DIN-C	60.6	82.7	83.7	132.7	130	2.7	16	3
14.8	3	□	MNS1480S-DIN	42.5	64.7	65.7	114.7	112	2.7	16	4
	3	□	MNS1480S-DIN-C	42.5	64.7	65.7	114.7	112	2.7	16	3
	5	□	MNS1480L-DIN	60.5	82.7	83.7	132.7	130	2.7	16	4
14.9	3	□	MNS1490S-DIN	42.4	64.7	65.7	114.7	112	2.7	16	4
	3	□	MNS1490S-DIN-C	42.4	64.7	65.7	114.7	112	2.7	16	3
	5	□	MNS1490L-DIN	60.4	82.7	83.7	132.7	130	2.7	16	4
15.0	3	□	MNS1500S-DIN	42.2	64.7	65.7	114.7	112	2.7	16	4
	3	□	MNS1500S-DIN-C	42.2	64.7	65.7	114.7	112	2.7	16	3
	5	□	MNS1500L-DIN	60.2	82.7	83.7	132.7	130	2.7	16	4
15.1	3	□	MNS1510S-DIN	42.1	64.7	65.7	114.7	112	2.7	16	4
	3	□	MNS1510S-DIN-C	42.1	64.7	65.7	114.7	112	2.7	16	3
	5	□	MNS1510L-DIN	60.1	82.7	83.7	132.7	130	2.7	16	4
15.2	3	□	MNS1520S-DIN	42.0	64.8	65.8	114.8	112	2.8	16	4
	3	□	MNS1520S-DIN-C	42.0	64.8	65.8	114.8	112	2.8	16	3
	5	□	MNS1520L-DIN	60.0	82.8	83.8	132.8	130	2.8	16	4

M

DELME

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
15.3	3	<input type="checkbox"/>	MNS1530S-DIN	41.8	64.8	65.8	114.8	112	2.8	16	4
	3	<input type="checkbox"/>	MNS1530S-DIN-C	41.8	64.8	65.8	114.8	112	2.8	16	3
	5	<input type="checkbox"/>	MNS1530L-DIN	59.8	82.8	83.8	132.8	130	2.8	16	4
	5	<input type="checkbox"/>	MNS1530L-DIN-C	59.8	82.8	83.8	132.8	130	2.8	16	3
15.4	3	<input type="checkbox"/>	MNS1540S-DIN	41.7	64.8	65.8	114.8	112	2.8	16	4
	3	<input type="checkbox"/>	MNS1540S-DIN-C	41.7	64.8	65.8	114.8	112	2.8	16	3
	5	<input type="checkbox"/>	MNS1540L-DIN	59.7	82.8	83.8	132.8	130	2.8	16	4
	5	<input type="checkbox"/>	MNS1540L-DIN-C	59.7	82.8	83.8	132.8	130	2.8	16	3
15.5	3	<input type="checkbox"/>	MNS1550S-DIN	41.6	64.8	65.8	114.8	112	2.8	16	4
	3	<input type="checkbox"/>	MNS1550S-DIN-C	41.6	64.8	65.8	114.8	112	2.8	16	3
	5	<input type="checkbox"/>	MNS1550L-DIN	59.6	82.8	83.8	132.8	130	2.8	16	4
	5	<input checked="" type="checkbox"/>	MNS1550L-DIN-C	59.6	82.8	83.8	132.8	130	2.8	16	3
15.6	3	<input type="checkbox"/>	MNS1560S-DIN	41.4	64.8	65.8	114.8	112	2.8	16	4
	3	<input type="checkbox"/>	MNS1560S-DIN-C	41.4	64.8	65.8	114.8	112	2.8	16	3
	5	<input type="checkbox"/>	MNS1560L-DIN	59.4	82.8	83.8	132.8	130	2.8	16	4
	5	<input type="checkbox"/>	MNS1560L-DIN-C	59.4	82.8	83.8	132.8	130	2.8	16	3
15.7	3	<input type="checkbox"/>	MNS1570S-DIN	41.3	64.9	65.9	114.9	112	2.9	16	4
	3	<input type="checkbox"/>	MNS1570S-DIN-C	41.3	64.9	65.9	114.9	112	2.9	16	3
	5	<input type="checkbox"/>	MNS1570L-DIN	59.3	82.9	83.9	132.9	130	2.9	16	4
	5	<input type="checkbox"/>	MNS1570L-DIN-C	59.3	82.9	83.9	132.9	130	2.9	16	3
15.8	3	<input type="checkbox"/>	MNS1580S-DIN	41.2	64.9	65.9	114.9	112	2.9	16	4
	3	<input type="checkbox"/>	MNS1580S-DIN-C	41.2	64.9	65.9	114.9	112	2.9	16	3
	5	<input type="checkbox"/>	MNS1580L-DIN	59.2	82.9	83.9	132.9	130	2.9	16	4
	5	<input type="checkbox"/>	MNS1580L-DIN-C	59.2	82.9	83.9	132.9	130	2.9	16	3
15.9	3	<input type="checkbox"/>	MNS1590S-DIN	41.0	64.9	65.9	114.9	112	2.9	16	4
	3	<input type="checkbox"/>	MNS1590S-DIN-C	41.0	64.9	65.9	114.9	112	2.9	16	3
	5	<input type="checkbox"/>	MNS1590L-DIN	59.0	82.9	83.9	132.9	130	2.9	16	4
	5	<input type="checkbox"/>	MNS1590L-DIN-C	59.0	82.9	83.9	132.9	130	2.9	16	3
16.0	3	<input type="checkbox"/>	MNS1600S-DIN	40.9	64.9	65.9	114.9	112	2.9	16	4
	3	<input type="checkbox"/>	MNS1600S-DIN-C	40.9	64.9	65.9	114.9	112	2.9	16	3
	5	<input type="checkbox"/>	MNS1600L-DIN	58.9	82.9	83.9	132.9	130	2.9	16	4
	5	<input checked="" type="checkbox"/>	MNS1600L-DIN-C	58.9	82.9	83.9	132.9	130	2.9	16	3
16.1	3	<input type="checkbox"/>	MNS1610S-DIN	48.8	72.9	73.9	122.9	120	2.9	18	4
	3	<input type="checkbox"/>	MNS1610S-DIN-C	48.8	72.9	73.9	122.9	120	2.9	18	3
	5	<input type="checkbox"/>	MNS1610L-DIN	68.8	92.9	93.9	142.9	140	2.9	18	4
	5	<input type="checkbox"/>	MNS1610L-DIN-C	68.8	92.9	93.9	142.9	140	2.9	18	3
16.2	3	<input type="checkbox"/>	MNS1620S-DIN	48.6	72.9	73.9	122.9	120	2.9	18	4
	3	<input type="checkbox"/>	MNS1620S-DIN-C	48.6	72.9	73.9	122.9	120	2.9	18	3
	5	<input type="checkbox"/>	MNS1620L-DIN	68.6	92.9	93.9	142.9	140	2.9	18	4
	5	<input type="checkbox"/>	MNS1620L-DIN-C	68.6	92.9	93.9	142.9	140	2.9	18	3
16.3	3	<input type="checkbox"/>	MNS1630S-DIN	48.5	73.0	74.0	123.0	120	3.0	18	4
	3	<input type="checkbox"/>	MNS1630S-DIN-C	48.5	73.0	74.0	123.0	120	3.0	18	3
	5	<input type="checkbox"/>	MNS1630L-DIN	68.5	93.0	94.0	143.0	140	3.0	18	4
	5	<input type="checkbox"/>	MNS1630L-DIN-C	68.5	93.0	94.0	143.0	140	3.0	18	3
16.4	3	<input type="checkbox"/>	MNS1640S-DIN	48.4	73.0	74.0	123.0	120	3.0	18	4
	3	<input type="checkbox"/>	MNS1640S-DIN-C	48.4	73.0	74.0	123.0	120	3.0	18	3
	5	<input type="checkbox"/>	MNS1640L-DIN	68.4	93.0	94.0	143.0	140	3.0	18	4
	5	<input type="checkbox"/>	MNS1640L-DIN-C	68.4	93.0	94.0	143.0	140	3.0	18	3

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
16.5	3	<input type="checkbox"/>	MNS1650S-DIN	48.3	73.0	74.0	123.0	120	3.0	18	4
	3	<input type="checkbox"/>	MNS1650S-DIN-C	48.3	73.0	74.0	123.0	120	3.0	18	3
	5	<input type="checkbox"/>	MNS1650L-DIN	68.3	93.0	94.0	143.0	140	3.0	18	4
	5	<input checked="" type="checkbox"/>	MNS1650L-DIN-C	68.3	93.0	94.0	143.0	140	3.0	18	3
16.6	3	<input type="checkbox"/>	MNS1660S-DIN	48.1	73.0	74.0	123.0	120	3.0	18	4
	3	<input type="checkbox"/>	MNS1660S-DIN-C	48.1	73.0	74.0	123.0	120	3.0	18	3
	5	<input type="checkbox"/>	MNS1660L-DIN	68.1	93.0	94.0	143.0	140	3.0	18	4
	5	<input type="checkbox"/>	MNS1660L-DIN-C	68.1	93.0	94.0	143.0	140	3.0	18	3
16.7	3	<input type="checkbox"/>	MNS1670S-DIN	48.0	73.0	74.0	123.0	120	3.0	18	4
	3	<input type="checkbox"/>	MNS1670S-DIN-C	48.0	73.0	74.0	123.0	120	3.0	18	3
	5	<input type="checkbox"/>	MNS1670L-DIN	68.0	93.0	94.0	143.0	140	3.0	18	4
	5	<input type="checkbox"/>	MNS1670L-DIN-C	68.0	93.0	94.0	143.0	140	3.0	18	3
16.8	3	<input type="checkbox"/>	MNS1680S-DIN	47.9	73.1	74.1	123.1	120	3.1	18	4
	3	<input type="checkbox"/>	MNS1680S-DIN-C	47.9	73.1	74.1	123.1	120	3.1	18	3
	5	<input type="checkbox"/>	MNS1680L-DIN	67.9	93.1	94.1	143.1	140	3.1	18	4
	5	<input type="checkbox"/>	MNS1680L-DIN-C	67.9	93.1	94.1	143.1	140	3.1	18	3
16.9	3	<input type="checkbox"/>	MNS1690S-DIN	47.7	73.1	74.1	123.1	120	3.1	18	4
	3	<input type="checkbox"/>	MNS1690S-DIN-C	47.7	73.1	74.1	123.1	120	3.1	18	3
	5	<input type="checkbox"/>	MNS1690L-DIN	67.7	93.1	94.1	143.1	140	3.1	18	4
	5	<input type="checkbox"/>	MNS1690L-DIN-C	67.7	93.1	94.1	143.1	140	3.1	18	3
17.0	3	<input type="checkbox"/>	MNS1700S-DIN	47.6	73.1	74.1	123.1	120	3.1	18	4
	3	<input type="checkbox"/>	MNS1700S-DIN-C	47.6	73.1	74.1	123.1	120	3.1	18	3
	5	<input type="checkbox"/>	MNS1700L-DIN	67.6	93.1	94.1	143.1	140	3.1	18	4
	5	<input checked="" type="checkbox"/>	MNS1700L-DIN-C	67.6	93.1	94.1	143.1	140	3.1	18	3
17.1	3	<input type="checkbox"/>	MNS1710S-DIN	47.5	73.1	74.1	123.1	120	3.1	18	4
	3	<input type="checkbox"/>	MNS1710S-DIN-C	47.5	73.1	74.1	123.1	120	3.1	18	3
	5	<input type="checkbox"/>	MNS1710L-DIN	67.5	93.1	94.1	143.1	140	3.1	18	4
	5	<input type="checkbox"/>	MNS1710L-DIN-C	67.5	93.1	94.1	143.1	140	3.1	18	3
17.2	3	<input type="checkbox"/>	MNS1720S-DIN	47.3	73.1	74.1	123.1	120	3.1	18	4
	3	<input type="checkbox"/>	MNS1720S-DIN-C	47.3	73.1	74.1	123.1	120	3.1	18	3
	5	<input type="checkbox"/>	MNS1720L-DIN	67.3	93.1	94.1	143.1	140	3.1	18	4
	5	<input type="checkbox"/>	MNS1720L-DIN-C	67.3	93.1	94.1	143.1	140	3.1	18	3
17.3	3	<input type="checkbox"/>	MNS1730S-DIN	47.2	73.1	74.1	123.1	120	3.1	18	4
	3	<input type="checkbox"/>	MNS1730S-DIN-C	47.2	73.1	74.1	123.1	120	3.1	18	3
	5	<input type="checkbox"/>	MNS1730L-DIN	67.2	93.1	94.1	143.1	140	3.1	18	4
	5	<input type="checkbox"/>	MNS1730L-DIN-C	67.2	93.1	94.1	143.1	140	3.1	18	3
17.4	3	<input type="checkbox"/>	MNS1740S-DIN	47.1	73.2	74.2	123.2	120	3.2	18	4
	3	<input type="checkbox"/>	MNS1740S-DIN-C	47.1	73.2	74.2	123.2	120	3.2	18	3
	5	<input type="checkbox"/>	MNS1740L-DIN	67.1	93.2	94.2	143.2	140	3.2	18	4
	5	<input type="checkbox"/>	MNS1740L-DIN-C	67.1	93.2	94.2	143.2	140	3.2	18	3
17.5	3	<input type="checkbox"/>	MNS1750S-DIN	46.9	73.2	74.2	123.2	120	3.2	18	4
	3	<input type="checkbox"/>	MNS1750S-DIN-C	46.9	73.2	74.2	123.2	120	3.2	18	3
	5	<input type="checkbox"/>	MNS1750L-DIN	66.9	93.2	94.2	143.2	140	3.2	18	4
	5	<input checked="" type="checkbox"/>	MNS1750L-DIN-C	66.9	93.2	94.2	143.2	140	3.2	18	3
17.6	3	<input type="checkbox"/>	MNS1760S-DIN	46.8	73.2	74.2	123.2	120	3.2	18	4
	3	<input type="checkbox"/>	MNS1760S-DIN-C	46.8	73.2	74.2	123.2	120	3.2	18	3
	5	<input type="checkbox"/>	MNS1760L-DIN	66.8	93.2	94.2	143.2	140	3.2	18	4
	5	<input type="checkbox"/>	MNS1760L-DIN-C	66.8	93.2	94.2	143.2	140	3.2	18	3

Not 1) Lütfen bu katalogda olmayan herhangi bir geometri için bizimle iletişim kurun (örn. farklı çap ve uzunluk).

● : Avrupa standart stok. □ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
17.7	3	<input type="checkbox"/>	MNS1770S-DIN	46.7	73.2	74.2	123.2	120	3.2	18	4
	3	<input type="checkbox"/>	MNS1770S-DIN-C	46.7	73.2	74.2	123.2	120	3.2	18	3
	5	<input type="checkbox"/>	MNS1770L-DIN	66.7	93.2	94.2	143.2	140	3.2	18	4
	5	<input type="checkbox"/>	MNS1770L-DIN-C	66.7	93.2	94.2	143.2	140	3.2	18	3
17.8	3	<input type="checkbox"/>	MNS1780S-DIN	46.5	73.2	74.2	123.2	120	3.2	18	4
	3	<input type="checkbox"/>	MNS1780S-DIN-C	46.5	73.2	74.2	123.2	120	3.2	18	3
	5	<input type="checkbox"/>	MNS1780L-DIN	66.5	93.2	94.2	143.2	140	3.2	18	4
	5	<input type="checkbox"/>	MNS1780L-DIN-C	66.5	93.2	94.2	143.2	140	3.2	18	3
17.9	3	<input type="checkbox"/>	MNS1790S-DIN	46.4	73.3	74.3	123.3	120	3.3	18	4
	3	<input type="checkbox"/>	MNS1790S-DIN-C	46.4	73.3	74.3	123.3	120	3.3	18	3
	5	<input type="checkbox"/>	MNS1790L-DIN	66.4	93.3	94.3	143.3	140	3.3	18	4
	5	<input type="checkbox"/>	MNS1790L-DIN-C	66.4	93.3	94.3	143.3	140	3.3	18	3
18.0	3	<input type="checkbox"/>	MNS1800S-DIN	46.3	73.3	74.3	123.3	120	3.3	18	4
	3	<input type="checkbox"/>	MNS1800S-DIN-C	46.3	73.3	74.3	123.3	120	3.3	18	3
	5	<input type="checkbox"/>	MNS1800L-DIN	66.3	93.3	94.3	143.3	140	3.3	18	4
	5	<input checked="" type="checkbox"/>	MNS1800L-DIN-C	66.3	93.3	94.3	143.3	140	3.3	18	3
18.1	3	<input type="checkbox"/>	MNS1810S-DIN	52.1	79.3	80.3	131.3	128	3.3	20	4
	3	<input type="checkbox"/>	MNS1810S-DIN-C	52.1	79.3	80.3	131.3	128	3.3	20	3
	5	<input type="checkbox"/>	MNS1810L-DIN	74.1	101.3	102.3	153.3	150	3.3	20	4
	5	<input type="checkbox"/>	MNS1810L-DIN-C	74.1	101.3	102.3	153.3	150	3.3	20	3
18.2	3	<input type="checkbox"/>	MNS1820S-DIN	52.0	79.3	80.3	131.3	128	3.3	20	4
	3	<input type="checkbox"/>	MNS1820S-DIN-C	52.0	79.3	80.3	131.3	128	3.3	20	3
	5	<input type="checkbox"/>	MNS1820L-DIN	74.0	101.3	102.3	153.3	150	3.3	20	4
	5	<input type="checkbox"/>	MNS1820L-DIN-C	74.0	101.3	102.3	153.3	150	3.3	20	3
18.3	3	<input type="checkbox"/>	MNS1830S-DIN	51.9	79.3	80.3	131.3	128	3.3	20	4
	3	<input type="checkbox"/>	MNS1830S-DIN-C	51.9	79.3	80.3	131.3	128	3.3	20	3
	5	<input type="checkbox"/>	MNS1830L-DIN	73.9	101.3	102.3	153.3	150	3.3	20	4
	5	<input type="checkbox"/>	MNS1830L-DIN-C	73.9	101.3	102.3	153.3	150	3.3	20	3
18.4	3	<input type="checkbox"/>	MNS1840S-DIN	51.7	79.3	80.3	131.3	128	3.3	20	4
	3	<input type="checkbox"/>	MNS1840S-DIN-C	51.7	79.3	80.3	131.3	128	3.3	20	3
	5	<input type="checkbox"/>	MNS1840L-DIN	73.7	101.3	102.3	153.3	150	3.3	20	4
	5	<input type="checkbox"/>	MNS1840L-DIN-C	73.7	101.3	102.3	153.3	150	3.3	20	3
18.5	3	<input type="checkbox"/>	MNS1850S-DIN	51.6	79.4	80.4	131.4	128	3.4	20	4
	3	<input type="checkbox"/>	MNS1850S-DIN-C	51.6	79.4	80.4	131.4	128	3.4	20	3
	5	<input type="checkbox"/>	MNS1850L-DIN	73.6	101.4	102.4	153.4	150	3.4	20	4
	5	<input checked="" type="checkbox"/>	MNS1850L-DIN-C	73.6	101.4	102.4	153.4	150	3.4	20	3
18.6	3	<input type="checkbox"/>	MNS1860S-DIN	51.5	79.4	80.4	131.4	128	3.4	20	4
	3	<input type="checkbox"/>	MNS1860S-DIN-C	51.5	79.4	80.4	131.4	128	3.4	20	3
	5	<input type="checkbox"/>	MNS1860L-DIN	73.5	101.4	102.4	153.4	150	3.4	20	4
	5	<input type="checkbox"/>	MNS1860L-DIN-C	73.5	101.4	102.4	153.4	150	3.4	20	3
18.7	3	<input type="checkbox"/>	MNS1870S-DIN	51.4	79.4	80.4	131.4	128	3.4	20	4
	3	<input type="checkbox"/>	MNS1870S-DIN-C	51.4	79.4	80.4	131.4	128	3.4	20	3
	5	<input type="checkbox"/>	MNS1870L-DIN	73.4	101.4	102.4	153.4	150	3.4	20	4
	5	<input type="checkbox"/>	MNS1870L-DIN-C	73.4	101.4	102.4	153.4	150	3.4	20	3
18.8	3	<input type="checkbox"/>	MNS1880S-DIN	51.2	79.4	80.4	131.4	128	3.4	20	4
	3	<input type="checkbox"/>	MNS1880S-DIN-C	51.2	79.4	80.4	131.4	128	3.4	20	3
	5	<input type="checkbox"/>	MNS1880L-DIN	73.2	101.4	102.4	153.4	150	3.4	20	4
	5	<input type="checkbox"/>	MNS1880L-DIN-C	73.2	101.4	102.4	153.4	150	3.4	20	3

DC (mm)	Delik Derinliği (L/D)	TF15	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
18.9	3	<input type="checkbox"/>	MNS1890S-DIN	51.1	79.4	80.4	131.4	128	3.4	20	4
	3	<input type="checkbox"/>	MNS1890S-DIN-C	51.1	79.4	80.4	131.4	128	3.4	20	3
	5	<input type="checkbox"/>	MNS1890L-DIN	73.1	101.4	102.4	153.4	150	3.4	20	4
	5	<input type="checkbox"/>	MNS1890L-DIN-C	73.1	101.4	102.4	153.4	150	3.4	20	3
19.0	3	<input type="checkbox"/>	MNS1900S-DIN	51.0	79.5	80.5	131.5	128	3.5	20	4
	3	<input type="checkbox"/>	MNS1900S-DIN-C	51.0	79.5	80.5	131.5	128	3.5	20	3
	5	<input type="checkbox"/>	MNS1900L-DIN	73.0	101.5	102.5	153.5	150	3.5	20	4
	5	<input type="checkbox"/>	MNS1900L-DIN-C	73.0	101.5	102.5	153.5	150	3.5	20	3
19.1	3	<input type="checkbox"/>	MNS1910S-DIN	50.8	79.5	80.5	131.5	128	3.5	20	4
	3	<input type="checkbox"/>	MNS1910S-DIN-C	50.8	79.5	80.5	131.5	128	3.5	20	3
	5	<input type="checkbox"/>	MNS1910L-DIN	72.8	101.5	102.5	153.5	150	3.5	20	4
	5	<input type="checkbox"/>	MNS1910L-DIN-C	72.8	101.5	102.5	153.5	150	3.5	20	3
19.2	3	<input type="checkbox"/>	MNS1920S-DIN	50.7	79.5	80.5	131.5	128	3.5	20	4
	3	<input type="checkbox"/>	MNS1920S-DIN-C	50.7	79.5	80.5	131.5	128	3.5	20	3
	5	<input type="checkbox"/>	MNS1920L-DIN	72.7	101.5	102.5	153.5	150	3.5	20	4
	5	<input type="checkbox"/>	MNS1920L-DIN-C	72.7	101.5	102.5	153.5	150	3.5	20	3
19.3	3	<input type="checkbox"/>	MNS1930S-DIN	50.6	79.5	80.5	131.5	128	3.5	20	4
	5	<input type="checkbox"/>	MNS1930L-DIN	72.6	101.5	102.5	153.5	150	3.5	20	4
	5	<input type="checkbox"/>	MNS1930L-DIN-C	72.6	101.5	102.5	153.5	150	3.5	20	3
	19.4	3	<input type="checkbox"/>	MNS1940S-DIN	50.4	79.5	80.5	131.5	128	3.5	20
3		<input type="checkbox"/>	MNS1940S-DIN-C	50.4	79.5	80.5	131.5	128	3.5	20	3
5		<input type="checkbox"/>	MNS1940L-DIN	72.4	101.5	102.5	153.5	150	3.5	20	4
5		<input type="checkbox"/>	MNS1940L-DIN-C	72.4	101.5	102.5	153.5	150	3.5	20	3
19.5	3	<input type="checkbox"/>	MNS1950S-DIN	50.3	79.5	80.5	131.5	128	3.5	20	4
	3	<input type="checkbox"/>	MNS1950S-DIN-C	50.3	79.5	80.5	131.5	128	3.5	20	3
	5	<input type="checkbox"/>	MNS1950L-DIN	72.3	101.5	102.5	153.5	150	3.5	20	4
	5	<input checked="" type="checkbox"/>	MNS1950L-DIN-C	72.3	101.5	102.5	153.5	150	3.5	20	3
19.6	3	<input type="checkbox"/>	MNS1960S-DIN	50.2	79.6	80.6	131.6	128	3.6	20	4
	3	<input type="checkbox"/>	MNS1960S-DIN-C	50.2	79.6	80.6	131.6	128	3.6	20	3
	5	<input type="checkbox"/>	MNS1960L-DIN	72.2	101.6	102.6	153.6	150	3.6	20	4
	5	<input type="checkbox"/>	MNS1960L-DIN-C	72.2	101.6	102.6	153.6	150	3.6	20	3
19.7	3	<input type="checkbox"/>	MNS1970S-DIN	50.0	79.6	80.6	131.6	128	3.6	20	4
	3	<input type="checkbox"/>	MNS1970S-DIN-C	50.0	79.6	80.6	131.6	128	3.6	20	3
	5	<input type="checkbox"/>	MNS1970L-DIN	72.0	101.6	102.6	153.6	150	3.6	20	4
	5	<input type="checkbox"/>	MNS1970L-DIN-C	72.0	101.6	102.6	153.6	150	3.6	20	3
19.8	3	<input type="checkbox"/>	MNS1980S-DIN	49.9	79.6	80.6	131.6	128	3.6	20	4
	3	<input type="checkbox"/>	MNS1980S-DIN-C	49.9	79.6	80.6	131.6	128	3.6	20	3
	5	<input type="checkbox"/>	MNS1980L-DIN	71.9	101.6	102.6	153.6	150	3.6	20	4
	5	<input type="checkbox"/>	MNS1980L-DIN-C	71.9	101.6	102.6	153.6	150	3.6	20	3
19.9	3	<input type="checkbox"/>	MNS1990S-DIN	49.8	79.6	80.6	131.6	128	3.6	20	4
	3	<input type="checkbox"/>	MNS1990S-DIN-C	49.8	79.6	80.6	131.6	128	3.6	20	3
	5	<input type="checkbox"/>	MNS1990L-DIN	71.8	101.6	102.6	153.6	150	3.6	20	4
	5	<input type="checkbox"/>	MNS1990L-DIN-C	71.8	101.6	102.6	153.6	150	3.6	20	3
20.0	3	<input type="checkbox"/>	MNS2000S-DIN	49.6	79.6	80.6	131.6	128	3.6	20	4
	3	<input type="checkbox"/>	MNS2000S-DIN-C	49.6	79.6	80.6	131.6	128	3.6	20	3
	5	<input type="checkbox"/>	MNS2000L-DIN	71.6	101.6	102.6	153.6	150	3.6	20	4
	5	<input checked="" type="checkbox"/>	MNS2000L-DIN-C	71.6	101.6	102.6	153.6	150	3.6	20	3

M

DELME

ÖNERİLEN KESME KOŞULLARI

■ Delik Derinliği : L/D = 3, 5, 8 (LB, S-DIN, S-DIN-C, L-DIN, L-DIN-C, L8C Tipi Matkap Ucu)

Çalışma malzemesi	N					
	Alüminyum Alaşım (Si<%5)		Alüminyum Alaşım (%5≤Si≤%10)		Alüminyum Alaşım (Si>%10)	
Matkap Ucu Çapı DC (mm)	Devir (dak ⁻¹)	İlerleme oranı (Min. – Maks.) (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (Min. – Maks.) (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (Min. – Maks.) (mm/dev)
3.2	11900	0.1 (0.11–0.16)	11900	0.15 (0.16–0.21)	11900	0.15 (0.16–0.21)
4.0	9500	0.15 (0.13–0.20)	9500	0.2 (0.20–0.27)	9500	0.2 (0.20–0.27)
5.0	7600	0.2 (0.17–0.25)	7600	0.25 (0.25–0.33)	7600	0.25 (0.25–0.33)
6.3	7500	0.25 (0.21–0.32)	7500	0.35 (0.32–0.42)	7500	0.35 (0.32–0.42)
8.0	5900	0.3 (0.27–0.40)	5900	0.45 (0.40–0.53)	5900	0.45 (0.40–0.53)
10.0	4700	0.4 (0.33–0.50)	4700	0.55 (0.50–0.67)	4700	0.55 (0.50–0.67)
12.0	5300	0.5 (0.40–0.60)	5300	0.7 (0.60–0.80)	5300	0.7 (0.60–0.80)
14.0	4500	0.5 (0.40–0.60)	4500	0.7 (0.60–0.80)	4500	0.7 (0.60–0.80)
16.0	4000	0.5 (0.40–0.60)	4000	0.7 (0.60–0.80)	4000	0.7 (0.60–0.80)
18.0	3500	0.5 (0.40–0.60)	3500	0.7 (0.60–0.80)	3500	0.7 (0.60–0.80)
20.0	3200	0.5 (0.40–0.60)	3200	0.7 (0.60–0.80)	3200	0.7 (0.60–0.80)

Not 1) L/D 10 üzerinde uzunluğa sahip bir Matkap Ucu kullanıldığında, kılavuz olarak hazırlık deliğinin kullanılması gereklidir.
(Hazırlık deliği kullanılmazsa Matkap Ucu kırılması meydana gelebilir.)

Not 2) Pilot deliği delme için, Mitsubishi Materials MNS, MAE-MB veya MAS-MB Matkap Ucu önerilir.

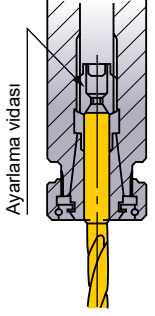
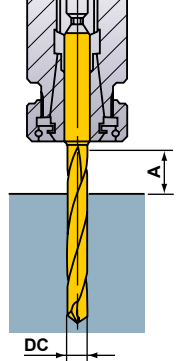
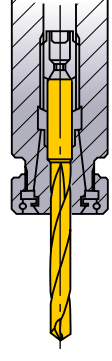
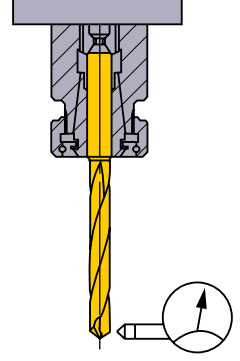
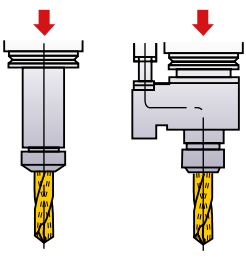
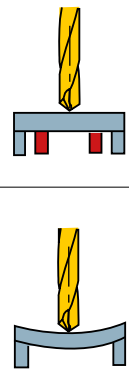
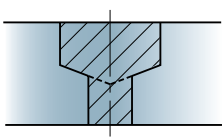
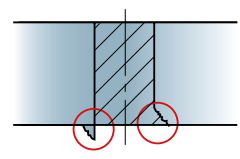
■ Delik Derinliği : L/D = 10, 12, 15, 20, 25, 30 (X10DB, X20DB, X30DB, L10C, L12C, L15C, L20C, L25C, L30C Tipi Matkap Ucu)

Çalışma malzemesi	N					
	Alüminyum Alaşım (Si<%5)		Alüminyum Alaşım (%5≤Si≤%10)		Alüminyum Alaşım (Si>%10)	
Matkap Ucu Çapı DC (mm)	Devir (dak ⁻¹)	İlerleme oranı (Min. – Maks.) (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (Min. – Maks.) (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (Min. – Maks.) (mm/dev)
3.2	8900	0.1 (0.11–0.16)	8900	0.15 (0.16–0.21)	8900	0.15 (0.16–0.21)
4.0	7100	0.15 (0.13–0.20)	7100	0.2 (0.20–0.27)	7100	0.2 (0.20–0.27)
5.0	5700	0.2 (0.17–0.25)	5700	0.25 (0.25–0.33)	5700	0.25 (0.25–0.33)
6.3	6000	0.25 (0.21–0.32)	6000	0.35 (0.32–0.42)	6000	0.35 (0.32–0.42)
8.0	4700	0.3 (0.27–0.40)	4700	0.45 (0.40–0.53)	4700	0.45 (0.40–0.53)
10.0	3800	0.4 (0.33–0.50)	3800	0.55 (0.50–0.67)	3800	0.55 (0.50–0.67)
12.0	4200	0.5 (0.40–0.60)	4200	0.7 (0.60–0.80)	4200	0.7 (0.60–0.80)
14.0	3600	0.5 (0.40–0.60)	3600	0.7 (0.60–0.80)	3600	0.7 (0.60–0.80)
16.0	3200	0.5 (0.40–0.60)	3200	0.7 (0.60–0.80)	3200	0.7 (0.60–0.80)
18.0	2800	0.5 (0.40–0.60)	2800	0.7 (0.60–0.80)	2800	0.7 (0.60–0.80)
20.0	2500	0.5 (0.40–0.60)	2500	0.7 (0.60–0.80)	2500	0.7 (0.60–0.80)

Not 1) L/D 10 üzerinde uzunluğa sahip bir Matkap Ucu kullanıldığında, kılavuz olarak hazırlık deliğinin kullanılması gereklidir.
(Hazırlık deliği kullanılmazsa Matkap Ucu kırılması meydana gelebilir.)

Not 2) Pilot deliği delme için, Mitsubishi Materials MNS, MAE-MB veya MAS-MB Matkap Ucu önerilir.

■ MNS MATKAP UCU İÇİN ÇALIŞMA KILAVUZU (L/D 3, 5, 8)

<p>Matkap ucunu tutma</p>  <p>Bilya sıkıştırılmalı pensli tutucular matkabi güvenli bir şekilde tutar.</p>	<p>Matkap ucu uzunluğu</p>  <p>$A : \geq DC \times 1.5$</p>	<p>Matkap ucunu takma</p>  <p>Helis kanallarından bağlamayınız.</p>	<p>Takma toleransı</p>  <p>Salgı $\leq 0.03\text{mm}$</p>
<p>Soğutma suyu yöntemi (MNS)</p> <p>Boydan boya fener milli içinden soğutma tipi</p> <p>Harici pompa sürkülasyonlu soğutma tipi</p>  <p>Soğutma suyu basıncı yaklaşık 5 bar—70 bar'dır</p>	<p>Soğutma suyu kullanımı</p> <p>< MNS tipi ></p> <ol style="list-style-type: none"> 1) Eski soğutma suyundaki kir ve toz parçacıkları yağ deliğini tıkayabilir ve etkili akışı önleyebilir. Düzenli soğutma suyu değişimi önerilir. 2) Küçük talaş parçacıkları yağ deliğine sıkışır. Koruyucu önlem olarak filtre kullanın. Küçük çaplı matkap uçları kullanırken, ince elekli filtre kullanın. 	<p>İnce Çalışma Parçası</p> 	<p>Kesintili Kesme</p> <p>Tek Proses</p> <p>OK</p> <p>① Darbeli parçayı delerken ilerlemeyi düşürün.</p> <p>Önceden işleme gerektirir</p> <p>① Delmeden önce parmak freze ile düzeltin.</p>
<p>Kademeli delikler</p>  <ol style="list-style-type: none"> ① İşlemeyi iki sürece ayırın. ② Önce büyük deliği delin. <p>*Pah ve Havşa yuvası için takımlar sipariş üzerine üretilebilir.</p>	<p>Çapaklanma ve iş parçası kenarında ufalanma</p>  <ol style="list-style-type: none"> ① Çıkışta ilerleme oranını düşürün. ② Pah ekleyin. ③ Uç açısını değiştirin. 		

■ MNS TİPİ UZUN MATKAP UCU İÇİN ÇALIŞMA KILAVUZU (L/D 10, 12, 15, 20, 25, 30)

DÜZ YÜZ DELME ● Bir kör delik delme

■ 1. Bir pilot deliği delme



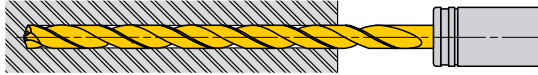
- ① Süper uzun tip matkapdan daha büyük bir uç açılı (düz) bir matkap ucu kullanın. Mitsubishi Materials tip MNS, MAE-MB veya MAS-MB matkap ucu önerilir.
- ② Yataklama için yüksek hassasiyetli deliğin delindiğinden emin olun.
- ③ Matkap ucu derinliği : Yaklaşık 1DC veya daha derin.
(Süper uzun tipin boyuna göre pilot deliği derinliğini ayarlayın.)

■ 2. Uzun tip matkap ucu ile ilk kesme



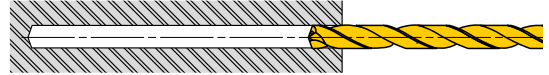
- ① Pilot deliğine düşük devirde nüfuz ettirin.
(Kesme hızı 20m-30m/dak, ilerleme oranı 0.2mm-0.3mm/dev)
- ② Uzun tip matkap ucunu pilot deliği tabanına 1mm-3mm kala durdurun.

■ 3. Derin deliği delme



- ① Önerilen devir ve ilerleme ile gagalama yapmadan (kesintisiz ilerleme) kesmeyi başlatın.

■ 4. Matkap ucunu geriye çekme



- ① Delmeden sonra, delik sonundan yaklaşık 1mm-2mm kadar matkabı geri çekin kesme devrini düşürün. (Yaklaşık 20m-30m/dak kesme hızı)
- ② 3000mm/dak ilerleme hızıyla matkap ucunu pilot Delik Derinliği başlangıç noktasına geri çekin.
- ③ Son olarak, 20m-30m/dak kesme hızıyla ve 0.2mm-0.3mm/dev ilerleme oranında deliği temizleyin.

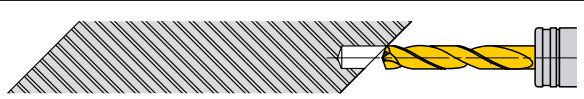
DARBELİ DELME ● Düzensiz yüzeyli veya açılı yüzeyleri delme ve boşa çıkma

■ 1. Havşa yüzeyi açma



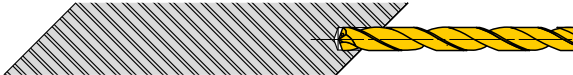
- ① Eğimli bir yüzeye derin bir delik açarken, ön deliği açmak için MFE matkabı kullanın.
- ② Ön deliğin yüksek hassasiyette açıldığından emin olun.
- ③ Delme derinliği: Yakl. DC×1.

■ 2. Bir pilot deliği delme



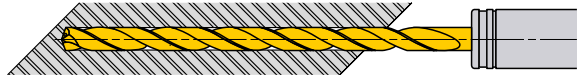
- ① Süper uzun matkapdan daha büyük uç açılı (düz) bir matkap ucu kullanın. Mitsubishi Materials tipi MNS, MAE-MB veya MAS-MB matkap ucu önerilir.
- ② Yataklama için yüksek hassasiyetli deliğin delindiğinden emin olun.
- ③ Matkap ucu derinliği: Yaklaşık 1DC veya daha derin.
(Süper uzun tip matkabın boyuna göre pilot deliği derinliğini ayarlayın.)

■ 3. Uzun tip matkap ucu ile ilk kesme



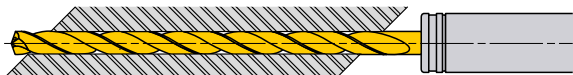
- ① Pilot deliğe düşük devirde nüfuz edin. (Kesme hızı 20m-30m/dak, ilerleme oranı 0.2mm-0.3mm/dev)
- ② Uzun tip matkap ucunu pilot deliğin tabanına 1mm-3mm kala durdurun.

■ 4. Derin deliği delme



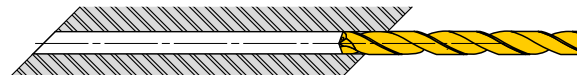
- ① Önerilen devir ve ilerleme ile gagalama yapmadan (kesintisiz ilerleme) kesmeye başlayın.

■ 5. Boşa çıkma



- ① Boşa çıkma işlemi sırasında, kesme kenarı hasar görebilir.
- ② 0.05mm-0.1mm/dev' lik bir ilerleme oranı önerilir.

■ 6. Matkap ucunu geriye çekme



- ① 3000mm/dak ilerleme oranında matkap ucunu pilot Delik Derinliği başlangıç noktasına geri çekin.
- ② Son olarak, 20m-30m/dak kesme hızında ve 0.2mm-0.3mm/dev besleme oranında deliği temizleyin.

DELME (YEKPARE KARBÜR)

MAE, MAS

- Alüminyum ve dökme demiri delmek için özelleştirilmiştir.
- Yüksek delik hassasiyeti.
- Ezerek dış açma için ön delik delme.
- Helisel boydan boya soğutma suyu delikleri yüksek hızda işlemeyi sağlar (MAS tipi).



Sadece MAS

KARBÜR

DELME

M

P M **K** N S H

MAE (Dışarıdan soğutma suyu)



MAS (İçeriden soğutma suyu)

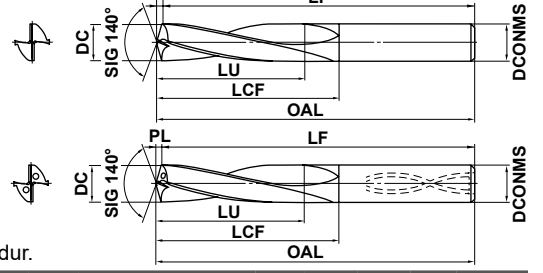


Not 1) Ø 5.0'ten büyük çaplarda uç yüzünde bir girintiye sahiptir (MAS tipi).

Not 2) MAE/MAS matkap uçları yalnızca ısıtılmış takım tutucular ile kullanılmı için uygundur.



DC=3	3<DC≤6	6<DC≤10	10<DC≤16
+0.005 0	+0.005 0	+0.005 0	+0.005 0
0 -0.006	0 -0.008	0 -0.009	0 -0.011



DC (mm)	Delik Derinliği (L/D)	Soğutma suyu (Dah./Har.)	HT110	Sipariş No.	Boyutlar (mm)					
					LU	LCF	OAL	LF	PL	DCONMS
3.0	3	Har.	★	MAE0300MB	9.5	21.5	61.5	61	0.5	3
	3	Dah.	□	MAS0300MB	9.5	21.5	61.5	61	0.5	3
	6	Dah.	●	MAS0300LB	18.5	30.5	70.5	70	0.5	3
3.1	3	Har.	★	MAE0310MB	9.9	24.6	64.6	64	0.6	4
	3	Dah.	□	MAS0310MB	9.9	24.6	64.6	64	0.6	4
	6	Dah.	★	MAS0310LB	19.2	34.6	74.6	74	0.6	4
3.2	3	Har.	★	MAE0320MB	10.2	24.6	64.6	64	0.6	4
	3	Dah.	□	MAS0320MB	10.2	24.6	64.6	64	0.6	4
	6	Dah.	★	MAS0320LB	19.8	34.6	74.6	74	0.6	4
3.3	3	Har.	★	MAE0330MB	10.5	24.6	64.6	64	0.6	4
	3	Dah.	□	MAS0330MB	10.5	24.6	64.6	64	0.6	4
	6	Dah.	●	MAS0330LB	20.4	34.6	74.6	74	0.6	4
3.4	3	Har.	★	MAE0340MB	10.8	24.6	64.6	64	0.6	4
	3	Dah.	□	MAS0340MB	10.8	24.6	64.6	64	0.6	4
	6	Dah.	★	MAS0340LB	21.0	34.6	74.6	74	0.6	4
3.5	3	Har.	★	MAE0350MB	11.1	24.6	64.6	64	0.6	4
	3	Dah.	□	MAS0350MB	11.1	24.6	64.6	64	0.6	4
	6	Dah.	●	MAS0350LB	21.6	34.6	74.6	74	0.6	4
3.6	3	Har.	★	MAE0360MB	11.5	28.7	68.7	68	0.7	4
	3	Dah.	□	MAS0360MB	11.5	28.7	68.7	68	0.7	4
	6	Dah.	★	MAS0360LB	22.3	40.7	80.7	80	0.7	4
3.65	3	Har.	★	* MAE0365MB	11.7	28.7	68.7	68	0.7	4
	3	Dah.	□	* MAS0365MB	11.7	28.7	68.7	68	0.7	4
	6	Dah.	●	* MAS0365LB	22.6	40.7	80.7	80	0.7	4
3.7	3	Har.	★	MAE0370MB	11.8	28.7	68.7	68	0.7	4
	3	Dah.	□	MAS0370MB	11.8	28.7	68.7	68	0.7	4
	6	Dah.	★	MAS0370LB	22.9	40.7	80.7	80	0.7	4
3.8	3	Har.	★	MAE0380MB	12.1	28.7	68.7	68	0.7	4
	3	Dah.	□	MAS0380MB	12.1	28.7	68.7	68	0.7	4
	6	Dah.	★	MAS0380LB	23.5	40.7	80.7	80	0.7	4
3.9	3	Har.	★	MAE0390MB	12.4	28.7	68.7	68	0.7	4
	3	Dah.	□	MAS0390MB	12.4	28.7	68.7	68	0.7	4
	6	Dah.	★	MAS0390LB	24.1	40.7	80.7	80	0.7	4
4.0	3	Har.	★	MAE0400MB	12.7	28.7	68.7	68	0.7	4
	3	Dah.	□	MAS0400MB	12.7	28.7	68.7	68	0.7	4
	6	Dah.	●	MAS0400LB	24.7	40.7	80.7	80	0.7	4
4.1	3	Har.	★	MAE0410MB	13.0	31.7	71.7	71	0.7	5
	3	Dah.	□	MAS0410MB	13.0	31.7	71.7	71	0.7	5
	6	Dah.	★	MAS0410LB	25.3	44.7	84.7	84	0.7	5

DC (mm)	Delik Derinliği (L/D)	Soğutma suyu (Dah./Har.)	HT110	Sipariş No.	Boyutlar (mm)					
					LU	LCF	OAL	LF	PL	DCONMS
4.2	3	Har.	★	MAE0420MB	13.4	31.8	71.8	71	0.8	5
	3	Dah.	□	MAS0420MB	13.4	31.8	71.8	71	0.8	5
	6	Dah.	●	MAS0420LB	26.0	44.8	84.8	84	0.8	5
4.3	3	Har.	★	MAE0430MB	13.7	31.8	71.8	71	0.8	5
	3	Dah.	□	MAS0430MB	13.7	31.8	71.8	71	0.8	5
	6	Dah.	★	MAS0430LB	26.6	44.8	84.8	84	0.8	5
4.4	3	Har.	★	MAE0440MB	14.0	31.8	71.8	71	0.8	5
	3	Dah.	□	MAS0440MB	14.0	31.8	71.8	71	0.8	5
	6	Dah.	★	MAS0440LB	27.2	44.8	84.8	84	0.8	5
4.5	3	Har.	★	MAE0450MB	14.3	31.8	71.8	71	0.8	5
	3	Dah.	□	MAS0450MB	14.3	31.8	71.8	71	0.8	5
	6	Dah.	★	MAS0450LB	27.8	44.8	84.8	84	0.8	5
4.6	3	Har.	★	* MAE0460MB	14.6	33.8	73.8	73	0.8	5
	3	Dah.	□	* MAS0460MB	14.6	33.8	73.8	73	0.8	5
	6	Dah.	●	* MAS0460LB	28.4	48.8	88.8	88	0.8	5
4.7	3	Har.	★	MAE0470MB	15.0	33.9	73.9	73	0.9	5
	3	Dah.	□	MAS0470MB	15.0	33.9	73.9	73	0.9	5
	6	Dah.	★	MAS0470LB	29.1	48.9	88.9	88	0.9	5
4.8	3	Har.	★	MAE0480MB	15.3	33.9	73.9	73	0.9	5
	3	Dah.	□	MAS0480MB	15.3	33.9	73.9	73	0.9	5
	6	Dah.	★	MAS0480LB	29.7	48.9	88.9	88	0.9	5
4.9	3	Har.	★	MAE0490MB	15.6	33.9	73.9	73	0.9	5
	3	Dah.	□	MAS0490MB	15.6	33.9	73.9	73	0.9	5
	6	Dah.	★	MAS0490LB	30.3	48.9	88.9	88	0.9	5
5.0	3	Har.	★	MAE0500MB	15.9	33.9	73.9	73	0.9	5
	3	Dah.	●	MAS0500MB	15.9	33.9	73.9	73	0.9	5
	6	Dah.	●	MAS0500LB	30.9	48.9	88.9	88	0.9	5
5.1	3	Har.	★	MAE0510MB	16.2	36.9	76.9	76	0.9	6
	3	Dah.	□	MAS0510MB	16.2	36.9	76.9	76	0.9	6
	6	Dah.	★	MAS0510LB	31.5	52.9	92.9	92	0.9	6
5.2	3	Har.	★	MAE0520MB	16.5	36.9	76.9	76	0.9	6
	3	Dah.	□	MAS0520MB	16.5	36.9	76.9	76	0.9	6
	6	Dah.	●	MAS0520LB	32.1	52.9	92.9	92	0.9	6
5.3	3	Har.	★	MAE0530MB	16.9	37.0	77.0	76	1.0	6
	3	Dah.	□	MAS0530MB	16.9	37.0	77.0	76	1.0	6
	6	Dah.	★	MAS0530LB	32.8	53.0	93.0	92	1.0	6
5.4	3	Har.	★	MAE0540MB	17.2	37.0	77.0	76	1.0	6
	3	Dah.	□	MAS0540MB	17.2	37.0	77.0	76	1.0	6
	6	Dah.	★	MAS0540LB	33.4	53.0	93.0	92	1.0	6

* : Ovalama dış kılavuzları için standart delik boyutu.

● : Avrupa standart stok. ★ : Japonya standart stok.

□ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC (mm)	Delik Derinliği (L/D)	Soğutma suyu (Dah./Har.)	HTI10	Sipariş No.	Boyutlar (mm)					
					LU	LCF	OAL	LF	PL	DCONMS
5.5	3	Har.	★	* MAE0550MB	17.5	37.0	77.0	76	1.0	6
	3	Dah.	★	* MAS0550MB	17.5	37.0	77.0	76	1.0	6
	6	Dah.	●	* MAS0550LB	34.0	53.0	93.0	92	1.0	6
5.6	3	Har.	★	MAE0560MB	17.8	40.0	80.0	79	1.0	6
	3	Dah.	□	MAS0560MB	17.8	40.0	80.0	79	1.0	6
	6	Dah.	★	MAS0560LB	34.6	58.0	98.0	97	1.0	6
5.7	3	Har.	★	MAE0570MB	18.1	40.0	80.0	79	1.0	6
	3	Dah.	□	MAS0570MB	18.1	40.0	80.0	79	1.0	6
	6	Dah.	★	MAS0570LB	35.2	58.0	98.0	97	1.0	6
5.8	3	Har.	★	MAE0580MB	18.5	40.1	80.1	79	1.1	6
	3	Dah.	□	MAS0580MB	18.5	40.1	80.1	79	1.1	6
	6	Dah.	★	MAS0580LB	35.9	58.1	98.1	97	1.1	6
5.9	3	Har.	★	MAE0590MB	18.8	40.1	80.1	79	1.1	6
	3	Dah.	□	MAS0590MB	18.8	40.1	80.1	79	1.1	6
	6	Dah.	★	MAS0590LB	36.5	58.1	98.1	97	1.1	6
6.0	3	Har.	★	MAE0600MB	19.1	40.1	80.1	79	1.1	6
	3	Dah.	●	MAS0600MB	19.1	40.1	80.1	79	1.1	6
	6	Dah.	●	MAS0600LB	37.1	58.1	98.1	97	1.1	6
6.1	3	Har.	★	MAE0610MB	19.4	43.1	85.1	84	1.1	7
	3	Dah.	□	MAS0610MB	19.4	43.1	85.1	84	1.1	7
	6	Dah.	★	MAS0610LB	37.7	63.1	105.1	104	1.1	7
6.2	3	Har.	★	MAE0620MB	19.7	43.1	85.1	84	1.1	7
	3	Dah.	□	MAS0620MB	19.7	43.1	85.1	84	1.1	7
	6	Dah.	★	MAS0620LB	38.3	63.1	105.1	104	1.1	7
6.3	3	Har.	★	MAE0630MB	20.0	43.1	85.1	84	1.1	7
	3	Dah.	□	MAS0630MB	20.0	43.1	85.1	84	1.1	7
	6	Dah.	★	MAS0630LB	38.9	63.1	105.1	104	1.1	7
6.4	3	Har.	★	MAE0640MB	20.4	43.2	85.2	84	1.2	7
	3	Dah.	□	MAS0640MB	20.4	43.2	85.2	84	1.2	7
	6	Dah.	★	MAS0640LB	39.6	63.2	105.2	104	1.2	7
6.5	3	Har.	★	MAE0650MB	20.7	43.2	85.2	84	1.2	7
	3	Dah.	★	MAS0650MB	20.7	43.2	85.2	84	1.2	7
	6	Dah.	●	MAS0650LB	40.2	63.2	105.2	104	1.2	7
6.6	3	Har.	★	MAE0660MB	21.0	43.2	85.2	84	1.2	7
	3	Dah.	□	MAS0660MB	21.0	43.2	85.2	84	1.2	7
	6	Dah.	★	MAS0660LB	40.8	66.2	108.2	107	1.2	7
6.7	3	Har.	★	MAE0670MB	21.3	43.2	85.2	84	1.2	7
	3	Dah.	□	MAS0670MB	21.3	43.2	85.2	84	1.2	7
	6	Dah.	●	MAS0670LB	41.4	66.2	108.2	107	1.2	7
6.8	3	Har.	★	MAE0680MB	21.6	43.2	85.2	84	1.2	7
	3	Dah.	★	MAS0680MB	21.6	43.2	85.2	84	1.2	7
	6	Dah.	●	MAS0680LB	42.0	66.2	108.2	107	1.2	7
6.9	3	Har.	★	MAE0690MB	22.0	43.3	85.3	84	1.3	7
	3	Dah.	□	MAS0690MB	22.0	43.3	85.3	84	1.3	7
	6	Dah.	★	MAS0690LB	42.7	66.3	108.3	107	1.3	7
7.0	3	Har.	★	MAE0700MB	22.3	43.3	85.3	84	1.3	7
	3	Dah.	★	MAS0700MB	22.3	43.3	85.3	84	1.3	7
	6	Dah.	●	MAS0700LB	43.3	66.3	108.3	107	1.3	7

* : Ovalmalı diş kılavuzları için standart delik boyutu.

DC (mm)	Delik Derinliği (L/D)	Soğutma suyu (Dah./Har.)	HTI10	Sipariş No.	Boyutlar (mm)					
					LU	LCF	OAL	LF	PL	DCONMS
7.1	3	Har.	★	MAE0710MB	22.6	49.3	91.3	90	1.3	8
	3	Dah.	□	MAS0710MB	22.6	49.3	91.3	90	1.3	8
	6	Dah.	★	MAS0710LB	43.9	69.3	111.3	110	1.3	8
7.2	3	Har.	★	MAE0720MB	22.9	49.3	91.3	90	1.3	8
	3	Dah.	□	MAS0720MB	22.9	49.3	91.3	90	1.3	8
	6	Dah.	★	MAS0720LB	44.5	69.3	111.3	110	1.3	8
7.3	3	Har.	★	MAE0730MB	23.2	49.3	91.3	90	1.3	8
	3	Dah.	□	MAS0730MB	23.2	49.3	91.3	90	1.3	8
	6	Dah.	★	MAS0730LB	45.1	69.3	111.3	110	1.3	8
7.35	3	Har.	★	* MAE0735MB	23.4	49.3	91.3	90	1.3	8
	3	Dah.	★	* MAS0735MB	23.4	49.3	91.3	90	1.3	8
	6	Dah.	●	* MAS0735LB	45.4	69.3	111.3	110	1.3	8
7.4	3	Har.	★	MAE0740MB	23.5	49.3	91.3	90	1.3	8
	3	Dah.	□	MAS0740MB	23.5	49.3	91.3	90	1.3	8
	6	Dah.	★	MAS0740LB	45.7	69.3	111.3	110	1.3	8
7.5	3	Har.	★	MAE0750MB	23.9	49.4	91.4	90	1.4	8
	3	Dah.	□	MAS0750MB	23.9	49.4	91.4	90	1.4	8
	6	Dah.	★	MAS0750LB	46.4	69.4	111.4	110	1.4	8
7.6	3	Har.	★	MAE0760MB	24.2	49.4	91.4	90	1.4	8
	3	Dah.	□	MAS0760MB	24.2	49.4	91.4	90	1.4	8
	6	Dah.	★	MAS0760LB	47.0	73.4	115.4	114	1.4	8
7.7	3	Har.	★	MAE0770MB	24.5	49.4	91.4	90	1.4	8
	3	Dah.	□	MAS0770MB	24.5	49.4	91.4	90	1.4	8
	6	Dah.	★	MAS0770LB	47.6	73.4	115.4	114	1.4	8
7.8	3	Har.	★	MAE0780MB	24.8	49.4	91.4	90	1.4	8
	3	Dah.	□	MAS0780MB	24.8	49.4	91.4	90	1.4	8
	6	Dah.	★	MAS0780LB	48.2	73.4	115.4	114	1.4	8
7.9	3	Har.	★	MAE0790MB	25.1	49.4	91.4	90	1.4	8
	3	Dah.	□	MAS0790MB	25.1	49.4	91.4	90	1.4	8
	6	Dah.	★	MAS0790LB	48.8	73.4	115.4	114	1.4	8
8.0	3	Har.	★	MAE0800MB	25.5	49.5	91.5	90	1.5	8
	3	Dah.	●	MAS0800MB	25.5	49.5	91.5	90	1.5	8
	6	Dah.	●	MAS0800LB	49.5	73.5	115.5	114	1.5	8
8.1	3	Har.	★	MAE0810MB	25.8	51.5	95.5	94	1.5	9
	3	Dah.	□	MAS0810MB	25.8	51.5	95.5	94	1.5	9
	6	Dah.	★	MAS0810LB	50.1	76.5	120.5	119	1.5	9
8.2	3	Har.	★	MAE0820MB	26.1	51.5	95.5	94	1.5	9
	3	Dah.	□	MAS0820MB	26.1	51.5	95.5	94	1.5	9
	6	Dah.	★	MAS0820LB	50.7	76.5	120.5	119	1.5	9
8.3	3	Har.	★	MAE0830MB	26.4	51.5	95.5	94	1.5	9
	3	Dah.	□	MAS0830MB	26.4	51.5	95.5	94	1.5	9
	6	Dah.	★	MAS0830LB	51.3	76.5	120.5	119	1.5	9
8.4	3	Har.	★	MAE0840MB	26.7	51.5	95.5	94	1.5	9
	3	Dah.	□	MAS0840MB	26.7	51.5	95.5	94	1.5	9
	6	Dah.	★	MAS0840LB	51.9	76.5	120.5	119	1.5	9
8.5	3	Har.	★	MAE0850MB	27.0	51.5	95.5	94	1.5	9
	3	Dah.	●	MAS0850MB	27.0	51.5	95.5	94	1.5	9
	6	Dah.	★	MAS0850LB	52.5	76.5	120.5	119	1.5	9

MAE, MAS

KARBÜR

M
DELME

DC (mm)	Delik Derinliği (L/D)	Soğutma suyu (Dah./Har.)	HTI10	Sipariş No.	Boyutlar (mm)					
					LU	LCF	OAL	LF	PL	DCONMS
8.6	3	Har.	★	MAE0860MB	27.4	51.6	95.6	94	1.6	9
	3	Dah.	□	MAS0860MB	27.4	51.6	95.6	94	1.6	9
	6	Dah.	★	MAS0860LB	53.2	78.6	122.6	121	1.6	9
8.7	3	Har.	★	MAE0870MB	27.7	51.6	95.6	94	1.6	9
	3	Dah.	□	MAS0870MB	27.7	51.6	95.6	94	1.6	9
	6	Dah.	★	MAS0870LB	53.8	78.6	122.6	121	1.6	9
8.8	3	Har.	★	MAE0880MB	28.0	51.6	95.6	94	1.6	9
	3	Dah.	□	MAS0880MB	28.0	51.6	95.6	94	1.6	9
	6	Dah.	★	MAS0880LB	54.4	78.6	122.6	121	1.6	9
8.9	3	Har.	★	MAE0890MB	28.3	51.6	95.6	94	1.6	9
	3	Dah.	□	MAS0890MB	28.3	51.6	95.6	94	1.6	9
	6	Dah.	★	MAS0890LB	55.0	78.6	122.6	121	1.6	9
9.0	3	Har.	★	MAE0900MB	28.6	51.6	95.6	94	1.6	9
	3	Dah.	★	MAS0900MB	28.6	51.6	95.6	94	1.6	9
	6	Dah.	●	MAS0900LB	55.6	78.6	122.6	121	1.6	9
9.1	3	Har.	★	MAE0910MB	29.0	54.7	98.7	97	1.7	10
	3	Dah.	□	MAS0910MB	29.0	54.7	98.7	97	1.7	10
	6	Dah.	★	MAS0910LB	56.3	82.7	126.7	125	1.7	10
9.2	3	Har.	★	MAE0920MB	29.3	54.7	98.7	97	1.7	10
	3	Dah.	□	MAS0920MB	29.3	54.7	98.7	97	1.7	10
	6	Dah.	★	MAS0920LB	56.9	82.7	126.7	125	1.7	10
9.21	3	Har.	★	* MAE0921MB	29.3	54.7	98.7	97	1.7	10
	3	Dah.	★	* MAS0921MB	29.3	54.7	98.7	97	1.7	10
	6	Dah.	★	* MAS0921LB	57.0	82.7	126.7	125	1.7	10
9.3	3	Har.	★	MAE0930MB	29.6	54.7	98.7	97	1.7	10
	3	Dah.	□	MAS0930MB	29.6	54.7	98.7	97	1.7	10
	6	Dah.	★	MAS0930LB	57.5	82.7	126.7	125	1.7	10
9.4	3	Har.	★	MAE0940MB	29.9	54.7	98.7	97	1.7	10
	3	Dah.	□	MAS0940MB	29.9	54.7	98.7	97	1.7	10
	6	Dah.	★	MAS0940LB	58.1	82.7	126.7	125	1.7	10
9.5	3	Har.	★	MAE0950MB	30.2	54.7	98.7	97	1.7	10
	3	Dah.	★	MAS0950MB	30.2	54.7	98.7	97	1.7	10
	6	Dah.	●	MAS0950LB	58.7	82.7	126.7	125	1.7	10
9.6	3	Har.	★	MAE0960MB	30.5	54.7	98.7	97	1.7	10
	3	Dah.	□	MAS0960MB	30.5	54.7	98.7	97	1.7	10
	6	Dah.	★	MAS0960LB	59.3	82.7	126.7	125	1.7	10
9.7	3	Har.	★	MAE0970MB	30.9	54.8	98.8	97	1.8	10
	3	Dah.	□	MAS0970MB	30.9	54.8	98.8	97	1.8	10
	6	Dah.	★	MAS0970LB	60.0	82.8	126.8	125	1.8	10
9.8	3	Har.	★	MAE0980MB	31.2	54.8	98.8	97	1.8	10
	3	Dah.	□	MAS0980MB	31.2	54.8	98.8	97	1.8	10
	6	Dah.	★	MAS0980LB	60.6	82.8	126.8	125	1.8	10
9.9	3	Har.	★	MAE0990MB	31.5	54.8	98.8	97	1.8	10
	3	Dah.	□	MAS0990MB	31.5	54.8	98.8	97	1.8	10
	6	Dah.	★	MAS0990LB	61.2	82.8	126.8	125	1.8	10
10.0	3	Har.	★	MAE1000MB	31.8	54.8	98.8	97	1.8	10
	3	Dah.	●	MAS1000MB	31.8	54.8	98.8	97	1.8	10
	6	Dah.	●	MAS1000LB	61.8	82.8	126.8	125	1.8	10

* : Ovalama dış kılavuzları için standart delik boyutu.

DC (mm)	Delik Derinliği (L/D)	Soğutma suyu (Dah./Har.)	HTI10	Sipariş No.	Boyutlar (mm)					
					LU	LCF	OAL	LF	PL	DCONMS
10.1	3	Har.	□	MAE1010MB	32.1	56.8	102.8	101	1.8	11
	3	Dah.	□	MAS1010MB	32.1	56.8	102.8	101	1.8	11
	6	Dah.	□	MAS1010LB	62.4	90.8	136.8	135	1.8	11
10.2	3	Har.	□	MAE1020MB	32.5	56.9	102.9	101	1.9	11
	3	Dah.	□	MAS1020MB	32.5	56.9	102.9	101	1.9	11
	6	Dah.	□	MAS1020LB	63.1	90.9	136.9	135	1.9	11
10.3	3	Har.	★	MAE1030MB	32.8	56.9	102.9	101	1.9	11
	3	Dah.	★	MAS1030MB	32.8	56.9	102.9	101	1.9	11
	6	Dah.	●	MAS1030LB	63.7	90.9	136.9	135	1.9	11
10.4	3	Har.	□	MAE1040MB	33.1	56.9	102.9	101	1.9	11
	3	Dah.	□	MAS1040MB	33.1	56.9	102.9	101	1.9	11
	6	Dah.	□	MAS1040LB	64.3	90.9	136.9	135	1.9	11
10.5	3	Har.	★	MAE1050MB	33.4	56.9	102.9	101	1.9	11
	3	Dah.	★	MAS1050MB	33.4	56.9	102.9	101	1.9	11
	6	Dah.	●	MAS1050LB	64.9	90.9	136.9	135	1.9	11
10.6	3	Har.	□	MAE1060MB	33.7	56.9	102.9	101	1.9	11
	3	Dah.	□	MAS1060MB	33.7	56.9	102.9	101	1.9	11
	6	Dah.	□	MAS1060LB	65.5	90.9	136.9	135	1.9	11
10.7	3	Har.	□	MAE1070MB	34.0	56.9	102.9	101	1.9	11
	3	Dah.	□	MAS1070MB	34.0	56.9	102.9	101	1.9	11
	6	Dah.	□	MAS1070LB	66.1	90.9	136.9	135	1.9	11
10.8	3	Har.	□	MAE1080MB	34.4	57.0	103.0	101	2.0	11
	3	Dah.	□	MAS1080MB	34.4	57.0	103.0	101	2.0	11
	6	Dah.	□	MAS1080LB	66.8	91.0	137.0	135	2.0	11
10.9	3	Har.	□	MAE1090MB	34.7	57.0	103.0	101	2.0	11
	3	Dah.	□	MAS1090MB	34.7	57.0	103.0	101	2.0	11
	6	Dah.	□	MAS1090LB	67.4	91.0	137.0	135	2.0	11
11.0	3	Har.	★	MAE1100MB	35.0	57.0	103.0	101	2.0	11
	3	Dah.	★	MAS1100MB	35.0	57.0	103.0	101	2.0	11
	6	Dah.	●	MAS1100LB	68.0	91.0	137.0	135	2.0	11
11.08	3	Har.	★	* MAE1108MB	35.2	62.0	108.0	106	2.0	12
	3	Dah.	★	* MAS1108MB	35.2	62.0	108.0	106	2.0	12
	6	Dah.	●	* MAS1108LB	68.5	96.0	142.0	140	2.0	12
11.1	3	Har.	□	MAE1110MB	35.3	62.0	108.0	106	2.0	12
	3	Dah.	□	MAS1110MB	35.3	62.0	108.0	106	2.0	12
	6	Dah.	□	MAS1110LB	68.6	96.0	142.0	140	2.0	12
11.2	3	Har.	□	MAE1120MB	35.6	62.0	108.0	106	2.0	12
	3	Dah.	□	MAS1120MB	35.6	62.0	108.0	106	2.0	12
	6	Dah.	□	MAS1120LB	69.2	96.0	142.0	140	2.0	12
11.3	3	Har.	□	MAE1130MB	36.0	62.1	108.1	106	2.1	12
	3	Dah.	□	MAS1130MB	36.0	62.1	108.1	106	2.1	12
	6	Dah.	□	MAS1130LB	69.9	96.1	142.1	140	2.1	12
11.4	3	Har.	□	MAE1140MB	36.3	62.1	108.1	106	2.1	12
	3	Dah.	□	MAS1140MB	36.3	62.1	108.1	106	2.1	12
	6	Dah.	□	MAS1140LB	70.5	96.1	142.1	140	2.1	12
11.5	3	Har.	□	MAE1150MB	36.6	62.1	108.1	106	2.1	12
	3	Dah.	□	MAS1150MB	36.6	62.1	108.1	106	2.1	12
	6	Dah.	□	MAS1150LB	71.1	96.1	142.1	140	2.1	12

● : Avrupa standart stok. ★ : Japonya standart stok.

□ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC (mm)	Delik Derinliği (L/D)	Soğutma suyu (Dah./Har.)	HTI10	Sipariş No.	Boyutlar (mm)					
					LU	LCF	OAL	LF	PL	DCONMS
11.6	3	Har.	□	MAE1160MB	36.9	62.1	108.1	106	2.1	12
	3	Dah.	□	MAS1160MB	36.9	62.1	108.1	106	2.1	12
	6	Dah.	□	MAS1160LB	71.7	96.1	142.1	140	2.1	12
11.7	3	Har.	□	MAE1170MB	37.2	62.1	108.1	106	2.1	12
	3	Dah.	□	MAS1170MB	37.2	62.1	108.1	106	2.1	12
	6	Dah.	□	MAS1170LB	72.3	96.1	142.1	140	2.1	12
11.8	3	Har.	□	MAE1180MB	37.5	62.1	108.1	106	2.1	12
	3	Dah.	□	MAS1180MB	37.5	62.1	108.1	106	2.1	12
	6	Dah.	□	MAS1180LB	72.9	96.1	142.1	140	2.1	12
11.9	3	Har.	□	MAE1190MB	37.9	62.2	108.2	106	2.2	12
	3	Dah.	□	MAS1190MB	37.9	62.2	108.2	106	2.2	12
	6	Dah.	□	MAS1190LB	73.6	96.2	142.2	140	2.2	12
12.0	3	Har.	★	MAE1200MB	38.2	62.2	108.2	106	2.2	12
	3	Dah.	●	MAS1200MB	38.2	62.2	108.2	106	2.2	12
	6	Dah.	●	MAS1200LB	74.2	96.2	142.2	140	2.2	12
12.1	3	Har.	□	MAE1210MB	38.5	67.2	117.2	115	2.2	13
	3	Dah.	□	MAS1210MB	38.5	67.2	117.2	115	2.2	13
	6	Dah.	□	MAS1210LB	74.8	102.2	152.2	150	2.2	13
12.2	3	Har.	□	MAE1220MB	38.8	67.2	117.2	115	2.2	13
	3	Dah.	□	MAS1220MB	38.8	67.2	117.2	115	2.2	13
	6	Dah.	□	MAS1220LB	75.4	102.2	152.2	150	2.2	13
12.3	3	Har.	□	MAE1230MB	39.1	67.2	117.2	115	2.2	13
	3	Dah.	□	MAS1230MB	39.1	67.2	117.2	115	2.2	13
	6	Dah.	□	MAS1230LB	76.0	102.2	152.2	150	2.2	13
12.4	3	Har.	□	MAE1240MB	39.5	67.3	117.3	115	2.3	13
	3	Dah.	□	MAS1240MB	39.5	67.3	117.3	115	2.3	13
	6	Dah.	□	MAS1240LB	76.7	102.3	152.3	150	2.3	13
12.5	3	Har.	★	MAE1250MB	39.8	67.3	117.3	115	2.3	13
	3	Dah.	●	MAS1250MB	39.8	67.3	117.3	115	2.3	13
	6	Dah.	●	MAS1250LB	77.3	102.3	152.3	150	2.3	13
12.6	3	Har.	□	MAE1260MB	40.1	67.3	117.3	115	2.3	13
	3	Dah.	□	MAS1260MB	40.1	67.3	117.3	115	2.3	13
	6	Dah.	□	MAS1260LB	77.9	102.3	152.3	150	2.3	13
12.7	3	Har.	□	MAE1270MB	40.4	67.3	117.3	115	2.3	13
	3	Dah.	□	MAS1270MB	40.4	67.3	117.3	115	2.3	13
	6	Dah.	□	MAS1270LB	78.5	102.3	152.3	150	2.3	13
12.8	3	Har.	□	MAE1280MB	40.7	67.3	117.3	115	2.3	13
	3	Dah.	□	MAS1280MB	40.7	67.3	117.3	115	2.3	13
	6	Dah.	□	MAS1280LB	79.1	102.3	152.3	150	2.3	13
12.9	3	Har.	□	MAE1290MB	41.0	67.3	117.3	115	2.3	13
	3	Dah.	□	MAS1290MB	41.0	67.3	117.3	115	2.3	13
	6	Dah.	□	MAS1290LB	79.7	102.3	152.3	150	2.3	13
12.96	3	Har.	★	*MAE1296MB	41.3	67.4	117.4	115	2.4	13
	3	Dah.	★	*MAS1296MB	41.3	67.4	117.4	115	2.4	13
	6	Dah.	★	*MAS1296LB	80.2	102.4	152.4	150	2.4	13
13.0	3	Har.	★	MAE1300MB	41.4	67.4	117.4	115	2.4	13
	3	Dah.	★	MAS1300MB	41.4	67.4	117.4	115	2.4	13
	6	Dah.	●	MAS1300LB	80.4	102.4	152.4	150	2.4	13

* : Ovalama dış kılavuzları için standart delik boyutu.

DC (mm)	Delik Derinliği (L/D)	Soğutma suyu (Dah./Har.)	HTI10	Sipariş No.	Boyutlar (mm)					
					LU	LCF	OAL	LF	PL	DCONMS
13.1	3	Har.	□	MAE1310MB	41.7	72.4	122.4	120	2.4	14
	3	Dah.	□	MAS1310MB	41.7	72.4	122.4	120	2.4	14
	6	Dah.	□	MAS1310LB	81.0	112.4	162.4	160	2.4	14
13.2	3	Har.	□	MAE1320MB	42.0	72.4	122.4	120	2.4	14
	3	Dah.	□	MAS1320MB	42.0	72.4	122.4	120	2.4	14
	6	Dah.	□	MAS1320LB	81.6	112.4	162.4	160	2.4	14
13.3	3	Har.	□	MAE1330MB	42.3	72.4	122.4	120	2.4	14
	3	Dah.	□	MAS1330MB	42.3	72.4	122.4	120	2.4	14
	6	Dah.	□	MAS1330LB	82.2	112.4	162.4	160	2.4	14
13.4	3	Har.	□	MAE1340MB	42.6	72.4	122.4	120	2.4	14
	3	Dah.	□	MAS1340MB	42.6	72.4	122.4	120	2.4	14
	6	Dah.	□	MAS1340LB	82.8	112.4	162.4	160	2.4	14
13.5	3	Har.	★	MAE1350MB	43.0	72.5	122.5	120	2.5	14
	3	Dah.	★	MAS1350MB	43.0	72.5	122.5	120	2.5	14
	6	Dah.	★	MAS1350LB	83.5	112.5	162.5	160	2.5	14
13.6	3	Har.	□	MAE1360MB	43.3	72.5	122.5	120	2.5	14
	3	Dah.	□	MAS1360MB	43.3	72.5	122.5	120	2.5	14
	6	Dah.	□	MAS1360LB	84.1	112.5	162.5	160	2.5	14
13.7	3	Har.	□	MAE1370MB	43.6	72.5	122.5	120	2.5	14
	3	Dah.	□	MAS1370MB	43.6	72.5	122.5	120	2.5	14
	6	Dah.	□	MAS1370LB	84.7	112.5	162.5	160	2.5	14
13.8	3	Har.	□	MAE1380MB	43.9	72.5	122.5	120	2.5	14
	3	Dah.	□	MAS1380MB	43.9	72.5	122.5	120	2.5	14
	6	Dah.	□	MAS1380LB	85.3	112.5	162.5	160	2.5	14
13.9	3	Har.	□	MAE1390MB	44.2	72.5	122.5	120	2.5	14
	3	Dah.	□	MAS1390MB	44.2	72.5	122.5	120	2.5	14
	6	Dah.	□	MAS1390LB	85.9	112.5	162.5	160	2.5	14
14.0	3	Har.	★	MAE1400MB	44.5	72.5	122.5	120	2.5	14
	3	Dah.	●	MAS1400MB	44.5	72.5	122.5	120	2.5	14
	6	Dah.	●	MAS1400LB	86.5	112.5	162.5	160	2.5	14
14.1	3	Har.	□	MAE1410MB	44.9	74.6	132.6	130	2.6	15
	3	Dah.	□	MAS1410MB	44.9	74.6	132.6	130	2.6	15
	6	Dah.	□	MAS1410LB	87.2	117.6	175.6	173	2.6	15
14.2	3	Har.	□	MAE1420MB	45.2	74.6	132.6	130	2.6	15
	3	Dah.	□	MAS1420MB	45.2	74.6	132.6	130	2.6	15
	6	Dah.	□	MAS1420LB	87.8	117.6	175.6	173	2.6	15
14.3	3	Har.	□	MAE1430MB	45.5	74.6	132.6	130	2.6	15
	3	Dah.	□	MAS1430MB	45.5	74.6	132.6	130	2.6	15
	6	Dah.	□	MAS1430LB	88.4	117.6	175.6	173	2.6	15
14.4	3	Har.	□	MAE1440MB	45.8	74.6	132.6	130	2.6	15
	3	Dah.	□	MAS1440MB	45.8	74.6	132.6	130	2.6	15
	6	Dah.	□	MAS1440LB	89.0	117.6	175.6	173	2.6	15
14.5	3	Har.	□	MAE1450MB	46.1	74.6	132.6	130	2.6	15
	3	Dah.	□	MAS1450MB	46.1	74.6	132.6	130	2.6	15
	6	Dah.	□	MAS1450LB	89.6	117.6	175.6	173	2.6	15
14.6	3	Har.	□	MAE1460MB	46.5	74.7	132.7	130	2.7	15
	3	Dah.	□	MAS1460MB	46.5	74.7	132.7	130	2.7	15
	6	Dah.	□	MAS1460LB	90.3	117.7	175.7	173	2.7	15

MAE, MAS

KARBÜR

M
DELME

DC (mm)	Delik Derinliği (L/D)	Soğutma suyu (Dah./Har.)	HT110	Sipariş No.	Boyutlar (mm)					
					LU	LCF	OAL	LF	PL	DCONMS
14.7	3	Har.	<input type="checkbox"/>	MAE1470MB	46.8	74.7	132.7	130	2.7	15
	3	Dah.	<input type="checkbox"/>	MAS1470MB	46.8	74.7	132.7	130	2.7	15
	6	Dah.	<input type="checkbox"/>	MAS1470LB	90.9	117.7	175.7	173	2.7	15
14.8	3	Har.	<input type="checkbox"/>	MAE1480MB	47.1	74.7	132.7	130	2.7	15
	3	Dah.	<input type="checkbox"/>	MAS1480MB	47.1	74.7	132.7	130	2.7	15
	6	Dah.	<input type="checkbox"/>	MAS1480LB	91.5	117.7	175.7	173	2.7	15
14.9	3	Har.	<input type="checkbox"/>	MAE1490MB	47.4	74.7	132.7	130	2.7	15
	3	Dah.	<input type="checkbox"/>	MAS1490MB	47.4	74.7	132.7	130	2.7	15
	6	Dah.	<input type="checkbox"/>	MAS1490LB	92.1	117.7	175.7	173	2.7	15
14.96	3	Har.	★	*MAE1496MB	47.6	74.7	132.7	130	2.7	15
	3	Dah.	★	*MAS1496MB	47.6	74.7	132.7	130	2.7	15
	6	Dah.	★	*MAS1496LB	92.5	117.7	175.7	173	2.7	15
15.0	3	Har.	★	MAE1500MB	47.7	74.7	132.7	130	2.7	15
	3	Dah.	★	MAS1500MB	47.7	74.7	132.7	130	2.7	15
	6	Dah.	●	MAS1500LB	92.7	117.7	175.7	173	2.7	15
15.1	3	Har.	<input type="checkbox"/>	MAE1510MB	48.0	78.7	136.7	134	2.7	16
	3	Dah.	<input type="checkbox"/>	MAS1510MB	48.0	78.7	136.7	134	2.7	16
	6	Dah.	<input type="checkbox"/>	MAS1510LB	93.3	122.7	180.7	178	2.7	16
15.2	3	Har.	<input type="checkbox"/>	MAE1520MB	48.4	78.8	136.8	134	2.8	16
	3	Dah.	<input type="checkbox"/>	MAS1520MB	48.4	78.8	136.8	134	2.8	16
	6	Dah.	<input type="checkbox"/>	MAS1520LB	94.0	122.8	180.8	178	2.8	16
15.3	3	Har.	<input type="checkbox"/>	MAE1530MB	48.7	78.8	136.8	134	2.8	16
	3	Dah.	<input type="checkbox"/>	MAS1530MB	48.7	78.8	136.8	134	2.8	16
	6	Dah.	<input type="checkbox"/>	MAS1530LB	94.6	122.8	180.8	178	2.8	16
15.4	3	Har.	<input type="checkbox"/>	MAE1540MB	49.0	78.8	136.8	134	2.8	16
	3	Dah.	<input type="checkbox"/>	MAS1540MB	49.0	78.8	136.8	134	2.8	16
	6	Dah.	<input type="checkbox"/>	MAS1540LB	95.2	122.8	180.8	178	2.8	16
15.5	3	Har.	<input type="checkbox"/>	MAE1550MB	49.3	78.8	136.8	134	2.8	16
	3	Dah.	<input type="checkbox"/>	MAS1550MB	49.3	78.8	136.8	134	2.8	16
	6	Dah.	<input type="checkbox"/>	MAS1550LB	95.8	122.8	180.8	178	2.8	16
15.6	3	Har.	<input type="checkbox"/>	MAE1560MB	49.6	78.8	136.8	134	2.8	16
	3	Dah.	<input type="checkbox"/>	MAS1560MB	49.6	78.8	136.8	134	2.8	16
	6	Dah.	<input type="checkbox"/>	MAS1560LB	96.4	122.8	180.8	178	2.8	16
15.7	3	Har.	<input type="checkbox"/>	MAE1570MB	50.0	78.9	136.9	134	2.9	16
	3	Dah.	<input type="checkbox"/>	MAS1570MB	50.0	78.9	136.9	134	2.9	16
	6	Dah.	<input type="checkbox"/>	MAS1570LB	97.1	122.9	180.9	178	2.9	16
15.8	3	Har.	<input type="checkbox"/>	MAE1580MB	50.3	78.9	136.9	134	2.9	16
	3	Dah.	<input type="checkbox"/>	MAS1580MB	50.3	78.9	136.9	134	2.9	16
	6	Dah.	<input type="checkbox"/>	MAS1580LB	97.7	122.9	180.9	178	2.9	16
15.9	3	Har.	<input type="checkbox"/>	MAE1590MB	50.6	78.9	136.9	134	2.9	16
	3	Dah.	<input type="checkbox"/>	MAS1590MB	50.6	78.9	136.9	134	2.9	16
	6	Dah.	<input type="checkbox"/>	MAS1590LB	98.3	122.9	180.9	178	2.9	16
16.0	3	Har.	★	MAE1600MB	50.9	78.9	136.9	134	2.9	16
	3	Dah.	★	MAS1600MB	50.9	78.9	136.9	134	2.9	16
	6	Dah.	●	MAS1600LB	98.9	122.9	180.9	178	2.9	16

* : Ovalama dış kılavuzları için standart delik boyutu.

● : Avrupa standart stok. ★ : Japonya standart stok.

□ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

ÖNERİLEN KESME KOŞULLARI

Tip	Çalışma Malzemesi	Matkap Ucu Çapı Ø 3.0–Ø 6.0		Matkap Ucu Çapı Ø 6.1–Ø 10.0		Matkap Ucu Çapı Ø 10.1–Ø 16.0	
		Kesme Hızı (m/dak)	İlerleme (mm/dev)	Kesme Hızı (m/dak)	İlerleme (mm/dev)	Kesme Hızı (m/dak)	İlerleme (mm/dev)
MAE	N Alüminyum Alaşım	90 (40–140)	0.15 (0.05–0.3)	100 (50–150)	0.2 (0.1–0.3)	120 (60–170)	0.25 (0.1–0.4)
	Alüminyum Alaşımli Döküm	100 (60–150)	0.12 (0.05–0.25)	110 (70–160)	0.15 (0.05–0.25)	130 (80–180)	0.2 (0.1–0.3)
	K Gri Dökme Demir	40 (20–60)	0.15 (0.1–0.2)	60 (40–80)	0.2 (0.1–0.3)	80 (60–100)	0.3 (0.2–0.4)
	Duktil Dökme Demir	30 (20–40)	0.1 (0.05–0.15)	40 (20–60)	0.12 (0.05–0.2)	60 (40–80)	0.2 (0.1–0.3)
MAS	N Alüminyum Alaşım	100 (60–150)	0.15 (0.05–0.3)	120 (80–170)	0.2 (0.1–0.3)	150 (100–200)	0.25 (0.1–0.4)
	Alüminyum Alaşımli Döküm	120 (80–170)	0.12 (0.05–0.25)	150 (100–180)	0.15 (0.05–0.25)	160 (120–200)	0.2 (0.1–0.3)
	K Gri Dökme Demir	60 (40–80)	0.15 (0.1–0.2)	80 (60–110)	0.2 (0.1–0.3)	100 (70–130)	0.3 (0.2–0.4)
	Duktil Dökme Demir	45 (30–60)	0.1 (0.05–0.15)	60 (40–80)	0.12 (0.05–0.2)	80 (60–100)	0.2 (0.1–0.3)

■ DIŞ AÇMA İŞLEMİ İÇİN DELİK VE MATKAP UCU ÇAPLARI

Diş Ölçüsü	Diş Açma				Ovalama Diş Açma		
	Matkap Ucu Çapı (DC)	Delik Çapı Toleransı		Matkap Ucu Çapı (DC)	Delik Çapı Toleransı		
		min	maks		min	maks	
M4x0.7	3.3	3.242	3.422	3.65	3.65	3.70	
M5x0.8	4.2	4.134	4.334	4.60	4.59	4.66	
M6x1.0	5.0	4.917	5.153	5.50	5.48	5.57	
M8x1.25	6.8	6.647	6.912	7.35	7.34	7.41	
M10x1.5	8.5	8.376	8.676	9.21	9.18	9.28	
M12x1.75	10.3	10.106	10.441	11.08	11.05	11.15	
M14x2	12.0	11.835	12.210	12.96	12.92	13.04	
M16x2	14.0	13.835	14.210	14.96	14.92	15.04	

DELME (YEKPARE KARBÜR)

MHS

- Yüksek mukavemet ve benzersiz çift zırh.
- Yüksek sertlikte çelikler için uzun takım ömrü ile gagalama yapmaksızın delme, 35HRC-55HRC.



KARBÜR

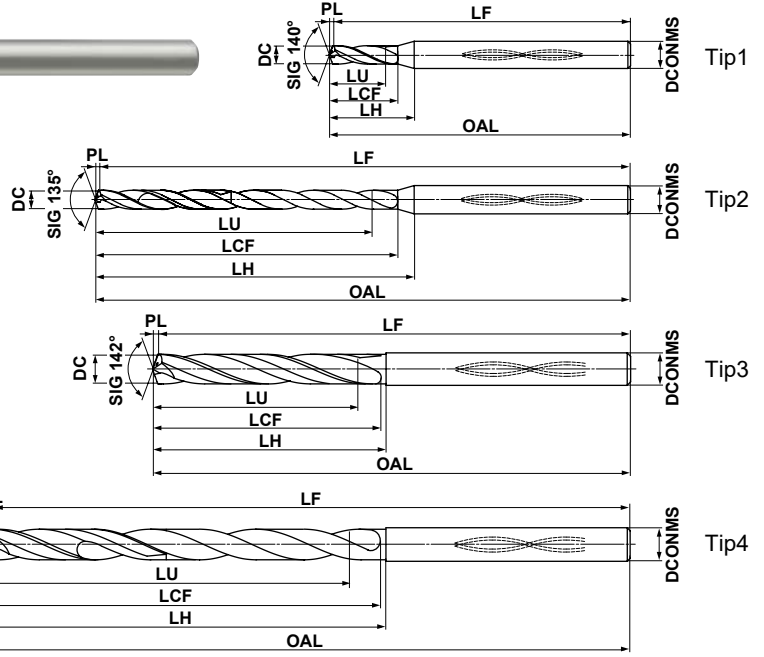
P M K N S H

İçten Soğutma



M

DELME



DC ≤ 3	3 < DC ≤ 6	6 < DC ≤ 10	10 < DC ≤ 12
+0.010	+0.010	+0.010	+0.010
-0.002	-0.002	-0.005	-0.008
DCONMS=3	3 < DCONMS ≤ 6	6 < DCONMS ≤ 10	10 < DCONMS ≤ 12
0	0	0	0
-0.006	-0.008	-0.009	-0.011

- MHS matkap uçları ısıtımali takım tutuculari ile kullanım için uygundur.
- Pilot matkap ucu için istenen çapta en kısa tipi kullanın.

DC (mm)	Delik Derinliği (L/D)	VP15TF	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
0.95	3	★	MHS0095L006B	3.0	6.2	10.0	60.2	60	0.17	3	1
	6	★	MHS0095L009B	5.9	9.2	13.0	60.2	60	0.17	3	2
	13	★	MHS0095L015B	12.5	15.2	19.0	60.2	60	0.17	3	2
	23	★	MHS0095L025B	22.0	25.2	29.0	60.2	60	0.17	3	2
	30	★	MHS0095L035B	28.7	35.2	39.0	80.2	80	0.17	3	2
1.00	3	●	MHS0100L006B	3.2	6.2	9.9	60.2	60	0.2	3	1
	6	●	MHS0100L009B	6.2	9.2	12.9	60.2	60	0.2	3	2
	12	★	MHS0100L015B	12.2	15.2	18.9	60.2	60	0.2	3	2
	22	●	MHS0100L025B	22.2	25.2	28.9	60.2	60	0.2	3	2
	30	●	MHS0100L035B	30.2	35.2	38.9	80.2	80	0.2	3	2
1.10	2	●	MHS0110L006B	2.4	6.2	9.7	60.2	60	0.2	3	1
	5	★	MHS0110L009B	5.7	9.2	12.7	60.2	60	0.2	3	2
	11	●	MHS0110L015B	12.3	15.2	18.7	60.2	60	0.2	3	2
	20	●	MHS0110L025B	22.2	25.2	28.7	60.2	60	0.2	3	2
	29	●	MHS0110L035B	32.1	35.2	38.7	80.2	80	0.2	3	2
1.20	2	●	MHS0120L006B	2.6	6.2	9.6	60.2	60	0.2	3	1
	5	★	MHS0120L009B	6.2	9.2	12.6	60.2	60	0.2	3	2
	10	●	MHS0120L015B	12.2	15.2	18.6	60.2	60	0.2	3	2
	18	●	MHS0120L025B	21.8	25.2	28.6	60.2	60	0.2	3	2
	26	●	MHS0120L035B	31.4	35.2	38.6	80.2	80	0.2	3	2
1.30	2	●	MHS0130L007B	2.8	7.2	10.4	60.2	60	0.2	3	1
	5	★	MHS0130L011B	6.8	11.3	14.5	60.3	60	0.3	3	2
	12	●	MHS0130L020B	15.9	20.3	23.5	60.3	60	0.3	3	2
	20	●	MHS0130L030B	26.3	30.3	33.5	80.3	80	0.3	3	2
	30	●	MHS0130L045B	39.3	45.3	48.5	80.3	80	0.3	3	2

DC (mm)	Delik Derinliği (L/D)	VP15TF	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCONMS	
1.40	2	●	MHS0140L007B	3.1	7.3	10.3	60.3	60	0.3	3	1
	5	★	MHS0140L011B	7.3	11.3	14.3	60.3	60	0.3	3	2
	11	●	MHS0140L020B	15.7	20.3	23.3	60.3	60	0.3	3	2
	18	★	MHS0140L030B	25.5	30.3	33.3	80.3	80	0.3	3	2
	29	★	MHS0140L045B	40.9	45.3	48.3	80.3	80	0.3	3	2
1.45	3	●	MHS0145L008B	4.7	8.3	11.2	60.3	60	0.3	3	1
	6	★	MHS0145L013B	9.0	13.3	16.2	60.3	60	0.3	3	2
	11	★	MHS0145L020B	16.3	20.3	23.2	60.3	60	0.3	3	2
	21	●	MHS0145L035B	30.8	35.3	38.2	80.3	80	0.3	3	2
	30	★	MHS0145L055B	43.8	55.3	58.2	100.3	100	0.3	3	2
1.50	2	●	MHS0150L008B	3.3	8.3	11.1	60.3	60	0.3	3	1
	6	★	MHS0150L013B	9.3	13.3	16.1	60.3	60	0.3	3	2
	10	●	MHS0150L020B	15.3	20.3	23.1	60.3	60	0.3	3	2
	20	●	MHS0150L035B	30.3	35.3	38.1	80.3	80	0.3	3	2
	30	●	MHS0150L055B	45.3	55.3	58.1	100.3	100	0.3	3	2
1.60	2	●	MHS0160L008B	3.5	8.3	10.9	60.3	60	0.3	3	1
	5	★	MHS0160L013B	8.3	13.3	15.9	60.3	60	0.3	3	2
	10	●	MHS0160L020B	16.3	20.3	22.9	60.3	60	0.3	3	2
	19	●	MHS0160L035B	30.7	35.3	37.9	80.3	80	0.3	3	2
	30	●	MHS0160L055B	48.3	55.3	57.9	100.3	100	0.3	3	2
1.70	2	●	MHS0170L008B	3.7	8.3	10.7	60.3	60	0.3	3	1
	5	★	MHS0170L013B	8.9	13.4	15.8	60.4	60	0.4	3	2
	9	●	MHS0170L020B	15.7	20.4	22.8	60.4	60	0.4	3	2
	18	●	MHS0170L035B	31.0	35.4	37.8	80.4	80	0.4	3	2
	29	●	MHS0170L055B	49.7	55.4	57.8	100.4	100	0.4	3	2

Not 1) Lütfen bu katalogda Bulunmayan herhangi bir geometri için bizimle iletişim kurabilirsiniz (örn. farklı çap ve uzunlukta).

● : Avrupa standart stok. ★ : Japonya standart stok.

□ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC (mm)	Delik Derinliği (L/D)	VP15TF	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCNMS	
1.80	3	●	MHS0180L010B	5.7	10.3	12.5	60.3	60	0.3	3	1
	5	★	MHS0180L015B	9.4	15.4	17.6	60.4	60	0.4	3	2
	11	●	MHS0180L025B	20.2	25.4	27.6	60.4	60	0.4	3	2
	22	●	MHS0180L045B	40.0	45.4	47.6	80.4	80	0.4	3	2
	30	●	MHS0180L065B	54.4	65.4	67.6	100.4	100	0.4	3	2
1.90	2	●	MHS0190L010B	4.1	10.3	12.4	60.3	60	0.3	3	1
	5	★	MHS0190L015B	9.9	15.4	17.5	60.4	60	0.4	3	2
	10	●	MHS0190L025B	19.4	25.4	27.5	60.4	60	0.4	3	2
	21	●	MHS0190L045B	40.3	45.4	47.5	80.4	80	0.4	3	2
	30	●	MHS0190L065B	57.4	65.4	67.5	100.4	100	0.4	3	2
1.95	2	●	MHS0195L010B	4.3	10.4	12.4	60.4	60	0.4	3	1
	5	★	MHS0195L015B	10.2	15.4	17.4	60.4	60	0.4	3	2
	10	★	MHS0195L025B	19.9	25.4	27.4	60.4	60	0.4	3	2
	20	●	MHS0195L045B	39.4	45.4	47.4	80.4	80	0.4	3	2
	30	★	MHS0195L065B	58.9	65.4	67.4	100.4	100	0.4	3	2
2.00	2	●	MHS0200L010B	4.4	10.4	12.3	60.4	60	0.4	3	1
	5	★	MHS0200L015B	10.4	15.4	17.3	60.4	60	0.4	3	2
	9	●	MHS0200L025B	18.4	25.4	27.3	60.4	60	0.4	3	2
	20	●	MHS0200L045B	40.4	45.4	47.3	80.4	80	0.4	3	2
	30	●	MHS0200L065B	60.4	65.4	67.3	100.4	100	0.4	3	2
2.10	3	●	MHS0210L012B	6.7	12.4	14.1	60.4	60	0.4	3	1
	7	★	MHS0210L020B	15.1	20.4	22.1	60.4	60	0.4	3	2
	11	●	MHS0210L030B	23.5	30.4	32.1	80.4	80	0.4	3	2
	23	●	MHS0210L055B	48.7	55.4	57.1	100.4	100	0.4	3	2
	30	●	MHS0210L075B	63.4	75.4	77.1	120.4	120	0.4	3	2
2.20	2	●	MHS0220L012B	4.8	12.4	13.9	60.4	60	0.4	3	1
	6	★	MHS0220L020B	13.7	20.5	22.0	60.5	60	0.5	3	2
	11	●	MHS0220L030B	24.7	30.5	32.0	80.5	80	0.5	3	2
	22	●	MHS0220L055B	48.9	55.5	57.0	100.5	100	0.5	3	2
	30	●	MHS0220L075B	66.5	75.5	77.0	120.5	120	0.5	3	2
2.30	2	●	MHS0230L012B	5.0	12.4	13.7	60.4	60	0.4	3	1
	6	★	MHS0230L020B	14.3	20.5	21.8	60.5	60	0.5	3	2
	10	●	MHS0230L030B	23.5	30.5	31.8	80.5	80	0.5	3	2
	21	●	MHS0230L055B	48.8	55.5	56.8	100.5	100	0.5	3	2
	30	●	MHS0230L075B	69.5	75.5	76.8	120.5	120	0.5	3	2
2.40	2	●	MHS0240L012B	5.2	12.4	13.5	60.4	60	0.4	3	1
	5	★	MHS0240L020B	12.5	20.5	21.6	60.5	60	0.5	3	2
	9	●	MHS0240L030B	22.1	30.5	31.6	80.5	80	0.5	3	2
	20	●	MHS0240L055B	48.5	55.5	56.6	100.5	100	0.5	3	2
	28	●	MHS0240L075B	67.7	75.5	76.6	120.5	120	0.5	3	2
2.45	2	★	MHS0245L013B	5.3	13.4	14.4	70.4	70	0.4	4	1
	5	★	MHS0245L020B	12.8	20.5	21.5	70.5	70	0.5	4	2
	11	★	MHS0245L035B	27.5	35.5	36.5	90.5	90	0.5	4	2
	24	★	MHS0245L065B	59.3	65.5	66.5	110.5	110	0.5	4	2
	30	★	MHS0245L090B	74.0	90.5	91.5	140.5	140	0.5	4	2
2.50	2	●	MHS0250L013B	5.5	13.5	16.3	70.5	70	0.5	4	1
	5	★	MHS0250L020B	13.0	20.5	23.3	70.5	70	0.5	4	2
	11	●	MHS0250L035B	28.0	35.5	38.3	90.5	90	0.5	4	2
	23	●	MHS0250L065B	58.0	65.5	68.3	110.5	110	0.5	4	2
	30	●	MHS0250L090B	75.5	90.5	93.3	140.5	140	0.5	4	2

DC (mm)	Delik Derinliği (L/D)	VP15TF	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCNMS	
2.60	2	●	MHS0260L013B	5.7	13.5	16.1	70.5	70	0.5	4	1
	5	★	MHS0260L020B	13.5	20.5	23.1	70.5	70	0.5	4	2
	10	●	MHS0260L035B	26.5	35.5	38.1	90.5	90	0.5	4	2
	22	●	MHS0260L065B	57.7	65.5	68.1	110.5	110	0.5	4	2
	30	●	MHS0260L090B	78.5	90.5	93.1	140.5	140	0.5	4	2
2.70	2	●	MHS0270L013B	5.9	13.5	15.9	70.5	70	0.5	4	1
	4	★	MHS0270L020B	11.4	20.6	23.0	70.6	70	0.6	4	2
	10	●	MHS0270L035B	27.6	35.6	38.0	90.6	90	0.6	4	2
	21	●	MHS0270L065B	57.3	65.6	68.0	110.6	110	0.6	4	2
	30	●	MHS0270L090B	81.6	90.6	93.0	140.6	140	0.6	4	2
2.80	2	●	MHS0280L014B	6.1	14.5	16.7	70.5	70	0.5	4	1
	4	★	MHS0280L020B	11.8	20.6	22.8	70.6	70	0.6	4	2
	9	●	MHS0280L035B	25.8	35.6	37.8	90.6	90	0.6	4	2
	20	●	MHS0280L065B	56.6	65.6	67.8	110.6	110	0.6	4	2
	29	●	MHS0280L090B	81.8	90.6	92.8	140.6	140	0.6	4	2
2.90	2	●	MHS0290L014B	6.3	14.5	16.6	70.5	70	0.5	4	1
	4	★	MHS0290L020B	12.2	20.6	22.7	70.6	70	0.6	4	2
	9	●	MHS0290L035B	26.7	35.6	37.7	90.6	90	0.6	4	2
	19	●	MHS0290L065B	55.7	65.6	67.7	110.6	110	0.6	4	2
	28	●	MHS0290L090B	81.8	90.6	92.7	140.6	140	0.6	4	2
2.95	2	★	MHS0295L014B	6.4	14.5	16.5	70.5	70	0.5	4	1
	4	★	MHS0295L020B	12.4	20.6	22.6	70.6	70	0.6	4	2
	9	★	MHS0295L035B	27.2	35.6	37.6	90.6	90	0.6	4	2
	19	●	MHS0295L065B	56.7	65.6	67.6	110.6	110	0.6	4	2
	28	★	MHS0295L090B	83.2	90.6	92.6	140.6	140	0.6	4	2
3.0	4	●	MHS0300L020B	12.5	19.5	20.5	70.5	70	0.5	4	3
	10	●	MHS0300L040B	30.5	39.5	40.5	90.5	90	0.5	4	4
	17	●	MHS0300L060B	51.5	59.5	60.5	110.5	110	0.5	4	4
	27	●	MHS0300L090B	81.5	89.5	90.5	140.5	140	0.5	4	4
	3.1	4	□	MHS0310L020B	12.9	20.0	20.5	70.5	70	0.5	4
10		□	MHS0310L040B	31.6	40.1	40.6	90.6	90	0.6	4	4
17		□	MHS0310L060B	53.3	60.1	60.6	110.6	110	0.6	4	4
26		□	MHS0310L090B	81.2	90.1	90.6	140.6	140	0.6	4	4
3.2		4	□	MHS0320L020B	13.4	20.1	20.6	70.6	70	0.6	4
	10	□	MHS0320L040B	32.6	40.1	40.6	90.6	90	0.6	4	4
	16	□	MHS0320L060B	51.8	60.1	60.6	110.6	110	0.6	4	4
	25	□	MHS0320L090B	80.6	90.1	90.6	140.6	140	0.6	4	4
	3.3	3	□	MHS0330L020B	10.5	20.1	20.6	70.6	70	0.6	4
9		□	MHS0330L040B	30.3	40.1	40.6	90.6	90	0.6	4	4
16		□	MHS0330L060B	53.4	60.1	60.6	110.6	110	0.6	4	4
25		□	MHS0330L090B	83.1	90.1	90.6	140.6	140	0.6	4	4
3.4		3	□	MHS0340L020B	10.8	20.1	20.6	70.6	70	0.6	4
	9	□	MHS0340L040B	31.2	40.1	40.6	90.6	90	0.6	4	4
	15	□	MHS0340L060B	51.6	60.1	60.6	110.6	110	0.6	4	4
	24	□	MHS0340L090B	82.2	90.1	90.6	140.6	140	0.6	4	4
	3.5	3	●	MHS0350L020B	11.1	20.1	20.6	70.6	70	0.6	4
9		●	MHS0350L040B	32.1	40.1	40.6	90.6	90	0.6	4	4
14		●	MHS0350L060B	49.6	60.1	60.6	110.6	110	0.6	4	4
23		●	MHS0350L090B	81.1	90.1	90.6	140.6	140	0.6	4	4

DC (mm)	Delik Derinliği (L/D)	VP15TF	Sipariş No.	Boyutlar (mm)								Tip
				LU	LCF	LH	OAL	LF	PL	DCNMS		
3.6	3	□	MHS0360L020B	11.4	20.6	20.6	70.6	70	0.6	4	3	
	9	□	MHS0360L040B	33.1	40.7	40.7	90.7	90	0.7	4	4	
	14	□	MHS0360L060B	51.1	60.7	60.7	110.7	110	0.7	4	4	
	22	□	MHS0360L090B	79.9	90.7	90.7	140.7	140	0.7	4	4	
	30	□	MHS0360L120B	108.7	120.7	120.7	170.7	170	0.7	4	4	
3.7	3	□	MHS0370L020B	11.7	20.6	20.6	70.6	70	0.6	4	3	
	8	□	MHS0370L040B	30.3	40.7	40.7	90.7	90	0.7	4	4	
	14	□	MHS0370L060B	52.5	60.7	60.7	110.7	110	0.7	4	4	
	22	□	MHS0370L090B	82.1	90.7	90.7	140.7	140	0.7	4	4	
3.8	3	★	MHS0380L020B	12.1	20.7	20.7	70.7	70	0.7	4	3	
	8	★	MHS0380L040B	31.1	40.7	40.7	90.7	90	0.7	4	4	
	13	★	MHS0380L060B	50.1	60.7	60.7	110.7	110	0.7	4	4	
	21	★	MHS0380L090B	80.5	90.7	90.7	140.7	140	0.7	4	4	
	29	★	MHS0380L120B	110.9	120.7	120.7	170.7	170	0.7	4	4	
3.9	3	★	MHS0390L020B	12.4	20.7	20.7	70.7	70	0.7	4	3	
	8	★	MHS0390L040B	31.9	40.7	40.7	90.7	90	0.7	4	4	
	13	★	MHS0390L060B	51.4	60.7	60.7	110.7	110	0.7	4	4	
	21	□	MHS0390L090B	82.6	90.7	90.7	140.7	140	0.7	4	4	
	28	□	MHS0390L120B	109.9	120.7	120.7	170.7	170	0.7	4	4	
4.0	2	●	MHS0400L020B	8.7	20.7	20.7	70.7	70	0.7	4	3	
	7	●	MHS0400L040B	28.7	40.7	40.7	90.7	90	0.7	4	4	
	12	●	MHS0400L060B	48.7	60.7	60.7	110.7	110	0.7	4	4	
	20	●	MHS0400L090B	80.7	90.7	90.7	140.7	140	0.7	4	4	
	27	●	MHS0400L120B	108.7	120.7	120.7	170.7	170	0.7	4	4	
4.1	2	□	MHS0410L020B	8.9	19.2	20.7	70.7	70	0.7	6	3	
	7	□	MHS0410L040B	29.4	39.2	40.7	90.7	90	0.7	6	4	
	12	□	MHS0410L060B	49.9	59.2	60.7	110.7	110	0.7	6	4	
	19	□	MHS0410L090B	78.6	89.2	90.7	140.7	140	0.7	6	4	
	26	□	MHS0410L120B	107.3	119.2	120.7	170.7	170	0.7	6	4	
4.2	2	□	MHS0420L020B	9.1	19.2	20.7	70.7	70	0.7	6	3	
	7	□	MHS0420L040B	30.2	39.3	40.8	90.8	90	0.8	6	4	
	11	□	MHS0420L060B	47.0	59.3	60.8	110.8	110	0.8	6	4	
	19	□	MHS0420L090B	80.6	89.3	90.8	140.8	140	0.8	6	4	
	26	□	MHS0420L120B	110.0	119.3	120.8	170.8	170	0.8	6	4	
4.3	2	□	MHS0430L020B	9.3	19.2	20.7	70.7	70	0.7	6	3	
	6	□	MHS0430L040B	26.6	39.3	40.8	90.8	90	0.8	6	4	
	11	□	MHS0430L060B	48.1	59.3	60.8	110.8	110	0.8	6	4	
	18	□	MHS0430L090B	78.2	89.3	90.8	140.8	140	0.8	6	4	
	25	□	MHS0430L120B	108.3	119.3	120.8	170.8	170	0.8	6	4	
4.4	2	★	MHS0440L020B	9.6	19.3	20.8	70.8	70	0.8	6	3	
	6	□	MHS0440L040B	27.2	39.3	40.8	90.8	90	0.8	6	4	
	11	□	MHS0440L060B	49.2	59.3	60.8	110.8	110	0.8	6	4	
	18	□	MHS0440L090B	80.0	89.3	90.8	140.8	140	0.8	6	4	
	24	□	MHS0440L120B	106.4	119.3	120.8	170.8	170	0.8	6	4	
4.5	2	●	MHS0450L020B	9.8	19.3	20.8	70.8	70	0.8	6	3	
	6	●	MHS0450L040B	27.8	39.3	40.8	90.8	90	0.8	6	4	
	10	●	MHS0450L060B	45.8	59.3	60.8	110.8	110	0.8	6	4	
	17	●	MHS0450L090B	77.3	89.3	90.8	140.8	140	0.8	6	4	
	24	●	MHS0450L120B	108.8	119.3	120.8	170.8	170	0.8	6	4	

DC (mm)	Delik Derinliği (L/D)	VP15TF	Sipariş No.	Boyutlar (mm)								Tip
				LU	LCF	LH	OAL	LF	PL	DCNMS		
4.6	2	□	MHS0460L020B	10.0	19.8	20.8	70.8	70	0.8	6	3	
	6	□	MHS0460L040B	28.4	39.8	40.8	90.8	90	0.8	6	4	
	10	□	MHS0460L060B	46.8	59.8	60.8	110.8	110	0.8	6	4	
	17	□	MHS0460L090B	79.0	89.8	90.8	140.8	140	0.8	6	4	
	23	□	MHS0460L120B	106.6	119.8	120.8	170.8	170	0.8	6	4	
	30	□	MHS0460L150B	138.8	149.8	150.8	200.8	200	0.8	6	4	
4.7	2	□	MHS0470L020B	10.2	19.8	20.8	70.8	70	0.8	6	3	
	6	□	MHS0470L040B	29.1	39.9	40.9	90.9	90	0.9	6	4	
	10	□	MHS0470L060B	47.9	59.9	60.9	110.9	110	0.9	6	4	
	16	□	MHS0470L090B	76.1	89.9	90.9	140.9	140	0.9	6	4	
	23	□	MHS0470L120B	109.0	119.9	120.9	170.9	170	0.9	6	4	
	29	□	MHS0470L150B	137.2	149.9	150.9	200.9	200	0.9	6	4	
4.8	1	★	MHS0480L020B	5.6	19.8	20.8	70.8	70	0.8	6	3	
	6	★	MHS0480L040B	29.7	39.9	40.9	90.9	90	0.9	6	4	
	10	★	MHS0480L060B	48.9	59.9	60.9	110.9	110	0.9	6	4	
	16	★	MHS0480L090B	77.7	89.9	90.9	140.9	140	0.9	6	4	
	22	★	MHS0480L120B	106.5	119.9	120.9	170.9	170	0.9	6	4	
4.9	1	□	MHS0490L020B	5.7	19.8	20.8	70.8	70	0.8	6	3	
	5	□	MHS0490L040B	25.4	39.9	40.9	90.9	90	0.9	6	4	
	10	□	MHS0490L060B	49.9	59.9	60.9	110.9	110	0.9	6	4	
	16	□	MHS0490L090B	79.3	89.9	90.9	140.9	140	0.9	6	4	
	22	□	MHS0490L120B	108.7	119.9	120.9	170.9	170	0.9	6	4	
5.0	1	●	MHS0500L020B	5.9	19.9	20.9	70.9	70	0.9	6	3	
	5	●	MHS0500L040B	25.9	39.9	40.9	90.9	90	0.9	6	4	
	9	●	MHS0500L060B	45.9	59.9	60.9	110.9	110	0.9	6	4	
	15	●	MHS0500L090B	75.9	89.9	90.9	140.9	140	0.9	6	4	
	21	●	MHS0500L120B	105.9	119.9	120.9	170.9	170	0.9	6	4	
	27	●	MHS0500L150B	135.9	149.9	150.9	200.9	200	0.9	6	4	
5.1	3	□	MHS0510L030B	16.2	30.4	30.9	80.9	80	0.9	6	3	
	9	□	MHS0510L060B	46.8	60.4	60.9	110.9	110	0.9	6	4	
	15	□	MHS0510L090B	77.4	90.4	90.9	140.9	140	0.9	6	4	
	21	□	MHS0510L120B	108.0	120.4	120.9	170.9	170	0.9	6	4	
	27	□	MHS0510L150B	138.6	150.4	150.9	200.9	200	0.9	6	4	
5.2	3	□	MHS0520L030B	16.5	30.4	30.9	80.9	80	0.9	6	3	
	9	□	MHS0520L060B	47.7	60.4	60.9	110.9	110	0.9	6	4	
	15	□	MHS0520L090B	78.9	90.4	90.9	140.9	140	0.9	6	4	
	20	□	MHS0520L120B	104.9	120.4	120.9	170.9	170	0.9	6	4	
	26	□	MHS0520L150B	136.1	150.4	150.9	200.9	200	0.9	6	4	
5.3	3	□	MHS0530L030B	16.8	30.4	30.9	80.9	80	0.9	6	3	
	9	□	MHS0530L060B	48.7	60.5	61.0	111.0	110	1.0	6	4	
	14	★	MHS0530L090B	75.2	90.5	91.0	141.0	140	1.0	6	4	
	20	□	MHS0530L120B	107.0	120.5	121.0	171.0	170	1.0	6	4	
	26	□	MHS0530L150B	138.8	150.5	151.0	201.0	200	1.0	6	4	
5.4	3	□	MHS0540L030B	17.1	30.4	30.9	80.9	80	0.9	6	3	
	9	□	MHS0540L060B	49.6	60.5	61.0	111.0	110	1.0	6	4	
	14	□	MHS0540L090B	76.6	90.5	91.0	141.0	140	1.0	6	4	
	20	□	MHS0540L120B	109.0	120.5	121.0	171.0	170	1.0	6	4	
	25	□	MHS0540L150B	136.0	150.5	151.0	201.0	200	1.0	6	4	

Not 1) Lütfen bu katalogda Bulunmayan herhangi bir geometri için bizimle iletişim kurabilirsiniz (örn. farklı çap ve uzunlukta).

● : Avrupa standart stok. ★ : Japonya standart stok.

□ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC (mm)	Delik Derinliği (L/D)	VP15TF	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCNMS	
5.5	3	●	MHS0550L030B	17.4	30.4	30.9	80.9	80	0.9	6	3
	8	●	MHS0550L060B	45.0	60.5	61.0	111.0	110	1.0	6	4
	14	●	MHS0550L090B	78.0	90.5	91.0	141.0	140	1.0	6	4
	19	●	MHS0550L120B	105.5	120.5	121.0	171.0	170	1.0	6	4
	25	●	MHS0550L150B	138.5	150.5	151.0	201.0	200	1.0	6	4
5.6	3	□	MHS0560L030B	17.8	31.0	31.0	81.0	80	1.0	6	3
	8	□	MHS0560L060B	45.8	61.0	61.0	111.0	110	1.0	6	4
	14	□	MHS0560L090B	79.4	91.0	91.0	141.0	140	1.0	6	4
	19	□	MHS0560L120B	107.4	121.0	121.0	171.0	170	1.0	6	4
	24	□	MHS0560L150B	135.4	151.0	151.0	201.0	200	1.0	6	4
5.7	3	□	MHS0570L030B	18.1	31.0	31.0	81.0	80	1.0	6	3
	8	□	MHS0570L060B	46.6	61.0	61.0	111.0	110	1.0	6	4
	13	□	MHS0570L090B	75.1	91.0	91.0	141.0	140	1.0	6	4
	19	□	MHS0570L120B	109.3	121.0	121.0	171.0	170	1.0	6	4
	24	□	MHS0570L150B	137.8	151.0	151.0	201.0	200	1.0	6	4
5.8	3	★	MHS0580L030B	18.4	31.0	31.0	81.0	80	1.0	6	3
	8	★	MHS0580L060B	47.5	61.1	61.1	111.1	110	1.1	6	4
	13	★	MHS0580L090B	76.5	91.1	91.1	141.1	140	1.1	6	4
	18	★	MHS0580L120B	105.5	121.1	121.1	171.1	170	1.1	6	4
	23	★	MHS0580L150B	134.5	151.1	151.1	201.1	200	1.1	6	4
5.9	3	□	MHS0590L030B	18.7	31.0	31.0	81.0	80	1.0	6	3
	8	□	MHS0590L060B	48.3	61.1	61.1	111.1	110	1.1	6	4
	13	□	MHS0590L090B	77.8	91.1	91.1	141.1	140	1.1	6	4
	18	□	MHS0590L120B	107.3	121.1	121.1	171.1	170	1.1	6	4
	23	□	MHS0590L150B	136.8	151.1	151.1	201.1	200	1.1	6	4
6.0	2	●	MHS0600L030B	13.0	29.6	31.0	81.0	80	1.0	6	3
	7	●	MHS0600L060B	43.1	61.1	61.1	111.1	110	1.1	6	4
	12	●	MHS0600L090B	73.1	91.1	91.1	141.1	140	1.1	6	4
	17	●	MHS0600L120B	103.1	121.1	121.1	171.1	170	1.1	6	4
	22	●	MHS0600L150B	133.1	151.1	151.1	201.1	200	1.1	6	4
6.1	2	□	MHS0610L030B	13.3	29.6	31.1	81.1	80	1.1	8	3
	7	□	MHS0610L060B	43.8	59.6	61.1	111.1	110	1.1	8	4
	12	□	MHS0610L090B	74.3	89.6	91.1	141.1	140	1.1	8	4
	17	□	MHS0610L120B	104.8	119.6	121.1	171.1	170	1.1	8	4
	22	□	MHS0610L150B	135.3	149.6	151.1	201.1	200	1.1	8	4
6.2	2	□	MHS0620L030B	13.5	29.6	31.1	81.1	80	1.1	8	3
	7	□	MHS0620L060B	44.5	59.6	61.1	111.1	110	1.1	8	4
	12	□	MHS0620L090B	75.5	89.6	91.1	141.1	140	1.1	8	4
	17	□	MHS0620L120B	106.5	119.6	121.1	171.1	170	1.1	8	4
	21	□	MHS0620L150B	131.3	149.6	151.1	201.1	200	1.1	8	4
6.3	2	□	MHS0630L030B	13.7	29.6	31.1	81.1	80	1.1	8	3
	7	□	MHS0630L060B	45.2	59.6	61.1	111.1	110	1.1	8	4
	12	□	MHS0630L090B	76.7	89.6	91.1	141.1	140	1.1	8	4
	16	□	MHS0630L120B	101.9	119.6	121.1	171.1	170	1.1	8	4
	21	□	MHS0630L150B	133.4	149.6	151.1	201.1	200	1.1	8	4
6.4	2	□	MHS0640L030B	13.9	29.6	31.1	81.1	80	1.1	8	3
	7	□	MHS0640L060B	46.0	59.7	61.2	111.2	110	1.2	8	4
	11	□	MHS0640L090B	71.6	89.7	91.2	141.2	140	1.2	8	4
	16	□	MHS0640L120B	103.6	119.7	121.2	171.2	170	1.2	8	4
	21	□	MHS0640L150B	135.6	149.7	151.2	201.2	200	1.2	8	4

DC (mm)	Delik Derinliği (L/D)	VP15TF	Sipariş No.	Boyutlar (mm)							Tip
				LU	LCF	LH	OAL	LF	PL	DCNMS	
6.5	2	●	MHS0650L030B	14.1	29.6	31.1	81.1	80	1.1	8	3
	6	●	MHS0650L060B	40.2	59.7	61.2	111.2	110	1.2	8	4
	11	●	MHS0650L090B	72.7	89.7	91.2	141.2	140	1.2	8	4
	16	●	MHS0650L120B	105.2	119.7	121.2	171.2	170	1.2	8	4
	20	●	MHS0650L150B	131.2	149.7	151.2	201.2	200	1.2	8	4
6.6	2	□	MHS0660L030B	14.3	30.1	31.1	81.1	80	1.1	8	3
	6	□	MHS0660L060B	40.8	60.2	61.2	111.2	110	1.2	8	4
	11	□	MHS0660L090B	73.8	90.2	91.2	141.2	140	1.2	8	4
	16	□	MHS0660L120B	106.8	120.2	121.2	171.2	170	1.2	8	4
	20	□	MHS0660L150B	133.2	150.2	151.2	201.2	200	1.2	8	4
6.7	2	□	MHS0670L030B	14.6	30.2	31.2	81.2	80	1.2	8	3
	6	□	MHS0670L060B	41.4	60.2	61.2	111.2	110	1.2	8	4
	11	□	MHS0670L090B	74.9	90.2	91.2	141.2	140	1.2	8	4
	15	□	MHS0670L120B	101.7	120.2	121.2	171.2	170	1.2	8	4
	20	□	MHS0670L150B	135.2	150.2	151.2	201.2	200	1.2	8	4
6.8	2	★	MHS0680L030B	14.8	30.2	31.2	81.2	80	1.2	8	3
	6	★	MHS0680L060B	42.0	60.2	61.2	111.2	110	1.2	8	4
	11	★	MHS0680L090B	76.0	90.2	91.2	141.2	140	1.2	8	4
	15	★	MHS0680L120B	103.2	120.2	121.2	171.2	170	1.2	8	4
	19	★	MHS0680L150B	130.4	150.2	151.2	201.2	200	1.2	8	4
6.9	2	□	MHS0690L030B	15.0	30.2	31.2	81.2	80	1.2	8	3
	6	□	MHS0690L060B	42.7	60.3	61.3	111.3	110	1.3	8	4
	10	□	MHS0690L090B	70.3	90.3	91.3	141.3	140	1.3	8	4
	15	□	MHS0690L120B	104.8	120.3	121.3	171.3	170	1.3	8	4
	19	□	MHS0690L150B	132.4	150.3	151.3	201.3	200	1.3	8	4
7.0	2	●	MHS0700L030B	15.2	30.2	31.2	81.2	80	1.2	8	3
	6	●	MHS0700L060B	43.3	60.3	61.3	111.3	110	1.3	8	4
	10	●	MHS0700L090B	71.3	90.3	91.3	141.3	140	1.3	8	4
	14	●	MHS0700L120B	99.3	120.3	121.3	171.3	170	1.3	8	4
	19	●	MHS0700L150B	134.3	150.3	151.3	201.3	200	1.3	8	4
7.1	2	□	MHS0710L030B	15.4	30.7	31.2	81.2	80	1.2	8	3
	6	□	MHS0710L060B	43.9	60.8	61.3	111.3	110	1.3	8	4
	10	□	MHS0710L090B	72.3	90.8	91.3	141.3	140	1.3	8	4
	14	□	MHS0710L120B	100.7	120.8	121.3	171.3	170	1.3	8	4
	19	□	MHS0710L150B	136.2	150.8	151.3	201.3	200	1.3	8	4
7.2	2	□	MHS0720L030B	15.6	30.7	31.2	81.2	80	1.2	8	3
	6	□	MHS0720L060B	44.5	60.8	61.3	111.3	110	1.3	8	4
	10	□	MHS0720L090B	73.3	90.8	91.3	141.3	140	1.3	8	4
	14	□	MHS0720L120B	102.1	120.8	121.3	171.3	170	1.3	8	4
	18	□	MHS0720L150B	130.9	150.8	151.3	201.3	200	1.3	8	4

DC (mm)	Delik Derinliği (L/D)	VP15TF	Sipariş No.	Boyutlar (mm)								Tip
				LU	LCF	LH	OAL	LF	PL	DCNMS		
7.3	2	□	MHS0730L030B	15.9	30.8	31.3	81.3	80	1.3	8	3	
	6	□	MHS0730L060B	45.1	60.8	61.3	111.3	110	1.3	8	4	
	10	□	MHS0730L090B	74.3	90.8	91.3	141.3	140	1.3	8	4	
	14	□	MHS0730L120B	103.5	120.8	121.3	171.3	170	1.3	8	4	
	18	□	MHS0730L150B	132.7	150.8	151.3	201.3	200	1.3	8	4	
	25	□	MHS0730L200B	183.8	200.8	201.3	251.3	250	1.3	8	4	
7.4	1	□	MHS0740L030B	8.7	30.8	31.3	81.3	80	1.3	8	3	
	6	□	MHS0740L060B	45.7	60.8	61.3	111.3	110	1.3	8	4	
	10	□	MHS0740L090B	75.3	90.8	91.3	141.3	140	1.3	8	4	
	14	□	MHS0740L120B	104.9	120.8	121.3	171.3	170	1.3	8	4	
	18	□	MHS0740L150B	134.5	150.8	151.3	201.3	200	1.3	8	4	
	24	□	MHS0740L200B	178.9	200.8	201.3	251.3	250	1.3	8	4	
7.5	1	●	MHS0750L030B	8.8	30.8	31.3	81.3	80	1.3	8	3	
	5	●	MHS0750L060B	38.9	60.9	61.4	111.4	110	1.4	8	4	
	9	●	MHS0750L090B	68.9	90.9	91.4	141.4	140	1.4	8	4	
	13	●	MHS0750L120B	98.9	120.9	121.4	171.4	170	1.4	8	4	
	17	●	MHS0750L150B	128.9	150.9	151.4	201.4	200	1.4	8	4	
	24	●	MHS0750L200B	181.4	200.9	201.4	251.4	250	1.4	8	4	
7.6	1	□	MHS0760L030B	8.9	31.3	31.3	81.3	80	1.3	8	3	
	5	□	MHS0760L060B	39.4	61.4	61.4	111.4	110	1.4	8	4	
	9	□	MHS0760L090B	69.8	91.4	91.4	141.4	140	1.4	8	4	
	13	□	MHS0760L120B	100.2	121.4	121.4	171.4	170	1.4	8	4	
	17	□	MHS0760L150B	130.6	151.4	151.4	201.4	200	1.4	8	4	
	24	□	MHS0760L200B	183.8	201.4	201.4	251.4	250	1.4	8	4	
7.7	1	□	MHS0770L030B	9.0	31.3	31.3	81.3	80	1.3	8	3	
	5	□	MHS0770L060B	39.9	61.4	61.4	111.4	110	1.4	8	4	
	9	□	MHS0770L090B	70.7	91.4	91.4	141.4	140	1.4	8	4	
	13	□	MHS0770L120B	101.5	121.4	121.4	171.4	170	1.4	8	4	
	17	□	MHS0770L150B	132.3	151.4	151.4	201.4	200	1.4	8	4	
	23	□	MHS0770L200B	178.5	201.4	201.4	251.4	250	1.4	8	4	
7.8	1	★	MHS0780L030B	9.1	31.3	31.3	81.3	80	1.3	8	3	
	5	★	MHS0780L060B	40.4	61.4	61.4	111.4	110	1.4	8	4	
	9	★	MHS0780L090B	71.6	91.4	91.4	141.4	140	1.4	8	4	
	13	★	MHS0780L120B	102.8	121.4	121.4	171.4	170	1.4	8	4	
	17	★	MHS0780L150B	134.0	151.4	151.4	201.4	200	1.4	8	4	
	23	★	MHS0780L200B	180.8	201.4	201.4	251.4	250	1.4	8	4	
7.9	1	□	MHS0790L030B	9.3	31.4	31.4	81.4	80	1.4	8	3	
	5	□	MHS0790L060B	40.9	61.4	61.4	111.4	110	1.4	8	4	
	9	□	MHS0790L090B	72.5	91.4	91.4	141.4	140	1.4	8	4	
	13	□	MHS0790L120B	104.1	121.4	121.4	171.4	170	1.4	8	4	
	16	□	MHS0790L150B	127.8	151.4	151.4	201.4	200	1.4	8	4	
	23	□	MHS0790L200B	183.1	201.4	201.4	251.4	250	1.4	8	4	

DC (mm)	Delik Derinliği (L/D)	VP15TF	Sipariş No.	Boyutlar (mm)								Tip
				LU	LCF	LH	OAL	LF	PL	DCNMS		
8.0	1	●	MHS0800L030B	9.4	31.4	31.4	81.4	80	1.4	8	3	
	5	●	MHS0800L060B	41.5	61.5	61.5	111.5	110	1.5	8	4	
	9	●	MHS0800L090B	73.5	91.5	91.5	141.5	140	1.5	8	4	
	12	●	MHS0800L120B	97.5	121.5	121.5	171.5	170	1.5	8	4	
	16	●	MHS0800L150B	129.5	151.5	151.5	201.5	200	1.5	8	4	
	22	●	MHS0800L200B	177.5	201.5	201.5	251.5	250	1.5	8	4	
	29	●	MHS0800L250B	233.5	251.5	251.5	301.5	300	1.5	8	4	
8.1	2	□	MHS0810L040B	17.6	39.9	41.4	101.4	100	1.4	10	3	
	8	□	MHS0810L090B	66.3	90.0	91.5	151.5	150	1.5	10	4	
	12	□	MHS0810L120B	98.7	120.0	121.5	181.5	180	1.5	10	4	
	16	□	MHS0810L150B	131.1	150.0	151.5	211.5	210	1.5	10	4	
	22	□	MHS0810L200B	179.7	200.0	201.5	261.5	260	1.5	10	4	
	28	□	MHS0810L250B	228.3	250.0	251.5	311.5	310	1.5	10	4	
8.2	2	□	MHS0820L040B	17.8	39.9	41.4	101.4	100	1.4	10	3	
	8	□	MHS0820L090B	67.1	90.0	91.5	151.5	150	1.5	10	4	
	12	□	MHS0820L120B	99.9	120.0	121.5	181.5	180	1.5	10	4	
	16	□	MHS0820L150B	132.7	150.0	151.5	211.5	210	1.5	10	4	
	22	□	MHS0820L200B	181.9	200.0	201.5	261.5	260	1.5	10	4	
	28	□	MHS0820L250B	231.1	250.0	251.5	311.5	310	1.5	10	4	
8.3	2	□	MHS0830L040B	18.0	39.9	41.4	101.4	100	1.4	10	3	
	8	□	MHS0830L090B	67.9	90.0	91.5	151.5	150	1.5	10	4	
	12	□	MHS0830L120B	101.1	120.0	121.5	181.5	180	1.5	10	4	
	15	□	MHS0830L150B	126.0	150.0	151.5	211.5	210	1.5	10	4	
	21	□	MHS0830L200B	175.8	200.0	201.5	261.5	260	1.5	10	4	
	27	□	MHS0830L250B	225.6	250.0	251.5	311.5	310	1.5	10	4	
8.4	2	□	MHS0840L040B	18.2	39.9	41.4	101.4	100	1.4	10	3	
	8	□	MHS0840L090B	68.7	90.0	91.5	151.5	150	1.5	10	4	
	12	□	MHS0840L120B	102.3	120.0	121.5	181.5	180	1.5	10	4	
	15	□	MHS0840L150B	127.5	150.0	151.5	211.5	210	1.5	10	4	
	21	□	MHS0840L200B	177.9	200.0	201.5	261.5	260	1.5	10	4	
	27	□	MHS0840L250B	228.3	250.0	251.5	311.5	310	1.5	10	4	
8.5	2	●	MHS0850L040B	18.5	40.0	41.5	101.5	100	1.5	10	3	
	8	●	MHS0850L090B	69.5	90.0	91.5	151.5	150	1.5	10	4	
	11	●	MHS0850L120B	95.0	120.0	121.5	181.5	180	1.5	10	4	
	15	●	MHS0850L150B	129.0	150.0	151.5	211.5	210	1.5	10	4	
	21	●	MHS0850L200B	180.0	200.0	201.5	261.5	260	1.5	10	4	
	27	●	MHS0850L250B	231.0	250.0	251.5	311.5	310	1.5	10	4	
8.6	2	□	MHS0860L040B	18.7	40.5	41.5	101.5	100	1.5	10	3	
	8	□	MHS0860L090B	70.4	90.6	91.6	151.6	150	1.6	10	4	
	11	□	MHS0860L120B	96.2	120.6	121.6	181.6	180	1.6	10	4	
	15	□	MHS0860L150B	130.6	150.6	151.6	211.6	210	1.6	10	4	
	21	□	MHS0860L200B	182.2	200.6	201.6	261.6	260	1.6	10	4	
	26	□	MHS0860L250B	225.2	250.6	251.6	311.6	310	1.6	10	4	
8.7	2	□	MHS0870L040B	18.9	40.5	41.5	101.5	100	1.5	10	3	
	8	□	MHS0870L090B	71.2	90.6	91.6	151.6	150	1.6	10	4	
	11	□	MHS0870L120B	97.3	120.6	121.6	181.6	180	1.6	10	4	
	15	□	MHS0870L150B	132.1	150.6	151.6	211.6	210	1.6	10	4	
	20	□	MHS0870L200B	175.6	200.6	201.6	261.6	260	1.6	10	4	
	26	□	MHS0870L250B	227.8	250.6	251.6	311.6	310	1.6	10	4	

Not 1) Lütfen bu katalogda Bulunmayan herhangi bir geometri için bizimle iletişim kurabilirsiniz (örn. farklı çap ve uzunlukta).

● : Avrupa standart stok. ★ : Japonya standart stok.

□ : Stokta bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC (mm)	Delik Derinliği (L/D)	VP15TF	Sipariş No.	Boyutlar (mm)						Tip	
				LU	LCF	LH	OAL	LF	PL		DCNMS
8.8	2	★	MHS0880L040B	19.1	40.5	41.5	101.5	100	1.5	10	3
	8	★	MHS0880L090B	72.0	90.6	91.6	151.6	150	1.6	10	4
	11	★	MHS0880L120B	98.4	120.6	121.6	181.6	180	1.6	10	4
	14	★	MHS0880L150B	124.8	150.6	151.6	211.6	210	1.6	10	4
	20	★	MHS0880L200B	177.6	200.6	201.6	261.6	260	1.6	10	4
	26	★	MHS0880L250B	230.4	250.6	251.6	311.6	310	1.6	10	4
8.9	2	□	MHS0890L040B	19.3	40.5	41.5	101.5	100	1.5	10	3
	7	□	MHS0890L090B	63.9	90.6	91.6	151.6	150	1.6	10	4
	11	□	MHS0890L120B	99.5	120.6	121.6	181.6	180	1.6	10	4
	14	□	MHS0890L150B	126.2	150.6	151.6	211.6	210	1.6	10	4
	20	□	MHS0890L200B	179.6	200.6	201.6	261.6	260	1.6	10	4
	25	□	MHS0890L250B	224.1	250.6	251.6	311.6	310	1.6	10	4
9.0	2	●	MHS0900L040B	19.5	40.5	41.5	101.5	100	1.5	10	3
	7	●	MHS0900L090B	64.6	90.6	91.6	151.6	150	1.6	10	4
	11	●	MHS0900L120B	100.6	120.6	121.6	181.6	180	1.6	10	4
	14	●	MHS0900L150B	127.6	150.6	151.6	211.6	210	1.6	10	4
	20	●	MHS0900L200B	181.6	200.6	201.6	261.6	260	1.6	10	4
	25	●	MHS0900L250B	226.6	250.6	251.6	311.6	310	1.6	10	4
9.1	2	□	MHS0910L040B	19.8	41.1	41.6	101.6	100	1.6	10	3
	7	□	MHS0910L090B	65.4	91.2	91.7	151.7	150	1.7	10	4
	11	□	MHS0910L120B	101.8	121.2	121.7	181.7	180	1.7	10	4
	14	□	MHS0910L150B	129.1	151.2	151.7	211.7	210	1.7	10	4
	19	□	MHS0910L200B	174.6	201.2	201.7	261.7	260	1.7	10	4
	25	□	MHS0910L250B	229.2	251.2	251.7	311.7	310	1.7	10	4
9.2	2	□	MHS0920L040B	20.0	41.1	41.6	101.6	100	1.6	10	3
	7	□	MHS0920L090B	66.1	91.2	91.7	151.7	150	1.7	10	4
	10	□	MHS0920L120B	93.7	121.2	121.7	181.7	180	1.7	10	4
	14	□	MHS0920L150B	130.5	151.2	151.7	211.7	210	1.7	10	4
	19	□	MHS0920L200B	176.5	201.2	201.7	261.7	260	1.7	10	4
	25	□	MHS0920L250B	231.7	251.2	251.7	311.7	310	1.7	10	4
9.3	2	□	MHS0930L040B	20.2	41.1	41.6	101.6	100	1.6	10	3
	7	□	MHS0930L090B	66.8	91.2	91.7	151.7	150	1.7	10	4
	10	□	MHS0930L120B	94.7	121.2	121.7	181.7	180	1.7	10	4
	14	□	MHS0930L150B	131.9	151.2	151.7	211.7	210	1.7	10	4
	19	□	MHS0930L200B	178.4	201.2	201.7	261.7	260	1.7	10	4
	24	□	MHS0930L250B	224.9	251.2	251.7	311.7	310	1.7	10	4
9.4	2	□	MHS0940L040B	20.4	41.1	41.6	101.6	100	1.6	10	3
	7	□	MHS0940L090B	67.5	91.2	91.7	151.7	150	1.7	10	4
	10	□	MHS0940L120B	95.7	121.2	121.7	181.7	180	1.7	10	4
	13	□	MHS0940L150B	123.9	151.2	151.7	211.7	210	1.7	10	4
	19	□	MHS0940L200B	180.3	201.2	201.7	261.7	260	1.7	10	4
	24	□	MHS0940L250B	227.3	251.2	251.7	311.7	310	1.7	10	4

DC (mm)	Delik Derinliği (L/D)	VP15TF	Sipariş No.	Boyutlar (mm)						Tip	
				LU	LCF	LH	OAL	LF	PL		DCNMS
9.5	2	★	MHS0950L040B	20.6	41.1	41.6	101.6	100	1.6	10	3
	7	★	MHS0950L090B	68.2	91.2	91.7	151.7	150	1.7	10	4
	10	★	MHS0950L120B	96.7	121.2	121.7	181.7	180	1.7	10	4
	13	★	MHS0950L150B	125.2	151.2	151.7	211.7	210	1.7	10	4
	18	★	MHS0950L200B	172.7	201.2	201.7	261.7	260	1.7	10	4
	24	★	MHS0950L250B	229.7	251.2	251.7	311.7	310	1.7	10	4
9.6	2	□	MHS0960L040B	20.9	41.7	41.7	101.7	100	1.7	10	3
	7	□	MHS0960L090B	68.9	91.7	91.7	151.7	150	1.7	10	4
	10	□	MHS0960L120B	97.7	121.7	121.7	181.7	180	1.7	10	4
	13	□	MHS0960L150B	126.5	151.7	151.7	211.7	210	1.7	10	4
	18	□	MHS0960L200B	174.5	201.7	201.7	261.7	260	1.7	10	4
	24	□	MHS0960L250B	232.1	251.7	251.7	311.7	310	1.7	10	4
9.7	2	□	MHS0970L040B	21.1	41.7	41.7	101.7	100	1.7	10	3
	7	□	MHS0970L090B	69.7	91.8	91.8	151.8	150	1.8	10	4
	10	□	MHS0970L120B	98.8	121.8	121.8	181.8	180	1.8	10	4
	13	□	MHS0970L150B	127.9	151.8	151.8	211.8	210	1.8	10	4
	18	□	MHS0970L200B	176.4	201.8	201.8	261.8	260	1.8	10	4
	23	□	MHS0970L250B	224.9	251.8	251.8	311.8	310	1.8	10	4
9.8	2	★	MHS0980L040B	21.3	41.7	41.7	101.7	100	1.7	10	3
	7	★	MHS0980L090B	70.4	91.8	91.8	151.8	150	1.8	10	4
	10	★	MHS0980L120B	99.8	121.8	121.8	181.8	180	1.8	10	4
	13	★	MHS0980L150B	129.2	151.8	151.8	211.8	210	1.8	10	4
	18	★	MHS0980L200B	178.2	201.8	201.8	261.8	260	1.8	10	4
	23	★	MHS0980L250B	227.2	251.8	251.8	311.8	310	1.8	10	4
9.9	2	□	MHS0990L040B	21.5	41.7	41.7	101.7	100	1.7	10	3
	7	□	MHS0990L090B	71.1	91.8	91.8	151.8	150	1.8	10	4
	10	□	MHS0990L120B	100.8	121.8	121.8	181.8	180	1.8	10	4
	13	□	MHS0990L150B	130.5	151.8	151.8	211.8	210	1.8	10	4
	18	□	MHS0990L200B	180.0	201.8	201.8	261.8	260	1.8	10	4
	23	□	MHS0990L250B	229.5	251.8	251.8	311.8	310	1.8	10	4
10.0	2	●	MHS1000L040B	11.7	41.7	41.7	101.7	100	1.7	10	3
	6	●	MHS1000L090B	61.8	91.8	91.8	151.8	150	1.8	10	4
	9	●	MHS1000L120B	91.8	121.8	121.8	181.8	180	1.8	10	4
	12	●	MHS1000L150B	121.8	151.8	151.8	211.8	210	1.8	10	4
	17	●	MHS1000L200B	171.8	201.8	201.8	261.8	260	1.8	10	4
	22	●	MHS1000L250B	221.8	251.8	251.8	311.8	310	1.8	10	4
10.1	1	□	MHS1010L040B	11.8	40.2	41.7	101.7	100	1.7	12	3
	6	□	MHS1010L090B	62.4	90.3	91.8	151.8	150	1.8	12	4
	9	□	MHS1010L120B	92.7	120.3	121.8	181.8	180	1.8	12	4
	12	□	MHS1010L150B	123.0	150.3	151.8	211.8	210	1.8	12	4
	17	□	MHS1010L200B	173.5	200.3	201.8	261.8	260	1.8	12	4
	22	□	MHS1010L250B	224.0	250.3	251.8	311.8	310	1.8	12	4

DC (mm)	Delik Derinliği (L/D)	VP15TF	Sipariş No.	Boyutlar (mm)								Tip
				LU	LCF	LH	OAL	LF	PL	DCNMS		
10.2	1	□	MHS1020L040B	12.0	40.3	41.8	101.8	100	1.8	12	3	
	6	□	MHS1020L090B	63.1	90.4	91.9	151.9	150	1.9	12	4	
	9	□	MHS1020L120B	93.7	120.4	121.9	181.9	180	1.9	12	4	
	12	□	MHS1020L150B	124.3	150.4	151.9	211.9	210	1.9	12	4	
	17	□	MHS1020L200B	175.3	200.4	201.9	261.9	260	1.9	12	4	
	22	□	MHS1020L250B	226.3	250.4	251.9	311.9	310	1.9	12	4	
	27	□	MHS1020L300B	277.3	300.4	301.9	361.9	360	1.9	12	4	
10.3	1	□	MHS1030L040B	12.1	40.3	41.8	101.8	100	1.8	12	3	
	6	□	MHS1030L090B	63.7	90.4	91.9	151.9	150	1.9	12	4	
	9	□	MHS1030L120B	94.6	120.4	121.9	181.9	180	1.9	12	4	
	12	□	MHS1030L150B	125.5	150.4	151.9	211.9	210	1.9	12	4	
	17	□	MHS1030L200B	177.0	200.4	201.9	261.9	260	1.9	12	4	
	22	□	MHS1030L250B	228.5	250.4	251.9	311.9	310	1.9	12	4	
	26	□	MHS1030L300B	269.7	300.4	301.9	361.9	360	1.9	12	4	
10.4	1	□	MHS1040L040B	12.2	40.3	41.8	101.8	100	1.8	12	3	
	6	□	MHS1040L090B	64.3	90.4	91.9	151.9	150	1.9	12	4	
	9	□	MHS1040L120B	95.5	120.4	121.9	181.9	180	1.9	12	4	
	12	□	MHS1040L150B	126.7	150.4	151.9	211.9	210	1.9	12	4	
	17	□	MHS1040L200B	178.7	200.4	201.9	261.9	260	1.9	12	4	
	21	□	MHS1040L250B	220.3	250.4	251.9	311.9	310	1.9	12	4	
	26	□	MHS1040L300B	272.3	300.4	301.9	361.9	360	1.9	12	4	
10.5	1	★	MHS1050L040B	12.3	40.3	41.8	101.8	100	1.8	12	3	
	6	★	MHS1050L090B	64.9	90.4	91.9	151.9	150	1.9	12	4	
	9	★	MHS1050L120B	96.4	120.4	121.9	181.9	180	1.9	12	4	
	12	★	MHS1050L150B	127.9	150.4	151.9	211.9	210	1.9	12	4	
	16	★	MHS1050L200B	169.9	200.4	201.9	261.9	260	1.9	12	4	
	21	★	MHS1050L250B	222.4	250.4	251.9	311.9	310	1.9	12	4	
	26	★	MHS1050L300B	274.9	300.4	301.9	361.9	360	1.9	12	4	
10.6	1	□	MHS1060L040B	12.4	40.8	41.8	101.8	100	1.8	12	3	
	6	□	MHS1060L090B	65.5	90.9	91.9	151.9	150	1.9	12	4	
	9	□	MHS1060L120B	97.3	120.9	121.9	181.9	180	1.9	12	4	
	12	□	MHS1060L150B	129.1	150.9	151.9	211.9	210	1.9	12	4	
	16	□	MHS1060L200B	171.5	200.9	201.9	261.9	260	1.9	12	4	
	21	□	MHS1060L250B	224.5	250.9	251.9	311.9	310	1.9	12	4	
	26	□	MHS1060L300B	277.5	300.9	301.9	361.9	360	1.9	12	4	
10.7	1	□	MHS1070L040B	12.5	40.8	41.8	101.8	100	1.8	12	3	
	6	□	MHS1070L090B	66.1	90.9	91.9	151.9	150	1.9	12	4	
	9	□	MHS1070L120B	98.2	120.9	121.9	181.9	180	1.9	12	4	
	11	□	MHS1070L150B	119.6	150.9	151.9	211.9	210	1.9	12	4	
	16	□	MHS1070L200B	173.1	200.9	201.9	261.9	260	1.9	12	4	
	21	□	MHS1070L250B	226.6	250.9	251.9	311.9	310	1.9	12	4	
	25	□	MHS1070L300B	269.4	300.9	301.9	361.9	360	1.9	12	4	
10.8	1	★	MHS1080L040B	12.7	40.9	41.9	101.9	100	1.9	12	3	
	6	★	MHS1080L090B	66.8	91.0	92.0	152.0	150	2.0	12	4	
	9	★	MHS1080L120B	99.2	121.0	122.0	182.0	180	2.0	12	4	
	11	★	MHS1080L150B	120.8	151.0	152.0	212.0	210	2.0	12	4	
	16	★	MHS1080L200B	174.8	201.0	202.0	262.0	260	2.0	12	4	
	21	★	MHS1080L250B	228.8	251.0	252.0	312.0	310	2.0	12	4	
	25	★	MHS1080L300B	272.0	301.0	302.0	362.0	360	2.0	12	4	

DC (mm)	Delik Derinliği (L/D)	VP15TF	Sipariş No.	Boyutlar (mm)								Tip
				LU	LCF	LH	OAL	LF	PL	DCNMS		
10.9	1	□	MHS1090L040B	12.8	40.9	41.9	101.9	100	1.9	12	3	
	6	□	MHS1090L090B	67.4	91.0	92.0	152.0	150	2.0	12	4	
	8	□	MHS1090L120B	89.2	121.0	122.0	182.0	180	2.0	12	4	
	11	□	MHS1090L150B	121.9	151.0	152.0	212.0	210	2.0	12	4	
	16	□	MHS1090L200B	176.4	201.0	202.0	262.0	260	2.0	12	4	
	20	□	MHS1090L250B	220.0	251.0	252.0	312.0	310	2.0	12	4	
	25	□	MHS1090L300B	274.5	301.0	302.0	362.0	360	2.0	12	4	
11.0	1	●	MHS1100L040B	12.9	40.9	41.9	101.9	100	1.9	12	3	
	6	●	MHS1100L090B	68.0	91.0	92.0	152.0	150	2.0	12	4	
	8	●	MHS1100L120B	90.0	121.0	122.0	182.0	180	2.0	12	4	
	11	●	MHS1100L150B	123.0	151.0	152.0	212.0	210	2.0	12	4	
	16	●	MHS1100L200B	178.0	201.0	202.0	262.0	260	2.0	12	4	
	20	●	MHS1100L250B	222.0	251.0	252.0	312.0	310	2.0	12	4	
	25	●	MHS1100L300B	277.0	301.0	302.0	362.0	360	2.0	12	4	
11.1	1	□	MHS1110L040B	13.0	41.4	41.9	101.9	100	1.9	12	3	
	6	□	MHS1110L090B	68.6	91.5	92.0	152.0	150	2.0	12	4	
	8	□	MHS1110L120B	90.8	121.5	122.0	182.0	180	2.0	12	4	
	11	□	MHS1110L150B	124.1	151.5	152.0	212.0	210	2.0	12	4	
	15	□	MHS1110L200B	168.5	201.5	202.0	262.0	260	2.0	12	4	
	20	□	MHS1110L250B	224.0	251.5	252.0	312.0	310	2.0	12	4	
	24	□	MHS1110L300B	268.4	301.5	302.0	362.0	360	2.0	12	4	
11.2	1	□	MHS1120L040B	13.1	41.4	41.9	101.9	100	1.9	12	3	
	5	□	MHS1120L090B	58.0	91.5	92.0	152.0	150	2.0	12	4	
	8	□	MHS1120L120B	91.6	121.5	122.0	182.0	180	2.0	12	4	
	11	□	MHS1120L150B	125.2	151.5	152.0	212.0	210	2.0	12	4	
	15	□	MHS1120L200B	170.0	201.5	202.0	262.0	260	2.0	12	4	
	20	□	MHS1120L250B	226.0	251.5	252.0	312.0	310	2.0	12	4	
	24	□	MHS1120L300B	270.8	301.5	302.0	362.0	360	2.0	12	4	
11.3	1	□	MHS1130L040B	13.2	41.4	41.9	101.9	100	1.9	12	3	
	5	□	MHS1130L090B	58.6	91.6	92.1	152.1	150	2.1	12	4	
	8	□	MHS1130L120B	92.5	121.6	122.1	182.1	180	2.1	12	4	
	11	□	MHS1130L150B	126.4	151.6	152.1	212.1	210	2.1	12	4	
	15	□	MHS1130L200B	171.6	201.6	202.1	262.1	260	2.1	12	4	
	20	□	MHS1130L250B	228.1	251.6	252.1	312.1	310	2.1	12	4	
	24	□	MHS1130L300B	273.3	301.6	302.1	362.1	360	2.1	12	4	
11.4	1	□	MHS1140L040B	13.4	41.5	42.0	102.0	100	2.0	12	3	
	5	□	MHS1140L090B	59.1	91.6	92.1	152.1	150	2.1	12	4	
	8	□	MHS1140L120B	93.3	121.6	122.1	182.1	180	2.1	12	4	
	11	□	MHS1140L150B	127.5	151.6	152.1	212.1	210	2.1	12	4	
	15	□	MHS1140L200B	173.1	201.6	202.1	262.1	260	2.1	12	4	
	19	□	MHS1140L250B	218.7	251.6	252.1	312.1	310	2.1	12	4	
	24	□	MHS1140L300B	275.7	301.6	302.1	362.1	360	2.1	12	4	
11.5	1	★	MHS1150L040B	13.5	41.5	42.0	102.0	100	2.0	12	3	
	5	★	MHS1150L090B	59.6	91.6	92.1	152.1	150	2.1	12	4	
	8	★	MHS1150L120B	94.1	121.6	122.1	182.1	180	2.1	12	4	
	10	★	MHS1150L150B	117.1	151.6	152.1	212.1	210	2.1	12	4	
	15	★	MHS1150L200B	174.6	201.6	202.1	262.1	260	2.1	12	4	
	19	★	MHS1150L250B	220.6	251.6	252.1	312.1	310	2.1	12	4	
	24	★	MHS1150L300B	278.1	301.6	302.1	362.1	360	2.1	12	4	

Not 1) Lütfen bu katalogda Bulunmayan herhangi bir geometri için bizimle iletişim kurabilirsiniz (örn. farklı çap ve uzunlukta).

● : Avrupa standart stok. ★ : Japonya standart stok.

□ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

DC (mm)	Delik Derinliği (L/D)	VP15TF	Sipariş No.	Boyutlar (mm)								Tip
				LU	LCF	LH	OAL	LF	PL	DCNMS		
11.6	1	□	MHS1160L040B	13.6	42.0	42.0	102.0	100	2.0	12	3	
	5	□	MHS1160L090B	60.1	92.1	92.1	152.1	150	2.1	12	4	
	8	□	MHS1160L120B	94.9	122.1	122.1	182.1	180	2.1	12	4	
	10	□	MHS1160L150B	118.1	152.1	152.1	212.1	210	2.1	12	4	
	15	□	MHS1160L200B	176.1	202.1	202.1	262.1	260	2.1	12	4	
	19	□	MHS1160L250B	222.5	252.1	252.1	312.1	310	2.1	12	4	
	23	□	MHS1160L300B	268.9	302.1	302.1	362.1	360	2.1	12	4	
11.7	1	□	MHS1170L040B	13.7	42.0	42.0	102.0	100	2.0	12	3	
	5	□	MHS1170L090B	60.6	92.1	92.1	152.1	150	2.1	12	4	
	8	□	MHS1170L120B	95.7	122.1	122.1	182.1	180	2.1	12	4	
	10	□	MHS1170L150B	119.1	152.1	152.1	212.1	210	2.1	12	4	
	15	□	MHS1170L200B	177.6	202.1	202.1	262.1	260	2.1	12	4	
	19	□	MHS1170L250B	224.4	252.1	252.1	312.1	310	2.1	12	4	
	23	□	MHS1170L300B	271.2	302.1	302.1	362.1	360	2.1	12	4	
11.8	1	★	MHS1180L040B	13.8	42.0	42.0	102.0	100	2.0	12	3	
	5	★	MHS1180L090B	61.1	92.1	92.1	152.1	150	2.1	12	4	
	8	★	MHS1180L120B	96.5	122.1	122.1	182.1	180	2.1	12	4	
	10	★	MHS1180L150B	120.1	152.1	152.1	212.1	210	2.1	12	4	
	14	★	MHS1180L200B	167.3	202.1	202.1	262.1	260	2.1	12	4	
	19	★	MHS1180L250B	226.3	252.1	252.1	312.1	310	2.1	12	4	
	23	★	MHS1180L300B	273.5	302.1	302.1	362.1	360	2.1	12	4	
11.9	1	□	MHS1190L040B	13.9	42.0	42.0	102.0	100	2.0	12	3	
	5	□	MHS1190L090B	61.7	92.2	92.2	152.2	150	2.2	12	4	
	8	□	MHS1190L120B	97.4	122.2	122.2	182.2	180	2.2	12	4	
	10	□	MHS1190L150B	121.2	152.2	152.2	212.2	210	2.2	12	4	
	14	□	MHS1190L200B	168.8	202.2	202.2	262.2	260	2.2	12	4	
	19	□	MHS1190L250B	228.3	252.2	252.2	312.2	310	2.2	12	4	
	23	□	MHS1190L300B	275.9	302.2	302.2	362.2	360	2.2	12	4	
12.0	1	●	MHS1200L040B	14.1	42.1	42.1	102.1	100	2.1	12	3	
	5	●	MHS1200L090B	62.2	92.2	92.2	152.2	150	2.2	12	4	
	7	●	MHS1200L120B	86.2	122.2	122.2	182.2	180	2.2	12	4	
	10	●	MHS1200L150B	122.2	152.2	152.2	212.2	210	2.2	12	4	
	14	●	MHS1200L200B	170.2	202.2	202.2	262.2	260	2.2	12	4	
	18	●	MHS1200L250B	218.2	252.2	252.2	312.2	310	2.2	12	4	
	22	●	MHS1200L300B	266.2	302.2	302.2	362.2	360	2.2	12	4	

M

DELME

ÖNERİLEN KESME KOŞULLARI

M
DELME

Çalışma Malzemesi	P				M			
	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Tabla Hızı (mm/dak)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Tabla Hızı (mm/dak)
Yumuşak Çelik (≤180HB), Karbon çelik, Alaşımli çelik (180—280HB) Ck10, Ck45, 42CrMo4					Feritik, Martensitik Paslanmaz Çelik (>200HB) X20CrNi17-2, X30Cr13			
1.0	40	12700	0.030 (0.020—0.040)	380	20	6400	0.030 (0.020—0.040)	190
1.2	50	13300	0.035 (0.025—0.050)	465	30	8000	0.035 (0.025—0.050)	280
1.6	60	11900	0.050 (0.030—0.065)	595	40	8000	0.050 (0.030—0.065)	400
2.0	70	11100	0.060 (0.040—0.080)	665	50	8000	0.060 (0.040—0.080)	480
2.5	80	10200	0.075 (0.050—0.100)	765	60	7600	0.075 (0.050—0.100)	570
3.2	80	8000	0.100 (0.070—0.130)	800	60	6000	0.100 (0.070—0.130)	600
4.0	80	6400	0.100 (0.090—0.110)	640	60	4800	0.090 (0.080—0.090)	430
5.0	80	5100	0.130 (0.110—0.140)	665	60	3800	0.110 (0.100—0.120)	420
6.3	80	4000	0.160 (0.140—0.180)	640	60	3000	0.140 (0.130—0.150)	420
8.0	80	3200	0.200 (0.180—0.230)	640	60	2400	0.170 (0.160—0.190)	410
10.0	80	2600	0.250 (0.220—0.280)	650	60	1900	0.220 (0.200—0.230)	420
12.0	80	2100	0.300 (0.270—0.340)	630	60	1600	0.260 (0.240—0.280)	415

Çalışma Malzemesi	P				H		M	
	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Tabla Hızı (mm/dak)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Tabla Hızı (mm/dak)
Önceden sertleştirilmiş çelik (35—45HRC) Alaşımli takım çeliği (≤350HB) X36CrMo17, X210Cr12, 55NiCrMoV6					Sertleştirilmiş çelik (40—55HRC) PH Paslanmaz Çelik (<450HB) X20CrNi17-2, X30Cr13 X5CrNiCuNb164, X7CrNiAl17-7			
1.0	20	6400	0.025 (0.020—0.030)	160	40	12700	0.020 (0.015—0.025)	255
1.2	30	8000	0.030 (0.020—0.035)	240	40	10600	0.025 (0.020—0.030)	265
1.6	40	8000	0.040 (0.030—0.045)	320	50	10000	0.035 (0.025—0.040)	350
2.0	50	8000	0.045 (0.035—0.060)	360	50	8000	0.040 (0.030—0.050)	320
2.5	60	7600	0.060 (0.045—0.075)	455	60	7600	0.050 (0.040—0.065)	380
3.2	60	6000	0.080 (0.060—0.090)	480	60	6000	0.060 (0.050—0.080)	360
4.0	60	4800	0.080 (0.070—0.100)	385	60	4800	0.080 (0.060—0.100)	385
5.0	60	3800	0.110 (0.090—0.130)	420	60	3800	0.100 (0.080—0.130)	380
6.3	60	3000	0.130 (0.110—0.160)	390	60	3000	0.110 (0.090—0.130)	330
8.0	60	2400	0.170 (0.140—0.200)	410	60	2400	0.140 (0.120—0.160)	335
10.0	60	1900	0.210 (0.170—0.250)	400	60	1900	0.170 (0.140—0.200)	325
12.0	60	1600	0.250 (0.210—0.300)	400	60	1600	0.210 (0.170—0.240)	335

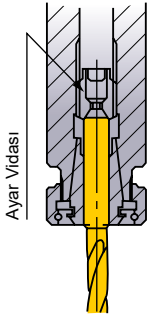
Çalışma Malzemesi	H		S	
	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	Tabla Hızı (mm/dak)
Sertleştirilmiş çelik (40—55HRC) Isıya Dirençli Alaşım X40CrMoV51, 55NiCrMoV7, Inconel®718				
1.0	10	3200	0.015 (0.015—0.020)	50
1.2	10	2700	0.020 (0.015—0.025)	55
1.6	10	2000	0.025 (0.020—0.030)	50
2.0	20	3200	0.035 (0.025—0.040)	110
2.5	20	2600	0.040 (0.030—0.050)	105
3.2	20	2000	0.050 (0.040—0.070)	100
4.0	30	2400	0.070 (0.050—0.080)	170
5.0	30	1900	0.080 (0.060—0.100)	150
6.3	30	1500	0.090 (0.080—0.110)	135
8.0	40	1600	0.120 (0.100—0.130)	190
10.0	40	1300	0.150 (0.130—0.170)	195
12.0	40	1100	0.180 (0.150—0.200)	200

Not 1) Delme boyu L/D 10 nun üzerinde matkap ucu kullanıldığında, yataklama için bir pilot deliğin kullanılması gereklidir. (Ön delik kullanılmazsa matkap ucu kırılması meydana gelebilir.)

Not 2) Pilot matkap ucu olarak ilgili boyutta en kısa helis kanallı matkap ucunu kullanın.

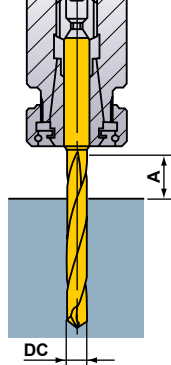
■ ÇALIŞMA KILAVUZU

Matkap Ucunu Bağlama



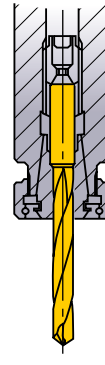
Bilya baskılı pens başlığı ile pens, matkap ucunu sabit şekilde tutar.

Matkap Ucu Uzunluğu



$$A \geq DC \times 2$$

Matkap Ucu Montajı

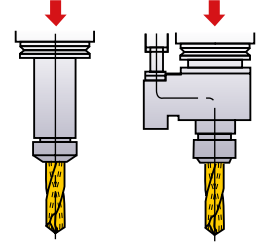


Helis kanallardan bağlamayın.

Boydan boyda Soğutma Tipi

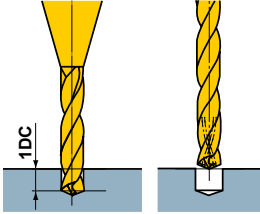
Tezgah mili boyunca soğutma Suyu Tipi

Devirdaim pompası ile Soğutma Suyu Tipi



Soğutma suyu basıncı yaklaşık 15 bar – 70 bar'dır
Önerilen soğutma suyu basıncı: ≥ 30 bar

Matkap Ucunun Kurulumu

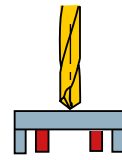


- 1) En kısa helisli matkap ucunu MHS'yi kullanarak yaklaşık 1DC(DC: matkap çapı) pilot delik hazırlayın.
- 2) Yataklama olarak pilot deliği kullanın ve soğutma delikli matkap ucu ile işleyin. Uygulamaya bağlı olarak, gagalama işlemini yürütün.

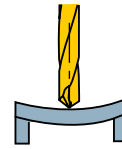
Soğutmayı Yönetme

- 1) Eski soğutma suyundaki kir ve toz parçacıkları yağ deliğini tıkayabilir ve etkili akışı önleyebilir. Soğutma suyunun düzenli değişimi önerilir.
- 2) Küçük talaş parçacıkları yağ deliğine sıkışır. Koruyucu önlem olarak filtre kullanın. Küçük çaplı matkap ucu kullanırken, ince gözenekli filtre kullanın.

İnce Çalışma Parçası



OK
İş Parçasını Destekleyin

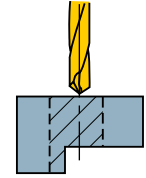


X
Bükülme Olasılığı

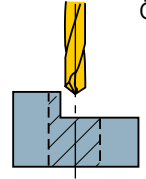
Kesintili Kesme

Bir İşlem

OK



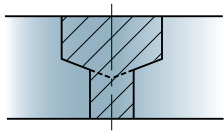
① Darbeyi oluşturan bölümü delerken ilerlemeyi düşürün.



Ön işleme Gerekir

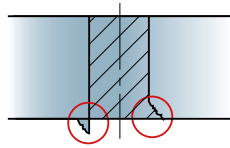
② Delmeden önce parmak freze ile yüzey düzeltme işlemini gerçekleştirin.

Kademeli Delikler



- ① İşlemeyi iki prosese ayırın.
 - ② Önce büyük çapı delin.
- *Pah ve spot yüzey için takımlar sipariş üzerine üretilebilir.

Çapaklanma ve Çalışma Parçası Yongalama



- ① Çıkışa yakın ilerleme oranını düşürün.
- ② Uç açısını değiştirin.

■ MHS UZUN TIP MATKAP UCU İÇİN ÇALIŞMA KILAVUZU (L/D ≥ 10)

DÜZ YÜZEY DELME ● Bir kör delik delme

■ 1. Bir pilot deliği delme



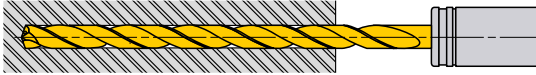
- ① Süper uzun tipten daha büyük (düz) uç açılı bir matkap ucu kullanın. Olası en kısa helis kanallığı kullanın.
- ② Yataklama için yüksek hassasiyetli deliğin delindiğinden emin olun.
- ③ Matkap ucu derinliği : Yaklaşık 1DC veya daha derin.
(Pilot Delik Derinliğini süper uzun tip matkap ucu uzunluğuna göre ayarlayın.)

■ 2. Uzun tip matkap ucu ile kesmeye başlama



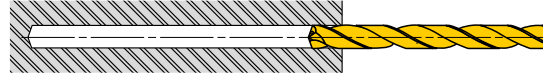
- ① Pilot deliğe düşük devirde nüfuz edin.
(Devir 1000dak⁻¹, ilerleme oranı 0.2–0.3mm/dev)
- ② Uzun tip matkap ucunu pilot delik tabanına 0.5–1mm kala durdurun.

■ 3. Derin deliğin delinmesi



- ① Önerilen hızda ve ilerleme oranıyla gagalama yapmadan (düz ilerleme) çevrimi ile kesmeye başlayın.

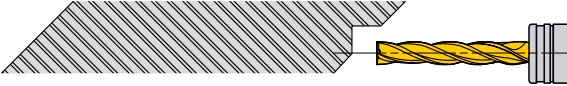
■ 4. Matkap ucunu geriye çekme



- ① Deldikten sonra, kesme devrini delik ucundan yaklaşık 0.5–1mm daha gerisinde düşürün (Devir yaklaşık 1000dak⁻¹)
- ② 3000mm/dak ilerleme hızıyla matkap ucunu pilot Delik Derinliği başlangıç noktasına geri çekin.
- ③ Son olarak, 20–30m/dak kesme hızında ve 0.2–0.3mm/dev ilerleme oranında deliği temizleyin.

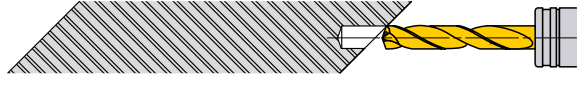
DARBELİ DELME ● Üzerinde düzensiz veya açılı yüzler bulunan parçaları delme ve boşa çıkma

■ 1. Spot yüzeyi açma



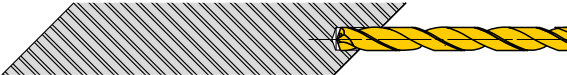
- ① Bir parmak frezeyi veya spot yüzeyi açma özellikli spot matkap ucunu kullanarak düz veya düzensiz bir yüzeyi işleyin. İşlenecek derin delik çapı ile aynı çapta bir düz yüzey yapın.

■ 2. Bir pilot deliği delme



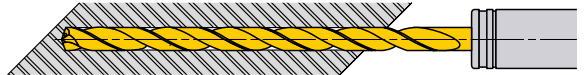
- ① Süper uzun tipten daha büyük (düz) bir uç açılı bir matkap ucu kullanın. Olası en kısa helis kanallığı kullanın.
- ② Yataklama için yüksek hassasiyetli deliğin delindiğinden emin olun.
- ③ Matkap ucu derinliği : Yaklaşık 1DC veya daha uzun.
(Pilot Delik Derinliğini süper uzun tip matkap ucu uzunluğuna göre ayarlayın.)

■ 3. Uzun tip matkap ucu ile kesmeye başlama



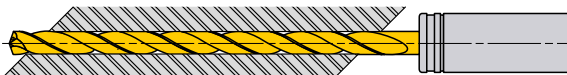
- ① Yataklama deliğine düşük devirde nüfuz edin.
(Devir 1000dak⁻¹, ilerleme oranı 0.2–0.3mm/dev)
- ② Uzun tip matkap ucunu pilot delik tabanına 0.5–1mm kala durdurun.

■ 4. Derin deliğin delinmesi



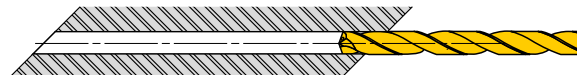
- ① Önerilen hızda ve ilerleme oranıyla gagalama yapmadan (düz ilerleme) çevrimi ile kesmeye başlayın.

■ 5. Boşa çıkma



- ① Boşa çıkma işlemi sırasında, kesme kenarı hasar görebilir.
- ② Yüzeğe yakın ilerleme oranını düşürün.

■ 6. Matkap ucunu geriye çekme



- ① Son olarak 20–30m/dak kesme hızında ve 0.2–0.3mm/dev ilerleme oranında deliği temizleyin.
- ② 3000mm/dak ilerleme hızıyla matkap ucunu pilot Delik Derinliği başlangıç noktasına geri çekin.

DELME (DEĞİŞTİRİLEBİLİR UÇLU TİP)

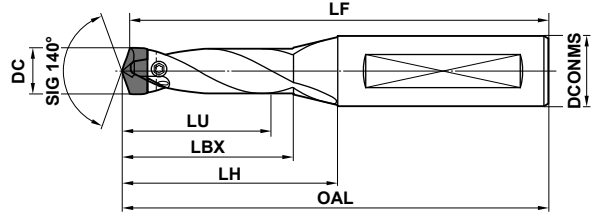
STAW

- İyi talaş kontrolü için dalgalı kesme kenarı tasarımı.
- Son derece sağlam bağlama sistemi, küçük delik delmede istikrar ve güvenilirlik sunar.



KARBÜR

P M K N S H



UÇ TUTUCULARI

DC (mm)	Delik Derinliği (LD)	Tutucu		Boyutlar (mm)						F Anahtar	Kesici Uç		
		Sipariş No.	Stok	LU	LBX	LH	OAL	LF	DCONMS		DC (mm)	Sipariş No.	Stok VP15TF
10.0 10.4	1.5	STAWSS1000S16	●	16.8	23.8	33.8	81.8	80	16	TIP06F	10.0	* STAWN1000TH STAWK1000TG	●
	3	STAWSN1000S16	●	31.8	38.8	48.8	96.8	95	16	TIP06F	10.1	STAWN1010TH STAWK1010TG	●
	5	STAWMN1000S16	●	51.8	58.8	68.8	116.8	115	16	TIP06F	10.2	STAWN1020TH STAWK1020TG	●
	8	STAWLN1000S16	●	81.8	88.8	98.8	146.8	145	16	TIP06F	10.3 10.4	STAWN1030TH STAWK1030TG STAWN1040TH STAWK1040TG	●
10.5 10.9	1.5	STAWSS1050S16	●	17.7	23.9	33.9	81.9	80	16	TIP06F	10.5	* STAWN1050TH STAWK1050TG	●
	3	STAWSN1050S16	●	33.4	38.9	48.9	96.9	95	16	TIP06F	10.6	STAWN1060TH STAWK1060TG	●
	5	STAWMN1050S16	●	54.4	58.9	68.9	116.9	115	16	TIP06F	10.7	STAWN1070TH STAWK1070TG	●
	8	STAWLN1050S16	●	85.9	88.9	98.9	146.9	145	16	TIP06F	10.8 10.9	STAWN1080TH STAWK1080TG STAWN1090TH STAWK1090TG	●
11.0 11.4	1.5	STAWSS1100S16	●	18.5	27.0	38.0	86.0	84	16	TIP06F	11.0	* STAWN1100TH STAWK1100TG	●
	3	STAWSN1100S16	●	35.0	43.0	54.0	102.0	100	16	TIP06F	11.1	STAWN1110TH STAWK1110TG	●
	5	STAWMN1100S16	●	57.0	68.0	79.0	127.0	125	16	TIP06F	11.2	STAWN1120TH STAWK1120TG	●
	8	STAWLN1100S16	●	90.0	98.0	109.0	157.0	155	16	TIP06F	11.3 11.4	STAWN1130TH STAWK1130TG STAWN1140TH STAWK1140TG	●
11.5 11.9	1.5	STAWSS1150S16	●	19.4	27.1	38.1	86.1	84	16	TIP06F	11.5	* STAWN1150TH STAWK1150TG	●
	3	STAWSN1150S16	●	36.6	43.1	54.1	102.1	100	16	TIP06F	11.6	STAWN1160TH STAWK1160TG	●
	5	STAWMN1150S16	●	59.6	68.1	79.1	127.1	125	16	TIP06F	11.7	STAWN1170TH STAWK1170TG	●
	8	STAWLN1150S16	●	94.1	98.1	109.1	157.1	155	16	TIP06F	11.8 11.9	STAWN1180TH STAWK1180TG STAWN1190TH STAWK1190TG	●
12.0 12.4	1.5	STAWSS1200S16	●	20.2	29.2	41.2	89.2	87	16	TIP06F	12.0	* STAWN1200TH STAWK1200TG	●
	3	STAWSN1200S16	●	38.2	47.2	59.2	107.2	105	16	TIP06F	12.1	STAWN1210TH STAWK1210TG	●
	5	STAWMN1200S16	●	62.2	72.2	84.2	132.2	130	16	TIP06F	12.2	STAWN1220TH STAWK1220TG	●
	8	STAWLN1200S16	●	98.2	107.2	119.2	167.2	165	16	TIP06F	12.3 12.4	STAWN1230TH STAWK1230TG STAWN1240TH STAWK1240TG	●

Not 1) Yukarıdaki boyutlar (*), kesici uçların montajından sonraki boyutlardır.

Not 2) Lütfen bu katalogta olmayan herhangi bir geometri için bizimle iletişim kurun (ör. farklı çap ve uzunluk).

● : Avrupa standart stok.
(Not: bir kutuda 1 kesici uç)

KESİCİ UÇ AÇIKLAMASI > M142
KESME KOŞULLARI > M144
KULLANIM NOTU > M145

YEDEK PARÇALAR > N001
TEKNİK VERİLER > P001

M139

M
DELME

DELME (DEĞİŞTİRİLEBİLİR UÇLU TİP)

STAW

KARBÜR


M
DELME

DC (mm)	Delik Derinliği (L/D)	Tutucu		Boyutlar (mm)						F W Anahtar	Kesici Uç		
		Sipariş No.	Stok	LU	LBX	LH	OAL	LF	DCONMS		DC (mm)	Sipariş No.	Stok VP15TF
12.5 12.9	1.5	STAWSS1250S16	●	21.1	29.3	41.3	89.3	87	16	TIP06F	12.5	* STAWN1250TH STAWK1250TG	●
	3	STAWSN1250S16	●	39.8	47.3	59.3	107.3	105	16	TIP06F	12.6	STAWN1260TH STAWK1260TG	●
	5	STAWMN1250S16	●	64.8	72.3	84.3	132.3	130	16	TIP06F	12.7	STAWN1270TH STAWK1270TG	●
	8	STAWLN1250S16	●	102.3	107.3	119.3	167.3	165	16	TIP06F	12.8	STAWN1280TH STAWK1280TG	●
13.0 13.4	1.5	STAWSS1300S16	●	21.9	32.4	45.4	93.4	91	16	TIP08W	13.0	* STAWN1300TH STAWK1300TG	●
	3	STAWSN1300S16	●	41.4	51.4	64.4	112.4	110	16	TIP08W	13.1	STAWN1310TH STAWK1310TG	●
	5	STAWMN1300S16	●	67.4	76.4	89.4	137.4	135	16	TIP08W	13.2	STAWN1320TH STAWK1320TG	●
	8	STAWLN1300S16	●	106.4	116.4	129.4	177.4	175	16	TIP08W	13.3	STAWN1330TH STAWK1330TG	●
13.5 13.9	1.5	STAWSS1350S16	●	22.8	32.5	45.5	93.5	91	16	TIP08W	13.4	STAWN1340TH STAWK1340TG	●
	3	STAWSN1350S16	●	43.0	51.5	64.5	112.5	110	16	TIP08W	13.5	* STAWN1350TH STAWK1350TG	●
	5	STAWMN1350S16	●	70.0	76.5	89.5	137.5	135	16	TIP08W	13.6	STAWN1360TH STAWK1360TG	●
	8	STAWLN1350S16	●	110.5	116.5	129.5	177.5	175	16	TIP08W	13.7	STAWN1370TH STAWK1370TG	●
14.0 14.4	1.5	STAWSS1400S16	●	23.5	33.5	47.5	95.5	93	16	TIP08W	13.8	STAWN1380TH STAWK1380TG	●
	3	STAWSN1400S16	●	44.5	55.5	69.5	117.5	115	16	TIP08W	13.9	STAWN1390TH STAWK1390TG	●
	5	STAWMN1400S16	●	72.5	85.5	99.5	147.5	145	16	TIP08W	14.0	* STAWN1400TH STAWK1400TG	●
	8	STAWLN1400S16	●	114.5	124.5	139.5	187.5	185	16	TIP08W	14.1	STAWN1410TH STAWK1410TG	●
14.5 14.9	1.5	STAWSS1450S16	●	24.4	33.6	47.6	95.6	93	16	TIP08W	14.2	STAWN1420TH STAWK1420TG	●
	3	STAWSN1450S16	●	46.1	55.6	69.6	117.6	115	16	TIP08W	14.3	STAWN1430TH STAWK1430TG	●
	5	STAWMN1450S16	●	75.1	85.6	99.6	147.6	145	16	TIP08W	14.4	STAWN1440TH STAWK1440TG	●
	8	STAWLN1450S16	●	118.6	124.6	139.6	187.6	185	16	TIP08W	14.5	* STAWN1450TH STAWK1450TG	●
15.0 15.4	1.5	STAWSS1500S20	●	25.2	35.7	50.7	100.7	98	20	TIP08W	14.6	STAWN1460TH STAWK1460TG	●
	3	STAWSN1500S20	●	47.7	62.7	77.7	127.7	125	20	TIP08W	14.7	STAWN1470TH STAWK1470TG	●
	5	STAWMN1500S20	●	77.7	92.7	107.7	157.7	155	20	TIP08W	14.8	STAWN1480TH STAWK1480TG	●
	8	STAWLN1500S20	●	122.7	132.7	150.7	200.7	198	20	TIP08W	14.9	STAWN1490TH STAWK1490TG	●
15.0 15.4	1.5	STAWSS1500S20	●	25.2	35.7	50.7	100.7	98	20	TIP08W	15.0	* STAWN1500TH STAWK1500TG	●
	3	STAWSN1500S20	●	47.7	62.7	77.7	127.7	125	20	TIP08W	15.1	STAWN1510TH STAWK1510TG	●
	5	STAWMN1500S20	●	77.7	92.7	107.7	157.7	155	20	TIP08W	15.2	STAWN1520TH STAWK1520TG	●
	8	STAWLN1500S20	●	122.7	132.7	150.7	200.7	198	20	TIP08W	15.3	STAWN1530TH STAWK1530TG	●
15.0 15.4	1.5	STAWSS1500S20	●	25.2	35.7	50.7	100.7	98	20	TIP08W	15.4	STAWN1540TH STAWK1540TG	●
	3	STAWSN1500S20	●	47.7	62.7	77.7	127.7	125	20	TIP08W	15.4	STAWN1540TH STAWK1540TG	●
	5	STAWMN1500S20	●	77.7	92.7	107.7	157.7	155	20	TIP08W	15.4	STAWN1540TH STAWK1540TG	●
	8	STAWLN1500S20	●	122.7	132.7	150.7	200.7	198	20	TIP08W	15.4	STAWN1540TH STAWK1540TG	●

Not 1) Yukarıdaki boyutlar (*), kesici uçların montajından sonraki boyutlardır.

Not 2) Lütfen bu katalogta olmayan herhangi bir geometri için bizimle iletişim kurun (ör. farklı çap ve uzunluk).

● : Avrupa standart stok. (Not: bir kutuda 1 kesici uç)

DC (mm)	Delik Derinliği (L/D)	Tutucu		Boyutlar (mm)						W  Anahtar	Kesici Uç		
		Sipariş No.	Stok	LU	LBX	LH	OAL	LF	DCONMS		DC (mm)	Sipariş No.	Stok VP15TF
15.5 16.4	1.5	STAWSS1600S20	●	26.1	36.8	52.8	102.8	100	20	TIP10W	15.5	* STAWN1550T	●
												STAWK1550TG	●
											15.6	STAWN1560T	●
	3	STAWSN1600S20	●	49.3	62.8	82.8	132.8	130	20	TIP10W	15.7	STAWN1570T	●
												STAWK1570TG	●
											15.8	STAWN1580T	●
	5	STAWMN1600S20	●	80.3	92.8	117.8	167.8	165	20	TIP10W	15.9	STAWN1590T	●
												STAWK1590TG	●
											16.0	STAWN1600T	●
	8	STAWLN1600S20	●	126.8	140.8	160.8	210.8	208	20	TIP10W	16.1	STAWN1610T	●
												STAWK1610TG	●
											16.2	STAWN1620T	●
16.5 17.4	1.5	STAWSS1700S20	●	27.8	39.0	56.0	106.0	103	20	TIP10W	16.3	STAWN1630T	●
												STAWK1630TG	●
											16.4	STAWN1640T	●
	3	STAWSN1700S20	●	52.5	64.0	88.0	138.0	135	20	TIP10W	16.5	* STAWN1650T	●
												STAWK1650TG	●
											16.6	STAWN1660T	●
	5	STAWMN1700S20	●	85.5	98.0	123.0	173.0	170	20	TIP10W	16.7	STAWN1670T	●
												STAWK1670TG	●
											16.8	STAWN1680T	●
	8	STAWLN1700S20	●	135.0	149.0	169.0	219.0	216	20	TIP10W	16.9	STAWN1690T	●
												STAWK1690TG	●
											17.0	STAWN1700T	●
17.5 18.4	1.5	STAWSS1800S20	●	29.5	40.2	58.2	108.2	105	20	TIP10W	17.1	STAWN1710T	●
												STAWK1710TG	●
											17.2	STAWN1720T	●
	3	STAWSN1800S20	●	55.7	67.2	93.2	143.2	140	20	TIP10W	17.3	STAWN1730T	●
												STAWK1730TG	●
											17.4	STAWN1740T	●
	5	STAWMN1800S20	●	90.7	103.2	128.2	178.2	175	20	TIP10W	17.5	* STAWN1750T	●
												STAWK1750TG	●
											17.6	STAWN1760T	●
	8	STAWLN1800S20	●	143.2	157.2	177.2	227.2	224	20	TIP10W	17.7	STAWN1770T	●
												STAWK1770TG	●
											17.8	STAWN1780T	●
	STAWK1780TG	●											
	STAWN1790T	●											
	STAWK1790TG	●											
	STAWN1800T	●											
	STAWK1800TG	●											
	STAWN1810T	●											
	STAWK1810TG	●											
	STAWN1820T	●											
	STAWK1820TG	●											
	STAWN1830T	●											
	STAWK1830TG	●											
	STAWN1840T	●											
	STAWK1840TG	●											

KESİCİ UÇ AÇIKLAMASI > M142

KESME KOŞULLARI > M144

KULLANIM NOTU > M145

YEDEK PARÇALAR > N001

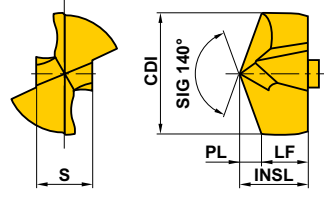
TEKNİK VERİLER > P001

DELME (DEĞİŞTİRİLEBİLİR UÇLU TİP)

KARBÜR

STAW

KESİCİ UÇLAR



M
DELME

Sipariş No.	Kaplama		Boyutlar (mm)					Geçerli Tutucu
	VP15TF		CDI	INSL	LF	PL	S	
STAWN1000TH	●		10.0	5.6	3.8	1.8	4.6	STAWSS1000S16 STAWSN1000S16 STAWMN1000S16 STAWLN1000S16
STAWN1010TH	●		10.1	5.6	3.8	1.8	4.6	
STAWN1020TH	●		10.2	5.7	3.8	1.9	4.6	
STAWN1030TH	●		10.3	5.7	3.8	1.9	4.6	
STAWN1040TH	●		10.4	5.7	3.8	1.9	4.6	
STAWN1050TH	●		10.5	5.9	4.0	1.9	4.8	STAWSS1050S16 STAWSN1050S16 STAWMN1050S16 STAWLN1050S16
STAWN1060TH	●		10.6	5.9	4.0	1.9	4.8	
STAWN1070TH	●		10.7	5.9	4.0	1.9	4.8	
STAWN1080TH	●		10.8	6.0	4.0	2.0	4.8	
STAWN1090TH	●		10.9	6.0	4.0	2.0	4.8	
STAWN1100TH	●		11.0	6.2	4.2	2.0	5.1	STAWSS1100S16 STAWSN1100S16 STAWMN1100S16 STAWLN1100S16
STAWN1110TH	●		11.1	6.2	4.2	2.0	5.1	
STAWN1120TH	●		11.2	6.2	4.2	2.0	5.1	
STAWN1130TH	●		11.3	6.3	4.2	2.1	5.1	
STAWN1140TH	●		11.4	6.3	4.2	2.1	5.1	
STAWN1150TH	●		11.5	6.5	4.4	2.1	5.3	STAWSS1150S16 STAWSN1150S16 STAWMN1150S16 STAWLN1150S16
STAWN1160TH	●		11.6	6.5	4.4	2.1	5.3	
STAWN1170TH	●		11.7	6.5	4.4	2.1	5.3	
STAWN1180TH	●		11.8	6.5	4.4	2.1	5.3	
STAWN1190TH	●		11.9	6.6	4.4	2.2	5.3	
STAWN1200TH	●		12.0	6.8	4.6	2.2	5.5	STAWSS1200S16 STAWSN1200S16 STAWMN1200S16 STAWLN1200S16
STAWN1210TH	●		12.1	6.8	4.6	2.2	5.5	
STAWN1220TH	●		12.2	6.8	4.6	2.2	5.5	
STAWN1230TH	●		12.3	6.8	4.6	2.2	5.5	
STAWN1240TH	●		12.4	6.9	4.6	2.3	5.5	
STAWN1250TH	●		12.5	7.1	4.8	2.3	5.8	STAWSS1250S16 STAWSN1250S16 STAWMN1250S16 STAWLN1250S16
STAWN1260TH	●		12.6	7.1	4.8	2.3	5.8	
STAWN1270TH	●		12.7	7.1	4.8	2.3	5.8	
STAWN1280TH	●		12.8	7.1	4.8	2.3	5.8	
STAWN1290TH	●		12.9	7.1	4.8	2.3	5.8	
STAWN1300TH	●		13.0	7.3	4.9	2.4	6.0	STAWSS1300S16 STAWSN1300S16 STAWMN1300S16 STAWLN1300S16
STAWN1310TH	●		13.1	7.3	4.9	2.4	6.0	
STAWN1320TH	●		13.2	7.3	4.9	2.4	6.0	
STAWN1330TH	●		13.3	7.3	4.9	2.4	6.0	
STAWN1340TH	●		13.4	7.3	4.9	2.4	6.0	
STAWN1350TH	●		13.5	7.6	5.1	2.5	6.2	STAWSS1350S16 STAWSN1350S16 STAWMN1350S16 STAWLN1350S16
STAWN1360TH	●		13.6	7.6	5.1	2.5	6.2	
STAWN1370TH	●		13.7	7.6	5.1	2.5	6.2	
STAWN1380TH	●		13.8	7.6	5.1	2.5	6.2	
STAWN1390TH	●		13.9	7.6	5.1	2.5	6.2	

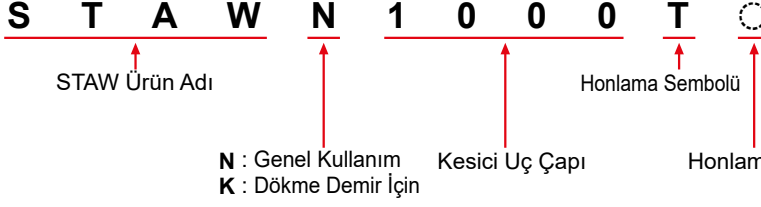
● : Avrupa standart stok. (Not: bir kutuda 1 kesici uç)

Sipariş No.	Kaplama		Boyutlar (mm)					Geçerli Tutucu
	VP15TF		CDI	INSL	LF	PL	S	
STAWN1400TH	●		14.0	7.8	5.3	2.5	6.4	STAWSS1400S16 STAWSN1400S16 STAWMN1400S16 STAWLN1400S16
STAWN1410TH	●		14.1	7.9	5.3	2.6	6.4	
STAWN1420TH	●		14.2	7.9	5.3	2.6	6.4	
STAWN1430TH	●		14.3	7.9	5.3	2.6	6.4	
STAWN1440TH	●		14.4	7.9	5.3	2.6	6.4	
STAWN1450TH	●		14.5	8.1	5.5	2.6	6.7	STAWSS1450S16 STAWSN1450S16 STAWMN1450S16 STAWLN1450S16
STAWN1460TH	●		14.6	8.2	5.5	2.7	6.7	
STAWN1470TH	●		14.7	8.2	5.5	2.7	6.7	
STAWN1480TH	●		14.8	8.2	5.5	2.7	6.7	
STAWN1490TH	●		14.9	8.2	5.5	2.7	6.7	
STAWN1500TH	●		15.0	8.4	5.7	2.7	6.9	STAWSS1500S20 STAWSN1500S20 STAWMN1500S20 STAWLN1500S20
STAWN1510TH	●		15.1	8.4	5.7	2.7	6.9	
STAWN1520TH	●		15.2	8.5	5.7	2.8	6.9	
STAWN1530TH	●		15.3	8.5	5.7	2.8	6.9	
STAWN1540TH	●		15.4	8.5	5.7	2.8	6.9	
STAWN1550T	●		15.5	8.7	5.9	2.8	7.1	STAWSS1600S20 STAWSN1600S20 STAWMN1600S20 STAWLN1600S20
STAWN1560T	●		15.6	8.7	5.9	2.8	7.1	
STAWN1570T	●		15.7	8.8	5.9	2.9	7.1	
STAWN1580T	●		15.8	8.8	5.9	2.9	7.1	
STAWN1590T	●		15.9	8.8	5.9	2.9	7.1	
STAWN1600T	●		16.0	8.8	5.9	2.9	7.1	
STAWN1610T	●		16.1	8.8	5.9	2.9	7.1	
STAWN1620T	●		16.2	8.8	5.9	2.9	7.1	
STAWN1630T	●		16.3	8.9	5.9	3.0	7.1	
STAWN1640T	●		16.4	8.9	5.9	3.0	7.1	
STAWN1650T	●		16.5	9.3	6.3	3.0	7.6	STAWSS1700S20 STAWSN1700S20 STAWMN1700S20 STAWLN1700S20
STAWN1660T	●		16.6	9.3	6.3	3.0	7.6	
STAWN1670T	●		16.7	9.3	6.3	3.0	7.6	
STAWN1680T	●		16.8	9.4	6.3	3.1	7.6	
STAWN1690T	●		16.9	9.4	6.3	3.1	7.6	
STAWN1700T	●		17.0	9.4	6.3	3.1	7.6	
STAWN1710T	●		17.1	9.4	6.3	3.1	7.6	
STAWN1720T	●		17.2	9.4	6.3	3.1	7.6	
STAWN1730T	●		17.3	9.4	6.3	3.1	7.6	
STAWN1740T	●		17.4	9.5	6.3	3.2	7.6	
STAWN1750T	●		17.5	9.9	6.7	3.2	8.1	STAWSS1800S20 STAWSN1800S20 STAWMN1800S20 STAWLN1800S20
STAWN1760T	●		17.6	9.9	6.7	3.2	8.1	
STAWN1770T	●		17.7	9.9	6.7	3.2	8.1	
STAWN1780T	●		17.8	9.9	6.7	3.2	8.1	
STAWN1790T	●		17.9	10.0	6.7	3.3	8.1	
STAWN1800T	●		18.0	10.0	6.7	3.3	8.1	
STAWN1810T	●		18.1	10.0	6.7	3.3	8.1	
STAWN1820T	●		18.2	10.0	6.7	3.3	8.1	
STAWN1830T	●		18.3	10.0	6.7	3.3	8.1	
STAWN1840T	●		18.4	10.0	6.7	3.3	8.1	

HONLAMA GENİŞLİĞİ

Standart dışında honlamalı bir kesici uç gerekliyse, lütfen aşağıdaki sembolleri kullanarak sipariş edin.

(Kesici Uç Sipariş No.)



(Honlama Standardı)

Honlama Tipi	Honlama Genişliği (mm)
F	0
G	0.02–0.05
H	0.05–0.10
- (Standart)	0.10–0.15
K	0.15–0.20
S	0.20–0.25
M	0.25–0.30

ÖNERİLEN KESME KOŞULLARI

Çalışma Malzemesi	Delme Ucu Çapı Koşullar Sertlik	Ø 10.0–Ø 12.9		Ø 13.0–Ø 13.9		Ø 14.0–Ø 15.4		Ø 15.5–Ø 18.4	
		Kesme Hızı (m/dak)	İlerleme (mm/dev)	Kesme Hızı (m/dak)	İlerleme (mm/dev)	Kesme Hızı (m/dak)	İlerleme (mm/dev)	Kesme Hızı (m/dak)	İlerleme (mm/dev)
P Yumuşak Çelik	≤180HB	80 (60–100)	0.20 (0.15–0.25)	90 (70–110)	0.25 (0.20–0.30)	100 (80–120)	0.30 (0.25–0.35)	100 (80–120)	0.35 (0.25–0.40)
	180–280HB	80 (60–100)	0.20 (0.15–0.25)	90 (70–110)	0.25 (0.20–0.30)	100 (80–120)	0.30 (0.25–0.35)	100 (80–120)	0.35 (0.25–0.40)
	280–350HB	70 (60–90)	0.20 (0.15–0.25)	80 (60–100)	0.25 (0.20–0.30)	90 (70–110)	0.25 (0.20–0.30)	90 (70–110)	0.30 (0.20–0.35)
M Paslanmaz Çelik	≤200HB	40 (30–50)	0.13 (0.10–0.16)	50 (40–60)	0.15 (0.12–0.18)	60 (50–70)	0.17 (0.14–0.20)	60 (50–70)	0.17 (0.14–0.20)
K Dökme Demir	Çekme Mukavemeti ≤350MPa	80 (60–100)	0.20 (0.15–0.25)	90 (70–110)	0.25 (0.20–0.30)	100 (80–120)	0.30 (0.25–0.35)	120 (80–140)	0.45 (0.35–0.55)
	Duktil Dökme Demir Çekme Mukavemeti ≤450MPa	70 (60–90)	0.20 (0.15–0.25)	80 (60–100)	0.25 (0.20–0.30)	90 (70–110)	0.30 (0.25–0.35)	100 (80–120)	0.35 (0.25–0.40)

Not 1) Matkabı DCx1.5 derinlikteki bir delik için kullanırken, ilerleme hızını yaklaşık %20 arttırmak mümkündür.

Not 2) DCx8 tip tutucu kullanırken kesme hızını yaklaşık %20 düşürün.

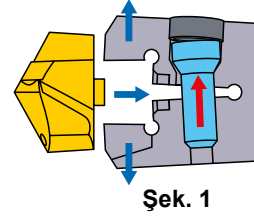
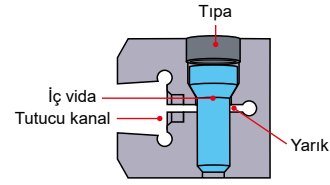
Not 3) DCx8 tip tutucuyu kullanırken bir pilot kılavuz deliği açılması tavsiye edilir.

Not 4) Paslanmaz çelik için, lütfen içten soğutma suyu kullanın. (Buğu ve MQL önerilmez).

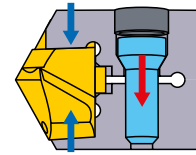
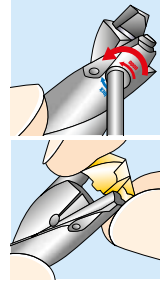
KULLANIMA İLİŞKİN NOTLAR

■ KESİCİ UÇ MONTAJI

1. Kesici ucu tutucuya takmadan önce, tutucu yuvasında veya yarığında yabancı nesne veya kir olmadığından emin olun. Gerekirse basınçlı hava kullanarak temizleyin.
2. Tutucunun ucunu açmak için iç vidayı gevşetmek üzere sağlanan anahtar kullanın, ardından kesici ucu şekil 1'de gösterildiği gibi tutucu yuvasına yerleştirin.
*Sıkarken anahtarın iç vida kafasının tabanı ile sıkıca temas ettiğinden emin olun.
3. Kesici uç tutucu yuvasında ayarlandıktan sonra, kelepçeyi sabitlemek ve kesici ucu konumlandırmak için kesici ucu şekil 2'de gösterildiği gibi cebeye hafifçe iterken iç vidayı sıkın.
*Sıkarken anahtarın iç vida kafasının tabanı ile sıkıca temas ettiğinden emin olun.



Şek. 1

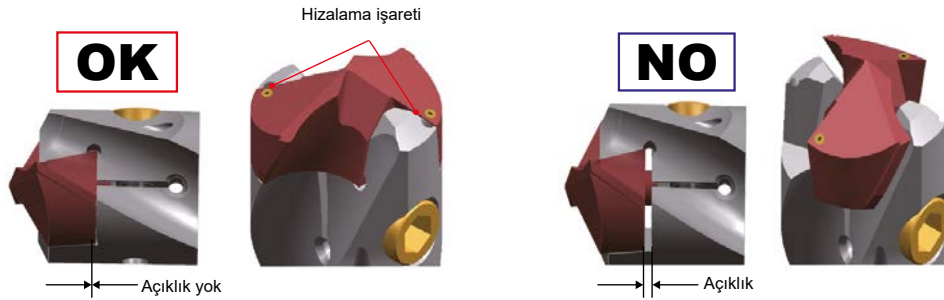


Şek. 2

Bağlama vidasını aşağıdaki torka göre sıkın.

Delme Ucu Çapı (mm)	Tork
	N•m
10 – 12.9	1
13 – 15.4	2
15.5 – 18.4	2.5



4. Kesici uç ve tutucu yuvasının tabanı arasında boşluk olmadığını kontrol edin.



Not 1) Kesici uçların zayıf veya yanlış bağlanması düşük delme performansına ve/veya delme ucu kırılmasına neden olabilir. Bu nedenle hem gövde hem de kesici uçtaki hizalama işaretlerinin ayarlama sırasında hizalandığından emin olun. İşleme sırasında, güvenlik korumaları ve gözlüklerini kullanın.

STAW

YEDEK PARÇALAR

Geçerli Tutucu	Paket Sipariş No. (Dahili vida ve tıpa)		
		İç vida	Tıpa
STAWSS/SN/MN/LN1000S16	WS203107TPS-35LH	WS203107TPS	WS35LH
STAWSS/SN/MN/LN1050S16	WS203107TPS-35LH	WS203107TPS	WS35LH
STAWSS/SN/MN/LN1100S16	WS203108TPS-35LH	WS203108TPS	WS35LH
STAWSS/SN/MN/LN1150S16	WS203108TPS-35LH	WS203108TPS	WS35LH
STAWSS/SN/MN/LN1200S16	WS203108TPS-35LH	WS203108TPS	WS35LH
STAWSS/SN/MN/LN1250S16	WS203108TPS-35LH	WS203108TPS	WS35LH
STAWSS/SN/MN/LN1300S16	WS253909TPS-45LH	WS253909TPS	WS45LH
STAWSS/SN/MN/LN1350S16	WS253909TPS-45LH	WS253909TPS	WS45LH
STAWSS/SN/MN/LN1400S16	WS253909TPS-45LH	WS253909TPS	WS45LH
STAWSS/SN/MN/LN1450S16	WS253909TPS-45LH	WS253909TPS	WS45LH
STAWSS/SN/MN/LN1500S20	WS253909TPS-45LH	WS253909TPS	WS45LH
STAWSS/SN/MN/LN1600S20	WS304912TPS-55LH	WS304912TPS	WS55LH
STAWSS/SN/MN/LN1700S20	WS304912TPS-55LH	WS304912TPS	WS55LH
STAWSS/SN/MN/LN1800S20	WS304912TPS-55LH	WS304912TPS	WS55LH

Not 1) Paketlenmiş parçalar iç vida, tıpa ve çalışma kılavuzudur. Lütfen parçaları çalışma kılavuzuna göre değiştirin.

DC (mm)	Delik Derinliği (L/D)	Tutucu		Boyutlar (mm)						Bağlama Vidası	Anahtar	Levha	Sıkıştırma Önleyici Yağ	Kesici Uç				
		Sipariş No.	Stok	LU	LBX	LH	OAL	LF	DCONIMS					DC (mm)	Sipariş No.	Stok		
														VP15TF	VP10H			
20.5 - 21.4	3	TAWSN2100S25	●	65.2	78.7	102.7	158.7	155.0	25	WS304518T	TKY10T	WPT4405	MK1KS	20.5	* TAWNH2050T	●	□	
															TAWKH2050TG			
														20.6	TAWNH2060T	□	□	
	5	TAWMN2100S25	●	106.2	121.7	142.7	198.7	195.0	25	WS304518T	TKY10T	WPT4405	MK1KS	20.6	TAWKH2060TG			
														20.7	TAWNH2070T	□	□	
															TAWKH2070TG			
	8	TAWLN2100S25	●	167.7	181.7	205.7	261.7	258.0	25	WS304518T	TKY10T	WPT4405	MK1KS	20.7	TAWNH2080T	□	□	
															TAWKH2080TG			
														20.8	TAWNH2090T	□	□	
	21.5 - 22.4	3	TAWSN2200S25	●	68.4	83.2	108.2	164.2	160.3	25	WS355520T	TKY15T	WPT4405	MK1KS	20.9	TAWKH2090TG		
															21.0	TAWNH2100T	●	□
																TAWKH2100TG		
5		TAWMN2200S25	●	111.4	128.2	148.2	204.2	200.3	25	WS355520T	TKY15T	WPT4405	MK1KS	21.0	TAWNH2110T	□	□	
															TAWKH2110TG			
														21.1	TAWNH2120T	□	□	
8		TAWLN2200S25	●	175.9	189.9	213.9	269.9	266.0	25	WS355520T	TKY15T	WPT4405	MK1KS	21.2	TAWKH2120TG			
														21.3	TAWNH2130T	□	□	
															TAWKH2130TG			
22.5 - 23.4		3	TAWSN2300S25	●	71.6	86.4	108.4	164.4	160.3	25	WS355521T	TKY15T	WPT4405	MK1KS	21.4	TAWNH2140T	□	□
																TAWKH2140TG		
															21.5	* TAWNH2150T	●	□
	5	TAWMN2300S25	●	116.6	133.4	158.4	214.4	210.3	25	WS355521T	TKY15T	WPT4405	MK1KS	21.6	TAWKH2150TG			
														21.6	TAWNH2160T	□	□	
															TAWKH2160TG			
	8	TAWLN2300S25	●	184.1	198.1	227.1	283.1	279.0	25	WS355521T	TKY15T	WPT4405	MK1KS	21.7	TAWNH2170T	□	□	
															TAWKH2170TG			
														21.8	TAWNH2180T	□	□	
	22.5 - 23.4	3	TAWSN2300S25	●	71.6	86.4	108.4	164.4	160.3	25	WS355521T	TKY15T	WPT4405	MK1KS	21.9	TAWKH2180TG		
															21.9	TAWNH2190T	□	□
																TAWKH2190TG		
5		TAWMN2300S25	●	116.6	133.4	158.4	214.4	210.3	25	WS355521T	TKY15T	WPT4405	MK1KS	22.0	TAWNH2200T	●	□	
															TAWKH2200TG			
														22.0	TAWNH2210T	□	□	
8		TAWLN2300S25	●	184.1	198.1	227.1	283.1	279.0	25	WS355521T	TKY15T	WPT4405	MK1KS	22.1	TAWKH2210TG			
														22.2	TAWNH2220T	□	□	
															TAWKH2220TG			
22.5 - 23.4		3	TAWSN2300S25	●	71.6	86.4	108.4	164.4	160.3	25	WS355521T	TKY15T	WPT4405	MK1KS	22.2	TAWNH2230T	□	□
																TAWKH2230TG		
															22.3	TAWNH2240T	□	□
	5	TAWMN2300S25	●	116.6	133.4	158.4	214.4	210.3	25	WS355521T	TKY15T	WPT4405	MK1KS	22.4	TAWKH2240TG			
														22.5	* TAWNH2250T	●	□	
															TAWKH2250TG			
	8	TAWLN2300S25	●	184.1	198.1	227.1	283.1	279.0	25	WS355521T	TKY15T	WPT4405	MK1KS	22.6	TAWNH2260T	□	□	
															TAWKH2260TG			
														22.7	TAWNH2270T	□	□	
	22.5 - 23.4	3	TAWSN2300S25	●	71.6	86.4	108.4	164.4	160.3	25	WS355521T	TKY15T	WPT4405	MK1KS	22.8	TAWKH2270TG		
															22.8	TAWNH2280T	□	□
																TAWKH2280TG		
5		TAWMN2300S25	●	116.6	133.4	158.4	214.4	210.3	25	WS355521T	TKY15T	WPT4405	MK1KS	22.9	TAWNH2290T	□	□	
															TAWKH2290TG			
														23.0	TAWNH2300T	●	□	
8		TAWLN2300S25	●	184.1	198.1	227.1	283.1	279.0	25	WS355521T	TKY15T	WPT4405	MK1KS	23.1	TAWKH2300TG			
														23.1	TAWNH2310T	□	□	
															TAWKH2310TG			
5		TAWMN2300S25	●	116.6	133.4	158.4	214.4	210.3	25	WS355521T	TKY15T	WPT4405	MK1KS	23.2	TAWNH2320T	□	□	
															TAWKH2320TG			
														23.3	TAWNH2330T	□	□	
8	TAWLN2300S25	●	184.1	198.1	227.1	283.1	279.0	25	WS355521T	TKY15T	WPT4405	MK1KS	23.3	TAWKH2330TG				
													23.3	TAWNH2340T	□	□		
														TAWKH2340TG				

KESİCİ UÇ AÇIKLAMASI > M153
 KESME KOŞULLARI > M155
 KULLANIM NOTU > M156

YEDEK PARÇALAR > N001
 TEKNİK VERİLER > P001

DELME (DEĞİŞTİRİLEBİLİR UÇLU TİP)

TAW

KARBÜR

M
DELME

DC (mm)	Delik Derinliği (L/D)	Tutucu		Boyutlar (mm)						Bağlama Vidası	Anahtar	Levha	Sıkıştırma Önleyici Yağ	Kesici Uç				
		Sipariş No.	Stok	LU	LBX	LH	OAL	LF	DCONIMS					DC (mm)	Sipariş No.	Stok		
														VP15TF	VP10H			
23.5 - 24.4	3	TAWSN2400S32	●	74.8	90.6	114.6	174.6	170.3	32	WS355521T	TKY15T	WPT4405	MK1KS	23.5	* TAWNH2350T	●	□	
															TAWKH2350TG			
														23.6	TAWNH2360T	□	□	
	5	TAWMN2400S32	●	121.8	139.6	164.6	224.6	220.3	32	WS355521T	TKY15T	WPT4405	MK1KS	23.7	TAWNH2370T	□	□	
															TAWKH2370TG			
														23.8	TAWNH2380T	□	□	
	8	TAWLN2400S32	●	192.3	206.6	236.6	296.6	292.3	32	WS355521T	TKY15T	WPT4405	MK1KS	23.9	TAWNH2390T	□	□	
															TAWKH2390TG			
														24.0	TAWNH2400T	●	□	
	24.5 - 25.4	3	TAWSN2500S32	●	78.0	93.1	115.1	175.1	170.6	32	WS406023T	TKY25T	WPT4405	MK1KS	24.1	TAWNH2410T	□	□
																TAWKH2410TG		
															24.2	TAWNH2420T	□	□
5		TAWMN2500S32	●	127.0	145.1	170.1	230.1	225.6	32	WS406023T	TKY25T	WPT4405	MK1KS	24.3	TAWNH2430T	□	□	
															TAWKH2430TG			
														24.4	TAWNH2440T	□	□	
8		TAWLN2500S32	●	200.5	215.1	245.1	305.1	300.6	32	WS406023T	TKY25T	WPT4405	MK1KS	24.5	* TAWNH2450T	●	□	
															TAWKH2450TG			
														24.6	TAWNH2460T	□	□	
25.5 - 26.4		3	TAWSN2600S32	●	81.1	97.2	120.2	180.2	175.6	32	WS406024T	TKY25T	WPT4405	MK1KS	24.7	TAWNH2470T	□	□
																TAWKH2470TG		
															24.8	TAWNH2480T	□	□
	5	TAWMN2600S32	●	132.1	151.2	175.2	235.2	230.6	32	WS406024T	TKY25T	WPT4405	MK1KS	24.9	TAWNH2490T	□	□	
															TAWKH2490TG			
														25.0	TAWNH2500T	●	□	
	8	TAWLN2600S32	●	208.6	223.2	253.2	313.2	308.6	32	WS406024T	TKY25T	WPT4405	MK1KS	25.1	TAWNH2510T	□	□	
															TAWKH2510TG			
														25.2	TAWNH2520T	□	□	
	25.5 - 26.4	3	TAWSN2600S32	●	81.1	97.2	120.2	180.2	175.6	32	WS406024T	TKY25T	WPT4405	MK1KS	25.3	TAWNH2530T	□	□
																TAWKH2530TG		
															25.4	TAWNH2540T	□	□
5		TAWMN2600S32	●	132.1	151.2	175.2	235.2	230.6	32	WS406024T	TKY25T	WPT4405	MK1KS	25.5	* TAWNH2550T	●	□	
															TAWKH2550TG			
														25.6	TAWNH2560T	□	□	
8		TAWLN2600S32	●	208.6	223.2	253.2	313.2	308.6	32	WS406024T	TKY25T	WPT4405	MK1KS	25.7	TAWNH2570T	□	□	
															TAWKH2570TG			
														25.8	TAWNH2580T	□	□	
25.5 - 26.4		3	TAWSN2600S32	●	81.1	97.2	120.2	180.2	175.6	32	WS406024T	TKY25T	WPT4405	MK1KS	25.9	TAWNH2590T	□	□
																TAWKH2590TG		
															26.0	TAWNH2600T	●	□
	5	TAWMN2600S32	●	132.1	151.2	175.2	235.2	230.6	32	WS406024T	TKY25T	WPT4405	MK1KS	26.1	TAWNH2610T	□	□	
															TAWKH2610TG			
														26.2	TAWNH2620T	□	□	
	8	TAWLN2600S32	●	208.6	223.2	253.2	313.2	308.6	32	WS406024T	TKY25T	WPT4405	MK1KS	26.3	TAWNH2630T	□	□	
															TAWKH2630TG			
														26.4	TAWNH2640T	□	□	

Not 1) Yukarıdaki boyutlar (*), kesici uçların montajından sonraki boyutlardır .

Not 2) Lütfen bu katalogta olmayan herhangi bir geometri için bizimle iletişime kurun (ör. farklı çap ve uzunluk).

● : Avrupa standart stok. □ : Stokta bulundurulmaz, yalnızca siparişe istinaden üretilir.
(Not: bir kutuda 1 kesici uç)

DC (mm)	Delik Derinliği (L/D)	Tutucu		Boyutlar (mm)						Bağlama Vidası	Anahtar	Levha	Sıkıştırma Önleyici Yağ	Kesici Uç				
		Sipariş No.	Stok	LU	LBX	LH	OAL	LF	DCONIMS					DC (mm)	Sipariş No.	Stok		
														VP15TF	VP10H			
26.5 - 27.4	3	TAWSN2700S32	●	84.3	99.4	120.4	180.4	175.6	32	WS406024T	TKY25T	WPT4405	MK1KS	26.5	* TAWNH2650T	●	<input type="checkbox"/>	
															TAWKH2650TG			
														26.6	TAWNH2660T	<input type="checkbox"/>	<input type="checkbox"/>	
															TAWKH2660TG			
		5	TAWMN2700S32	●	137.3	156.4	180.4	240.4	235.6	32	WS406024T	TKY25T	WPT4405	MK1KS	26.7	TAWNH2670T	<input type="checkbox"/>	<input type="checkbox"/>
															TAWKH2670TG			
	26.8														TAWNH2680T	<input type="checkbox"/>	<input type="checkbox"/>	
															TAWKH2680TG			
		8	TAWLN2700S32	●	216.8	231.4	261.4	321.4	316.6	32	WS406024T	TKY25T	WPT4405	MK1KS	26.9	TAWNH2690T	<input type="checkbox"/>	<input type="checkbox"/>
															TAWKH2690TG			
	27.0														TAWNH2700T	●	<input type="checkbox"/>	
															TAWKH2700TG			
														27.1	TAWNH2710T	<input type="checkbox"/>	<input type="checkbox"/>	
														TAWKH2710TG				
27.2														TAWNH2720T	<input type="checkbox"/>	<input type="checkbox"/>		
														TAWKH2720TG				
														27.3	TAWNH2730T	<input type="checkbox"/>	<input type="checkbox"/>	
														TAWKH2730TG				
27.4														TAWNH2740T	<input type="checkbox"/>	<input type="checkbox"/>		
														TAWKH2740TG				
27.5 - 28.4	3	TAWSN2800S32	●	87.5	102.2	125.2	185.2	180.2	32	WS508026T	TKY27T	WPT4405	MK1KS	27.5	* TAWNH2750T	●	<input type="checkbox"/>	
															TAWKH2750TG			
														27.6	TAWNH2760T	<input type="checkbox"/>	<input type="checkbox"/>	
															TAWKH2760TG			
		5	TAWMN2800S32	●	142.5	162.2	185.2	245.2	240.2	32	WS508026T	TKY27T	WPT4405	MK1KS	27.7	TAWNH2770T	<input type="checkbox"/>	<input type="checkbox"/>
															TAWKH2770TG			
	27.8														TAWNH2780T	<input type="checkbox"/>	<input type="checkbox"/>	
															TAWKH2780TG			
		8	TAWLN2800S32	●	225.0	239.2	269.2	329.2	324.2	32	WS508026T	TKY27T	WPT4405	MK1KS	27.9	TAWNH2790T	<input type="checkbox"/>	<input type="checkbox"/>
															TAWKH2790TG			
	28.0														TAWNH2800T	●	<input type="checkbox"/>	
															TAWKH2800TG			
														28.1	TAWNH2810T	<input type="checkbox"/>	<input type="checkbox"/>	
														TAWKH2810TG				
28.2														TAWNH2820T	<input type="checkbox"/>	<input type="checkbox"/>		
														TAWKH2820TG				
														28.3	TAWNH2830T	<input type="checkbox"/>	<input type="checkbox"/>	
														TAWKH2830TG				
28.4														TAWNH2840T	<input type="checkbox"/>	<input type="checkbox"/>		
														TAWKH2840TG				
28.5 - 29.4	3	TAWSN2900S32	●	90.7	105.4	130.4	190.4	185.2	32	WS508027T	TKY27T	WPT4405	MK1KS	28.5	* TAWNH2850T	●	<input type="checkbox"/>	
															TAWKH2850TG			
														28.6	TAWNH2860T	<input type="checkbox"/>	<input type="checkbox"/>	
															TAWKH2860TG			
		5	TAWMN2900S32	●	147.7	167.4	190.4	250.4	245.2	32	WS508027T	TKY27T	WPT4405	MK1KS	28.7	TAWNH2870T	<input type="checkbox"/>	<input type="checkbox"/>
															TAWKH2870TG			
	28.8														TAWNH2880T	<input type="checkbox"/>	<input type="checkbox"/>	
															TAWKH2880TG			
		8	TAWLN2900S32	●	233.2	247.4	277.4	337.4	332.2	32	WS508027T	TKY27T	WPT4405	MK1KS	28.9	TAWNH2890T	<input type="checkbox"/>	<input type="checkbox"/>
															TAWKH2890TG			
	29.0														TAWNH2900T	●	<input type="checkbox"/>	
															TAWKH2900TG			
														29.1	TAWNH2910T	<input type="checkbox"/>	<input type="checkbox"/>	
														TAWKH2910TG				
29.2														TAWNH2920T	<input type="checkbox"/>	<input type="checkbox"/>		
														TAWKH2920TG				
														29.3	TAWNH2930T	<input type="checkbox"/>	<input type="checkbox"/>	
														TAWKH2930TG				
29.4														TAWNH2940T	<input type="checkbox"/>	<input type="checkbox"/>		
														TAWKH2940TG				

M

DELME

KESİCİ UÇ AÇIKLAMASI > M153

KESME KOŞULLARI > M155

KULLANIM NOTU > M156

YEDEK PARÇALAR > N001

TEKNİK VERİLER > P001

M151

DELME (DEĞİŞTİRİLEBİLİR UÇLU TİP)

KARBÜR

TAW

M
DELME

DC (mm)	Delik Derinliği (L/D)	Tutucu		Boyutlar (mm)						Bağlama Vidası	Anahtar	Levha	Sıkıştırma Önleyici Yağ	Kesici Uç			
		Sipariş No.	Stok	LU	LBX	LH	OAL	LF	DCONIMS					DC (mm)	Sipariş No.	Stok	
														VP15TF	VP10H		
29.5 - 30.4	3	TAWSN3000S32	●	93.9	109.6	130.6	190.6	185.2	32	WS508027T	TKY27T	WPT4405	MK1KS	29.5	* TAWNH2950T	●	<input type="checkbox"/>
															TAWKH2950TG		
														29.6	TAWNH2960T	<input type="checkbox"/>	<input type="checkbox"/>
		TAWKH2960TG															
		29.7	TAWNH2970T	<input type="checkbox"/>	<input type="checkbox"/>												
		TAWKH2970TG															
		29.8	TAWNH2980T	<input type="checkbox"/>	<input type="checkbox"/>												
		TAWKH2980TG															
		29.9	TAWNH2990T	<input type="checkbox"/>	<input type="checkbox"/>												
		TAWKH2990TG															
		30.0	TAWNH3000T	●	<input type="checkbox"/>												
		TAWKH3000TG															
	30.1	TAWNH3010T	<input type="checkbox"/>	<input type="checkbox"/>													
	TAWKH3010TG																
	30.2	TAWNH3020T	<input type="checkbox"/>	<input type="checkbox"/>													
	TAWKH3020TG																
	30.3	TAWNH3030T	<input type="checkbox"/>	<input type="checkbox"/>													
	TAWKH3030TG																
	30.4	TAWNH3040T	<input type="checkbox"/>	<input type="checkbox"/>													
	TAWKH3040TG																
	8	TAWLN3000S32	●	241.4	255.6	290.6	350.6	345.2	32	WS508027T	TKY27T	WPT4405	MK1KS				

Not 1) Yukarıdaki boyutlar (*), kesici uçların montajından sonraki boyutlardır .

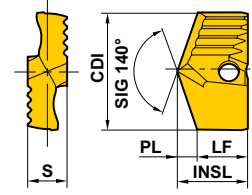
Not 2) Lütfen bu katalogta olmayan herhangi bir geometri için bizimle iletişim kurun (ör. farklı çap ve uzunluk).

● : Avrupa standart stok. □ : Stokta bulundurulmaz, yalnızca siparişe istinaden üretilir.
(Not: bir kutuda 1 kesici uç)

M152

KESİCİ UÇLAR

H Tipi



Sipariş No.	Stok		Boyutlar (mm)					Geçerli Tutucu
	VP15TF	VP10H	CDI	INSL	LF	PL	S	
TAWNH1850T	●	□	18.5	12.7	9.3	3.4	7.0	TAWSN 1900S25
TAWNH1860T	●	□	18.6	12.7	9.3	3.4	7.0	
TAWNH1870T	●	□	18.7	12.7	9.3	3.4	7.0	
TAWNH1880T	●	□	18.8	12.7	9.3	3.4	7.0	
TAWNH1890T	●	□	18.9	12.7	9.3	3.4	7.0	
TAWNH1900T	●	□	19.0	12.7	9.2	3.5	7.0	
TAWNH1910T	●	□	19.1	12.7	9.2	3.5	7.0	
TAWNH1920T	●	□	19.2	12.7	9.2	3.5	7.0	
TAWNH1930T	●	□	19.3	12.7	9.2	3.5	7.0	
TAWNH1940T	●	□	19.4	12.7	9.2	3.5	7.0	
TAWNH1950T	●	□	19.5	12.6	9.1	3.5	7.0	TAWSN 2000S25
TAWNH1960T	●	□	19.6	12.7	9.1	3.6	7.0	
TAWNH1970T	●	□	19.7	12.7	9.1	3.6	7.0	
TAWNH1980T	●	□	19.8	12.7	9.1	3.6	7.0	
TAWNH1990T	●	□	19.9	12.7	9.1	3.6	7.0	
TAWNH2000T	●	□	20.0	12.6	9.0	3.6	7.0	
TAWNH2010T	□	□	20.1	12.7	9.0	3.7	7.0	
TAWNH2020T	□	□	20.2	12.7	9.0	3.7	7.0	
TAWNH2030T	□	□	20.3	12.7	9.0	3.7	7.0	
TAWNH2040T	□	□	20.4	12.7	9.0	3.7	7.0	
TAWNH2050T	●	□	20.5	12.6	8.9	3.7	7.0	TAWSN 2100S25
TAWNH2060T	□	□	20.6	12.6	8.9	3.7	7.0	
TAWNH2070T	□	□	20.7	12.7	8.9	3.8	7.0	
TAWNH2080T	□	□	20.8	12.7	8.9	3.8	7.0	
TAWNH2090T	□	□	20.9	12.7	8.9	3.8	7.0	
TAWNH2100T	●	□	21.0	12.6	8.8	3.8	7.0	
TAWNH2110T	□	□	21.1	12.6	8.8	3.8	7.0	
TAWNH2120T	□	□	21.2	12.7	8.8	3.9	7.0	
TAWNH2130T	□	□	21.3	12.7	8.8	3.9	7.0	
TAWNH2140T	□	□	21.4	12.7	8.8	3.9	7.0	
TAWNH2150T	●	□	21.5	14.5	10.6	3.9	8.0	TAWSN 2200S25
TAWNH2160T	□	□	21.6	14.5	10.6	3.9	8.0	
TAWNH2170T	□	□	21.7	14.5	10.6	3.9	8.0	
TAWNH2180T	□	□	21.8	14.6	10.6	4.0	8.0	
TAWNH2190T	□	□	21.9	14.6	10.6	4.0	8.0	
TAWNH2200T	●	□	22.0	14.5	10.5	4.0	8.0	
TAWNH2210T	□	□	22.1	14.5	10.5	4.0	8.0	
TAWNH2220T	□	□	22.2	14.5	10.5	4.0	8.0	
TAWNH2230T	□	□	22.3	14.6	10.5	4.1	8.0	
TAWNH2240T	□	□	22.4	14.6	10.5	4.1	8.0	

Sipariş No.	Stok		Boyutlar (mm)					Geçerli Tutucu
	VP15TF	VP10H	CDI	INSL	LF	PL	S	
TAWNH2250T	●	□	22.5	14.5	10.4	4.1	8.0	TAWSN 2300S25
TAWNH2260T	□	□	22.6	14.5	10.4	4.1	8.0	
TAWNH2270T	□	□	22.7	14.5	10.4	4.1	8.0	
TAWNH2280T	□	□	22.8	14.5	10.4	4.1	8.0	
TAWNH2290T	□	□	22.9	14.6	10.4	4.2	8.0	
TAWNH2300T	●	□	23.0	14.5	10.3	4.2	8.0	
TAWNH2310T	□	□	23.1	14.5	10.3	4.2	8.0	
TAWNH2320T	□	□	23.2	14.5	10.3	4.2	8.0	
TAWNH2330T	□	□	23.3	14.5	10.3	4.2	8.0	
TAWNH2340T	□	□	23.4	14.6	10.3	4.3	8.0	
TAWNH2350T	●	□	23.5	14.5	10.2	4.3	8.0	TAWSN 2400S32
TAWNH2360T	□	□	23.6	14.5	10.2	4.3	8.0	
TAWNH2370T	□	□	23.7	14.5	10.2	4.3	8.0	
TAWNH2380T	□	□	23.8	14.5	10.2	4.3	8.0	
TAWNH2390T	□	□	23.9	14.5	10.2	4.3	8.0	
TAWNH2400T	●	□	24.0	14.5	10.1	4.4	8.0	
TAWNH2410T	□	□	24.1	14.5	10.1	4.4	8.0	
TAWNH2420T	□	□	24.2	14.5	10.1	4.4	8.0	
TAWNH2430T	□	□	24.3	14.5	10.1	4.4	8.0	
TAWNH2440T	□	□	24.4	14.5	10.1	4.4	8.0	
TAWNH2450T	●	□	24.5	16.2	11.7	4.5	9.0	TAWSN 2500S32
TAWNH2460T	□	□	24.6	16.2	11.7	4.5	9.0	
TAWNH2470T	□	□	24.7	16.2	11.7	4.5	9.0	
TAWNH2480T	□	□	24.8	16.2	11.7	4.5	9.0	
TAWNH2490T	□	□	24.9	16.2	11.7	4.5	9.0	
TAWNH2500T	●	□	25.0	16.1	11.6	4.5	9.0	
TAWNH2510T	□	□	25.1	16.2	11.6	4.6	9.0	
TAWNH2520T	□	□	25.2	16.2	11.6	4.6	9.0	
TAWNH2530T	□	□	25.3	16.2	11.6	4.6	9.0	
TAWNH2540T	□	□	25.4	16.2	11.6	4.6	9.0	
TAWNH2550T	●	□	25.5	16.1	11.5	4.6	9.0	TAWSN 2600S32
TAWNH2560T	□	□	25.6	16.2	11.5	4.7	9.0	
TAWNH2570T	□	□	25.7	16.2	11.5	4.7	9.0	
TAWNH2580T	□	□	25.8	16.2	11.5	4.7	9.0	
TAWNH2590T	□	□	25.9	16.2	11.5	4.7	9.0	
TAWNH2600T	●	□	26.0	16.1	11.4	4.7	9.0	
TAWNH2610T	□	□	26.1	16.1	11.4	4.7	9.0	
TAWNH2620T	□	□	26.2	16.2	11.4	4.8	9.0	
TAWNH2630T	□	□	26.3	16.2	11.4	4.8	9.0	
TAWNH2640T	□	□	26.4	16.2	11.4	4.8	9.0	

DELME (DEĞİŞTİRİLEBİLİR UÇLU TİP)

TAW

KARBÜR

M
DELME

Sipariş No.	Stok		Boyutlar (mm)					Geçerli Tutucu
	VP15TF	VP10H	CDI	INSL	LF	PL	S	
TAWNH2650T	●	□	26.5	16.1	11.3	4.8	9.0	TAWSN 2700S32
TAWNH2660T	□	□	26.6	16.1	11.3	4.8	9.0	
TAWNH2670T	□	□	26.7	16.2	11.3	4.9	9.0	
TAWNH2680T	□	□	26.8	16.2	11.3	4.9	9.0	
TAWNH2690T	□	□	26.9	16.2	11.3	4.9	9.0	
TAWNH2700T	●	□	27.0	16.1	11.2	4.9	9.0	
TAWNH2710T	□	□	27.1	16.1	11.2	4.9	9.0	
TAWNH2720T	□	□	27.2	16.1	11.2	4.9	9.0	
TAWNH2730T	□	□	27.3	16.2	11.2	5.0	9.0	
TAWNH2740T	□	□	27.4	16.2	11.2	5.0	9.0	
TAWNH2750T	●	□	27.5	17.3	12.3	5.0	10.0	TAWMN 2700S32
TAWNH2760T	□	□	27.6	17.3	12.3	5.0	10.0	
TAWNH2770T	□	□	27.7	17.3	12.3	5.0	10.0	
TAWNH2780T	□	□	27.8	17.4	12.3	5.1	10.0	
TAWNH2790T	□	□	27.9	17.4	12.3	5.1	10.0	
TAWNH2800T	●	□	28.0	17.3	12.2	5.1	10.0	
TAWNH2810T	□	□	28.1	17.3	12.2	5.1	10.0	
TAWNH2820T	□	□	28.2	17.3	12.2	5.1	10.0	
TAWNH2830T	□	□	28.3	17.4	12.2	5.2	10.0	
TAWNH2840T	□	□	28.4	17.4	12.2	5.2	10.0	

Sipariş No.	Stok		Boyutlar (mm)					Geçerli Tutucu
	VP15TF	VP10H	CDI	INSL	LF	PL	S	
TAWNH2850T	●	□	28.5	17.3	12.1	5.2	10.0	TAWSN 2900S32
TAWNH2860T	□	□	28.6	17.3	12.1	5.2	10.0	
TAWNH2870T	□	□	28.7	17.3	12.1	5.2	10.0	
TAWNH2880T	□	□	28.8	17.3	12.1	5.2	10.0	
TAWNH2890T	□	□	28.9	17.4	12.1	5.3	10.0	
TAWNH2900T	●	□	29.0	17.3	12.0	5.3	10.0	
TAWNH2910T	□	□	29.1	17.3	12.0	5.3	10.0	
TAWNH2920T	□	□	29.2	17.3	12.0	5.3	10.0	
TAWNH2930T	□	□	29.3	17.3	12.0	5.3	10.0	
TAWNH2940T	□	□	29.4	17.4	12.0	5.4	10.0	
TAWNH2950T	●	□	29.5	17.3	11.9	5.4	10.0	TAWMN 2900S32
TAWNH2960T	□	□	29.6	17.3	11.9	5.4	10.0	
TAWNH2970T	□	□	29.7	17.3	11.9	5.4	10.0	
TAWNH2980T	□	□	29.8	17.3	11.9	5.4	10.0	
TAWNH2990T	□	□	29.9	17.3	11.9	5.4	10.0	
TAWNH3000T	●	□	30.0	17.3	11.8	5.5	10.0	
TAWNH3010T	□	□	30.1	17.3	11.8	5.5	10.0	
TAWNH3020T	□	□	30.2	17.3	11.8	5.5	10.0	
TAWNH3030T	□	□	30.3	17.3	11.8	5.5	10.0	
TAWNH3040T	□	□	30.4	17.3	11.8	5.5	10.0	

● : Avrupa standart stok. □ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.
(Not: bir kutuda 1 kesici uç)

KESME KOŞULLARI > M155
KULLANIM NOTU > M156

YEDEK PARÇALAR > N001
TEKNİK VERİLER > P001

ÖNERİLEN KESME KOŞULLARI

Çalışma Malzemesi	Delme Ucu Çapı Koşullar Sertlik	Ø 18.5–Ø 21.4		Ø 21.5–Ø 24.4	
		Kesme Hızı (m/dak)	İlerleme (mm/dev)	Kesme Hızı (m/dak)	İlerleme (mm/dev)
P Yumuşak Çelik	≤180HB	90 (70–110)	0.25 (0.20–0.30)	100 (80–120)	0.30 (0.25–0.35)
	180–280HB	80 (60–100)	0.25 (0.20–0.30)	90 (70–110)	0.30 (0.25–0.35)
	280–350HB	70 (50–90)	0.20 (0.15–0.25)	80 (60–100)	0.25 (0.20–0.30)
M Paslanmaz Çelik	≤200HB	60 (50–70)	0.20 (0.15–0.22)	60 (50–70)	0.20 (0.15–0.22)
K Dökme Demir	Çekme Mukavemeti ≤350MPa	120 (60–140)	0.25 (0.20–0.30)	130 (80–150)	0.35 (0.25–0.40)
	Çekme Mukavemeti ≤450MPa	80 (60–90)	0.25 (0.20–0.30)	90 (60–100)	0.30 (0.25–0.35)

Çalışma Malzemesi	Delme Ucu Çapı Koşullar Sertlik	Ø 24.5–Ø 27.4		Ø 27.5–Ø 30.4	
		Kesme Hızı (m/dak)	İlerleme (mm/dev)	Kesme Hızı (m/dak)	İlerleme (mm/dev)
P Yumuşak Çelik	≤180HB	110 (80–120)	0.30 (0.25–0.35)	110 (80–120)	0.30 (0.25–0.35)
	180–280HB	100 (80–120)	0.30 (0.25–0.35)	100 (80–120)	0.30 (0.25–0.35)
	280–350HB	90 (70–110)	0.25 (0.20–0.30)	90 (70–110)	0.25 (0.20–0.30)
M Paslanmaz Çelik	≤200HB	70 (60–80)	0.25 (0.20–0.28)	70 (60–80)	0.25 (0.20–0.28)
K Dökme Demir	Çekme Mukavemeti ≤350MPa	140 (90–160)	0.35 (0.25–0.40)	140 (90–160)	0.40 (0.30–0.45)
	Çekme Mukavemeti ≤450MPa	100 (80–110)	0.30 (0.25–0.35)	100 (80–110)	0.30 (0.25–0.35)

Not 1) Yumuşak çelik ve paslanmaz çelik işlerken H tipi honlama önerilir.

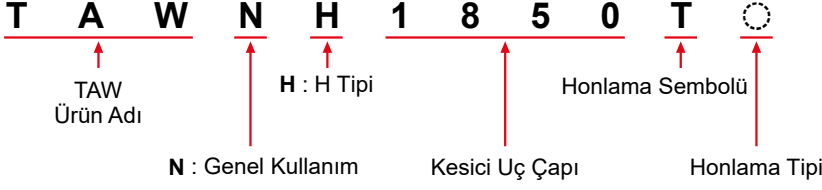
Not 2) Yalnızca rijid tezgah ve bağlama sistemi ile kullanılması önerilir. Paslanmaz çelik işlerken içten soğutma suyu sistemini kullanın.
(İşlemede MQL ve yağ püskürtme kullanılmamalıdır.)

TAW

HONLAMA GENİŞLİĞİ

Standart dışında honlamaya sahip bir kesici uç gerekirse, lütfen aşağıdaki sembollerini kullanarak sipariş edin.

(Kesici Uç Sipariş No.)



(Honlama Standardı)

Honlama Tipi	Honlama Genişliği (mm)
F	0
G	0.02–0.05
H	0.05–0.10
- (Standart)	0.10–0.15
S	0.20–0.25
M	0.25–0.30

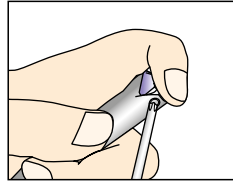
KULLANIMA İLİŞKİN NOTLAR

KESİCİ UÇ MONTAJI

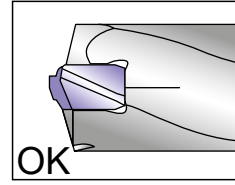
- Kesici ucu takmak için bağlama vidasını çıkarın. (H tipi kesici uç)
- Kesici ucu ve tutucu testere ağızlarını doğru şekilde birbirine geçirin, ardından kesici ucu yuvanın altına kaydırın.
- Kesici ucu gösterildiği gibi hafifçe tutarken sağlanan tork anahtarını kullanarak bağlama vidasını sabitleyin. (Şekil 1)
- Kesici uç ve tutucunun altı arasında boşluk olmadığını kontrol edin. (Şekil 2)

bağlama vidasını aşağıdaki torka göre sıkın.

Delme Ucu Çapı	Tork
Ø14–Ø15	2.0N•m
Ø16–Ø18	2.0N•m
Ø19–Ø21	3.5N•m
Ø22–Ø24	5.5N•m
Ø25–Ø27	8.5N•m
Ø28–Ø30	12.0N•m



Şek. 1



Şek. 2

Boşluk

KESİCİ UCU DEĞİŞTİRME

- Yeni bir kesici uç takmadan önce tutucunun testere dişlerini iyice temizleyin. Sağlanan temizleme levhasını kullanarak tutucu testere dişlerindeki ağır kiri giderin.

DELME (DEĞİŞTİRİLEBİLİR UÇLU TİP)

MVX

- Dış CVD kesici uç ve iç PVD kesici uç arasında ideal kombinasyon.
- L/D=6 derinliğinde delme işlemi sağlayan yüksek dayanımlı gövde yapısı.



P

M

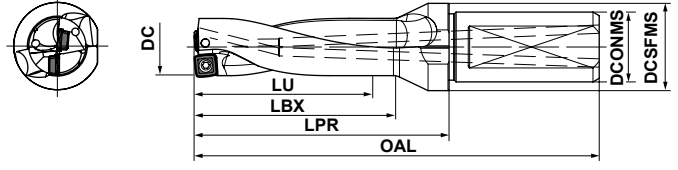
K

N

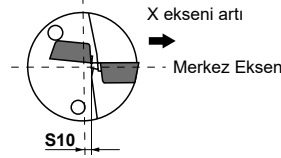
S

H

M
DELME



Dönüş için maksimum sapma değeri


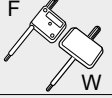


L/D	İşleme toleransı(kılavuz) (mm)		
	Ø14.0-Ø33.0	Ø33.5-Ø47.0	Ø48.0-Ø63.0
2D, 3D	0 +0.25	0 +0.3	0 +0.3
4D, 5D	0 +0.35	0 +0.4	0 +0.45
6D	0 +0.45	0 +0.6	

DC (mm)	Delik Derinliği (L/D)	Sipariş No.	Stok	Dişler	Boyutlar (mm)						S10 (mm)	Kesici Uç	Bağlama Vidası	F Anahtar
					LU	LBX	LPR	OAL	DCONMS	DCSFMS				
14.0	2	MVX1400X2F20	●	2	28	35	50	93	20	25	0.6	SOX05	TPS20-1	TIP06F
	3	MVX1400X3F20	●	2	42	49	64	107	20	25	0.6	SOX05	TPS20-1	TIP06F
	4	MVX1400X4F20	●	2	56	63	78	121	20	25	0.6	SOX05	TPS20-1	TIP06F
	5	MVX1400X5F20	●	2	70	77	92	135	20	25	0.6	SOX05	TPS20-1	TIP06F
14.5	2	MVX1450X2F20	●	2	29	36	51	94	20	25	0.5	SOX05	TPS20-1	TIP06F
	3	MVX1450X3F20	●	2	43.5	50.5	65.5	108.5	20	25	0.5	SOX05	TPS20-1	TIP06F
	4	MVX1450X4F20	●	2	58	65	80	123	20	25	0.5	SOX05	TPS20-1	TIP06F
	5	MVX1450X5F20	●	2	72.5	79.5	94.5	137.5	20	25	0.5	SOX05	TPS20-1	TIP06F
15.0	2	MVX1500X2F20	●	2	30	37	52	95	20	25	0.35	SOX05	TPS20-1	TIP06F
	3	MVX1500X3F20	●	2	45	52	67	110	20	25	0.35	SOX05	TPS20-1	TIP06F
	4	MVX1500X4F20	●	2	60	67	82	125	20	25	0.35	SOX05	TPS20-1	TIP06F
	5	MVX1500X5F20	●	2	75	82	97	140	20	25	0.35	SOX05	TPS20-1	TIP06F
15.5	2	MVX1550X2F20	●	2	31	38	53	96	20	25	0.3	SOX05	TPS20-1	TIP06F
	3	MVX1550X3F20	●	2	46.5	53.5	68.5	111.5	20	25	0.3	SOX05	TPS20-1	TIP06F
	4	MVX1550X4F20	●	2	62	69	84	127	20	25	0.3	SOX05	TPS20-1	TIP06F
	5	MVX1550X5F20	●	2	77.5	84.5	99.5	142.5	20	25	0.3	SOX05	TPS20-1	TIP06F
16.0	2	MVX1600X2F20	●	2	32	39	54	97	20	25	0.25	SOX05	TPS20-1	TIP06F
	3	MVX1600X3F20	●	2	48	55	70	113	20	25	0.25	SOX05	TPS20-1	TIP06F
	4	MVX1600X4F20	●	2	64	71	86	129	20	25	0.25	SOX05	TPS20-1	TIP06F
	5	MVX1600X5F20	●	2	80	87	102	145	20	25	0.25	SOX05	TPS20-1	TIP06F
16.5	2	MVX1650X2F20	●	2	33	40	55	98	20	25	0.25	SOX05	TPS20-1	TIP06F
	3	MVX1650X3F20	●	2	49.5	56.5	71.5	114.5	20	25	0.25	SOX05	TPS20-1	TIP06F
	4	MVX1650X4F20	●	2	66	73	88	131	20	25	0.25	SOX05	TPS20-1	TIP06F
	5	MVX1650X5F20	●	2	82.5	89.5	104.5	147.5	20	25	0.25	SOX05	TPS20-1	TIP06F
17.0	2	MVX1700X2F20	●	2	34	41	56	99	20	25	0.5	SOX06	TPS25	TIP07F
	3	MVX1700X3F20	●	2	51	58	73	116	20	25	0.5	SOX06	TPS25	TIP07F
	4	MVX1700X4F20	●	2	68	75	90	133	20	25	0.5	SOX06	TPS25	TIP07F
	5	MVX1700X5F20	●	2	85	92	107	150	20	25	0.5	SOX06	TPS25	TIP07F
	6	MVX1700X6F20	●	2	102	109	124	167	20	25	0.5	SOX06	TPS25	TIP07F

* Sıkma Torku (N • m) : TPS20-1=0.6, TPS25=1.0

● : Avrupa standart stok.

DC (mm)	Delik Derinliği (L/D)	Sipariş No.	Stok	Dişler	Boyutlar (mm)						S10 (mm)	Kesici Uç		
					LU	LBX	LPR	OAL	DCONMS	DCSFMS				
17.5	2	MVX1750X2F25	●	2	35	42	62	112	25	32	0.45	SOX06	TPS25	TIP07F
	3	MVX1750X3F25	●	2	52.5	59.5	79.5	129.5	25	32	0.45	SOX06	TPS25	TIP07F
	4	MVX1750X4F25	●	2	70	77	97	147	25	32	0.45	SOX06	TPS25	TIP07F
	5	MVX1750X5F25	●	2	87.5	94.5	114.5	164.5	25	32	0.45	SOX06	TPS25	TIP07F
	6	MVX1750X6F25	●	2	105	112	132	182	25	32	0.45	SOX06	TPS25	TIP07F
18.0	2	MVX1800X2F25	●	2	36	43	63	113	25	32	0.4	SOX06	TPS25	TIP07F
	3	MVX1800X3F25	●	2	54	61	81	131	25	32	0.4	SOX06	TPS25	TIP07F
	4	MVX1800X4F25	●	2	72	79	99	149	25	32	0.4	SOX06	TPS25	TIP07F
	5	MVX1800X5F25	●	2	90	97	117	167	25	32	0.4	SOX06	TPS25	TIP07F
	6	MVX1800X6F25	●	2	108	115	135	185	25	32	0.4	SOX06	TPS25	TIP07F
18.5	2	MVX1850X2F25	●	2	37	44	64	114	25	32	0.35	SOX06	TPS25	TIP07F
	3	MVX1850X3F25	●	2	55.5	62.5	82.5	132.5	25	32	0.35	SOX06	TPS25	TIP07F
	4	MVX1850X4F25	●	2	74	81	101	151	25	32	0.35	SOX06	TPS25	TIP07F
	5	MVX1850X5F25	●	2	92.5	99.5	119.5	169.5	25	32	0.35	SOX06	TPS25	TIP07F
	6	MVX1850X6F25	●	2	111	118	138	188	25	32	0.35	SOX06	TPS25	TIP07F
19.0	2	MVX1900X2F25	●	2	38	45	65	115	25	32	0.3	SOX06	TPS25	TIP07F
	3	MVX1900X3F25	●	2	57	64	84	134	25	32	0.3	SOX06	TPS25	TIP07F
	4	MVX1900X4F25	●	2	76	83	103	153	25	32	0.3	SOX06	TPS25	TIP07F
	5	MVX1900X5F25	●	2	95	102	122	172	25	32	0.3	SOX06	TPS25	TIP07F
	6	MVX1900X6F25	●	2	114	121	141	191	25	32	0.3	SOX06	TPS25	TIP07F
19.5	2	MVX1950X2F25	●	2	39	46	66	116	25	32	0.25	SOX06	TPS25	TIP07F
	3	MVX1950X3F25	●	2	58.5	65.5	85.5	135.5	25	32	0.25	SOX06	TPS25	TIP07F
	4	MVX1950X4F25	●	2	78	85	105	155	25	32	0.25	SOX06	TPS25	TIP07F
	5	MVX1950X5F25	●	2	97.5	104.5	124.5	174.5	25	32	0.25	SOX06	TPS25	TIP07F
	6	MVX1950X6F25	●	2	117	124	144	194	25	32	0.25	SOX06	TPS25	TIP07F
20.0	2	MVX2000X2F25	●	2	40	47	67	117	25	32	0.6	SOX07	TPS3	TIP10W
	3	MVX2000X3F25	●	2	60	67	87	137	25	32	0.6	SOX07	TPS3	TIP10W
	4	MVX2000X4F25	●	2	80	87	107	157	25	32	0.6	SOX07	TPS3	TIP10W
	5	MVX2000X5F25	●	2	100	107	127	177	25	32	0.6	SOX07	TPS3	TIP10W
	6	MVX2000X6F25	●	2	120	127	147	197	25	32	0.6	SOX07	TPS3	TIP10W
20.5	2	MVX2050X2F25	●	2	41	48	68	118	25	32	0.55	SOX07	TPS3	TIP10W
	3	MVX2050X3F25	●	2	61.5	68.5	88.5	138.5	25	32	0.55	SOX07	TPS3	TIP10W
21.0	2	MVX2100X2F25	●	2	42	49	69	119	25	32	0.5	SOX07	TPS3	TIP10W
	3	MVX2100X3F25	●	2	63	70	90	140	25	32	0.5	SOX07	TPS3	TIP10W
	4	MVX2100X4F25	●	2	84	91	111	161	25	32	0.5	SOX07	TPS3	TIP10W
	5	MVX2100X5F25	●	2	105	112	132	182	25	32	0.5	SOX07	TPS3	TIP10W
	6	MVX2100X6F25	●	2	126	133	153	203	25	32	0.5	SOX07	TPS3	TIP10W
21.5	2	MVX2150X2F25	●	2	43	50	70	120	25	32	0.45	SOX07	TPS3	TIP10W
	3	MVX2150X3F25	●	2	64.5	71.5	91.5	141.5	25	32	0.45	SOX07	TPS3	TIP10W
22.0	2	MVX2200X2F25	●	2	44	51	71	121	25	32	0.4	SOX07	TPS3	TIP10W
	3	MVX2200X3F25	●	2	66	73	93	143	25	32	0.4	SOX07	TPS3	TIP10W
	4	MVX2200X4F25	●	2	88	95	115	165	25	32	0.4	SOX07	TPS3	TIP10W
	5	MVX2200X5F25	●	2	110	117	137	187	25	32	0.4	SOX07	TPS3	TIP10W
	6	MVX2200X6F25	●	2	132	139	159	209	25	32	0.4	SOX07	TPS3	TIP10W
22.5	2	MVX2250X2F25	●	2	45	52	72	122	25	32	0.35	SOX07	TPS3	TIP10W
	3	MVX2250X3F25	●	2	67.5	74.5	94.5	144.5	25	32	0.35	SOX07	TPS3	TIP10W

* Sıkma Torku (N • m) : TPS25=1.0, TPS3=2.0

KESİCİ UÇ AÇIKLAMASI > M166
 KESME KOŞULLARI > M167
 TAM UYUMLU AYAR BURCU > M170



KULLANIM NOTU > M171
 YEDEK PARÇALAR > N001
 TEKNİK VERİLER > P001

DELME (DEĞİŞTİRİLEBİLİR UÇLU TİP)

MVX



KARBÜR

M
DELME

DC (mm)	Delik Derinliği (L/D)	Sipariş No.	Stok	Dışlar	Boyutlar (mm)						S10 (mm)	Kesici Uç		
					LU	LBX	LPR	OAL	DCONMS	DCSFMS				
23.0	2	MVX2300X2F25	●	2	46	53	73	123	25	32	0.8	SOX08	TPS351	TIP10W
	3	MVX2300X3F25	●	2	69	76	96	146	25	32	0.8	SOX08	TPS351	TIP10W
	4	MVX2300X4F25	●	2	92	99	119	169	25	32	0.8	SOX08	TPS351	TIP10W
	5	MVX2300X5F25	●	2	115	122	142	192	25	32	0.8	SOX08	TPS351	TIP10W
	6	MVX2300X6F25	●	2	138	145	165	215	25	32	0.8	SOX08	TPS351	TIP10W
23.5	2	MVX2350X2F25	●	2	47	54	74	124	25	32	0.75	SOX08	TPS351	TIP10W
	3	MVX2350X3F25	●	2	70.5	77.5	97.5	147.5	25	32	0.75	SOX08	TPS351	TIP10W
24.0	2	MVX2400X2F25	●	2	48	55	75	125	25	32	0.7	SOX08	TPS351	TIP10W
	3	MVX2400X3F25	●	2	72	79	99	149	25	32	0.7	SOX08	TPS351	TIP10W
	4	MVX2400X4F25	●	2	96	103	123	173	25	32	0.7	SOX08	TPS351	TIP10W
	5	MVX2400X5F25	●	2	120	127	147	197	25	32	0.7	SOX08	TPS351	TIP10W
	6	MVX2400X6F25	●	2	144	151	171	221	25	32	0.7	SOX08	TPS351	TIP10W
24.5	2	MVX2450X2F25	●	2	49	56	76	126	25	32	0.65	SOX08	TPS351	TIP10W
	3	MVX2450X3F25	●	2	73.5	80.5	100.5	150.5	25	32	0.65	SOX08	TPS351	TIP10W
25.0	2	MVX2500X2F25	●	2	50	57	77	127	25	32	0.6	SOX08	TPS351	TIP10W
	3	MVX2500X3F25	●	2	75	82	102	152	25	32	0.6	SOX08	TPS351	TIP10W
	4	MVX2500X4F25	●	2	100	107	127	177	25	32	0.6	SOX08	TPS351	TIP10W
	5	MVX2500X5F25	●	2	125	132	152	202	25	32	0.6	SOX08	TPS351	TIP10W
	6	MVX2500X6F25	●	2	150	157	177	227	25	32	0.6	SOX08	TPS351	TIP10W
25.5	2	MVX2550X2F25	●	2	51	58	78	128	25	32	0.6	SOX08	TPS351	TIP10W
	3	MVX2550X3F25	●	2	76.5	83.5	103.5	153.5	25	32	0.6	SOX08	TPS351	TIP10W
26.0	2	MVX2600X2F32	●	2	52	59	79	134	32	42	0.5	SOX08	TPS351	TIP10W
	3	MVX2600X3F32	●	2	78	85	105	160	32	42	0.5	SOX08	TPS351	TIP10W
	4	MVX2600X4F32	●	2	104	111	131	186	32	42	0.5	SOX08	TPS351	TIP10W
	5	MVX2600X5F32	●	2	130	137	157	212	32	42	0.5	SOX08	TPS351	TIP10W
	6	MVX2600X6F32	●	2	156	163	183	238	32	42	0.5	SOX08	TPS351	TIP10W
26.5	2	MVX2650X2F32	●	2	53	60	80	135	32	42	0.5	SOX08	TPS351	TIP10W
	3	MVX2650X3F32	●	2	79.5	86.5	106.5	161.5	32	42	0.5	SOX08	TPS351	TIP10W
27.0	2	MVX2700X2F32	●	2	54	61	81	136	32	42	0.45	SOX08	TPS351	TIP10W
	3	MVX2700X3F32	●	2	81	88	108	163	32	42	0.45	SOX08	TPS351	TIP10W
	4	MVX2700X4F32	●	2	108	115	135	190	32	42	0.45	SOX08	TPS351	TIP10W
	5	MVX2700X5F32	●	2	135	142	162	217	32	42	0.45	SOX08	TPS351	TIP10W
	6	MVX2700X6F32	●	2	162	169	189	244	32	42	0.45	SOX08	TPS351	TIP10W
27.5	2	MVX2750X2F32	●	2	55	62	82	137	32	42	0.4	SOX08	TPS351	TIP10W
	3	MVX2750X3F32	●	2	82.5	89.5	109.5	164.5	32	42	0.4	SOX08	TPS351	TIP10W
28.0	2	MVX2800X2F32	●	2	56	63	83	138	32	42	0.85	SOX09	TPS4	TIP15W
	3	MVX2800X3F32	●	2	84	91	111	166	32	42	0.85	SOX09	TPS4	TIP15W
	4	MVX2800X4F32	●	2	112	119	139	194	32	42	0.85	SOX09	TPS4	TIP15W
	5	MVX2800X5F32	●	2	140	147	167	222	32	42	0.85	SOX09	TPS4	TIP15W
	6	MVX2800X6F32	●	2	168	175	195	250	32	42	0.85	SOX09	TPS4	TIP15W
28.5	2	MVX2850X2F32	●	2	57	64	84	139	32	42	0.8	SOX09	TPS4	TIP15W
	3	MVX2850X3F32	●	2	85.5	92.5	112.5	167.5	32	42	0.8	SOX09	TPS4	TIP15W
29.0	2	MVX2900X2F32	●	2	58	65	85	140	32	42	0.75	SOX09	TPS4	TIP15W
	3	MVX2900X3F32	●	2	87	94	114	169	32	42	0.75	SOX09	TPS4	TIP15W
	4	MVX2900X4F32	●	2	116	123	143	198	32	42	0.75	SOX09	TPS4	TIP15W
	5	MVX2900X5F32	●	2	145	152	172	227	32	42	0.75	SOX09	TPS4	TIP15W
	6	MVX2900X6F32	●	2	174	181	201	256	32	42	0.75	SOX09	TPS4	TIP15W
29.5	2	MVX2950X2F32	●	2	59	66	86	141	32	42	0.7	SOX09	TPS4	TIP15W
	3	MVX2950X3F32	●	2	88.5	95.5	115.5	170.5	32	42	0.7	SOX09	TPS4	TIP15W

* Sıkma Torku (N • m) : TPS351=2.5, TPS4=3.5

● : Avrupa standart stok.

DC (mm)	Delik Derinliği (L/D)	Sipariş No.	Stok	Dışlar	Boyutlar (mm)						S10 (mm)	Kesici Uç		
					LU	LBX	LPR	OAL	DCONMS	DCSFMS				
30.0	2	MVX3000X2F32	●	2	60	67	87	142	32	42	0.65	SOX09	TPS4	TIP15W
	3	MVX3000X3F32	●	2	90	97	117	172	32	42	0.65	SOX09	TPS4	TIP15W
	4	MVX3000X4F32	●	2	120	127	147	202	32	42	0.65	SOX09	TPS4	TIP15W
	5	MVX3000X5F32	●	2	150	157	177	232	32	42	0.65	SOX09	TPS4	TIP15W
	6	MVX3000X6F32	●	2	180	187	207	262	32	42	0.65	SOX09	TPS4	TIP15W
30.5	3	MVX3050X3F32	●	2	91.5	98.5	118.5	173.5	32	42	0.6	SOX09	TPS4	TIP15W
31.0	2	MVX3100X2F32	●	2	62	69	89	144	32	42	0.55	SOX09	TPS4	TIP15W
	3	MVX3100X3F32	●	2	93	100	120	175	32	42	0.55	SOX09	TPS4	TIP15W
	4	MVX3100X4F32	●	2	124	131	151	206	32	42	0.55	SOX09	TPS4	TIP15W
	2	MVX3100X2F40	●	2	62	69	89	154	40	50	0.55	SOX09	TPS4	TIP15W
	3	MVX3100X3F40	●	2	93	100	120	185	40	50	0.55	SOX09	TPS4	TIP15W
	4	MVX3100X4F40	●	2	124	131	151	216	40	50	0.55	SOX09	TPS4	TIP15W
31.5	5	MVX3100X5F40	●	2	155	162	182	247	40	50	0.55	SOX09	TPS4	TIP15W
	6	MVX3100X6F40	●	2	186	193	213	278	40	50	0.55	SOX09	TPS4	TIP15W
32.0	3	MVX3150X3F40	●	2	94.5	101.5	121.5	186.5	40	50	0.55	SOX09	TPS4	TIP15W
32.0	2	MVX3200X2F32	●	2	64	71	91	146	32	42	0.45	SOX09	TPS4	TIP15W
	3	MVX3200X3F32	●	2	96	103	123	178	32	42	0.45	SOX09	TPS4	TIP15W
	4	MVX3200X4F32	●	2	128	135	155	210	32	42	0.45	SOX09	TPS4	TIP15W
	2	MVX3200X2F40	●	2	64	71	91	156	40	50	0.45	SOX09	TPS4	TIP15W
	3	MVX3200X3F40	●	2	96	103	123	188	40	50	0.45	SOX09	TPS4	TIP15W
	4	MVX3200X4F40	●	2	128	135	155	220	40	50	0.45	SOX09	TPS4	TIP15W
32.5	5	MVX3200X5F40	●	2	160	167	187	252	40	50	0.45	SOX09	TPS4	TIP15W
	6	MVX3200X6F40	●	2	192	199	219	284	40	50	0.45	SOX09	TPS4	TIP15W
33.0	2	MVX3300X2F32	●	2	66	73	93	148	32	42	0.4	SOX09	TPS4	TIP15W
	3	MVX3300X3F32	●	2	99	106	126	181	32	42	0.4	SOX09	TPS4	TIP15W
	4	MVX3300X4F32	●	2	132	139	159	214	32	42	0.4	SOX09	TPS4	TIP15W
	2	MVX3300X2F40	●	2	66	73	93	158	40	50	0.4	SOX09	TPS4	TIP15W
	3	MVX3300X3F40	●	2	99	106	126	191	40	50	0.4	SOX09	TPS4	TIP15W
	4	MVX3300X4F40	●	2	132	139	159	224	40	50	0.4	SOX09	TPS4	TIP15W
33.5	5	MVX3300X5F40	●	2	165	172	192	257	40	50	0.4	SOX09	TPS4	TIP15W
	6	MVX3300X6F40	●	2	198	205	225	290	40	50	0.4	SOX09	TPS4	TIP15W
34.0	3	MVX3350X3F40	●	2	100.5	107.5	127.5	192.5	40	50	1.15	SOX11	TPS43	TIP15W
	2	MVX3400X2F40	●	2	68	75	105	170	40	50	1.11	SOX11	TPS43	TIP15W
	3	MVX3400X3F40	●	2	102	109	139	204	40	50	1.11	SOX11	TPS43	TIP15W
	4	MVX3400X4F40	●	2	136	143	173	238	40	50	1.11	SOX11	TPS43	TIP15W
	5	MVX3400X5F40	●	2	170	177	207	272	40	50	1.11	SOX11	TPS43	TIP15W
	6	MVX3400X6F40	●	2	204	211	241	306	40	50	1.1	SOX11	TPS43	TIP15W
34.5	3	MVX3450X3F40	●	2	103.5	110.5	140.5	205.5	40	50	1.08	SOX11	TPS43	TIP15W
35.0	2	MVX3500X2F40	●	2	70	77	107	172	40	50	1.03	SOX11	TPS43	TIP15W
	3	MVX3500X3F40	●	2	105	112	142	207	40	50	1.03	SOX11	TPS43	TIP15W
	4	MVX3500X4F40	●	2	140	147	177	242	40	50	1.03	SOX11	TPS43	TIP15W
	5	MVX3500X5F40	●	2	175	182	212	277	40	50	1.03	SOX11	TPS43	TIP15W
	6	MVX3500X6F40	●	2	210	217	247	312	40	50	1.02	SOX11	TPS43	TIP15W
35.5	3	MVX3550X3F40	●	2	106.5	113.5	143.5	208.5	40	50	0.99	SOX11	TPS43	TIP15W
36.0	2	MVX3600X2F40	●	2	72	79	109	174	40	50	0.95	SOX11	TPS43	TIP15W
	3	MVX3600X3F40	●	2	108	115	145	210	40	50	0.95	SOX11	TPS43	TIP15W
	4	MVX3600X4F40	●	2	144	151	181	246	40	50	0.95	SOX11	TPS43	TIP15W
	5	MVX3600X5F40	●	2	180	187	217	282	40	50	0.95	SOX11	TPS43	TIP15W
	6	MVX3600X6F40	●	2	216	223	253	318	40	50	0.94	SOX11	TPS43	TIP15W

* Sıkma Torku (N • m) : TPS4=3.5, TPS43=3.5

KESİCİ UÇ AÇIKLAMASI > M166
 KESME KOŞULLARI > M167
 TAM UYUMLU AYAR BURCU > M170



KULLANIM NOTU > M171
 YEDEK PARÇALAR > N001
 TEKNİK VERİLER > P001

DELME (DEĞİŞTİRİLEBİLİR UÇLU TİP)

MVX



KARBÜR

M
DELME

DC (mm)	Delik Derinliği (L/D)	Sipariş No.	Stok	Dişler	Boyutlar (mm)						S10 (mm)	Kesici Uç		
					LU	LBX	LPR	OAL	DCONMS	DCSFMS				
37.0	2	MVX3700X2F40	●	2	74	81	111	176	40	50	0.87	SOX11	TPS43	TIP15W
	3	MVX3700X3F40	●	2	111	118	148	213	40	50	0.87	SOX11	TPS43	TIP15W
	4	MVX3700X4F40	●	2	148	155	185	250	40	50	0.87	SOX11	TPS43	TIP15W
	5	MVX3700X5F40	●	2	185	192	222	287	40	50	0.87	SOX11	TPS43	TIP15W
	6	MVX3700X6F40	●	2	222	229	259	324	40	50	0.86	SOX11	TPS43	TIP15W
38.0	2	MVX3800X2F40	●	2	76	83	113	178	40	50	0.79	SOX11	TPS43	TIP15W
	3	MVX3800X3F40	●	2	114	121	151	216	40	50	0.79	SOX11	TPS43	TIP15W
	4	MVX3800X4F40	●	2	152	159	189	254	40	50	0.79	SOX11	TPS43	TIP15W
	5	MVX3800X5F40	●	2	190	197	227	292	40	50	0.79	SOX11	TPS43	TIP15W
	6	MVX3800X6F40	●	2	228	235	265	330	40	50	0.78	SOX11	TPS43	TIP15W
39.0	2	MVX3900X2F40	●	2	78	85	115	180	40	50	0.71	SOX11	TPS43	TIP15W
	3	MVX3900X3F40	●	2	117	124	154	219	40	50	0.71	SOX11	TPS43	TIP15W
	4	MVX3900X4F40	●	2	156	163	193	258	40	50	0.71	SOX11	TPS43	TIP15W
	5	MVX3900X5F40	●	2	195	202	232	297	40	50	0.71	SOX11	TPS43	TIP15W
	6	MVX3900X6F40	●	2	234	241	271	336	40	50	0.7	SOX11	TPS43	TIP15W
40.0	2	MVX4000X2F40	●	2	80	87	117	182	40	50	1.46	SOX13	TPS43	TIP15W
	3	MVX4000X3F40	●	2	120	127	157	222	40	50	1.46	SOX13	TPS43	TIP15W
	4	MVX4000X4F40	●	2	160	167	197	262	40	50	1.46	SOX13	TPS43	TIP15W
	5	MVX4000X5F40	●	2	200	207	237	302	40	50	1.46	SOX13	TPS43	TIP15W
	6	MVX4000X6F40	●	2	240	247	277	342	40	50	1.45	SOX13	TPS43	TIP15W
41.0	2	MVX4100X2F40	●	2	82	89	119	184	40	50	1.36	SOX13	TPS43	TIP15W
	3	MVX4100X3F40	●	2	123	130	160	225	40	50	1.36	SOX13	TPS43	TIP15W
	4	MVX4100X4F40	●	2	164	171	201	266	40	50	1.36	SOX13	TPS43	TIP15W
	5	MVX4100X5F40	●	2	205	212	242	307	40	50	1.36	SOX13	TPS43	TIP15W
	6	MVX4100X6F40	●	2	246	253	283	348	40	50	1.35	SOX13	TPS43	TIP15W
42.0	2	MVX4200X2F40	●	2	84	91	121	186	40	50	1.27	SOX13	TPS43	TIP15W
	3	MVX4200X3F40	●	2	126	133	163	228	40	50	1.27	SOX13	TPS43	TIP15W
	4	MVX4200X4F40	●	2	168	175	205	270	40	63	1.27	SOX13	TPS43	TIP15W
	5	MVX4200X5F40	●	2	210	217	247	312	40	63	1.27	SOX13	TPS43	TIP15W
	6	MVX4200X6F40	●	2	252	259	289	354	40	63	1.27	SOX13	TPS43	TIP15W
	4	MVX4200X4F50	★	2	168	175	205	280	50	63	1.27	SOX13	TPS43	TIP15W
	5	MVX4200X5F50	★	2	210	217	247	322	50	63	1.27	SOX13	TPS43	TIP15W
6	MVX4200X6F50	★	2	252	259	289	364	50	63	1.26	SOX13	TPS43	TIP15W	
43.0	2	MVX4300X2F40	●	2	86	93	123	188	40	50	1.18	SOX13	TPS43	TIP15W
	3	MVX4300X3F40	●	2	129	136	166	231	40	50	1.18	SOX13	TPS43	TIP15W
	4	MVX4300X4F40	●	2	172	179	209	274	40	63	1.18	SOX13	TPS43	TIP15W
	5	MVX4300X5F40	●	2	215	222	252	317	40	63	1.18	SOX13	TPS43	TIP15W
	6	MVX4300X6F40	●	2	258	265	295	360	40	63	1.17	SOX13	TPS43	TIP15W
	4	MVX4300X4F50	★	2	172	179	209	284	50	63	1.18	SOX13	TPS43	TIP15W
	5	MVX4300X5F50	★	2	215	222	252	327	50	63	1.18	SOX13	TPS43	TIP15W
6	MVX4300X6F50	★	2	258	265	295	370	50	63	1.17	SOX13	TPS43	TIP15W	
44.0	2	MVX4400X2F40	●	2	88	95	125	190	40	50	1.08	SOX13	TPS43	TIP15W
	3	MVX4400X3F40	●	2	132	139	169	234	40	50	1.08	SOX13	TPS43	TIP15W
	4	MVX4400X4F40	●	2	176	183	213	278	40	63	1.08	SOX13	TPS43	TIP15W
	5	MVX4400X5F40	●	2	220	227	257	322	40	63	1.08	SOX13	TPS43	TIP15W
	4	MVX4400X4F50	★	2	176	183	213	288	50	63	1.08	SOX13	TPS43	TIP15W
5	MVX4400X5F50	★	2	220	227	257	332	50	63	1.08	SOX13	TPS43	TIP15W	

* Sikma Torku (N • m) : TPS43=3.5

● : Avrupa standart stok. ★ : Japonya standart stok.

DC (mm)	Delik Derinliği (L/D)	Sipariş No.	Stok	Dışlar	Boyutlar (mm)						S10 (mm)	Kesici Uç		
					LU	LBX	LPR	OAL	DCONMS	DCSFMS				
45.0	2	MVX4500X2F40	●	2	90	97	127	192	40	50	0.99	SOX13	TPS43	TIP15W
	3	MVX4500X3F40	●	2	135	142	172	237	40	50	0.99	SOX13	TPS43	TIP15W
	4	MVX4500X4F40	●	2	180	187	217	282	40	63	0.99	SOX13	TPS43	TIP15W
	5	MVX4500X5F40	●	2	225	232	262	327	40	63	0.99	SOX13	TPS43	TIP15W
	4	MVX4500X4F50	★	2	180	187	217	292	50	63	0.99	SOX13	TPS43	TIP15W
	5	MVX4500X5F50	★	2	225	232	262	337	50	63	0.99	SOX13	TPS43	TIP15W
46.0	2	MVX4600X2F40	●	2	92	99	129	194	40	50	0.89	SOX13	TPS43	TIP15W
	3	MVX4600X3F40	●	2	138	145	175	240	40	50	0.89	SOX13	TPS43	TIP15W
	4	MVX4600X4F40	●	2	184	191	221	286	40	63	0.89	SOX13	TPS43	TIP15W
	5	MVX4600X5F40	●	2	230	237	267	332	40	63	0.89	SOX13	TPS43	TIP15W
	4	MVX4600X4F50	★	2	184	191	221	296	50	63	0.89	SOX13	TPS43	TIP15W
	5	MVX4600X5F50	★	2	230	237	267	342	50	63	0.89	SOX13	TPS43	TIP15W
47.0	2	MVX4700X2F40	●	2	94	101	141	206	40	63	1.9	SOX16	TPS54	TIP25D
	3	MVX4700X3F40	●	2	141	148	188	253	40	63	1.9	SOX16	TPS54	TIP25D
	4	MVX4700X4F40	●	2	188	195	235	300	40	63	1.9	SOX16	TPS54	TIP25D
	5	MVX4700X5F40	●	2	235	242	282	347	40	63	1.9	SOX16	TPS54	TIP25D
	4	MVX4700X4F50	★	2	188	195	235	310	50	63	1.9	SOX16	TPS54	TIP25D
	5	MVX4700X5F50	★	2	235	242	282	357	50	63	1.9	SOX16	TPS54	TIP25D
48.0	2	MVX4800X2F40	●	2	96	103	143	208	40	63	1.8	SOX16	TPS54	TIP25D
	3	MVX4800X3F40	●	2	144	151	191	256	40	63	1.8	SOX16	TPS54	TIP25D
	4	MVX4800X4F40	●	2	192	199	239	304	40	63	1.8	SOX16	TPS54	TIP25D
	5	MVX4800X5F40	●	2	240	247	287	352	40	63	1.8	SOX16	TPS54	TIP25D
	4	MVX4800X4F50	★	2	192	199	239	314	50	63	1.8	SOX16	TPS54	TIP25D
	5	MVX4800X5F50	★	2	240	247	287	362	50	63	1.8	SOX16	TPS54	TIP25D
49.0	2	MVX4900X2F40	●	2	98	105	145	210	40	63	1.7	SOX16	TPS54	TIP25D
	3	MVX4900X3F40	●	2	147	154	194	259	40	63	1.7	SOX16	TPS54	TIP25D
	4	MVX4900X4F40	●	2	196	203	243	308	40	63	1.7	SOX16	TPS54	TIP25D
	5	MVX4900X5F40	●	2	245	252	292	357	40	63	1.7	SOX16	TPS54	TIP25D
	4	MVX4900X4F50	★	2	196	203	243	318	50	63	1.7	SOX16	TPS54	TIP25D
	5	MVX4900X5F50	★	2	245	252	292	367	50	63	1.7	SOX16	TPS54	TIP25D
50.0	2	MVX5000X2F40	●	2	100	107	147	212	40	63	1.6	SOX16	TPS54	TIP25D
	3	MVX5000X3F40	●	2	150	157	197	262	40	63	1.6	SOX16	TPS54	TIP25D
	4	MVX5000X4F40	●	2	200	207	247	312	40	63	1.6	SOX16	TPS54	TIP25D
	5	MVX5000X5F40	●	2	250	257	297	362	40	63	1.6	SOX16	TPS54	TIP25D
	4	MVX5000X4F50	★	2	200	207	247	322	50	63	1.6	SOX16	TPS54	TIP25D
	5	MVX5000X5F50	★	2	250	257	297	372	50	63	1.6	SOX16	TPS54	TIP25D
51.0	2	MVX5100X2F40	●	2	102	109	149	214	40	63	1.5	SOX16	TPS54	TIP25D
	3	MVX5100X3F40	●	2	153	160	200	265	40	63	1.5	SOX16	TPS54	TIP25D
	4	MVX5100X4F40	●	2	204	211	251	316	40	63	1.5	SOX16	TPS54	TIP25D
	5	MVX5100X5F40	●	2	255	262	302	367	40	63	1.5	SOX16	TPS54	TIP25D
	4	MVX5100X4F50	★	2	204	211	251	326	50	63	1.5	SOX16	TPS54	TIP25D
	5	MVX5100X5F50	★	2	255	262	302	377	50	63	1.5	SOX16	TPS54	TIP25D
52.0	2	MVX5200X2F40	●	2	104	111	151	216	40	63	1.39	SOX16	TPS54	TIP25D
	3	MVX5200X3F40	●	2	156	163	203	268	40	63	1.39	SOX16	TPS54	TIP25D
	4	MVX5200X4F40	●	2	208	215	255	320	40	63	1.39	SOX16	TPS54	TIP25D
	5	MVX5200X5F40	●	2	260	267	307	372	40	63	1.39	SOX16	TPS54	TIP25D
	4	MVX5200X4F50	★	2	208	215	255	330	50	63	1.39	SOX16	TPS54	TIP25D
	5	MVX5200X5F50	★	2	260	267	307	382	50	63	1.39	SOX16	TPS54	TIP25D

* Sıkma Torku (N • m) : TPS43=3.5, TPS54=7.5

KESİCİ UÇ AÇIKLAMASI > M166
KESME KOŞULLARI > M167
TAM UYUMLU AYAR BURCU > M170



KULLANIM NOTU > M171
YEDEK PARÇALAR > N001
TEKNİK VERİLER > P001

DELME (DEĞİŞTİRİLEBİLİR UÇLU TİP)

MVX



KARBÜR

M
DELME

DC (mm)	Delik Derinliği (L/D)	Sipariş No.	Stok	Dişler	Boyutlar (mm)						S10 (mm)	Kesici Uç		
					LU	LBX	LPR	OAL	DCONMS	DCSFMS				
53.0	2	MVX5300X2F40	●	2	106	113	153	218	40	63	1.29	SOX16	TPS54	TIP25D
	3	MVX5300X3F40	●	2	159	166	206	271	40	63	1.29	SOX16	TPS54	TIP25D
	4	MVX5300X4F40	●	2	212	219	259	324	40	63	1.29	SOX16	TPS54	TIP25D
	5	MVX5300X5F40	●	2	265	272	312	377	40	63	1.29	SOX16	TPS54	TIP25D
	4	MVX5300X4F50	★	2	212	219	259	334	50	63	1.29	SOX16	TPS54	TIP25D
5	MVX5300X5F50	★	2	265	272	312	387	50	63	1.29	SOX16	TPS54	TIP25D	
54.0	2	MVX5400X2F40	●	2	108	115	155	220	40	63	1.19	SOX16	TPS54	TIP25D
	3	MVX5400X3F40	●	2	162	169	209	274	40	63	1.19	SOX16	TPS54	TIP25D
	4	MVX5400X4F40	●	2	216	223	263	328	40	63	1.19	SOX16	TPS54	TIP25D
	5	MVX5400X5F40	●	2	270	277	317	382	40	63	1.19	SOX16	TPS54	TIP25D
	4	MVX5400X4F50	★	2	216	223	263	338	50	63	1.19	SOX16	TPS54	TIP25D
5	MVX5400X5F50	★	2	270	277	317	392	50	63	1.19	SOX16	TPS54	TIP25D	
55.0	2	MVX5500X2F40	●	2	110	117	157	222	40	63	1.08	SOX16	TPS54	TIP25D
	3	MVX5500X3F40	●	2	165	172	212	277	40	63	1.08	SOX16	TPS54	TIP25D
	4	MVX5500X4F40	●	2	220	227	267	332	40	63	1.08	SOX16	TPS54	TIP25D
	5	MVX5500X5F40	●	2	275	282	322	387	40	63	1.08	SOX16	TPS54	TIP25D
	4	MVX5500X4F50	★	2	220	227	267	342	50	63	1.08	SOX16	TPS54	TIP25D
5	MVX5500X5F50	●	2	275	282	322	397	50	63	1.08	SOX16	TPS54	TIP25D	
56.0	2	MVX5600X2F40	●	2	112	119	159	224	40	63	0.98	SOX16	TPS54	TIP25D
	3	MVX5600X3F40	●	2	168	175	215	280	40	63	0.98	SOX16	TPS54	TIP25D
	4	MVX5600X4F40	●	2	224	231	271	336	40	63	0.98	SOX16	TPS54	TIP25D
	5	MVX5600X5F40	●	2	280	287	327	392	40	63	0.98	SOX16	TPS54	TIP25D
	4	MVX5600X4F50	★	2	224	231	271	346	50	63	0.98	SOX16	TPS54	TIP25D
5	MVX5600X5F50	★	2	280	287	327	402	50	63	0.98	SOX16	TPS54	TIP25D	
57.0	2	MVX5700X2F40	●	2	114	121	161	226	40	68	1.47	SOX18	TPS54	TIP25D
	3	MVX5700X3F40	●	2	171	178	218	283	40	68	1.47	SOX18	TPS54	TIP25D
	4	MVX5700X4F40	●	2	228	235	275	340	40	68	1.47	SOX18	TPS54	TIP25D
	5	MVX5700X5F40	●	2	285	292	332	397	40	68	1.47	SOX18	TPS54	TIP25D
	4	MVX5700X4F50	★	2	228	235	275	350	50	68	1.47	SOX18	TPS54	TIP25D
5	MVX5700X5F50	★	2	285	292	332	407	50	68	1.47	SOX18	TPS54	TIP25D	
58.0	2	MVX5800X2F40	●	2	116	123	163	228	40	68	1.37	SOX18	TPS54	TIP25D
	3	MVX5800X3F40	●	2	174	181	221	286	40	68	1.37	SOX18	TPS54	TIP25D
	4	MVX5800X4F40	●	2	232	239	279	344	40	68	1.37	SOX18	TPS54	TIP25D
	5	MVX5800X5F40	●	2	290	297	337	402	40	68	1.37	SOX18	TPS54	TIP25D
	4	MVX5800X4F50	★	2	232	239	279	354	50	68	1.37	SOX18	TPS54	TIP25D
5	MVX5800X5F50	★	2	290	297	337	412	50	68	1.37	SOX18	TPS54	TIP25D	
59.0	2	MVX5900X2F40	●	2	118	125	165	230	40	68	1.26	SOX18	TPS54	TIP25D
	3	MVX5900X3F40	●	2	177	184	224	289	40	68	1.26	SOX18	TPS54	TIP25D
	4	MVX5900X4F40	●	2	236	243	283	348	40	68	1.26	SOX18	TPS54	TIP25D
	5	MVX5900X5F40	●	2	295	302	342	407	40	68	1.26	SOX18	TPS54	TIP25D
	4	MVX5900X4F50	★	2	236	243	283	358	50	68	1.26	SOX18	TPS54	TIP25D
5	MVX5900X5F50	★	2	295	302	342	417	50	68	1.26	SOX18	TPS54	TIP25D	
60.0	2	MVX6000X2F40	●	2	120	127	167	232	40	68	1.16	SOX18	TPS54	TIP25D
	3	MVX6000X3F40	●	2	180	187	227	292	40	68	1.16	SOX18	TPS54	TIP25D
	4	MVX6000X4F40	●	2	240	247	287	352	40	68	1.16	SOX18	TPS54	TIP25D
	5	MVX6000X5F40	●	2	300	307	347	412	40	68	1.16	SOX18	TPS54	TIP25D
	4	MVX6000X4F50	★	2	240	247	287	362	50	68	1.16	SOX18	TPS54	TIP25D
5	MVX6000X5F50	★	2	300	307	347	422	50	68	1.16	SOX18	TPS54	TIP25D	

★ Sıkma Torku (N • m) : TPS54=7.5

● : Avrupa standart stok. ★ : Japonya standart stok.

DC (mm)	Delik Derinliği (L/D)	Sipariş No.	Stok	Dişler	Boyutlar (mm)						S10 (mm)	Kesici Uç		
					LU	LBX	LPR	OAL	DCONMS	DCSFMS				
61.0	2	MVX6100X2F40	●	2	122	129	169	234	40	68	1.05	SOX18	TPS54	TIP25D
	3	MVX6100X3F40	●	2	183	190	230	295	40	68	1.05	SOX18	TPS54	TIP25D
	4	MVX6100X4F40	●	2	244	251	291	356	40	68	1.05	SOX18	TPS54	TIP25D
	5	MVX6100X5F40	●	2	305	312	352	417	40	68	1.05	SOX18	TPS54	TIP25D
	4	MVX6100X4F50	★	2	244	251	291	366	50	68	1.05	SOX18	TPS54	TIP25D
	5	MVX6100X5F50	★	2	305	312	352	427	50	68	1.05	SOX18	TPS54	TIP25D
62.0	2	MVX6200X2F40	●	2	124	131	171	236	40	68	0.95	SOX18	TPS54	TIP25D
	3	MVX6200X3F40	●	2	186	193	233	298	40	68	0.95	SOX18	TPS54	TIP25D
	4	MVX6200X4F40	●	2	248	255	295	360	40	68	0.95	SOX18	TPS54	TIP25D
	5	MVX6200X5F40	●	2	310	317	357	422	40	68	0.95	SOX18	TPS54	TIP25D
	4	MVX6200X4F50	★	2	248	255	295	370	50	68	0.95	SOX18	TPS54	TIP25D
	5	MVX6200X5F50	★	2	310	317	357	432	50	68	0.95	SOX18	TPS54	TIP25D
63.0	2	MVX6300X2F40	●	2	126	133	173	238	40	68	0.85	SOX18	TPS54	TIP25D
	3	MVX6300X3F40	●	2	189	196	236	301	40	68	0.85	SOX18	TPS54	TIP25D
	4	MVX6300X4F40	●	2	252	259	299	364	40	68	0.85	SOX18	TPS54	TIP25D
	5	MVX6300X5F40	●	2	315	322	362	427	40	68	0.85	SOX18	TPS54	TIP25D
	4	MVX6300X4F50	★	2	252	259	299	374	50	68	0.85	SOX18	TPS54	TIP25D
	5	MVX6300X5F50	★	2	315	322	362	437	50	68	0.85	SOX18	TPS54	TIP25D

* Sıkma Torku (N • m) : TPS54=7.5

M

DELME

KESİCİ UÇ AÇIKLAMASI > M166
 KESME KOŞULLARI > M167
 TAM UYUMLU AYAR BURCU > M170


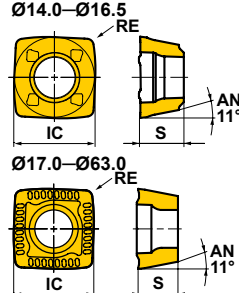

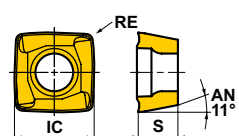

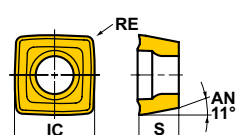

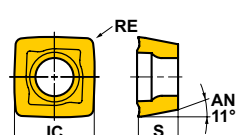
KULLANIM NOTU > M171
 YEDEK PARÇALAR > N001
 TEKNİK VERİLER > P001

M165

DELME (DEĞİŞTİRİLEBİLİR UÇLU TİP)













MVX

KESİCİ UÇLAR

Şekil	Delme Ucu Çapı	Kesici Uç Numarası	Boyutlar (mm)			Kaplama				Karbür		Geometri
			IC	S	RE	VP15TF	MC1020	MC5020	DP8020	TF15		
 Genel amaçlı İç kenar veya Dış Kenar için	Ø14.0—Ø16.5	SOMX052704-UM	5.0	2.7	0.4	●	●	●				
	Ø17.0—Ø19.5	SOMX063005-UM	6.0	3.0	0.5	●	●	●				
	Ø20.0—Ø22.5	SOMX073505-UM	7.0	3.5	0.5	●	●	●				
	Ø23.0—Ø27.5	SOMX084005-UM	8.3	4.0	0.5	●	●	●				
	Ø28.0—Ø33.0	SOMX094506-UM	9.7	4.5	0.6	●	●	●				
	Ø33.5—Ø39.0	SOMX115506-UM	11.6	5.5	0.6	●	●	●				
	Ø40.0—Ø46.0	SOMX136008-UM	13.8	6.0	0.8	●	●	●				
	Ø47.0—Ø56.0	SOMX166508-UM	16.5	6.5	0.8	●	●	●				
Ø57.0—Ø63.0	SOMX187008-UM	18.2	7.0	0.8	●	●	●					
 Paslanmaz çelik (iç kenar için)	Ø17.0—Ø19.5	SOMX063005-US	6.0	3.0	0.5	●						
	Ø20.0—Ø22.5	SOMX073505-US	7.0	3.5	0.5	●						
	Ø23.0—Ø27.5	SOMX084005-US	8.0	4.0	0.5	●						
	Ø28.0—Ø33.0	SOMX094506-US	9.0	4.5	0.6	●						
	Ø33.5—Ø39.0	SOMX115506-US	11.6	5.5	0.6	●						
	Ø40.0—Ø46.0	SOMX136008-US	13.8	6.0	0.8	●						
	Ø47.0—Ø56.0	SOMX166508-US	16.5	6.5	0.8	●						
	Ø57.0—Ø63.0	SOMX187008-US	18.2	7.0	0.8	●						
 Güçlü Kesme Kenarlı Tip ve İç kenar Kenar için	Ø17.0—Ø19.5	SOMX062905-UH	6.0	2.9	0.5				●			
	Ø20.0—Ø22.5	SOMX073405-UH	7.0	3.4	0.5				●			
	Ø23.0—Ø27.5	SOMX083905-UH	8.3	3.9	0.5				●			
	Ø28.0—Ø33.0	SOMX094406-UH	9.7	4.4	0.6				●			
	Ø33.5—Ø39.0	SOMX115406-UH	11.6	5.4	0.6				●			
	Ø40.0—Ø46.0	SOMX135908-UH	13.8	5.9	0.8				●			
	Ø47.0—Ø56.0	SOMX166408-UH	16.5	6.4	0.8				●			
	Ø57.0—Ø63.0	SOMX186908-UH	18.2	6.9	0.8				●			
 Alüminyum Alaşım ları İç kenar veya Dış Kenar için	Ø17.0—Ø19.5	SOGX063005-UN	6.0	3.0	0.5					●		
	Ø20.0—Ø22.5	SOGX073505-UN	7.0	3.5	0.5					●		
	Ø23.0—Ø27.5	SOGX084005-UN	8.3	4.0	0.5					●		
	Ø28.0—Ø33.0	SOGX094506-UN	9.7	4.5	0.6					●		
	Ø33.5—Ø39.0	SOGX115506-UN	11.6	5.5	0.6					●		
	Ø40.0—Ø46.0	SOGX136008-UN	13.8	6.0	0.8					●		
	Ø47.0—Ø56.0	SOGX166508-UN	16.5	6.5	0.8					●		
	Ø57.0—Ø63.0	SOGX187008-UN	18.2	7.0	0.8					●		

Not 1) MC1020 ve MC5020 kaliteli kesici uçlar özellikle Dış kenarda kullanılmak üzere üretilmiştir. DP8020 kaliteli kesici uçlar özellikle İç kenarda kullanılmak üzere üretilmiştir.

KESİCİ UÇ ÖNERİLERİ

	1. Öneri		Dış kesici uç kırılıyorsa	
	Dış Kesici Uç	İç Kesici Uç	Dış Kesici Uç	İç Kesici Uç
P Yumuşak Çelikler, Alaşımlı Çelik	MC1020 	VP15TF 	VP15TF 	VP15TF 
	UM Kırıcı	UM Kırıcı	UM Kırıcı	UM Kırıcı
M Paslanmaz Çelik- ler	MC1020 	VP15TF 	VP15TF 	VP15TF 
	UM Kırıcı	US Kırıcı	UM Kırıcı	US Kırıcı
K Dökme Demir	MC5020 	VP15TF 	VP15TF 	VP15TF 
	UM Kırıcı	UM Kırıcı	UM Kırıcı	UM Kırıcı

	1. Öneri		Dış kesici uç kırılıyorsa	
	Dış Kesici Uç	İç Kesici Uç	Dış Kesici Uç	İç Kesici Uç
H Sertleştirilmiş Çelikler	MC1020 	DP8020 	VP15TF 	DP8020 
	UM Kırıcı	UH Kırıcı	UM Kırıcı	UH Kırıcı
N Alüminyum Ala- şım ları	TF15 	TF15 		
	UN Kırıcı	UN Kırıcı		

● : Avrupa standart stok.

ÖNERİLEN KESME KOŞULLARI

Çalışma malzemesi	Sertlik	Vc (m/dak)	İç Kırıcı	Ø 14 – Ø 16.5			
				fr (mm/dev)			
				L/D=2, 3	4	5	
P	Yumuşak Çelik (C15, Ck15)	≤180HB	200 (180–235)	UM	0.05 (0.04–0.06)	0.05 (0.04–0.06)	0.05 (0.04–0.06)
				UH	–	–	–
	Karbon Çelik, Alaşımli Çelik (Ck45, 41CrMo4)	180–280HB	140 (115–180)	UM	0.08 (0.06–0.14)	0.08 (0.06–0.09)	0.08 (0.06–0.09)
				UH	–	–	–
	Karbon Çelik, Alaşımli Çelik (100Cr6)	280–350HB	100 (75–140)	UM	0.08 (0.06–0.14)	0.08 (0.06–0.09)	0.08 (0.06–0.09)
				UH	–	–	–
	Alaşımli Takım Çeliği (X210Cr12)	≤350HB	135 (100–170)	UM	0.08 (0.06–0.14)	0.08 (0.06–0.09)	0.08 (0.06–0.09)
				UH	–	–	–
M	Ostenitli Paslanmaz Çelik (X5CrNi18-10, X5CrNiMo17-12-2)	≤200HB	130 (80–180)	US	–	–	–
				UM	0.06 (0.04–0.08)	0.05 (0.04–0.06)	0.05 (0.04–0.06)
	Ostenitli Paslanmaz Çelik (X2CrNiN18-9, X5CrNiMoN17-11-2)	>200HB	130 (80–180)	US	–	–	–
				UM	0.06 (0.04–0.08)	0.05 (0.04–0.06)	0.05 (0.04–0.06)
	Ferritik ve Martensitik Paslanmaz Çelik (X12Cr13, X6Cr17)	≤200HB	120 (80–165)	US	–	–	–
				UM	0.06 (0.04–0.08)	0.05 (0.04–0.06)	0.05 (0.04–0.06)
	Ferritik ve Martensitik Paslanmaz Çelik (X17CrNi16-2, X30Cr13)	>200HB	120 (80–165)	US	–	–	–
				UM	0.06 (0.04–0.08)	0.05 (0.04–0.06)	0.05 (0.04–0.06)
K	Gri Dökme Demir (GG25, GG30)	≤350MPa	160 (130–195)	UM	0.10 (0.06–0.14)	0.08 (0.06–0.10)	0.08 (0.06–0.10)
	Duktıl Dökme Demir (GG40)	≤450MPa	100 (80–135)	UM	0.10 (0.06–0.14)	0.08 (0.06–0.10)	0.08 (0.06–0.10)
	Duktıl Dökme Demir (GGG70)	≤800HB	100 (70–125)	UM	0.08 (0.06–0.12)	0.07 (0.06–0.08)	0.07 (0.06–0.08)
N	Alüminyum Alaşım (EN AW-6061, EN AW-7075)	Si<5%	200 (100-350)	UN	–	–	–
	Alüminyum Alaşım (AC4B)	5%≤Si≤10%	150 (100-200)	UN	–	–	–
	Alüminyum Alaşım (ADC12, A390)	Si>10%	150 (100-200)	UN	–	–	–
H	Sertleştirilmiş Çelik (X40CrMoV51, 55NiCrMoV6)	38 - 45HRC	50 (30-80)	UH	–	–	–

Not 1) Dış kesici uç olarak VP15TF kullanıldığında kesme hızını %30 oranında düşürün.
Not 2) Yalnızca dıştan soğutma suyu kullanıldığında önerilen maksimum derinlik L/D=3'tür.
Not 3) Paslanmaz çelik delindiğinde içden boydan boya soğutma suyu fazlasıyla gereklidir.

KULLANIM NOTU > M171
YEDEK PARÇALAR > N001
TEKNİK VERİLER > P001

ÖNERİLEN KESME KOŞULLARI

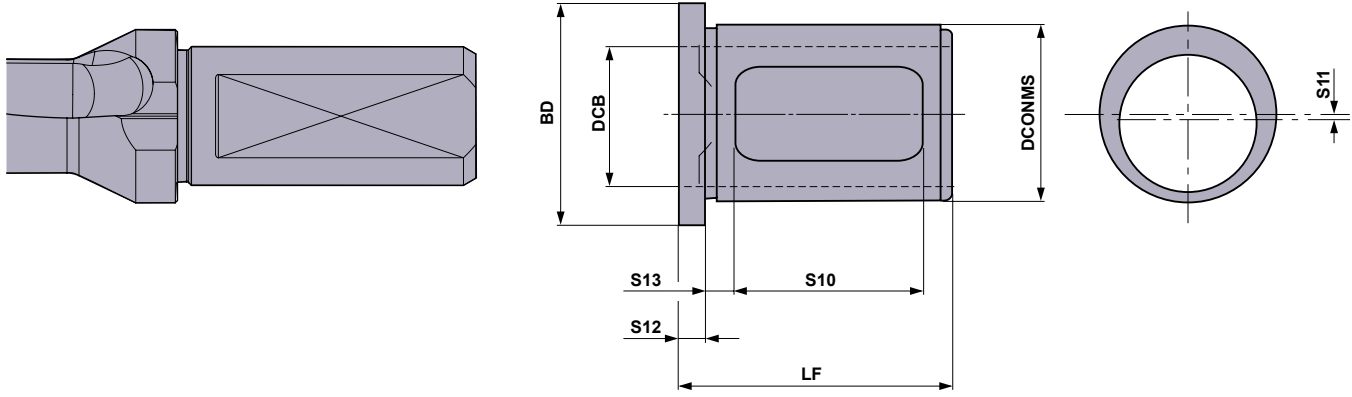
Çalışma malzemesi	Sertlik	Vc (m/dak)	İç Kırıcı	Ø 17-Ø 19.5				
				fr (mm/dev)				
				L/D=2, 3	4	5	6	
P Yumuşak Çelik (C15, Ck15)	≤180HB	200 (180-235)	UM	0.05 (0.04-0.06)	0.05 (0.04-0.06)	0.05 (0.04-0.06)	0.04 (0.04-0.05)	
			UH					
	180-280HB	140 (115-180)	UM	0.08 (0.06-0.14)	0.08 (0.06-0.09)	0.08 (0.06-0.09)	0.05 (0.04-0.06)	
			UH					
	280-350HB	100 (75-140)	UM	0.08 (0.06-0.14)	0.08 (0.06-0.09)	0.08 (0.06-0.09)	0.05 (0.04-0.06)	
			UH					
	≤350HB	135 (100-170)	UM	0.08 (0.06-0.14)	0.08 (0.06-0.09)	0.08 (0.06-0.09)	0.05 (0.04-0.06)	
			UH					
M	≤200HB	130 (80-180)	US	0.08 (0.06-0.12)	0.06 (0.04-0.08)	0.06 (0.04-0.08)	0.05 (0.04-0.06)	
			UM	0.06 (0.04-0.08)	0.05 (0.04-0.06)	0.05 (0.04-0.06)	0.04 (0.04-0.05)	
	>200HB	130 (80-180)	US	0.08 (0.06-0.12)	0.06 (0.04-0.08)	0.06 (0.04-0.08)	0.05 (0.04-0.06)	
			UM	0.06 (0.04-0.08)	0.05 (0.04-0.06)	0.05 (0.04-0.06)	0.04 (0.04-0.05)	
	≤200HB	120 (80-165)	US	0.08 (0.06-0.12)	0.06 (0.04-0.08)	0.06 (0.04-0.08)	0.05 (0.04-0.06)	
			UM	0.06 (0.04-0.08)	0.05 (0.04-0.06)	0.05 (0.04-0.06)	0.04 (0.04-0.05)	
	>200HB	120 (80-165)	US	0.08 (0.06-0.12)	0.06 (0.04-0.08)	0.06 (0.04-0.08)	0.05 (0.04-0.06)	
			UM	0.06 (0.04-0.08)	0.05 (0.04-0.06)	0.05 (0.04-0.06)	0.04 (0.04-0.05)	
	K	≤350MPa	160 (130-195)	UM	0.11 (0.08-0.14)	0.09 (0.08-0.10)	0.09 (0.08-0.10)	0.05 (0.04-0.06)
		≤450MPa	100 (80-135)	UM	0.11 (0.08-0.14)	0.09 (0.08-0.10)	0.09 (0.08-0.10)	0.05 (0.04-0.06)
≤800HB		100 (70-125)	UM	0.11 (0.08-0.14)	0.09 (0.08-0.10)	0.09 (0.08-0.10)	0.05 (0.04-0.06)	
N	Si<5%	200 (100-350)	UN	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.08 (0.05-0.12)	
	5%≤Si≤10%	150 (100-200)	UN	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.08 (0.05-0.12)	
	Si>10%	150 (100-200)	UN	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.08 (0.05-0.12)	
H	38 - 45HRC	50 (30-80)	UH	0.08 (0.04-0.12)	0.06 (0.04-0.09)	-	-	

Not 1) Dış kesici uç olarak VP15TF kullanıldığında kesme hızını %30 oranında düşürün.
 Not 2) Yalnızca dıştan soğutma suyu kullanıldığında önerilen maksimum derinlik L/D=3'tür.
 Not 3) Paslanmaz çelik delindiğinde içden boydan boya soğutma suyu fazlasıyla gereklidir.

	Ø 20-Ø 23.5				Ø 24-Ø 29.5				Ø 30-Ø 63			
	fr (mm/dev)				fr (mm/dev)				fr (mm/dev)			
	L/D=2, 3	4	5	6	L/D=2, 3	4	5	6	L/D=2, 3	4	5	6
	0.06 (0.04-0.08)	0.06 (0.04-0.07)	0.06 (0.04-0.07)	0.04 (0.04-0.05)	0.07 (0.04-0.08)	0.06 (0.04-0.07)	0.06 (0.04-0.07)	0.05 (0.04-0.06)	0.08 (0.06-0.10)	0.07 (0.06-0.08)	0.07 (0.06-0.08)	0.06 (0.06-0.07)
	0.10 (0.06-0.18)	0.09 (0.06-0.12)	0.09 (0.06-0.12)	0.07 (0.06-0.08)	0.12 (0.08-0.18)	0.10 (0.08-0.12)	0.10 (0.08-0.12)	0.09 (0.08-0.10)	0.14 (0.08-0.20)	0.12 (0.08-0.16)	0.12 (0.08-0.16)	0.11 (0.10-0.12)
	0.10 (0.06-0.18)	0.09 (0.06-0.12)	0.09 (0.06-0.12)	0.07 (0.06-0.08)	0.12 (0.08-0.18)	0.10 (0.08-0.12)	0.10 (0.08-0.12)	0.09 (0.08-0.10)	0.14 (0.08-0.20)	0.12 (0.08-0.16)	0.12 (0.08-0.16)	0.11 (0.10-0.12)
	0.10 (0.06-0.18)	0.09 (0.06-0.12)	0.09 (0.06-0.12)	0.07 (0.06-0.08)	0.12 (0.08-0.18)	0.10 (0.08-0.12)	0.10 (0.08-0.12)	0.09 (0.08-0.10)	0.14 (0.08-0.20)	0.12 (0.08-0.16)	0.12 (0.08-0.16)	0.10 (0.08-0.12)
	0.10 (0.06-0.14)	0.07 (0.06-0.08)	0.07 (0.06-0.08)	0.06 (0.06-0.07)	0.10 (0.06-0.14)	0.08 (0.06-0.10)	0.08 (0.06-0.10)	0.07 (0.06-0.08)	0.10 (0.06-0.14)	0.09 (0.06-0.12)	0.09 (0.06-0.12)	0.07 (0.06-0.10)
	0.08 (0.06-0.12)	0.07 (0.06-0.08)	0.07 (0.06-0.08)	0.06 (0.06-0.07)	0.09 (0.06-0.12)	0.07 (0.06-0.09)	0.07 (0.06-0.09)	0.06 (0.06-0.08)	0.09 (0.06-0.12)	0.08 (0.06-0.10)	0.08 (0.06-0.10)	0.07 (0.06-0.08)
	0.10 (0.06-0.14)	0.07 (0.06-0.08)	0.07 (0.06-0.08)	0.06 (0.06-0.07)	0.10 (0.06-0.14)	0.08 (0.06-0.10)	0.08 (0.06-0.10)	0.07 (0.06-0.08)	0.10 (0.06-0.14)	0.09 (0.06-0.12)	0.09 (0.06-0.12)	0.07 (0.06-0.10)
	0.08 (0.06-0.12)	0.07 (0.06-0.08)	0.07 (0.06-0.08)	0.06 (0.06-0.07)	0.09 (0.06-0.12)	0.07 (0.06-0.09)	0.07 (0.06-0.09)	0.06 (0.06-0.08)	0.09 (0.06-0.12)	0.08 (0.06-0.10)	0.08 (0.06-0.10)	0.07 (0.06-0.08)
	0.10 (0.06-0.14)	0.07 (0.06-0.08)	0.07 (0.06-0.08)	0.06 (0.06-0.07)	0.10 (0.06-0.14)	0.08 (0.06-0.10)	0.08 (0.06-0.10)	0.07 (0.06-0.08)	0.10 (0.06-0.14)	0.09 (0.06-0.12)	0.09 (0.06-0.12)	0.07 (0.06-0.10)
	0.08 (0.06-0.12)	0.07 (0.06-0.08)	0.07 (0.06-0.08)	0.06 (0.06-0.07)	0.09 (0.06-0.12)	0.07 (0.06-0.09)	0.07 (0.06-0.09)	0.06 (0.06-0.08)	0.09 (0.06-0.12)	0.08 (0.06-0.10)	0.08 (0.06-0.10)	0.07 (0.06-0.08)
	0.14 (0.10-0.18)	0.10 (0.10-0.12)	0.10 (0.10-0.12)	0.07 (0.06-0.08)	0.15 (0.10-0.20)	0.11 (0.10-0.13)	0.11 (0.10-0.13)	0.09 (0.08-0.10)	0.15 (0.10-0.20)	0.12 (0.10-0.13)	0.12 (0.10-0.13)	0.11 (0.10-0.12)
	0.13 (0.10-0.16)	0.10 (0.10-0.11)	0.10 (0.10-0.11)	0.07 (0.06-0.08)	0.14 (0.10-0.18)	0.11 (0.10-0.12)	0.11 (0.10-0.12)	0.09 (0.08-0.10)	0.15 (0.10-0.20)	0.12 (0.10-0.13)	0.12 (0.10-0.13)	0.11 (0.10-0.12)
	0.13 (0.10-0.16)	0.10 (0.10-0.11)	0.10 (0.10-0.11)	0.07 (0.06-0.08)	0.14 (0.10-0.18)	0.11 (0.10-0.12)	0.11 (0.10-0.12)	0.09 (0.08-0.10)	0.15 (0.10-0.20)	0.12 (0.10-0.13)	0.12 (0.10-0.13)	0.11 (0.10-0.12)
	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.08 (0.05-0.12)	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.08 (0.05-0.12)	0.12 (0.05-0.20)	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.08 (0.05-0.12)
	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.08 (0.05-0.12)	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.08 (0.05-0.12)	0.12 (0.05-0.20)	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.08 (0.05-0.12)
	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.08 (0.05-0.12)	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.08 (0.05-0.12)	0.12 (0.05-0.20)	0.12 (0.05-0.18)	0.12 (0.05-0.18)	0.08 (0.05-0.12)
	0.09 (0.06-0.14)	0.07 (0.06-0.09)	-	-	0.09 (0.06-0.14)	0.07 (0.06-0.09)	-	-	0.11 (0.06-0.16)	0.09 (0.06-0.12)	-	-

TAM UYUMLU AYAR BURCU [JFS]

- Kesme çapının artırılmasını sağlamak için matkap ucunun şaftı için bir burç.



Set Sipariş No.	Bireysel Sipariş No.	Stok	Boyutlar (mm)							*Artış (S11×2)	MVX Tip Matkapla uyumlu
			BD	DCONMS	DCB	LF	S10	S12	S13		
JFS-1	JFS2520-10	●	33	25	20	43	30	5	5	0.1	MVX1700 X ØF20
	JFS2520-20	●	33	25	20	43	30	5	5	0.2	
	JFS2520-30	●	33	25	20	43	30	5	5	0.3	
	JFS2520-40	●	33	25	20	43	30	5	5	0.4	
	JFS2520-50	●	33	25	20	43	30	5	5	0.5	
JFS-2	JFS3225-10	●	40	32	25	50	34	5	5	0.1	MVX1750 X ØF25 MVX2550 X ØF25
	JFS3225-20	●	40	32	25	50	34	5	5	0.2	
	JFS3225-30	●	40	32	25	50	34	5	5	0.3	
	JFS3225-40	●	40	32	25	50	34	5	5	0.4	
	JFS3225-50	●	40	32	25	50	34	5	5	0.5	
JFS-3	JFS4032-10	●	48	40	32	55	40	5	5	0.1	MVX2600 X ØF32 MVX3000 X ØF32
	JFS4032-20	●	48	40	32	55	40	5	5	0.2	
	JFS4032-30	●	48	40	32	55	40	5	5	0.3	
	JFS4032-40	●	48	40	32	55	40	5	5	0.4	
	JFS4032-50	●	48	40	32	55	40	5	5	0.5	
JFS-4	JFS5040-10	★	68	50	40	65	50	5	5	0.1	MVX3100 X ØF40 MVX6300 X ØF40
	JFS5040-20	★	68	50	40	65	50	5	5	0.2	
	JFS5040-30	★	68	50	40	65	50	5	5	0.3	
	JFS5040-40	★	68	50	40	65	50	5	5	0.4	
	JFS5040-50	★	68	50	40	65	50	5	5	0.5	

Ø50mm şaft çapına uygun yoktur

* Artış : Kesme çapındaki artışın büyüklüğü.

TAM UYUMLU AYAR BURCUNU SEÇME KILAVUZU

İstenilen = (Matkap Ø + JFS Artışı) + 0.1 mm

(Ör.) İstenen çap 20.3 mm (Standart ölçüden büyüklük 0.1 mm olarak alınır).

$$\text{Ø}20.3 = (\text{MVX2000 X ØF25} + \text{JFS3225-20}) + 0.1$$

20 mm Matkap

JFS'yi kullanarak,
0.2 mm bir artış olur.

Standart
ölçüden büyüklük

<Seçilen Takım>

Delme Ucu : MVX2000 X ØF25
Tam Uyumlu Burç [JFS]
: JFS3225-20

Not 1) Ölçü dışılık kullanılan kesme koşulları nedeniyle değişebilir, lütfen kılavuz olarak yukarıyı kullanın.

TAM UYUMLU BURCU SİPARİŞ ETME

● Satın Alma Yöntemi 1

Aşırı boyut kullanılan kesme koşulları nedeniyle değişebilir. Bu nedenle set olarak satın alınması önerilir. Bir sipariş verirken, lütfen Set sipariş numarasını kullanın. (5 manşon/set)

● Satın Alma Yöntemi 2

Ayrı ayrı sipariş etmek mümkündür. Bir sipariş verirken, lütfen bireysel sipariş numarasını kullanın.

● : Avrupa standart stok. ★ : Japonya standart stok.

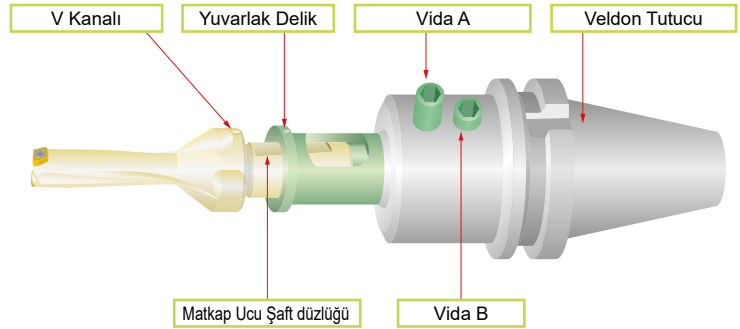
TAM UYUMLU MANŞONU UYGULAMA

1. Matkabı takarken yandan kilitli tutucuya yerleştirin, matkap flaşının dış çevresel kenarındaki V şekilli çentiğini burç flaşını dış çevresel kenarındaki yuvarlak delik ile hizalayın ve yandan vidalı takım tutucuya matkabı bağlayın. (eğer matkabın V çentiği yoksa burcun yuvarlak deliği ile matkap gövdesi üzerindeki düzlüğü aynı hizaya getirin.)

2. Matkabı bağlamak için yandan kilitli tutucunun A vidasını burcun açık penceresine doğrudan takın. B vidasını sıkarken manşona zarar vermeyecek bir radde de sıkın.

(Not)

- Burç çapı ile ince ayarlamalar yapılamaz.
- Pensli takım tutucular ile kullanılamaz.

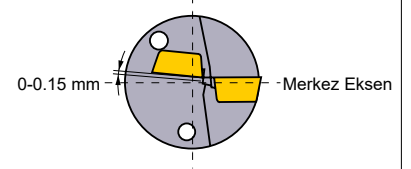


MVX TİPİ DELME UCUNUN UYGULANMASI

Tornada Kullanma

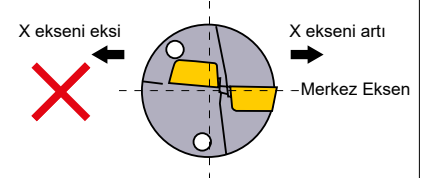
(1) Dış kesici uç ve tezgah X eksenine paralel ayarlanmalıdır. Matkap merkez iç kesici ucu matkap merkezi ve buna uygun tezgah fener mili merkezinden 0-0.15 mm düşük tasarlanmıştır.

*İç kesici ucun merkez yüksekliği tezgah X ekseninden daha yüksekse, iç kesici uç kırılabilir.

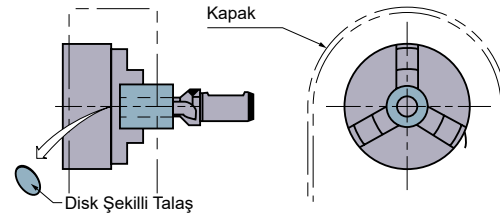


(2) Matkab ofset ayarları ile delik çapını ayarlamak için, lütfen X eksenine artı yönünde ayarlayın (delik çapını büyütün). Lütfen her bir tutucunun maksimum ayarlama oranı için tutucu boyutu listesine bakın.

*X eksenine eksi yönüne ayarlamak önerilmez (delik çapını düşürme yönü) çünkü tutucu delik ile temas edebilir.



(3) Tornada delik delme sırasında, çalışma parçasından çıkan matkap ucu tarafından üretilen disk yüksek hızda fırlayabilir. Yaralanma veya hasar tehlikesini azaltmak için önemle bir koruyucu önerilir.



VIOLET MATKAPLAR

VAPDS

Kısa delme boyu, Yüksek hassasiyet



DC<2

DC≥2

P

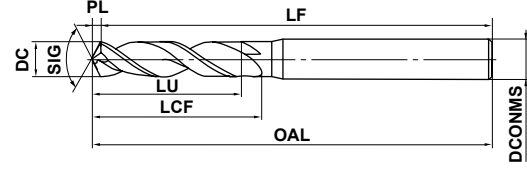
M

K

N

S

H



*LU = LCF-2DC (Maks 3×DC)

DELME



0.5≤DC≤3	3<DC≤6	6<DC≤10	10<DC≤13
0 -0.014	0 -0.018	0 -0.022	0 -0.027

* 2.0mm çapın altında 0,1 aralıkları hariç tüm matkaplar
0-0.009mm toleransa sahiptir.

● Yeni geliştirilen Violet kaplama ile fazlasıyla verimli delme ve uzun takım ömrü elde edilmiştir.

DC (mm)	Sipariş No.	Boyutlar (mm)					Stok
		LCF	OAL	LF	PL	DCONMS	
0.50	VAPDSD0050	3.2	50.2	50	0.15	3	●
0.51	VAPDSD0051	3.2	50.2	50	0.15	3	★
0.52	VAPDSD0052	3.2	50.2	50	0.16	3	★
0.53	VAPDSD0053	3.2	50.2	50	0.16	3	★
0.54	VAPDSD0054	3.2	50.2	50	0.16	3	★
0.55	VAPDSD0055	3.2	50.2	50	0.17	3	★
0.56	VAPDSD0056	4.2	50.2	50	0.17	3	★
0.57	VAPDSD0057	4.2	50.2	50	0.17	3	★
0.58	VAPDSD0058	4.2	50.2	50	0.17	3	★
0.59	VAPDSD0059	4.2	50.2	50	0.18	3	★
0.60	VAPDSD0060	5.2	50.2	50	0.18	3	★
0.61	VAPDSD0061	5.2	50.2	50	0.18	3	★
0.62	VAPDSD0062	5.2	50.2	50	0.19	3	★
0.63	VAPDSD0063	5.2	50.2	50	0.19	3	★
0.64	VAPDSD0064	5.2	50.2	50	0.19	3	★
0.65	VAPDSD0065	5.2	50.2	50	0.20	3	★
0.66	VAPDSD0066	5.2	50.2	50	0.20	3	★
0.67	VAPDSD0067	5.2	50.2	50	0.20	3	★
0.68	VAPDSD0068	5.2	50.2	50	0.20	3	★
0.69	VAPDSD0069	5.2	50.2	50	0.21	3	★
0.70	VAPDSD0070	5.2	50.2	50	0.21	3	★
0.71	VAPDSD0071	5.2	50.2	50	0.21	3	★
0.72	VAPDSD0072	5.2	50.2	50	0.22	3	★
0.73	VAPDSD0073	5.2	50.2	50	0.22	3	★
0.74	VAPDSD0074	5.2	50.2	50	0.22	3	★
0.75	VAPDSD0075	5.2	50.2	50	0.23	3	★
0.76	VAPDSD0076	5.2	50.2	50	0.23	3	★
0.77	VAPDSD0077	5.2	50.2	50	0.23	3	★
0.78	VAPDSD0078	5.2	50.2	50	0.23	3	★
0.79	VAPDSD0079	5.2	50.2	50	0.24	3	★
0.80	VAPDSD0080	5.2	50.2	50	0.24	3	★
0.81	VAPDSD0081	5.2	50.2	50	0.24	3	★
0.82	VAPDSD0082	5.3	50.3	50	0.25	3	★

DC (mm)	Sipariş No.	Boyutlar (mm)					Stok
		LCF	OAL	LF	PL	DCONMS	
0.83	VAPDSD0083	5.3	50.3	50	0.25	3	★
0.84	VAPDSD0084	5.3	50.3	50	0.25	3	★
0.85	VAPDSD0085	5.3	50.3	50	0.26	3	★
0.86	VAPDSD0086	6.3	50.3	50	0.26	3	★
0.87	VAPDSD0087	6.3	50.3	50	0.26	3	★
0.88	VAPDSD0088	6.3	50.3	50	0.26	3	★
0.89	VAPDSD0089	6.3	50.3	50	0.27	3	★
0.90	VAPDSD0090	6.3	50.3	50	0.27	3	★
0.91	VAPDSD0091	6.3	50.3	50	0.27	3	★
0.92	VAPDSD0092	6.3	50.3	50	0.28	3	★
0.93	VAPDSD0093	6.3	50.3	50	0.28	3	★
0.94	VAPDSD0094	6.3	50.3	50	0.28	3	★
0.95	VAPDSD0095	6.3	50.3	50	0.29	3	★
0.96	VAPDSD0096	6.3	50.3	50	0.29	3	★
0.97	VAPDSD0097	6.3	50.3	50	0.29	3	★
0.98	VAPDSD0098	6.3	50.3	50	0.29	3	★
0.99	VAPDSD0099	6.3	50.3	50	0.30	3	★
1.00	VAPDSD0100	6.3	50.3	50	0.3	3	●
1.01	VAPDSD0101	6.3	50.3	50	0.3	3	★
1.02	VAPDSD0102	6.3	50.3	50	0.3	3	★
1.03	VAPDSD0103	6.3	50.3	50	0.3	3	★
1.04	VAPDSD0104	6.3	50.3	50	0.3	3	★
1.05	VAPDSD0105	6.3	50.3	50	0.3	3	★
1.06	VAPDSD0106	6.3	50.3	50	0.3	3	★
1.07	VAPDSD0107	8.3	55.3	55	0.3	3	★
1.08	VAPDSD0108	8.3	55.3	55	0.3	3	★
1.09	VAPDSD0109	8.3	55.3	55	0.3	3	★
1.10	VAPDSD0110	8.3	55.3	55	0.3	3	★
1.11	VAPDSD0111	8.3	55.3	55	0.3	3	★
1.12	VAPDSD0112	8.3	55.3	55	0.3	3	★
1.13	VAPDSD0113	8.3	55.3	55	0.3	3	★
1.14	VAPDSD0114	8.3	55.3	55	0.3	3	★
1.15	VAPDSD0115	8.4	55.4	55	0.4	3	★

● : Avrupa standart stok. ★ : Japonya standart stok.

DC (mm)	Sipariş No.	Boyutlar (mm)					Stok
		LCF	OAL	LF	PL	DCONMS	
1.16	VAPDSD0116	8.4	55.4	55	0.4	3	★
1.17	VAPDSD0117	8.4	55.4	55	0.4	3	★
1.18	VAPDSD0118	8.4	55.4	55	0.4	3	★
1.19	VAPDSD0119	8.4	55.4	55	0.4	3	★
1.20	VAPDSD0120	8.4	55.4	55	0.4	3	★
1.21	VAPDSD0121	8.4	55.4	55	0.4	3	★
1.22	VAPDSD0122	8.4	55.4	55	0.4	3	★
1.23	VAPDSD0123	8.4	55.4	55	0.4	3	★
1.24	VAPDSD0124	8.4	55.4	55	0.4	3	★
1.25	VAPDSD0125	8.4	55.4	55	0.4	3	★
1.26	VAPDSD0126	8.4	55.4	55	0.4	3	★
1.27	VAPDSD0127	8.4	55.4	55	0.4	3	★
1.28	VAPDSD0128	8.4	55.4	55	0.4	3	★
1.29	VAPDSD0129	8.4	55.4	55	0.4	3	★
1.30	VAPDSD0130	9.4	55.4	55	0.4	3	★
1.31	VAPDSD0131	9.4	55.4	55	0.4	3	★
1.32	VAPDSD0132	9.4	55.4	55	0.4	3	★
1.33	VAPDSD0133	9.4	55.4	55	0.4	3	★
1.34	VAPDSD0134	9.4	55.4	55	0.4	3	★
1.35	VAPDSD0135	9.4	55.4	55	0.4	3	★
1.36	VAPDSD0136	9.4	55.4	55	0.4	3	★
1.37	VAPDSD0137	9.4	55.4	55	0.4	3	★
1.38	VAPDSD0138	9.4	55.4	55	0.4	3	★
1.39	VAPDSD0139	9.4	55.4	55	0.4	3	★
1.40	VAPDSD0140	9.4	55.4	55	0.4	3	★
1.41	VAPDSD0141	9.4	55.4	55	0.4	3	★
1.42	VAPDSD0142	9.4	55.4	55	0.4	3	★
1.43	VAPDSD0143	9.4	55.4	55	0.4	3	★
1.44	VAPDSD0144	9.4	55.4	55	0.4	3	★
1.45	VAPDSD0145	9.4	55.4	55	0.4	3	★
1.46	VAPDSD0146	9.4	55.4	55	0.4	3	★
1.47	VAPDSD0147	9.4	55.4	55	0.4	3	★
1.48	VAPDSD0148	9.4	55.4	55	0.4	3	★
1.49	VAPDSD0149	9.5	55.5	55	0.5	3	★
1.50	VAPDSD0150	9.5	55.5	55	0.5	3	●
1.51	VAPDSD0151	11.5	55.5	55	0.5	3	★
1.52	VAPDSD0152	11.5	55.5	55	0.5	3	★
1.53	VAPDSD0153	11.5	55.5	55	0.5	3	★
1.54	VAPDSD0154	11.5	55.5	55	0.5	3	★
1.55	VAPDSD0155	11.5	55.5	55	0.5	3	★
1.56	VAPDSD0156	11.5	55.5	55	0.5	3	★
1.57	VAPDSD0157	11.5	55.5	55	0.5	3	★
1.58	VAPDSD0158	11.5	55.5	55	0.5	3	★
1.59	VAPDSD0159	11.5	55.5	55	0.5	3	★
1.60	VAPDSD0160	11.5	55.5	55	0.5	3	★
1.61	VAPDSD0161	11.5	55.5	55	0.5	3	★
1.62	VAPDSD0162	11.5	55.5	55	0.5	3	★
1.63	VAPDSD0163	11.5	55.5	55	0.5	3	★
1.64	VAPDSD0164	11.5	55.5	55	0.5	3	★
1.65	VAPDSD0165	11.5	55.5	55	0.5	3	★

DC (mm)	Sipariş No.	Boyutlar (mm)					Stok
		LCF	OAL	LF	PL	DCONMS	
1.66	VAPDSD0166	11.5	55.5	55	0.5	3	★
1.67	VAPDSD0167	11.5	55.5	55	0.5	3	★
1.68	VAPDSD0168	11.5	55.5	55	0.5	3	★
1.69	VAPDSD0169	11.5	55.5	55	0.5	3	★
1.70	VAPDSD0170	11.5	55.5	55	0.5	3	★
1.71	VAPDSD0171	11.5	55.5	55	0.5	3	★
1.72	VAPDSD0172	11.5	55.5	55	0.5	3	★
1.73	VAPDSD0173	11.5	55.5	55	0.5	3	★
1.74	VAPDSD0174	11.5	55.5	55	0.5	3	★
1.75	VAPDSD0175	11.5	55.5	55	0.5	3	★
1.76	VAPDSD0176	11.5	55.5	55	0.5	3	★
1.77	VAPDSD0177	11.5	55.5	55	0.5	3	★
1.78	VAPDSD0178	11.5	55.5	55	0.5	3	★
1.79	VAPDSD0179	11.5	55.5	55	0.5	3	★
1.80	VAPDSD0180	11.5	55.5	55	0.5	3	★
1.81	VAPDSD0181	11.5	55.5	55	0.5	3	★
1.82	VAPDSD0182	11.6	55.6	55	0.6	3	★
1.83	VAPDSD0183	11.6	55.6	55	0.6	3	★
1.84	VAPDSD0184	11.6	55.6	55	0.6	3	★
1.85	VAPDSD0185	11.6	55.6	55	0.6	3	★
1.86	VAPDSD0186	11.6	55.6	55	0.6	3	★
1.87	VAPDSD0187	11.6	55.6	55	0.6	3	★
1.88	VAPDSD0188	11.6	55.6	55	0.6	3	★
1.89	VAPDSD0189	11.6	55.6	55	0.6	3	★
1.90	VAPDSD0190	12.6	55.6	55	0.6	3	★
1.91	VAPDSD0191	12.6	60.6	60	0.6	3	★
1.92	VAPDSD0192	12.6	60.6	60	0.6	3	★
1.93	VAPDSD0193	12.6	60.6	60	0.6	3	★
1.94	VAPDSD0194	12.6	60.6	60	0.6	3	★
1.95	VAPDSD0195	12.6	60.6	60	0.6	3	★
1.96	VAPDSD0196	12.6	60.6	60	0.6	3	★
1.97	VAPDSD0197	12.6	60.6	60	0.6	3	★
1.98	VAPDSD0198	12.6	60.6	60	0.6	3	★
1.99	VAPDSD0199	12.6	60.6	60	0.6	3	★
2.00	VAPDSD0200	12.4	60.4	60	0.4	3	●
2.05	VAPDSD0205	12.4	60.4	60	0.4	3	★
2.10	VAPDSD0210	12.4	60.4	60	0.4	3	★
2.15	VAPDSD0215	12.5	60.5	60	0.5	3	★
2.20	VAPDSD0220	12.5	60.5	60	0.5	3	★
2.25	VAPDSD0225	12.5	60.5	60	0.5	3	★
2.30	VAPDSD0230	13.5	60.5	60	0.5	3	★
2.35	VAPDSD0235	13.5	60.5	60	0.5	3	★
2.40	VAPDSD0240	13.5	60.5	60	0.5	3	★
2.45	VAPDSD0245	13.5	60.5	60	0.5	3	★
2.50	VAPDSD0250	13.5	60.5	60	0.5	3	●
2.55	VAPDSD0255	13.5	60.5	60	0.5	3	★
2.60	VAPDSD0260	15.5	60.5	60	0.5	3	★
2.65	VAPDSD0265	15.6	60.6	60	0.6	3	★
2.70	VAPDSD0270	15.6	60.6	60	0.6	3	★
2.75	VAPDSD0275	15.6	60.6	60	0.6	3	★

M

DELME

VIOLET MATKAPLAR

VAPDS

Kısa delme boyu, Yüksek hassasiyet

HSS

M
DELME

DC (mm)	Sipariş No.	Boyutlar (mm)					Stok
		LCF	OAL	LF	PL	DCONMS	
2.80	VAPDSD0280	15.6	60.6	60	0.6	3	★
2.85	VAPDSD0285	15.6	60.6	60	0.6	3	★
2.90	VAPDSD0290	15.6	60.6	60	0.6	3	★
2.95	VAPDSD0295	15.6	60.6	60	0.6	3	★
3.00	VAPDSD0300	15.6	60.6	60	0.6	3	●
3.05	VAPDSD0305	17.6	70.6	70	0.6	4	★
3.10	VAPDSD0310	17.6	70.6	70	0.6	4	★
3.15	VAPDSD0315	17.7	70.7	70	0.7	4	★
3.20	VAPDSD0320	17.7	70.7	70	0.7	4	★
3.25	VAPDSD0325	17.7	70.7	70	0.7	4	★
3.30	VAPDSD0330	19.7	70.7	70	0.7	4	★
3.35	VAPDSD0335	19.7	70.7	70	0.7	4	★
3.40	VAPDSD0340	19.7	70.7	70	0.7	4	★
3.45	VAPDSD0345	19.7	70.7	70	0.7	4	★
3.50	VAPDSD0350	19.7	70.7	70	0.7	4	●
3.55	VAPDSD0355	19.7	70.7	70	0.7	4	★
3.60	VAPDSD0360	21.8	70.8	70	0.8	4	★
3.65	VAPDSD0365	21.8	70.8	70	0.8	4	★
3.70	VAPDSD0370	21.8	70.8	70	0.8	4	★
3.75	VAPDSD0375	21.8	70.8	70	0.8	4	★
3.80	VAPDSD0380	21.8	70.8	70	0.8	4	★
3.85	VAPDSD0385	21.8	70.8	70	0.8	4	★
3.90	VAPDSD0390	21.8	70.8	70	0.8	4	★
3.95	VAPDSD0395	21.8	70.8	70	0.8	4	★
4.00	VAPDSD0400	21.8	70.8	70	0.8	4	●
4.05	VAPDSD0405	21.8	80.8	80	0.8	6	★
4.10	VAPDSD0410	21.9	80.9	80	0.9	6	★
4.15	VAPDSD0415	21.9	80.9	80	0.9	6	★
4.20	VAPDSD0420	21.9	80.9	80	0.9	6	★
4.25	VAPDSD0425	21.9	80.9	80	0.9	6	★
4.30	VAPDSD0430	23.9	80.9	80	0.9	6	★
4.35	VAPDSD0435	23.9	80.9	80	0.9	6	★
4.40	VAPDSD0440	23.9	80.9	80	0.9	6	★
4.45	VAPDSD0445	23.9	80.9	80	0.9	6	★
4.50	VAPDSD0450	23.9	80.9	80	0.9	6	●
4.55	VAPDSD0455	23.9	80.9	80	0.9	6	★
4.60	VAPDSD0460	26.0	81.0	80	1.0	6	★
4.65	VAPDSD0465	26.0	81.0	80	1.0	6	★
4.70	VAPDSD0470	26.0	81.0	80	1.0	6	★
4.75	VAPDSD0475	26.0	81.0	80	1.0	6	★
4.80	VAPDSD0480	26.0	81.0	80	1.0	6	★
4.85	VAPDSD0485	26.0	81.0	80	1.0	6	★
4.90	VAPDSD0490	26.0	81.0	80	1.0	6	★
4.95	VAPDSD0495	26.0	81.0	80	1.0	6	★
5.00	VAPDSD0500	26.0	81.0	80	1.0	6	●
5.05	VAPDSD0505	26.1	81.1	80	1.1	6	★
5.10	VAPDSD0510	26.1	81.1	80	1.1	6	★
5.15	VAPDSD0515	26.1	81.1	80	1.1	6	★
5.20	VAPDSD0520	26.1	81.1	80	1.1	6	★
5.25	VAPDSD0525	26.1	81.1	80	1.1	6	★

DC (mm)	Sipariş No.	Boyutlar (mm)					Stok
		LCF	OAL	LF	PL	DCONMS	
5.30	VAPDSD0530	26.1	81.1	80	1.1	6	★
5.35	VAPDSD0535	28.1	81.1	80	1.1	6	★
5.40	VAPDSD0540	28.1	81.1	80	1.1	6	★
5.45	VAPDSD0545	28.1	81.1	80	1.1	6	★
5.50	VAPDSD0550	28.1	81.1	80	1.1	6	●
5.55	VAPDSD0555	28.2	81.2	80	1.2	6	★
5.60	VAPDSD0560	28.2	81.2	80	1.2	6	★
5.65	VAPDSD0565	28.2	81.2	80	1.2	6	★
5.70	VAPDSD0570	28.2	81.2	80	1.2	6	★
5.75	VAPDSD0575	28.2	81.2	80	1.2	6	★
5.80	VAPDSD0580	28.2	81.2	80	1.2	6	★
5.85	VAPDSD0585	28.2	81.2	80	1.2	6	★
5.90	VAPDSD0590	28.2	81.2	80	1.2	6	★
5.95	VAPDSD0595	28.2	81.2	80	1.2	6	★
6.00	VAPDSD0600	28.2	81.2	80	1.2	6	●
6.05	VAPDSD0605	31.3	81.3	80	1.3	8	★
6.10	VAPDSD0610	31.3	81.3	80	1.3	8	★
6.15	VAPDSD0615	31.3	81.3	80	1.3	8	★
6.20	VAPDSD0620	31.3	81.3	80	1.3	8	★
6.25	VAPDSD0625	31.3	81.3	80	1.3	8	★
6.30	VAPDSD0630	31.3	81.3	80	1.3	8	★
6.35	VAPDSD0635	31.3	81.3	80	1.3	8	★
6.40	VAPDSD0640	31.3	81.3	80	1.3	8	★
6.45	VAPDSD0645	31.3	81.3	80	1.3	8	★
6.50	VAPDSD0650	31.4	81.4	80	1.4	8	●
6.55	VAPDSD0655	31.4	81.4	80	1.4	8	★
6.60	VAPDSD0660	31.4	81.4	80	1.4	8	★
6.65	VAPDSD0665	31.4	81.4	80	1.4	8	★
6.70	VAPDSD0670	31.4	81.4	80	1.4	8	★
6.75	VAPDSD0675	33.4	81.4	80	1.4	8	★
6.80	VAPDSD0680	33.4	81.4	80	1.4	8	★
6.85	VAPDSD0685	33.4	81.4	80	1.4	8	★
6.90	VAPDSD0690	33.4	81.4	80	1.4	8	★
6.95	VAPDSD0695	33.4	81.4	80	1.4	8	★
7.00	VAPDSD0700	33.5	81.5	80	1.5	8	●
7.05	VAPDSD0705	33.5	81.5	80	1.5	8	★
7.10	VAPDSD0710	33.5	81.5	80	1.5	8	★
7.15	VAPDSD0715	33.5	81.5	80	1.5	8	★
7.20	VAPDSD0720	33.5	81.5	80	1.5	8	★
7.25	VAPDSD0725	33.5	81.5	80	1.5	8	★
7.30	VAPDSD0730	33.5	81.5	80	1.5	8	★
7.35	VAPDSD0735	33.5	81.5	80	1.5	8	★
7.40	VAPDSD0740	33.5	81.5	80	1.5	8	★
7.45	VAPDSD0745	33.5	81.5	80	1.5	8	★
7.50	VAPDSD0750	33.6	81.6	80	1.6	8	●
7.55	VAPDSD0755	36.6	86.6	85	1.6	8	★
7.60	VAPDSD0760	36.6	86.6	85	1.6	8	★
7.65	VAPDSD0765	36.6	86.6	85	1.6	8	★
7.70	VAPDSD0770	36.6	86.6	85	1.6	8	★
7.75	VAPDSD0775	36.6	86.6	85	1.6	8	★

● : Avrupa standart stok. ★ : Japonya standart stok.

DC (mm)	Sipariş No.	Boyutlar (mm)					Stok
		LCF	OAL	LF	PL	DCONMS	
7.80	VAPDSD0780	36.6	86.6	85	1.6	8	★
7.85	VAPDSD0785	36.6	86.6	85	1.6	8	★
7.90	VAPDSD0790	36.6	86.6	85	1.6	8	★
7.95	VAPDSD0795	36.7	86.7	85	1.7	8	★
8.00	VAPDSD0800	36.7	86.7	85	1.7	8	●
8.05	VAPDSD0805	36.7	91.7	90	1.7	10	★
8.10	VAPDSD0810	36.7	91.7	90	1.7	10	★
8.15	VAPDSD0815	36.7	91.7	90	1.7	10	★
8.20	VAPDSD0820	36.7	91.7	90	1.7	10	★
8.25	VAPDSD0825	36.7	91.7	90	1.7	10	★
8.30	VAPDSD0830	36.7	91.7	90	1.7	10	★
8.35	VAPDSD0835	36.7	91.7	90	1.7	10	★
8.40	VAPDSD0840	36.7	91.7	90	1.7	10	★
8.45	VAPDSD0845	36.8	91.8	90	1.8	10	★
8.50	VAPDSD0850	36.8	91.8	90	1.8	10	●
8.55	VAPDSD0855	39.8	94.8	93	1.8	10	★
8.60	VAPDSD0860	39.8	94.8	93	1.8	10	★
8.65	VAPDSD0865	39.8	94.8	93	1.8	10	★
8.70	VAPDSD0870	39.8	94.8	93	1.8	10	★
8.75	VAPDSD0875	39.8	94.8	93	1.8	10	★
8.80	VAPDSD0880	39.8	94.8	93	1.8	10	★
8.85	VAPDSD0885	39.8	94.8	93	1.8	10	★
8.90	VAPDSD0890	39.8	94.8	93	1.8	10	★
8.95	VAPDSD0895	39.9	94.9	93	1.9	10	★
9.00	VAPDSD0900	39.9	94.9	93	1.9	10	●
9.10	VAPDSD0910	39.9	94.9	93	1.9	10	★
9.20	VAPDSD0920	39.9	94.9	93	1.9	10	★
9.30	VAPDSD0930	39.9	94.9	93	1.9	10	★
9.40	VAPDSD0940	40.0	95.0	93	2.0	10	★
9.50	VAPDSD0950	40.0	95.0	93	2.0	10	●
9.60	VAPDSD0960	43.0	98.0	96	2.0	10	★
9.70	VAPDSD0970	43.0	98.0	96	2.0	10	★
9.80	VAPDSD0980	43.0	98.0	96	2.0	10	★
9.90	VAPDSD0990	43.1	98.1	96	2.1	10	★
10.00	VAPDSD1000	43.1	98.1	96	2.1	10	●
10.10	VAPDSD1010	43.1	103.1	101	2.1	12	★
10.20	VAPDSD1020	43.1	103.1	101	2.1	12	★
10.30	VAPDSD1030	43.1	103.1	101	2.1	12	★
10.40	VAPDSD1040	43.2	103.2	101	2.2	12	★
10.50	VAPDSD1050	43.2	103.2	101	2.2	12	●
10.60	VAPDSD1060	43.2	103.2	101	2.2	12	★
10.70	VAPDSD1070	47.2	107.2	105	2.2	12	★
10.80	VAPDSD1080	47.2	107.2	105	2.2	12	★
10.90	VAPDSD1090	47.3	107.3	105	2.3	12	★
11.00	VAPDSD1100	47.3	107.3	105	2.3	12	●
11.10	VAPDSD1110	47.3	107.3	105	2.3	12	★
11.20	VAPDSD1120	47.3	107.3	105	2.3	12	★
11.30	VAPDSD1130	47.3	107.3	105	2.3	12	★
11.40	VAPDSD1140	47.4	107.4	105	2.4	12	★
11.50	VAPDSD1150	47.4	107.4	105	2.4	12	★

DC (mm)	Sipariş No.	Boyutlar (mm)					Stok
		LCF	OAL	LF	PL	DCONMS	
11.60	VAPDSD1160	47.4	107.4	105	2.4	12	★
11.70	VAPDSD1170	47.4	107.4	105	2.4	12	★
11.80	VAPDSD1180	47.4	107.4	105	2.4	12	★
11.90	VAPDSD1190	51.5	111.5	109	2.5	12	★
12.00	VAPDSD1200	51.5	111.5	109	2.5	12	●
12.10	VAPDSD1210	51.5	111.5	109	2.5	12	★
12.20	VAPDSD1220	51.5	111.5	109	2.5	12	★
12.30	VAPDSD1230	51.6	111.6	109	2.6	12	★
12.40	VAPDSD1240	51.6	111.6	109	2.6	12	★
12.50	VAPDSD1250	51.6	111.6	109	2.6	12	●
12.60	VAPDSD1260	51.6	111.6	109	2.6	12	★
12.70	VAPDSD1270	51.6	111.6	109	2.6	12	★
12.80	VAPDSD1280	51.7	111.7	109	2.7	12	★
12.90	VAPDSD1290	51.7	111.7	109	2.7	12	★
13.00	VAPDSD1300	51.7	111.7	109	2.7	12	★

M

DELME

ÖNERİLEN KESME KOŞULLARI

Çalışma malzemesi	P		P	K	P		M	P		M
	Yapı çeliği		Karbon çelik Ck55 Alaşımlı çelik Dökme demir		Alaşımlı takım çeliği X210Cr12 (Düşük sertlikte malzemeler) Feritik paslanmaz çelik X10CrAl18, X10CrAl13 Martensitik paslanmaz çelik X20Cr13, X10CrAl13		Alaşımlı takım çeliği X40CrMoV51 (-40HRC) Çökelimli sertleştirilmiş paslanmaz çelik X7CrNiAl177			
Matkap Çapı DC (mm)	Devir (dak ⁻¹)	İlerleme oranı (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (mm/dev)		
0.5	18000	0.02	16000	0.02	9000	0.02	8200	0.02		
1.0	12000	0.05	10000	0.05	6300	0.05	5500	0.04		
2.0	6400	0.09	5500	0.09	3200	0.09	2900	0.05		
3.0	4300	0.13	3700	0.13	2100	0.13	1900	0.06		
4.0	3200	0.15	2800	0.15	1600	0.15	1400	0.08		
5.0	2600	0.18	2200	0.18	1300	0.18	1100	0.10		
6.0	2100	0.19	1800	0.19	1100	0.20	950	0.11		
8.0	1600	0.24	1400	0.24	800	0.22	720	0.13		
10.0	1300	0.28	1100	0.28	640	0.25	570	0.15		
12.0	1100	0.34	930	0.34	530	0.30	480	0.17		
13.0	980	0.36	860	0.36	490	0.32	440	0.19		

Not 1) Lütfen iş parçası bağlama sistemi rijid değilse veya tezgahın sınırlamaları var ise devri ve ilerleme oranını düşürün.

Not 2) Lütfen pensli tip matkap tutucu veya frezeleme tutucusu kullanın.

Not 3) Nitelikli kesme sıvısı kullanın.

Not 4) 4 x matkap çapı derinliğinden büyük derinlikler için, lütfen gagalama ilerlemesi yapın.

Not 5) Yukarıda bahsedilen kesme koşulları, suda çözünebilir kesme sıvısı kullanıldığında standarttır.

Lütfen suda çözünmeyen kesme sıvısı kullanıldığında devirleri düşürün.

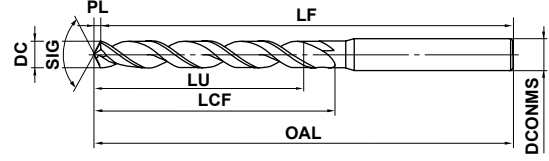
VAPDM

Orta delme boyu, Yüksek hassasiyet



HSS

P M K N S H



*LU = LCF-2DC (Maks 5×DC)



$0.5 \leq DC \leq 3$	$3 < DC \leq 6$	$6 < DC \leq 10$	$10 < DC \leq 18$	$18 < DC \leq 30$	$30 < DC \leq 32$
0	0	0	0	0	0
-0.014	-0.018	-0.022	-0.027	-0.033	-0.039

● Yeni geliştirilen Violet kaplama ile fazlasıyla verimli delme ve uzun takım ömrü elde edilmiştir.

DC (mm)	Sipariş No.	Boyutlar (mm)					Stok
		LCF	OAL	LF	PL	DCONMS	
0.50	VAPDMD0050	6.2	50.2	50	0.15	3	●
0.55	VAPDMD0055	6.2	50.2	50	0.17	3	★
0.60	VAPDMD0060	8.2	50.2	50	0.18	3	★
0.65	VAPDMD0065	8.2	50.2	50	0.20	3	★
0.70	VAPDMD0070	10.2	50.2	50	0.21	3	★
0.75	VAPDMD0075	10.2	50.2	50	0.23	3	★
0.80	VAPDMD0080	10.2	50.2	50	0.24	3	★
0.85	VAPDMD0085	10.3	50.3	50	0.26	3	★
0.90	VAPDMD0090	12.3	50.3	50	0.27	3	★
0.95	VAPDMD0095	12.3	50.3	50	0.29	3	★
1.00	VAPDMD0100	12.3	60.3	60	0.3	3	●
1.05	VAPDMD0105	12.3	60.3	60	0.3	3	★
1.10	VAPDMD0110	16.3	60.3	60	0.3	3	★
1.15	VAPDMD0115	16.4	60.4	60	0.4	3	★
1.20	VAPDMD0120	16.4	60.4	60	0.4	3	★
1.25	VAPDMD0125	16.4	60.4	60	0.4	3	★
1.30	VAPDMD0130	16.4	60.4	60	0.4	3	★
1.35	VAPDMD0135	18.4	60.4	60	0.4	3	★
1.40	VAPDMD0140	18.4	60.4	60	0.4	3	★
1.45	VAPDMD0145	18.4	60.4	60	0.4	3	★
1.50	VAPDMD0150	18.5	60.5	60	0.5	3	●
1.55	VAPDMD0155	20.5	60.5	60	0.5	3	★
1.60	VAPDMD0160	20.5	60.5	60	0.5	3	★
1.65	VAPDMD0165	20.5	60.5	60	0.5	3	★
1.70	VAPDMD0170	20.5	60.5	60	0.5	3	★
1.75	VAPDMD0175	20.5	60.5	60	0.5	3	★
1.80	VAPDMD0180	22.5	60.5	60	0.5	3	★
1.85	VAPDMD0185	22.6	60.6	60	0.6	3	★
1.90	VAPDMD0190	22.6	60.6	60	0.6	3	★
1.95	VAPDMD0195	23.6	60.6	60	0.6	3	★
2.00	VAPDMD0200	23.4	70.4	70	0.4	3	●
2.05	VAPDMD0205	23.4	70.4	70	0.4	3	★
2.10	VAPDMD0210	23.4	70.4	70	0.4	3	★

DC (mm)	Sipariş No.	Boyutlar (mm)					Stok
		LCF	OAL	LF	PL	DCONMS	
2.15	VAPDMD0215	23.5	70.5	70	0.5	3	★
2.20	VAPDMD0220	26.5	70.5	70	0.5	3	★
2.25	VAPDMD0225	26.5	70.5	70	0.5	3	★
2.30	VAPDMD0230	26.5	70.5	70	0.5	3	★
2.35	VAPDMD0235	26.5	70.5	70	0.5	3	★
2.40	VAPDMD0240	29.5	70.5	70	0.5	3	★
2.45	VAPDMD0245	29.5	70.5	70	0.5	3	★
2.50	VAPDMD0250	29.5	70.5	70	0.5	3	●
2.55	VAPDMD0255	29.5	70.5	70	0.5	3	★
2.60	VAPDMD0260	29.5	70.5	70	0.5	3	★
2.65	VAPDMD0265	29.6	70.6	70	0.6	3	★
2.70	VAPDMD0270	32.6	70.6	70	0.6	3	★
2.75	VAPDMD0275	32.6	70.6	70	0.6	3	★
2.80	VAPDMD0280	32.6	70.6	70	0.6	3	★
2.85	VAPDMD0285	32.6	70.6	70	0.6	3	★
2.90	VAPDMD0290	32.6	70.6	70	0.6	3	★
2.95	VAPDMD0295	32.6	70.6	70	0.6	3	★
3.00	VAPDMD0300	32.6	70.6	70	0.6	3	●
3.05	VAPDMD0305	35.6	85.6	85	0.6	4	★
3.10	VAPDMD0310	35.6	85.6	85	0.6	4	★
3.15	VAPDMD0315	35.7	85.7	85	0.7	4	★
3.20	VAPDMD0320	35.7	85.7	85	0.7	4	★
3.25	VAPDMD0325	35.7	85.7	85	0.7	4	★
3.30	VAPDMD0330	35.7	85.7	85	0.7	4	★
3.35	VAPDMD0335	35.7	85.7	85	0.7	4	★
3.40	VAPDMD0340	38.7	85.7	85	0.7	4	★
3.45	VAPDMD0345	38.7	85.7	85	0.7	4	★
3.50	VAPDMD0350	38.7	85.7	85	0.7	4	●
3.55	VAPDMD0355	38.7	85.7	85	0.7	4	★
3.60	VAPDMD0360	38.8	85.8	85	0.8	4	★
3.65	VAPDMD0365	38.8	85.8	85	0.8	4	★
3.70	VAPDMD0370	38.8	85.8	85	0.8	4	★
3.75	VAPDMD0375	42.8	85.8	85	0.8	4	★

● : Avrupa standart stok. ★ : Japonya standart stok.

KESME KOŞULLARI > M180
TEKNİK VERİLER > P001

M177

M
DELME

VIOLET MATKAPLAR

VAPDM

Orta delme boyu, Yüksek hassasiyet

HSS

M
DELME

DC (mm)	Sipariş No.	Boyutlar (mm)					Stok
		LCF	OAL	LF	PL	DCONMS	
3.80	VAPDMD0380	42.8	85.8	85	0.8	4	★
3.85	VAPDMD0385	42.8	85.8	85	0.8	4	★
3.90	VAPDMD0390	42.8	85.8	85	0.8	4	★
3.95	VAPDMD0395	42.8	85.8	85	0.8	4	★
4.00	VAPDMD0400	42.8	85.8	85	0.8	4	●
4.05	VAPDMD0405	42.8	100.8	100	0.8	6	★
4.10	VAPDMD0410	42.9	100.9	100	0.9	6	★
4.15	VAPDMD0415	42.9	100.9	100	0.9	6	★
4.20	VAPDMD0420	42.9	100.9	100	0.9	6	★
4.25	VAPDMD0425	46.9	100.9	100	0.9	6	★
4.30	VAPDMD0430	46.9	100.9	100	0.9	6	★
4.35	VAPDMD0435	46.9	100.9	100	0.9	6	★
4.40	VAPDMD0440	46.9	100.9	100	0.9	6	★
4.45	VAPDMD0445	46.9	100.9	100	0.9	6	★
4.50	VAPDMD0450	46.9	100.9	100	0.9	6	●
4.55	VAPDMD0455	46.9	100.9	100	0.9	6	★
4.60	VAPDMD0460	47.0	101.0	100	1.0	6	★
4.65	VAPDMD0465	47.0	101.0	100	1.0	6	★
4.70	VAPDMD0470	47.0	101.0	100	1.0	6	★
4.75	VAPDMD0475	47.0	101.0	100	1.0	6	★
4.80	VAPDMD0480	52.0	101.0	100	1.0	6	★
4.85	VAPDMD0485	52.0	101.0	100	1.0	6	★
4.90	VAPDMD0490	52.0	101.0	100	1.0	6	★
4.95	VAPDMD0495	52.0	101.0	100	1.0	6	★
5.00	VAPDMD0500	52.0	101.0	100	1.0	6	●
5.05	VAPDMD0505	52.1	101.1	100	1.1	6	★
5.10	VAPDMD0510	52.1	101.1	100	1.1	6	★
5.15	VAPDMD0515	52.1	101.1	100	1.1	6	★
5.20	VAPDMD0520	52.1	101.1	100	1.1	6	★
5.25	VAPDMD0525	52.1	101.1	100	1.1	6	★
5.30	VAPDMD0530	52.1	101.1	100	1.1	6	★
5.35	VAPDMD0535	57.1	107.1	106	1.1	6	★
5.40	VAPDMD0540	57.1	107.1	106	1.1	6	★
5.45	VAPDMD0545	57.1	107.1	106	1.1	6	★
5.50	VAPDMD0550	57.1	107.1	106	1.1	6	●
5.55	VAPDMD0555	57.2	107.2	106	1.2	6	★
5.60	VAPDMD0560	57.2	107.2	106	1.2	6	★
5.65	VAPDMD0565	57.2	107.2	106	1.2	6	★
5.70	VAPDMD0570	57.2	107.2	106	1.2	6	★
5.75	VAPDMD0575	57.2	107.2	106	1.2	6	★
5.80	VAPDMD0580	57.2	107.2	106	1.2	6	★
5.85	VAPDMD0585	57.2	107.2	106	1.2	6	★
5.90	VAPDMD0590	57.2	107.2	106	1.2	6	★
5.95	VAPDMD0595	57.2	107.2	106	1.2	6	★
6.00	VAPDMD0600	57.2	107.2	106	1.2	6	●
6.05	VAPDMD0605	63.3	113.3	112	1.3	8	★
6.10	VAPDMD0610	63.3	113.3	112	1.3	8	★
6.15	VAPDMD0615	63.3	113.3	112	1.3	8	★
6.20	VAPDMD0620	63.3	113.3	112	1.3	8	★
6.25	VAPDMD0625	63.3	113.3	112	1.3	8	★

DC (mm)	Sipariş No.	Boyutlar (mm)					Stok
		LCF	OAL	LF	PL	DCONMS	
6.30	VAPDMD0630	63.3	113.3	112	1.3	8	★
6.35	VAPDMD0635	63.3	113.3	112	1.3	8	★
6.40	VAPDMD0640	63.3	113.3	112	1.3	8	★
6.45	VAPDMD0645	63.3	113.3	112	1.3	8	★
6.50	VAPDMD0650	63.4	113.4	112	1.4	8	●
6.55	VAPDMD0655	63.4	113.4	112	1.4	8	★
6.60	VAPDMD0660	63.4	113.4	112	1.4	8	★
6.65	VAPDMD0665	63.4	113.4	112	1.4	8	★
6.70	VAPDMD0670	63.4	113.4	112	1.4	8	★
6.75	VAPDMD0675	68.4	118.4	117	1.4	8	★
6.80	VAPDMD0680	68.4	118.4	117	1.4	8	★
6.85	VAPDMD0685	68.4	118.4	117	1.4	8	★
6.90	VAPDMD0690	68.4	118.4	117	1.4	8	★
6.95	VAPDMD0695	68.4	118.4	117	1.4	8	★
7.00	VAPDMD0700	68.5	118.5	117	1.5	8	●
7.05	VAPDMD0705	68.5	118.5	117	1.5	8	★
7.10	VAPDMD0710	68.5	118.5	117	1.5	8	★
7.15	VAPDMD0715	68.5	118.5	117	1.5	8	★
7.20	VAPDMD0720	68.5	118.5	117	1.5	8	★
7.25	VAPDMD0725	68.5	118.5	117	1.5	8	★
7.30	VAPDMD0730	68.5	118.5	117	1.5	8	★
7.35	VAPDMD0735	68.5	118.5	117	1.5	8	★
7.40	VAPDMD0740	68.5	118.5	117	1.5	8	★
7.45	VAPDMD0745	68.5	118.5	117	1.5	8	★
7.50	VAPDMD0750	68.6	118.6	117	1.6	8	●
7.55	VAPDMD0755	74.6	124.6	123	1.6	8	★
7.60	VAPDMD0760	74.6	124.6	123	1.6	8	★
7.65	VAPDMD0765	74.6	124.6	123	1.6	8	★
7.70	VAPDMD0770	74.6	124.6	123	1.6	8	★
7.75	VAPDMD0775	74.6	124.6	123	1.6	8	★
7.80	VAPDMD0780	74.6	124.6	123	1.6	8	★
7.85	VAPDMD0785	74.6	124.6	123	1.6	8	★
7.90	VAPDMD0790	74.6	124.6	123	1.6	8	★
7.95	VAPDMD0795	74.7	124.7	123	1.7	8	★
8.00	VAPDMD0800	74.7	124.7	123	1.7	8	●
8.05	VAPDMD0805	74.7	129.7	128	1.7	10	★
8.10	VAPDMD0810	74.7	129.7	128	1.7	10	★
8.15	VAPDMD0815	74.7	129.7	128	1.7	10	★
8.20	VAPDMD0820	74.7	129.7	128	1.7	10	★
8.25	VAPDMD0825	74.7	129.7	128	1.7	10	★
8.30	VAPDMD0830	74.7	129.7	128	1.7	10	★
8.35	VAPDMD0835	74.7	129.7	128	1.7	10	★
8.40	VAPDMD0840	74.7	129.7	128	1.7	10	★
8.45	VAPDMD0845	74.8	129.8	128	1.8	10	★
8.50	VAPDMD0850	74.8	129.8	128	1.8	10	●
8.55	VAPDMD0855	80.8	135.8	134	1.8	10	★
8.60	VAPDMD0860	80.8	135.8	134	1.8	10	★
8.65	VAPDMD0865	80.8	135.8	134	1.8	10	★
8.70	VAPDMD0870	80.8	135.8	134	1.8	10	★
8.75	VAPDMD0875	80.8	135.8	134	1.8	10	★

● : Avrupa standart stok. ★ : Japonya standart stok.

DC (mm)	Sipariş No.	Boyutlar (mm)					Stok
		LCF	OAL	LF	PL	DCONMS	
8.80	VAPDMD0880	80.8	135.8	134	1.8	10	★
8.85	VAPDMD0885	80.8	135.8	134	1.8	10	★
8.90	VAPDMD0890	80.8	135.8	134	1.8	10	★
8.95	VAPDMD0895	80.9	135.9	134	1.9	10	★
9.00	VAPDMD0900	80.9	135.9	134	1.9	10	●
9.10	VAPDMD0910	80.9	135.9	134	1.9	10	★
9.20	VAPDMD0920	80.9	135.9	134	1.9	10	★
9.30	VAPDMD0930	80.9	135.9	134	1.9	10	★
9.40	VAPDMD0940	81.0	136.0	134	2.0	10	★
9.50	VAPDMD0950	81.0	136.0	134	2.0	10	●
9.60	VAPDMD0960	87.0	142.0	140	2.0	10	★
9.70	VAPDMD0970	87.0	142.0	140	2.0	10	★
9.80	VAPDMD0980	87.0	142.0	140	2.0	10	★
9.90	VAPDMD0990	87.1	142.1	140	2.1	10	★
10.00	VAPDMD1000	87.1	142.1	140	2.1	10	●
10.10	VAPDMD1010	87.1	147.1	145	2.1	12	★
10.20	VAPDMD1020	87.1	147.1	145	2.1	12	★
10.30	VAPDMD1030	87.1	147.1	145	2.1	12	★
10.40	VAPDMD1040	87.2	147.2	145	2.2	12	★
10.50	VAPDMD1050	87.2	147.2	145	2.2	12	●
10.60	VAPDMD1060	87.2	147.2	145	2.2	12	★
10.70	VAPDMD1070	94.2	154.2	152	2.2	12	★
10.80	VAPDMD1080	94.2	154.2	152	2.2	12	★
10.90	VAPDMD1090	94.3	154.3	152	2.3	12	★
11.00	VAPDMD1100	94.3	154.3	152	2.3	12	●
11.10	VAPDMD1110	94.3	154.3	152	2.3	12	★
11.20	VAPDMD1120	94.3	154.3	152	2.3	12	★
11.30	VAPDMD1130	94.3	154.3	152	2.3	12	★
11.40	VAPDMD1140	94.4	154.4	152	2.4	12	★
11.50	VAPDMD1150	94.4	154.4	152	2.4	12	●
11.60	VAPDMD1160	94.4	154.4	152	2.4	12	★
11.70	VAPDMD1170	94.4	154.4	152	2.4	12	★
11.80	VAPDMD1180	94.4	154.4	152	2.4	12	★
11.90	VAPDMD1190	101.5	161.5	159	2.5	12	★
12.00	VAPDMD1200	101.5	161.5	159	2.5	12	●
12.10	VAPDMD1210	101.5	161.5	159	2.5	12	★
12.20	VAPDMD1220	101.5	161.5	159	2.5	12	★
12.30	VAPDMD1230	101.6	161.6	159	2.6	12	★
12.40	VAPDMD1240	101.6	161.6	159	2.6	12	★
12.50	VAPDMD1250	101.6	161.6	159	2.6	12	●
12.60	VAPDMD1260	101.6	161.6	159	2.6	12	★
12.70	VAPDMD1270	101.6	161.6	159	2.6	12	★
12.80	VAPDMD1280	101.7	161.7	159	2.7	12	★
12.90	VAPDMD1290	101.7	161.7	159	2.7	12	★
13.00	VAPDMD1300	101.7	161.7	159	2.7	12	●
13.50	VAPDMD1350	102.8	162.8	160	2.8	16	●
14.00	VAPDMD1400	102.9	162.9	160	2.9	16	●
14.10	VAPDMD1410	107.9	167.9	165	2.9	16	★
14.20	VAPDMD1420	107.9	167.9	165	2.9	16	★
14.50	VAPDMD1450	108.0	168.0	165	3.0	16	●
15.00	VAPDMD1500	108.1	168.1	165	3.1	16	●

DC (mm)	Sipariş No.	Boyutlar (mm)					Stok
		LCF	OAL	LF	PL	DCONMS	
15.50	VAPDMD1550	113.2	173.2	170	3.2	16	★
15.60	VAPDMD1560	113.2	173.2	170	3.2	16	★
15.70	VAPDMD1570	113.3	173.3	170	3.3	16	★
16.00	VAPDMD1600	113.3	173.3	170	3.3	16	●
16.50	VAPDMD1650	113.4	178.4	175	3.4	20	●
17.00	VAPDMD1700	113.5	178.5	175	3.5	20	●
17.50	VAPDMD1750	118.6	183.6	180	3.6	20	●
17.60	VAPDMD1760	118.7	183.7	180	3.7	20	★
17.70	VAPDMD1770	118.7	183.7	180	3.7	20	★
18.00	VAPDMD1800	118.7	183.7	180	3.7	20	●
18.50	VAPDMD1850	123.8	188.8	185	3.8	20	★
19.00	VAPDMD1900	123.9	188.9	185	3.9	20	★
19.50	VAPDMD1950	124.0	189.0	185	4.0	20	★
19.60	VAPDMD1960	124.1	189.1	185	4.1	20	★
19.70	VAPDMD1970	124.1	189.1	185	4.1	20	★
20.00	VAPDMD2000	124.1	189.1	185	4.1	20	★
20.50	VAPDMD2050	129.3	204.3	200	4.3	25	●
21.00	VAPDMD2100	129.4	204.4	200	4.4	25	●
21.10	VAPDMD2110	129.4	204.4	200	4.4	25	★
21.20	VAPDMD2120	129.4	204.4	200	4.4	25	★
21.50	VAPDMD2150	129.5	204.5	200	4.5	25	★
22.00	VAPDMD2200	129.6	204.6	200	4.6	25	●
22.50	VAPDMD2250	134.7	209.7	205	4.7	25	★
23.00	VAPDMD2300	134.8	209.8	205	4.8	25	●
23.50	VAPDMD2350	134.9	209.9	205	4.9	25	★
24.00	VAPDMD2400	140.0	215.0	210	5.0	25	★
24.50	VAPDMD2450	140.1	215.1	210	5.1	25	★
25.00	VAPDMD2500	140.2	215.2	210	5.2	25	★
25.50	VAPDMD2550	145.3	225.3	220	5.3	32	●
26.00	VAPDMD2600	145.4	225.4	220	5.4	32	★
26.50	VAPDMD2650	145.5	225.5	220	5.5	32	★
27.00	VAPDMD2700	145.6	225.6	220	5.6	32	★
28.00	VAPDMD2800	145.8	225.8	220	5.8	32	★
29.00	VAPDMD2900	151.0	231.0	225	6.0	32	★
30.00	VAPDMD3000	151.2	231.2	225	6.2	32	★
31.00	VAPDMD3100	156.4	236.4	230	6.4	32	★
32.00	VAPDMD3200	161.6	241.6	235	6.6	32	★

M

DELME

ÖNERİLEN KESME KOŞULLARI (Standart delme derinliği : matkap çapının 5 katına kadar)

Çalışma malzemesi	P		P	K	P	M	P	M
	Yapı çeliği		Karbon çelik Ck55 Alaşımlı çelik Dökme demir		Alaşımlı takım çeliği X210Cr12 (Düşük sertlikte malzemeler) Feritik paslanmaz çelik X10CrAl18, X10CrAl13 Martensitik paslanmaz çelik X20Cr13, X10CrAl13		Alaşımlı takım çeliği X40CrMoV51 (-40HRC) Çökelimli sertleştirilen paslanmaz çelik X7CrNiAl177	
Matkap Çapı DC (mm)	Devir (dak ⁻¹)	İlerleme oranı (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (mm/dev)
0.5	17000	0.01	12800	0.01	8000	0.01	6600	0.01
1.0	11000	0.05	8300	0.05	5000	0.05	4100	0.04
2.0	6400	0.09	4800	0.09	2900	0.06	2400	0.05
3.0	4300	0.13	3200	0.13	1900	0.10	1600	0.06
4.0	3200	0.15	2400	0.15	1400	0.10	1200	0.08
5.0	2600	0.18	1900	0.18	1100	0.13	950	0.10
6.0	2100	0.19	1600	0.20	950	0.15	800	0.11
8.0	1600	0.24	1200	0.22	720	0.18	600	0.13
10.0	1300	0.28	950	0.25	570	0.21	480	0.15
12.0	1100	0.34	800	0.30	480	0.25	400	0.17
14.0	910	0.39	680	0.35	410	0.30	340	0.21
15.0	850	0.40	640	0.36	380	0.31	320	0.22
16.0	800	0.42	600	0.38	360	0.32	300	0.23
18.0	710	0.44	530	0.40	320	0.34	270	0.24
20.0	570	0.44	450	0.40	250	0.34	220	0.24
22.0	520	0.46	410	0.42	230	0.36	200	0.25
24.0	480	0.48	370	0.44	210	0.37	190	0.26
26.0	440	0.51	340	0.46	200	0.39	170	0.28
28.0	410	0.53	320	0.48	180	0.41	160	0.29
30.0	380	0.55	300	0.50	170	0.43	150	0.30
32.0	360	0.55	280	0.50	160	0.43	140	0.30

Not 1) Lütfen iş parçası bağlama sistemi rijid değilse veya tezgahın sınırlamaları var ise devri ve ilerleme oranını düşürün.

Not 2) Lütfen pensli matkap tutucusu veya frezeleme tutucusu kullanın.

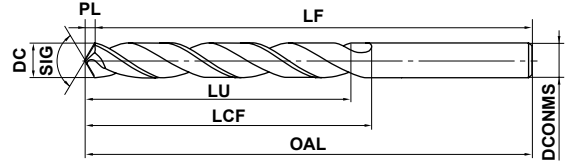
Not 3) Nitelikli kesme sıvısı kullanın.

Not 4) 4 x matkap çapı derinliğinden büyük derinlikler için , lütfen gagalama ilerlemesi yapın.

Not 5) Yukarıda bahsedilen kesme koşulları, suda çözünebilir kesme sıvısı kullanıldığında standarttır.

Lütfen suda çözünmeyen kesme sıvısı kullanıldığında devirleri düşürün.

P M K N S H



*LU = LCF-2DC



0.5≤DC≤1	1≤DC≤3	3<DC≤6	6<DC≤10	10<DC≤13
0 -0.010	0 -0.014	0 -0.018	0 -0.022	0 -0.027

DC (mm)	Sipariş No.	Boyutlar (mm)					Stok
		LCF	OAL	LF	PL	DCONMS	
0.5	VSDD0050	6.2	27.2	27	0.18	0.5	★
0.6	VSDD0060	7.2	30.2	30	0.21	0.6	●
0.7	VSDD0070	9.2	32.2	32	0.21	0.7	●
0.8	VSDD0080	10.2	34.2	34	0.24	0.8	●
0.9	VSDD0090	11.3	36.3	36	0.27	0.9	●
1.0	VSDD0100	12.3	40.3	40	0.3	1.0	●
1.1	VSDD0110	14.3	42.3	42	0.3	1.1	●
1.2	VSDD0120	16.4	42.4	42	0.4	1.2	●
1.3	VSDD0130	16.4	45.4	45	0.4	1.3	●
1.4	VSDD0140	18.4	48.4	48	0.4	1.4	●
1.5	VSDD0150	18.5	48.5	48	0.5	1.5	●
1.6	VSDD0160	20.5	50.5	50	0.5	1.6	●
1.7	VSDD0170	20.5	50.5	50	0.5	1.7	★
1.8	VSDD0180	22.5	52.5	52	0.5	1.8	●
1.9	VSDD0190	22.6	52.6	52	0.6	1.9	●
2.0	VSDD0200	23.6	55.6	55	0.6	2.0	●
2.1	VSDD0210	23.6	55.6	55	0.6	2.1	●
2.2	VSDD0220	26.7	58.7	58	0.7	2.2	●
2.3	VSDD0230	26.7	58.7	58	0.7	2.3	★
2.4	VSDD0240	29.7	61.7	61	0.7	2.4	★
2.5	VSDD0250	29.8	61.8	61	0.8	2.5	●
2.6	VSDD0260	29.8	64.8	64	0.8	2.6	★
2.7	VSDD0270	32.8	64.8	64	0.8	2.7	★
2.8	VSDD0280	32.8	67.8	67	0.8	2.8	●
2.9	VSDD0290	32.9	71.9	71	0.9	2.9	★
3.0	VSDD0300	32.9	71.9	71	0.9	3.0	●
3.1	VSDD0310	35.9	71.9	71	0.9	3.1	●
3.2	VSDD0320	36.0	72.0	71	1.0	3.2	●
3.3	VSDD0330	36.0	74.0	73	1.0	3.3	●
3.4	VSDD0340	39.0	74.0	73	1.0	3.4	●
3.5	VSDD0350	39.1	74.1	73	1.1	3.5	●
3.6	VSDD0360	39.1	77.1	76	1.1	3.6	★
3.7	VSDD0370	39.1	77.1	76	1.1	3.7	★
3.8	VSDD0380	43.1	77.1	76	1.1	3.8	★
3.9	VSDD0390	43.2	80.2	79	1.2	3.9	★
4.0	VSDD0400	43.2	84.2	83	1.2	4.0	●
4.1	VSDD0410	43.2	84.2	83	1.2	4.1	●
4.2	VSDD0420	43.3	84.3	83	1.3	4.2	●
4.3	VSDD0430	47.3	84.3	83	1.3	4.3	●
4.4	VSDD0440	47.3	87.3	86	1.3	4.4	★

DC (mm)	Sipariş No.	Boyutlar (mm)					Stok
		LCF	OAL	LF	PL	DCONMS	
4.5	VSDD0450	47.4	87.4	86	1.4	4.5	●
4.6	VSDD0460	47.4	87.4	86	1.4	4.6	★
4.7	VSDD0470	47.4	90.4	89	1.4	4.7	★
4.8	VSDD0480	52.4	90.4	89	1.4	4.8	●
4.9	VSDD0490	52.5	93.5	92	1.5	4.9	★
5.0	VSDD0500	52.5	93.5	92	1.5	5.0	●
5.1	VSDD0510	52.5	93.5	92	1.5	5.1	●
5.2	VSDD0520	52.6	96.6	95	1.6	5.2	●
5.3	VSDD0530	52.6	96.6	95	1.6	5.3	★
5.4	VSDD0540	57.6	96.6	95	1.6	5.4	★
5.5	VSDD0550	57.7	96.7	95	1.7	5.5	●
5.6	VSDD0560	57.7	99.7	98	1.7	5.6	★
5.7	VSDD0570	57.7	99.7	98	1.7	5.7	★
5.8	VSDD0580	57.7	99.7	98	1.7	5.8	★
5.9	VSDD0590	57.8	99.8	98	1.8	5.9	●
6.0	VSDD0600	57.8	103.8	102	1.8	6.0	●
6.1	VSDD0610	63.8	103.8	102	1.8	6.1	★
6.2	VSDD0620	63.9	103.9	102	1.9	6.2	●
6.3	VSDD0630	63.9	103.9	102	1.9	6.3	●
6.4	VSDD0640	63.9	106.9	105	1.9	6.4	★
6.5	VSDD0650	64.0	107.0	105	2.0	6.5	●
6.6	VSDD0660	64.0	107.0	105	2.0	6.6	★
6.7	VSDD0670	64.0	107.0	105	2.0	6.7	★
6.8	VSDD0680	69.0	107.0	105	2.0	6.8	●
6.9	VSDD0690	69.1	107.1	105	2.1	6.9	★
7.0	VSDD0700	69.1	107.1	105	2.1	7.0	●
7.1	VSDD0710	69.1	110.1	108	2.1	7.1	★
7.2	VSDD0720	69.2	110.2	108	2.2	7.2	★
7.3	VSDD0730	69.2	110.2	108	2.2	7.3	●
7.4	VSDD0740	69.2	113.2	111	2.2	7.4	★
7.5	VSDD0750	69.3	113.3	111	2.3	7.5	★
7.6	VSDD0760	75.3	113.3	111	2.3	7.6	★
7.7	VSDD0770	75.3	116.3	114	2.3	7.7	★
7.8	VSDD0780	75.3	116.3	114	2.3	7.8	★
7.9	VSDD0790	75.4	116.4	114	2.4	7.9	●
8.0	VSDD0800	75.4	116.4	114	2.4	8.0	●
8.1	VSDD0810	75.4	119.4	117	2.4	8.1	★
8.2	VSDD0820	75.5	119.5	117	2.5	8.2	★
8.3	VSDD0830	75.5	119.5	117	2.5	8.3	★
8.4	VSDD0840	75.5	123.5	121	2.5	8.4	★

Not 1) Ø0,5-Ø1.9mm arası : 5 adet/kutu , Ø2mm'nin üstü : 1 adet/kutu bulunmaktadır.

● : Avrupa standart stok. ★ : Japonya standart stok.

VIOLET MATKAPLAR

VSD

Düz şank

HSS

M
DELME

DC (mm)	Sipariş No.	Boyutlar (mm)					Stok
		LCF	OAL	LF	PL	DCONMS	
8.5	VSDD0850	75.6	123.6	121	2.6	8.5	●
8.6	VSDD0860	81.6	123.6	121	2.6	8.6	●
8.7	VSDD0870	81.6	123.6	121	2.6	8.7	●
8.8	VSDD0880	81.6	126.6	124	2.6	8.8	★
8.9	VSDD0890	81.7	126.7	124	2.7	8.9	★
9.0	VSDD0900	81.7	126.7	124	2.7	9.0	●
9.1	VSDD0910	81.7	126.7	124	2.7	9.1	★
9.2	VSDD0920	81.8	129.8	127	2.8	9.2	★
9.3	VSDD0930	81.8	129.8	127	2.8	9.3	★
9.4	VSDD0940	81.8	129.8	127	2.8	9.4	★
9.5	VSDD0950	81.9	129.9	127	2.9	9.5	●
9.6	VSDD0960	87.9	132.9	130	2.9	9.6	★
9.7	VSDD0970	87.9	132.9	130	2.9	9.7	★
9.8	VSDD0980	87.9	132.9	130	2.9	9.8	★
9.9	VSDD0990	88.0	133.0	130	3.0	9.9	★
10.0	VSDD1000	88.0	133.0	130	3.0	10.0	●
10.1	VSDD1010	88.0	136.0	133	3.0	10.1	★
10.2	VSDD1020	88.1	136.1	133	3.1	10.2	●
10.3	VSDD1030	88.1	136.1	133	3.1	10.3	●
10.4	VSDD1040	88.1	136.1	133	3.1	10.4	★
10.5	VSDD1050	88.2	140.2	137	3.2	10.5	●
10.6	VSDD1060	88.2	140.2	137	3.2	10.6	★
10.7	VSDD1070	95.2	140.2	137	3.2	10.7	★

DC (mm)	Sipariş No.	Boyutlar (mm)					Stok
		LCF	OAL	LF	PL	DCONMS	
10.8	VSDD1080	95.2	143.2	140	3.2	10.8	★
10.9	VSDD1090	95.3	143.3	140	3.3	10.9	★
11.0	VSDD1100	95.3	143.3	140	3.3	11.0	●
11.1	VSDD1110	95.3	143.3	140	3.3	11.1	★
11.2	VSDD1120	95.4	146.4	143	3.4	11.2	★
11.3	VSDD1130	95.4	146.4	143	3.4	11.3	★
11.4	VSDD1140	95.4	146.4	143	3.4	11.4	★
11.5	VSDD1150	95.5	146.5	143	3.5	11.5	★
11.6	VSDD1160	95.5	149.5	146	3.5	11.6	★
11.7	VSDD1170	95.5	149.5	146	3.5	11.7	★
11.8	VSDD1180	95.5	149.5	146	3.5	11.8	★
11.9	VSDD1190	102.6	149.6	146	3.6	11.9	★
12.0	VSDD1200	102.6	152.6	149	3.6	12.0	●
12.1	VSDD1210	102.6	152.6	149	3.6	12.1	★
12.2	VSDD1220	102.7	152.7	149	3.7	12.2	★
12.3	VSDD1230	102.7	152.7	149	3.7	12.3	★
12.4	VSDD1240	102.7	155.7	152	3.7	12.4	★
12.5	VSDD1250	102.8	155.8	152	3.8	12.5	★
12.6	VSDD1260	102.8	155.8	152	3.8	12.6	★
12.7	VSDD1270	102.8	155.8	152	3.8	12.7	★
12.8	VSDD1280	102.8	155.8	152	3.8	12.8	★
12.9	VSDD1290	102.9	155.9	152	3.9	12.9	★
13.0	VSDD1300	102.9	155.9	152	3.9	13.0	●

ÖNERİLEN KESME KOŞULLARI

Çalışma Malzemesi	P		M		P		M	
	Yapı çeliği	Karbon çelik Ck55	Paslanmaz çelik X20Cr13	Paslanmaz çelik X5CrNi1810 Takım çeliği X210Cr12 (Düşük sertlikteki malzemeler) Isıl işlem görmüş çelik X40CrMoV51 (-40HRC)				
Kesme hızı	40m/dak		30m/dak		20m/dak		10-14m/dak	
Matkap Çapı DC (mm)	Devir (dak ⁻¹)	İlerleme oranı (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (mm/dev)
0.5	15000	0.01	11250	0.01	7500	0.01	5620	0.01
1.0	10000	0.02	7500	0.02	5000	0.02	3750	0.02
1.5	8200	0.03	6150	0.03	4100	0.03	2800	0.03
2.0	6370	0.05	4780	0.05	3180	0.05	2200	0.04
3.0	4250	0.10	3180	0.10	2120	0.07	1400	0.06
4.0	3180	0.13	2390	0.13	1590	0.09	1100	0.08
5.0	2550	0.15	1910	0.15	1270	0.11	860	0.10
6.0	2120	0.18	1590	0.18	1060	0.13	720	0.11
7.0	1820	0.20	1360	0.20	910	0.14	610	0.12
8.0	1590	0.22	1190	0.21	800	0.15	540	0.13
9.0	1420	0.24	1060	0.22	710	0.17	480	0.14
10.0	1270	0.26	960	0.23	640	0.18	430	0.15
11.0	1160	0.28	870	0.24	580	0.19	390	0.16
12.0	1060	0.30	800	0.25	530	0.20	360	0.17
13.0	980	0.30	730	0.26	490	0.20	330	0.17

Not 1) Lütfen iş parçası Bağlama sistemi rijid değilse devirleri düşürün.

Not 2) Yukarıda bahsedilen kesme koşulları, suda çözünbilir kesme sıvısı kullanıldığında standarttır.

Lütfen suda çözünmeyen kesme sıvısı kullanıldığında devirleri düşürün.

● : Avrupa standart stok. ★ : Japonya standart stok.

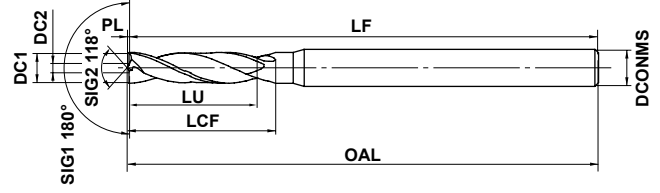
VAPDSCB

Kısa helis boyu, Yüksek hassasiyet, Havşa açmak için



HSS

P M K N S H



*LU = LCF-2DC (Maks 3×DC)



DC≤3	3<DC≤6	6<DC≤10	10<DC≤18	18<DC≤30	30<DC≤32
0	0	0	0	0	0
-0.014	-0.018	-0.022	-0.027	-0.033	-0.039

- Benzersiz geometrisi ile havşa açma işleminde yüksek verimlilik sağlar. Düz havşa açılmış yüzey,mükemmel talaş kırma özelliği.

DC1 (mm)	Sipariş No.	Boyutlar (mm)						Stok
		DC2	LCF	OAL	LF	PL	DCONMS	
2.0	VAPDSCBD0200	0.7	12	60.2	60	0.2	3	★
2.1	VAPDSCBD0210	0.7	12	60.2	60	0.2	3	★
2.2	VAPDSCBD0220	0.7	12	60.2	60	0.2	3	★
2.3	VAPDSCBD0230	0.7	13	60.2	60	0.2	3	★
2.4	VAPDSCBD0240	0.7	13	60.2	60	0.2	3	★
2.5	VAPDSCBD0250	0.7	13	60.2	60	0.2	3	★
2.6	VAPDSCBD0260	0.8	15	60.2	60	0.2	3	★
2.7	VAPDSCBD0270	0.8	15	60.2	60	0.2	3	★
2.8	VAPDSCBD0280	0.8	15	60.2	60	0.2	3	★
2.9	VAPDSCBD0290	0.8	15	60.2	60	0.2	3	★
3.0	VAPDSCBD0300	0.8	15	60.2	60	0.2	3	★
3.1	VAPDSCBD0310	0.8	17	70.2	70	0.2	4	★
3.2	VAPDSCBD0320	0.8	17	70.2	70	0.2	4	★
3.3	VAPDSCBD0330	0.8	19	70.2	70	0.2	4	★
3.4	VAPDSCBD0340	0.8	19	70.2	70	0.2	4	★
3.5	VAPDSCBD0350	0.8	19	70.2	70	0.2	4	★
3.6	VAPDSCBD0360	1.0	21	70.2	70	0.2	4	★
3.7	VAPDSCBD0370	1.0	21	70.2	70	0.2	4	★
3.8	VAPDSCBD0380	1.0	21	70.2	70	0.2	4	★
3.9	VAPDSCBD0390	1.0	21	70.2	70	0.2	4	★
4.0	VAPDSCBD0400	1.0	21	70.3	70	0.3	4	★
4.1	VAPDSCBD0410	1.0	21	80.3	80	0.3	6	★
4.2	VAPDSCBD0420	1.0	21	80.3	80	0.3	6	★
4.3	VAPDSCBD0430	1.0	23	80.3	80	0.3	6	★
4.4	VAPDSCBD0440	1.0	23	80.3	80	0.3	6	★
4.5	VAPDSCBD0450	1.0	23	80.3	80	0.3	6	★
4.6	VAPDSCBD0460	1.4	25	80.3	80	0.3	6	★
4.7	VAPDSCBD0470	1.4	25	80.3	80	0.3	6	★
4.8	VAPDSCBD0480	1.4	25	80.3	80	0.3	6	★
4.9	VAPDSCBD0490	1.4	25	80.3	80	0.3	6	★
5.0	VAPDSCBD0500	1.4	25	80.4	80	0.4	6	★
5.1	VAPDSCBD0510	1.4	25	80.4	80	0.4	6	★
5.2	VAPDSCBD0520	1.4	25	80.4	80	0.4	6	★
5.3	VAPDSCBD0530	1.4	25	80.4	80	0.4	6	★
5.4	VAPDSCBD0540	1.4	27	80.4	80	0.4	6	★
5.5	VAPDSCBD0550	1.4	27	80.4	80	0.4	6	★
5.6	VAPDSCBD0560	1.4	27	80.4	80	0.4	6	★
5.7	VAPDSCBD0570	1.4	27	80.4	80	0.4	6	★
5.8	VAPDSCBD0580	1.4	27	80.4	80	0.4	6	★
5.9	VAPDSCBD0590	1.4	27	80.4	80	0.4	6	★

DC1 (mm)	Sipariş No.	Boyutlar (mm)						Stok
		DC2	LCF	OAL	LF	PL	DCONMS	
6.0	VAPDSCBD0600	1.4	27	80.4	80	0.4	6	★
6.1	VAPDSCBD0610	1.4	30	80.4	80	0.4	8	★
6.2	VAPDSCBD0620	1.4	30	80.4	80	0.4	8	★
6.3	VAPDSCBD0630	1.4	30	80.4	80	0.4	8	★
6.4	VAPDSCBD0640	1.4	30	80.4	80	0.4	8	★
6.5	VAPDSCBD0650	1.4	30	80.4	80	0.4	8	★
6.6	VAPDSCBD0660	1.8	30	80.4	80	0.4	8	★
6.7	VAPDSCBD0670	1.8	30	80.4	80	0.4	8	★
6.8	VAPDSCBD0680	1.8	32	80.4	80	0.4	8	★
6.9	VAPDSCBD0690	1.8	32	80.4	80	0.4	8	★
7.0	VAPDSCBD0700	1.8	32	80.6	80	0.6	8	★
7.1	VAPDSCBD0710	1.8	32	80.6	80	0.6	8	★
7.2	VAPDSCBD0720	1.8	32	80.6	80	0.6	8	★
7.3	VAPDSCBD0730	1.8	32	80.6	80	0.6	8	★
7.4	VAPDSCBD0740	1.8	32	80.6	80	0.6	8	★
7.5	VAPDSCBD0750	1.8	32	80.6	80	0.6	8	★
7.6	VAPDSCBD0760	2.0	35	85.6	85	0.6	8	★
7.7	VAPDSCBD0770	2.0	35	85.6	85	0.6	8	★
7.8	VAPDSCBD0780	2.0	35	85.6	85	0.6	8	★
7.9	VAPDSCBD0790	2.0	35	85.6	85	0.6	8	★
8.0	VAPDSCBD0800	2.0	35	85.6	85	0.6	8	★
8.1	VAPDSCBD0810	2.0	35	90.6	90	0.6	10	★
8.5	VAPDSCBD0850	2.0	35	90.6	90	0.6	10	★
8.6	VAPDSCBD0860	2.8	38	93.6	93	0.6	10	★
8.8	VAPDSCBD0880	2.8	38	93.6	93	0.6	10	★
9.0	VAPDSCBD0900	2.8	38	93.8	93	0.8	10	★
9.1	VAPDSCBD0910	2.8	38	93.8	93	0.8	10	★
9.5	VAPDSCBD0950	2.8	38	93.8	93	0.8	10	★
9.6	VAPDSCBD0960	3.2	41	96.8	96	0.8	10	★
9.8	VAPDSCBD0980	3.2	41	96.8	96	0.8	10	★
10.0	VAPDSCBD1000	3.2	41	96.9	96	0.9	10	★
10.1	VAPDSCBD1010	3.2	41	101.9	101	0.9	12	★
10.3	VAPDSCBD1030	3.2	41	101.9	101	0.9	12	★
10.5	VAPDSCBD1050	3.2	41	101.9	101	0.9	12	★
10.8	VAPDSCBD1080	3.7	45	105.9	105	0.9	12	★
11.0	VAPDSCBD1100	3.7	45	105.9	105	0.9	12	★
11.1	VAPDSCBD1110	3.7	45	105.9	105	0.9	12	★
11.5	VAPDSCBD1150	3.7	45	105.9	105	0.9	12	★
11.8	VAPDSCBD1180	3.7	45	105.9	105	0.9	12	★
12.0	VAPDSCBD1200	3.7	49	109.9	109	0.9	12	★

VIOLET MATKAPLAR

VAPDSCB

Kısa helis boyu, Havşa açmak için Yüksek hassasiyet.

HSS

M
DELME

DC1 (mm)	Sipariş No.	Boyutlar (mm)						Stok
		DC2	LCF	OAL	LF	PL	DCOMMS	
12.5	VAPDSCBD1250	3.7	49	109.9	109	0.9	12	★
13.0	VAPDSCBD1300	4.2	49	110.1	109	1.1	12	★
13.5	VAPDSCBD1350	4.2	51	122.1	121	1.1	16	★
13.8	VAPDSCBD1380	4.2	51	122.1	121	1.1	16	★
14.0	VAPDSCBD1400	4.2	51	122.1	121	1.1	16	★
14.1	VAPDSCBD1410	5.5	58	124.1	123	1.1	16	★
14.2	VAPDSCBD1420	5.5	58	124.1	123	1.1	16	★
14.5	VAPDSCBD1450	5.5	58	124.1	123	1.1	16	★
14.8	VAPDSCBD1480	5.5	58	124.1	123	1.1	16	★
15.0	VAPDSCBD1500	5.5	58	124.3	123	1.3	16	★
15.5	VAPDSCBD1550	5.5	60	126.3	125	1.3	16	★
15.7	VAPDSCBD1570	5.5	60	126.3	125	1.3	16	★
15.8	VAPDSCBD1580	5.5	60	126.3	125	1.3	16	★
16.0	VAPDSCBD1600	5.5	60	126.3	125	1.3	16	★
17.0	VAPDSCBD1700	5.5	62	133.3	132	1.3	20	★
17.5	VAPDSCBD1750	5.5	63	134.6	133	1.6	20	★
17.6	VAPDSCBD1760	6.5	63	134.6	133	1.6	20	★
17.7	VAPDSCBD1770	6.5	63	134.6	133	1.6	20	★
17.8	VAPDSCBD1780	6.5	63	134.6	133	1.6	20	★
18.0	VAPDSCBD1800	6.5	63	134.6	133	1.6	20	★
18.1	VAPDSCBD1810	6.5	65	136.6	135	1.6	20	★
19.0	VAPDSCBD1900	6.5	65	136.6	135	1.6	20	★
19.8	VAPDSCBD1980	7.5	67	138.6	137	1.6	20	★
20.0	VAPDSCBD2000	7.5	67	138.8	137	1.8	20	★
20.1	VAPDSCBD2010	7.5	67	138.8	137	1.8	20	★
21.0	VAPDSCBD2100	7.5	75	166.8	165	1.8	25	★
22.0	VAPDSCBD2200	7.5	75	166.8	165	1.8	25	★
23.0	VAPDSCBD2300	7.5	80	171.8	170	1.8	25	★
24.0	VAPDSCBD2400	8.5	80	172.2	170	2.2	25	★
25.0	VAPDSCBD2500	8.5	85	182.2	180	2.2	25	★
26.0	VAPDSCBD2600	9.0	85	182.2	180	2.2	32	★
27.0	VAPDSCBD2700	9.0	95	192.2	190	2.2	32	★
28.0	VAPDSCBD2800	10.0	95	192.6	190	2.6	32	★
29.0	VAPDSCBD2900	10.0	100	197.6	195	2.6	32	★
30.0	VAPDSCBD3000	11.0	100	197.6	195	2.6	32	★
31.0	VAPDSCBD3100	11.0	105	202.6	200	2.6	32	★
32.0	VAPDSCBD3200	13.0	105	202.6	200	2.6	32	★

★ : Japonya standart stok.

KESME KOŞULLARI ÖNERİLERİ

Çalışma Malzemesi	P		N		P		K		P		M	
	Devir (dak ⁻¹)	İlerleme oranı (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (mm/dev)	Devir (dak ⁻¹)	İlerleme oranı (mm/dev)
Yapı çeliği, Alüminyum alaşım												
Karbon çelik Ck55, Alaşımlı çelik, Duktıl Dökme Demir												
Alaşımlı takım çeliği X210Cr12 (Düşük sertlikte malzemeler) Feritik paslanmaz çelik X10CrAl18, X10CrAl13 Martensitik paslanmaz çelik X20Cr13, X10CrAl13												
Alaşımlı takım çeliği, X40CrMoV51 (-40HRC) Sertleştirilmiş paslanmaz çelik, X7CrNiAl177												
Matkap Çapı DC (mm)												
2.0	5600	0.07	4800	0.07	3200	0.07	2800	0.04				
3.0	3700	0.10	3200	0.10	2100	0.10	1900	0.05				
4.0	2800	0.12	2400	0.12	1600	0.12	1400	0.06				
5.0	2200	0.14	1900	0.14	1300	0.14	1150	0.07				
6.0	1850	0.15	1600	0.15	1050	0.15	950	0.08				
8.0	1400	0.20	1200	0.20	800	0.20	720	0.10				
10.0	1100	0.23	960	0.23	640	0.21	570	0.11				
12.0	950	0.26	800	0.26	530	0.24	470	0.12				
14.0	800	0.27	680	0.27	450	0.25	410	0.13				
16.0	700	0.28	500	0.28	360	0.26	300	0.14				
18.0	620	0.29	450	0.29	320	0.27	260	0.15				
20.0	560	0.30	400	0.30	290	0.27	240	0.15				
22.0	510	0.32	360	0.32	260	0.29	220	0.16				
24.0	460	0.33	330	0.33	240	0.30	200	0.16				
26.0	430	0.35	310	0.35	220	0.31	180	0.17				
28.0	400	0.36	290	0.36	210	0.33	170	0.18				
30.0	370	0.37	270	0.37	190	0.34	160	0.18				
32.0	350	0.38	250	0.38	180	0.35	150	0.19				

Not 1) Yukarıdaki kesme koşulları pilot delik olmaksızın DCx3 delik derinliklerini delmek içindir.

DCx1 delik derinliklerinden küçük delikler delinirken, deviri (RPM) %20 oranında arttırmak mümkündür.

Not 2) Ön delik olmaksızın delme önerilir.

Ön delik varsa, talaşlar kırılmayabilir. Talaşın kırılması gerekiyorsa gagalama ilerlemesi kullanın.

Not 3) Meyilli yüzeye havşa açmak için, karbür parmak freze önerilir.

Not 4) Ostenitli paslanmaz çeliğin işlenmesinde (X5CrNi1810), devirleri %30 - 60 oranında ve ilerleme oranını %40 - 60 oranında düşürün.

Not 5) Lütfen pensli matkap tutucusu kullanın.

Not 6) Lütfen iş parçasının bağlama sistemi kurulumu ve tezgahın rijidliği zayıf ise, delme durumuna bağlı olarak devri ve ilerleme oranını düşürün.



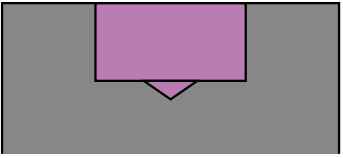

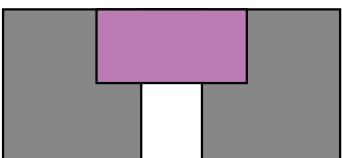

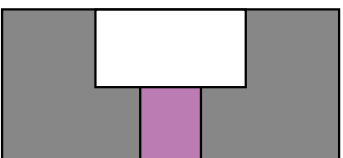

Not 7) Yeterli kesme sıvısı kullanın.

Not 8) Yukarıda bahsedilen kesme koşulları, suda çözünebilir kesme sıvısı kullanıldığında standarttır.

Lütfen suda çözünmeyen kesme sıvısı kullanıldığında devirleri düşürün.

KESME TEKNİĞİ ÖNERİSİ

■ VAPDSCB talaş sıkışmasını önleyerek yüksek verimli işleme sağlar.

Genel kesme tekniği		VAPDSCB kesme tekniği	
<p>①Cıvata deliği delme</p> 	<p>Talaş geometrisi</p> <p>İyi</p> 	<p>①Havşa açma</p> 	<p>Talaş geometrisi</p> <p>İyi</p> 
<p>②Havşa açma</p> 	<p>Kansız yongalar</p> 	<p>②Cıvata deliği delme</p> 	<p>İyi</p> 

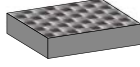
Not 1) VAPDSCB havşa açma işleminde, pilot deliği delerken, takımın çevresini saran kesintisiz talaşlar üretebilir.



P M K N S H **CFRP**

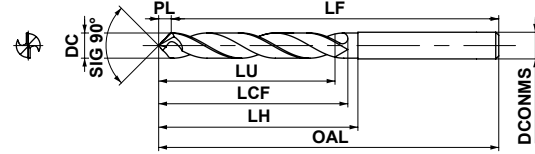


CNC Tezgah



CFRP

Dıştan Soğutma



3<DC≤6	6<DC≤10	10<DC≤18
0 -0.018	0 -0.022	0 -0.027
DCONMS=6	6<DCONMS≤10	10<DCONMS≤12
0 -0.008	0 -0.009	0 -0.011



Delik Çapı		Matkap Ucu Çapı		Delik Derinliği	Sipariş No.	Kalite	Boyutlar (mm)						
* AWG	inç	DC (mm)	inç	(L/D)		DD2105	LU	LCF	LH	OAL	LF	PL	DCONMS
—	3/16	4.76	.1875	3	MCC0476X03S060	★	16.7	40	40	80	77.6	2.4	6
—	1/4	6.38	.251	3	MCC0638X03S080	★	22.3	50	50	90	86.8	3.2	8
—	5/16	7.96	.3125	3	MCC0796X03S080	★	27.9	50	50	90	86.0	4.0	8
—	3/8	9.55	.375	3	MCC0955X03S100	★	33.5	50	50	100	95.2	4.8	10
—	7/16	11.14	.4375	3	MCC1114X03S120	★	39.0	60	60	110	104.4	5.6	12

*AWG : American Tel Mastarı

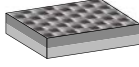
ÖNERİLEN KESME KOŞULLARI

Çalışma malzemesi		X			
		CFRP			
Matkap Ucu Çapı DC (mm)	Matkap Ucu Çapı DC (inç)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	İlerleme hızı (mm/dak)
4.76	.1875	100	6700	0.08 (0.05—0.12)	540
6.38	.251	100	5000	0.1 (0.05—0.12)	500
7.96	.3125	100	4000	0.1 (0.05—0.12)	400
9.55	.375	100	3400	0.1 (0.05—0.12)	340
11.14	.4375	100	2900	0.1 (0.05—0.12)	290

★ : Japonya standart stok. □ : Stokda bulundurulmaz, yalnızca siparişe istinaden üretilir.

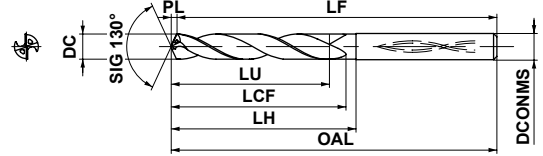


CNC Tezgah



CFRP+Al

İçten Soğutma



$6 < DC \leq 10$
0
-0.022



$6 < DCONMS \leq 10$
0
-0.009

Delik Çapı		Matkap Ucu Çapı		Delik Derinliği	Sipariş No.	Kalite	Boyutlar (mm)						
AWG*	inç	DC (mm)	inç	(L/D)		DD2110	LU	LCF	LH	OAL	LF	PL	DCONMS
—	1/4	6.38	.251	5	MCA0638X05S070	<input type="checkbox"/>	33.4	51	51	91	89.5	1.5	7
—	3/8	9.55	.375	5	MCA0955X05S100	<input type="checkbox"/>	50.0	77	77	118	115.8	2.2	10

*AWG : American Tel Mastarı

ÖNERİLEN KESME KOŞULLARI

Çalışma malzemesi		X				N			
CFRP		Alüminyum Alaşım (Si<5%) ASTM EN AW-6061, ASTM EN AW-7075 etc							
Matkap Ucu Çapı DC (mm)	Matkap Ucu Çapı DC (inç)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	İlerleme hızı (mm/dak)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	İlerleme hızı (mm/dak)
6.38	.251	100	5000	0.15 (0.10—0.20)	750	100	5000	0.03 (0.02—0.04)	150
9.55	.375	100	3400	0.15 (0.10—0.20)	680	100	3400	0.03 (0.02—0.04)	100

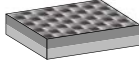
Not 1) Her bir iş parçası malzemesi için kesme koşullarını parçalara ayırmanızı öneririz.



P M K N **S** H CFRP+Ti

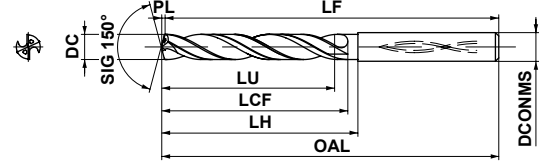


CNC Tezgah



CFRP+Ti

İçten Soğutma



$6 < DC \leq 10$
0
-0.022



$6 < DCONMS \leq 10$
0
-0.009

Delik Çapı		Matkap Ucu Çapı		Delik Derinliği	Sipariş No.	Kalite	Boyutlar (mm)						
AWG *	inç	DC (mm)	inç	(L/D)		TF15	LU	LCF	LH	OAL	LF	PL	DCONMS
—	1/4	6.38	.251	5	MCT0638X05S070	<input type="checkbox"/>	32.8	47	47	96	95.1	0.9	7
—	3/8	9.55	.375	5	MCT0955X05S100	<input type="checkbox"/>	49.1	71	71	122	120.7	1.3	10

*AWG : American Tel Mastarı

ÖNERİLEN KESME KOŞULLARI

Çalışma malzemesi		X				S				
CFRP		Titanyum alaşım Ti-6Al-4V vs.								
Matkap Ucu Çapı DC (mm)	Matkap Ucu Çapı DC (inç)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	İlerleme hızı (mm/dak)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	İlerleme hızı (mm/dak)	Kademeli işleme (mm)
6.38	.251	100	5000	0.15 (0.10—0.20)	750	15	750	0.02 (0.01—0.03)	15	1
9.55	.375	100	3400	0.15 (0.10—0.20)	680	15	500	0.02 (0.01—0.03)	10	1

Not 1) Bu koşullar içten hava veya sisli soğutma kullanıldığında geçerlidir.

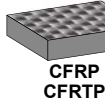
Not 2) Her bir iş parçası malzemesi için kesme koşullarını parçalara ayırmanızı öneririz.

: Stokta bulundurulmaz, yalnızca siparişe istinaden üretilir.

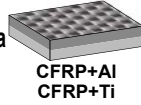


CNC Tezgah

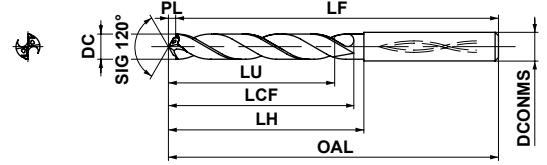
X


 CFRP
CFRTT

veya


 CFRP+Al
CFRP+Ti

İçten Soğutma


 $6 < DC \leq 10$
0
-0.022

 $6 < DCONMS \leq 10$
0
-0.009

Delik Çapı	Matkap Ucu Çapı		Delik Derinliği	Sipariş No.	Kalite		Boyutlar (mm)							
	AWG*	inç			DC (mm)	inç	(L/D)	HT10	DD2110	LU	LCF	LH	OAL	LF
—	1/4	6.38	.251	5	MCW0638X05S070	<input type="checkbox"/>	<input type="checkbox"/>	33.7	52	52	92	90.2	1.8	7
—	3/8	9.55	.375	5	MCW0955X05S100	<input type="checkbox"/>	<input type="checkbox"/>	50.6	73	73	119	116.2	2.8	10

*AWG : American Tel Mastarı

ÖNERİLEN KESME KOŞULLARI

Çalışma malzemesi		X			
CFRP					
Matkap Ucu Çapı DC (mm)	Matkap Ucu Çapı DC (inç)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	İlerleme hızı (mm/dak)
6.38	.251	100	5000	0.15 (0.10—0.20)	750
9.55	.375	100	3400	0.15 (0.10—0.20)	680

Çalışma malzemesi		N					S				
Alüminyum Alaşım (Si<5%) EN AW-6061, EN AW-7075 vs.		Titanium alaşım Ti-6Al-4V vs.									
Matkap Ucu Çapı DC (mm)	Matkap Ucu Çapı DC (inç)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	İlerleme hızı (mm/dak)	Kademeli işleme (mm)	Kesme Hızı (m/dak)	Devir (dak ⁻¹)	İlerleme oranı (Min.—Maks.) (mm/dev)	İlerleme hızı (mm/dak)	Kademeli işleme (mm)
6.38	.251	100	5000	0.15 (0.10—0.20)	750	3	15	750	0.02 (0.01—0.03)	15	1
9.55	.375	100	3400	0.15 (0.10—0.20)	500	3	15	500	0.02 (0.01—0.03)	10	1

Not 1) Bu koşullar içten hava veya sisli soğutma kullanıldığında geçerlidir.

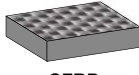
Not 2) Her bir iş parçası malzemesi için kesme koşullarını parçalara ayırmanızı öneririz.



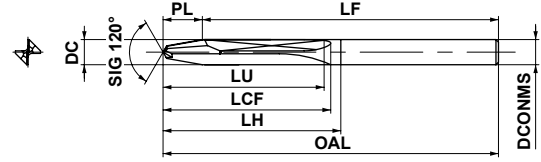
P M K **N** S H CFRP



El aleti



CFRP



$1 \leq DC \leq 3$	$3 < DC \leq 6$	$6 < DC \leq 10$
0 -0.014	0 -0.018	0 -0.022
$DCONMS=3$	$3 < DCONMS \leq 6$	$6 < DCONMS \leq 10$
0 -0.006	0 -0.008	0 -0.009



Delik Çapı		Matkap Ucu Çapı		Delik Derinliği	Sipariş No.	Kalite	Boyutlar (mm)						
AWG*	inç	DC (mm)	inç	(L/D)		DT2030	LU	LCF	LH	OAL	LF	PL	DCONMS
#40	—	2.5	.0985	15	MCCH0250X15S030	★	42.1	48	50	100	95.4	4.6	3
#30	—	3.26	.1285	10	MCCH0326X10S040	★	38.6	48	50	100	94.0	6.0	4
#20	—	4.1	.1615	8	MCCH0410X08S050	★	40.3	48	50	100	92.5	7.5	5
#11	—	4.86	.1915	5	MCCH0486X05S050	★	33.2	48	50	100	91.1	8.9	5
—	1/4	6.38	.251	3	MCCH0638X03S070	★	30.8	48	50	100	88.3	11.7	7
—	3/8	9.55	.375	2	MCCH0955X02S100	★	36.6	48	50	100	82.5	17.5	10

*AWG : Amerikan Tel Mastarı

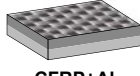
Not 1) Kesme koşulları için lütfen el aleti kılavuzunu kontrol edin.

★ : Japonya standart stok.

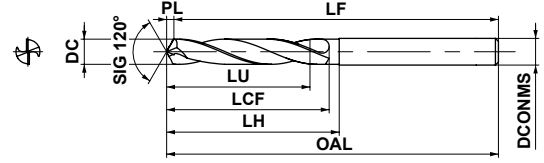
P M K **N** S H CFRP+AI



El aleti



CFRP+AI



M

DELME



$1 \leq DC \leq 3$	$3 < DC \leq 6$	$6 < DC \leq 10$
0	0	0
-0.014	-0.018	-0.022



$DCONMS=3$	$3 < DCONMS \leq 6$	$6 < DCONMS \leq 10$
0	0	0
-0.006	-0.008	-0.009

Delik Çapı		Matkap Ucu Çapı		Delik Derinliği	Sipariş No.	Kalite	Boyutlar (mm)						
AWG*	inç	DC (mm)	inç	(L/D)		DT2030	LU	LCF	LH	OAL	LF	PL	DCONMS
#40	—	2.5	.0985	15	MCAH0250X15S030	★	38.2	50	50	100	99.3	0.7	3
#30	—	3.26	.1285	15	MCAH0326X15S040	★	49.8	50	50	100	99.1	0.9	4
#20	—	4.1	.1615	10	MCAH0410X10S050	★	42.2	50	50	100	98.8	1.2	5
#11	—	4.86	.1915	8	MCAH0486X08S050	★	40.3	50	50	100	98.6	1.4	5
—	1/4	6.38	.251	5	MCAH0638X05S070	★	33.7	50	50	100	98.2	1.8	7
—	3/8	9.55	.375	3	MCAH0955X03S100	★	31.5	50	50	100	97.2	2.8	10

*AWG : Amerikan Tel Mastarı

Not 1) Kesme koşulları için lütfen el aletinizin kılavuzunu kontrol edin.

DEĞİŞTİRİLEBİLİR BAŞLIKLİ RAYBA

RX1S

Yüksek salgi hassasiyetiyle
kolay deęiştirilebilir başlik

Soęutma sıvısı akışına uygun optimum
başlik tasarımı



Boydan boya delikli komponent
uygulamaları için helisel geometri

Kanallarda yanıl soęutma sıvısı
delikleri.



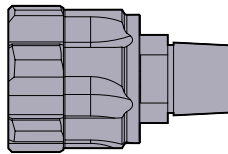
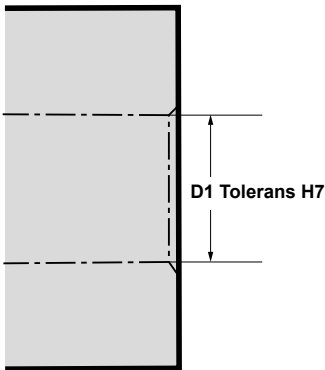
Bileşen kör delikleri için
düz kanal geometrisi

Merkezde boydan boya soęutma
sıvısı delięi.



Hassas delik toleransi ile kolay kullanım

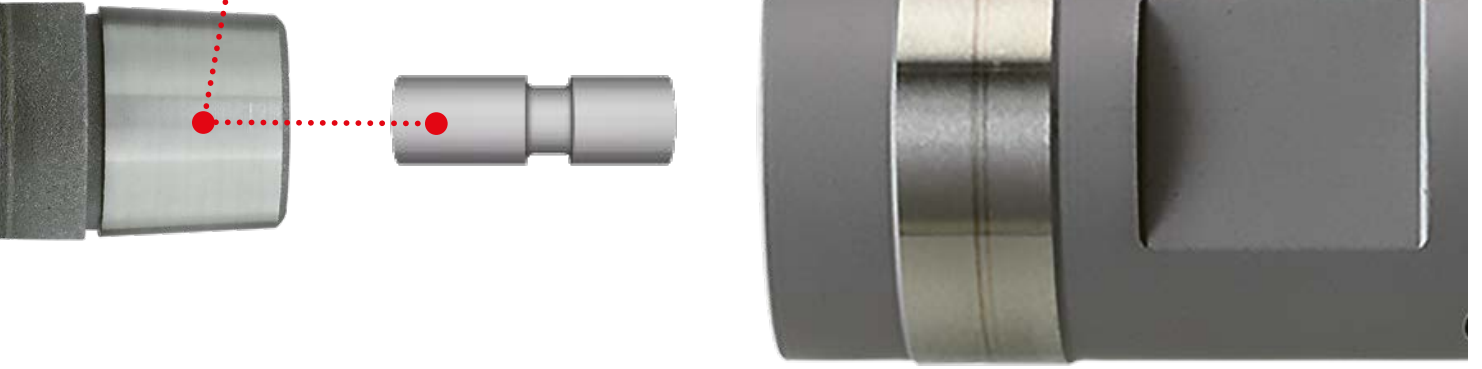
H7 iş parçasi delik toleransi





Yüksek hassasiyetli yerleştirme mekanizması

Konik yüzey ve merkez kilidi aracılığıyla çift bağlama, yüksek salgı hassasiyeti getirir.



Yekpare karbür başlık

Yüksek kesme hızları yüksek performansı mümkün kılar

Aliştirilmiş ve parlatılmış kesme kenari

Mükemmel yüzey finışı, etkin talaş tahliyesini teşvik eder.

Kısa ve uzun tutucu opsiyonları mevcuttur

X03



X05



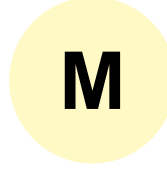
Geniş malzeme yelpazesi için

Son derece çok yönlü karbür altyapı ve PVD kaplamasının kombinasyonu, uzun takım ömrüyle birlikte yüksek hassasiyetli raybalama elde edilmesini sağlar.

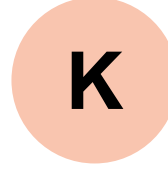
M
DELME



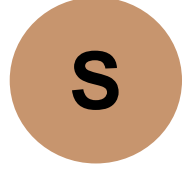
Çelik



Paslanmaz
Çelik



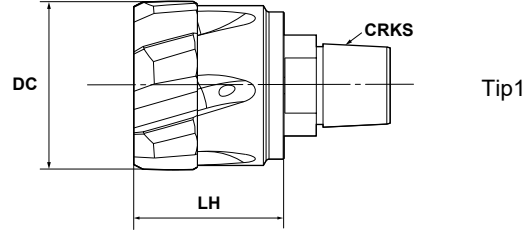
Dökme Demir



Isıya Dirençli
Alaşım

Özel yapım opsiyonlar

Farklı delik tolerans sınıfları sunan sahip özel yapım, optimum tasarımı raybalama başlıkları, 14 mm ila 29 mm çaplarda (DC) ve 1 µm'lik artışlarla üretilebilir.

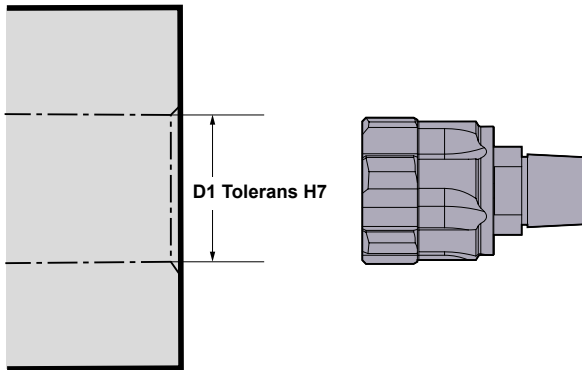


Boydan boya delikler için helisel kanallı başlık

Kanallarda yanıl soğutma sıvısı delikleri ile

DC (mm)	Sipariş No.	Stok	Diş Sayısı	LH (mm)	CRKS	Tip	Tutucu
		RP1010					
14	RX1S14000H7DHTP1	●	6	17.9	TP1	1	RX1SX○○S16ATP1
15	RX1S15000H7DHTP1	●	6	17.9	TP1	1	RX1SX○○S16ATP1
16	RX1S16000H7DHTP2	●	6	17.9	TP2	1	RX1SX○○S20ATP2
17	RX1S17000H7DHTP2	●	6	17.9	TP2	1	RX1SX○○S20ATP2
18	RX1S18000H7DHTP3	●	6	17.9	TP3	1	RX1SX○○S20ATP3
19	RX1S19000H7DHTP3	●	6	17.9	TP3	1	RX1SX○○S20ATP3
20	RX1S20000H7DHTP4	●	6	17.9	TP4	1	RX1SX○○S20ATP4
21	RX1S21000H7DHTP4	●	6	17.9	TP4	1	RX1SX○○S20ATP4
22	RX1S22000H7DHTP4	●	6	17.9	TP4	1	RX1SX○○S20ATP4
23	RX1S23000H7DHTP5	●	6	18.9	TP5	1	RX1SX○○S20ATP5
24	RX1S24000H7DHTP5	●	6	18.9	TP5	1	RX1SX○○S20ATP5
25	RX1S25000H7DHTP5	●	8	18.9	TP5	1	RX1SX○○S20ATP5
26	RX1S26000H7DHTP5	●	8	18.9	TP5	1	RX1SX○○S20ATP5
27	RX1S27000H7DHTP5	●	8	18.9	TP5	1	RX1SX○○S20ATP5
28	RX1S28000H7DHTP6	●	8	18.9	TP6	1	RX1SX○○S25ATP6
29	RX1S29000H7DHTP6	●	8	18.9	TP6	1	RX1SX○○S25ATP6

Not 1) Tutucunun ve başlığın sabitleme boyutuna yönelik vida boyutu CRKS, birbiriyle aynı olmalıdır.

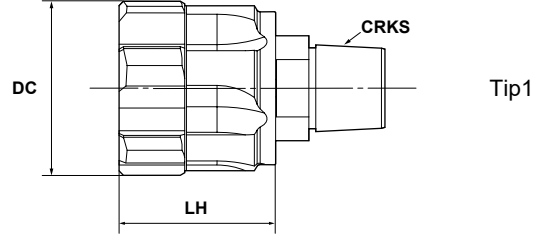


DEĞİŞTİRİLEBİLİR BAŞLIKLİ RAYBA

KARBÜR

RX1S NEW

M
DELME



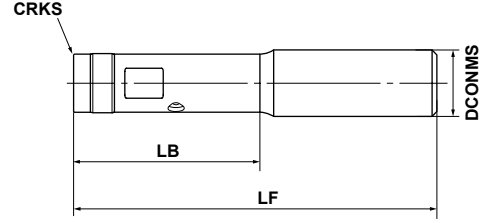
Kör delikler için düz kanallı başlık

Merkezde boydan boya soğutma sıvısı deliği ile

DC (mm)	Sipariş No.	Stok	Diş Sayısı	LH (mm)	CRKS	Tip	Tutucu
		RP1010					
14	RX1S14000H7DSTP1	●	6	17.9	TP1	1	RX1SX○○S16ATP1
15	RX1S15000H7DSTP1	●	6	17.9	TP1	1	RX1SX○○S16ATP1
16	RX1S16000H7DSTP2	●	6	17.9	TP2	1	RX1SX○○S20ATP2
17	RX1S17000H7DSTP2	●	6	17.9	TP2	1	RX1SX○○S20ATP2
18	RX1S18000H7DSTP3	●	6	17.9	TP3	1	RX1SX○○S20ATP3
19	RX1S19000H7DSTP3	●	6	17.9	TP3	1	RX1SX○○S20ATP3
20	RX1S20000H7DSTP4	●	6	17.9	TP4	1	RX1SX○○S20ATP4
21	RX1S21000H7DSTP4	●	6	17.9	TP4	1	RX1SX○○S20ATP4
22	RX1S22000H7DSTP4	●	6	17.9	TP4	1	RX1SX○○S20ATP4
23	RX1S23000H7DSTP5	●	6	18.9	TP5	1	RX1SX○○S20ATP5
24	RX1S24000H7DSTP5	●	6	18.9	TP5	1	RX1SX○○S20ATP5
25	RX1S25000H7DSTP5	●	8	18.9	TP5	1	RX1SX○○S20ATP5
26	RX1S26000H7DSTP5	●	8	18.9	TP5	1	RX1SX○○S20ATP5
27	RX1S27000H7DSTP5	●	8	18.9	TP5	1	RX1SX○○S20ATP5
28	RX1S28000H7DSTP6	●	8	18.9	TP6	1	RX1SX○○S25ATP6
29	RX1S29000H7DSTP6	●	8	18.9	TP6	1	RX1SX○○S25ATP6

Not 1) Tutucunun ve başlığın sabitleme boyutuna yönelik vida boyutu CRKS, birbiriyle aynı olmalıdır.

● : Avrupa standart stok.



12<DCONMS<16	20<DCONMS<25
0	0
-0.011	-0.013

TUTUCU

CRKS	Sipariş No.	Stok	Boyutlar (mm)				
			LB	LF	DCONMS	Min. Başlık DC	Maks. Başlık DC
TP1	RX1SX03S16ATP1	●	35.0	91.0	16	14	15
TP1	RX1SX05S16ATP1	●	67.0	123.0	16	14	15
TP2	RX1SX03S20ATP2	●	39.0	99.0	20	16	17
TP2	RX1SX05S20ATP2	●	75.0	135.0	20	16	17
TP3	RX1SX03S20ATP3	●	45.0	106.0	20	18	19
TP3	RX1SX05S20ATP3	●	85.0	146.0	20	18	19
TP4	RX1SX03S20ATP4	●	51.5	113.5	20	20	22
TP4	RX1SX05S20ATP4	●	96.5	158.5	20	20	22
TP5	RX1SX03S20ATP5	●	65.5	130.5	20	23	27
TP5	RX1SX05S20ATP5	●	120.5	185.5	20	23	27
TP6	RX1SX03S25ATP6	●	80.5	152.5	25	28	29
TP6	RX1SX05S25ATP6	●	145.5	217.5	25	28	29

Not 1) Tutucunun ve başlığın sabitleme boyutuna yönelik vida boyutu CRKS, birbiriyle aynı olmalıdır.

Not 2) Tutucu ile birlikte bir anahtar satılmaz.

YEDEK PARÇALAR

Tutucu Tipi			
	Sıkma Vidası	Tahrik boyutu	Tork (N•m)
RX1SX ○ ○ S16ATP1	RX1ST8TP1	T8	2
RX1SX ○ ○ S20ATP2	RX1ST10TP23	T10	3
RX1SX ○ ○ S20ATP3	RX1ST10TP23	T10	3
RX1SX ○ ○ S20ATP4	RX1ST15TP45	T15	5
RX1SX ○ ○ S20ATP5	RX1ST15TP45	T15	5
RX1SX ○ ○ S25ATP6	RX1ST25TP6	T25	9

Not 1) Yedek vidaların paketi 1 adet vida içerir.

PARÇALAR AYRICA SATILIR

Tutucu Tipi			
	Anahtar		
RX1SX ○ ○ S16ATP1	TKY08W		
RX1SX ○ ○ S20ATP2	TKY10F		
RX1SX ○ ○ S20ATP3	TKY10F		
RX1SX ○ ○ S20ATP4	TKY15T		
RX1SX ○ ○ S20ATP5	TKY15T		
RX1SX ○ ○ S25ATP6	TKY25T		

DEĞİŞTİRİLEBİLİR BAŞLIKLİ RAYBA

KARBÜR

RX1S NEW

ÖNERİLEN KESME KOŞULLARI

	Çalışma Malzemesi	Özellikleri	Kesme Hızı (m/dak)	İlerleme (mm/diş)	
				DC<20	DC≥20
P	Yumuşak Çelik (St44-2, AISI 1010 vs.)	Sertlik ≤180HB	120 (90–155)	0.10–0.20	0.10–0.22
	Karbon Çelik, Alaşımli Çelik (CK45, 4140 vs.)	Sertlik 180–280HB	120 (90–155)	0.10–0.20	0.10–0.22
	Karbon Çelik, Alaşımli Çelik (4340 vs.)	Sertlik 280–350HB	100 (75–130)	0.10–0.20	0.10–0.22
M	Ostenitik Paslanmaz Çelik (AISI 304, SUS316 vs.)	Sertlik ≤200HB	20 (15–30)	0.08–0.15	0.08–0.18
	Feritik paslanmaz çelik (SUS430 vs.)	–	40 (30–60)	0.08–0.18	0.08–0.20
	Dupleks Çelik (SUS329J1 vs.)	–	20 (15–30)	0.08–0.15	0.08–0.18
	Sertleştirilmiş Paslanmaz Çelik (SUS630 vs.)	–	40 (30–60)	0.08–0.18	0.08–0.20
K	Gri Dökme Demir (Pik Döküm vs.)	Çekme direnci ≤350MPa	110 (80–130)	0.10–0.20	0.10–0.22
	Duktil Dökme Demir (Sfero Döküm vs.)	Çekme direnci ≤450MPa	90 (65–110)	0.10–0.20	0.10–0.22
S	Isıya Dirençli Alaşımlar (Inconel®718 vs.)	–	30 (20–40)	0.08–0.18	0.10–0.20
	Titanyum Alaşımları (Ti-6Al-4V vs.)	–	30 (20–40)	0.08–0.18	0.10–0.20

ÇAPA GÖRE FİNİŞ İŞLEMESİ TOLERANSI

(mm)

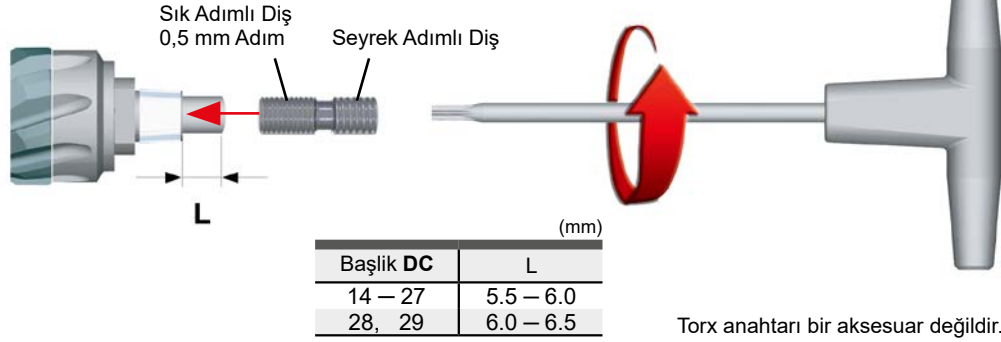
DC	14≤DC<15	15≤DC<20	20≤DC≤29
İşleme toleransı	0.15–0.30	0.15–0.35	0.20–0.40

BAŞLIK NASIL TAKILIR

KARBÜR

1

Çıkıntı miktarını aşağıdaki L boyutu uyarınca ayarlamak amacıyla bir Torx anahtarı kullanın. Kesici kenarlar keskindir; bundan dolayı koruyucu eldiven takılmalıdır.



M

DELME

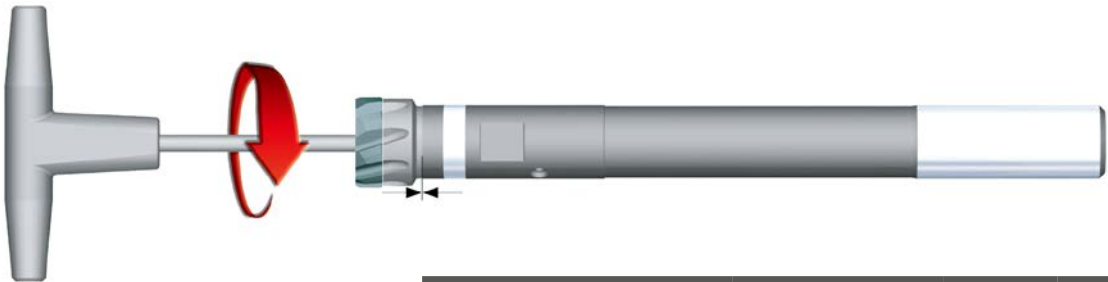
2

Başlığı tutucuya yerleştirin. Bu noktada, tutucunun uç yüzü ile başlık arasında hafif bir boşluk görülür.



3

Tutucu ile başlık sıkıca birbirine kenetlenene kadar sıkıca sıkılamak amacıyla bir Torx anahtarı kullanın.



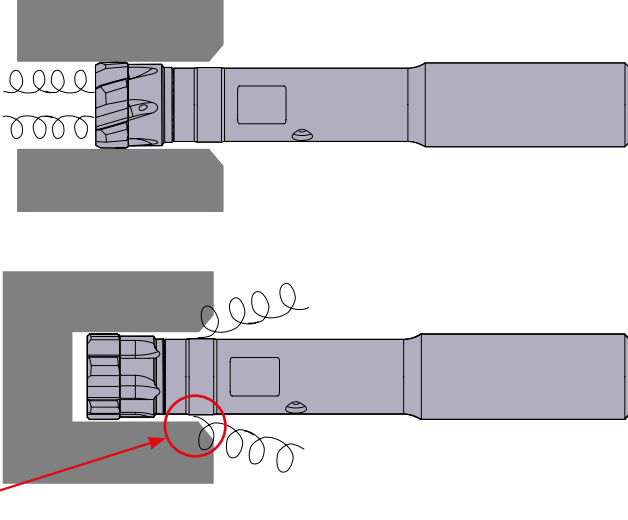
Tutucu Tipi	Sıkma Vidası	Tahrik boyutu	Tork (N•m)
RX1SX S16ATP1	RX1ST8TP1	T8	2
RX1SX S20ATP2, TP3	RX1ST10TP23	T10	3
RX1SX S20ATP4, TP5	RX1ST15TP45	T15	5
RX1SX S25ATP6	RX1ST25TP6	T25	9

Not 1) Yedek vidaların paketi 5 adet vida içerir.

M199

ÇALIŞMA KILAVUZU

- Lütfen boydan boya delikler için helisel tip başlık ve kör delikler için de düz tip başlık kullanın. Helisel tip, talaşların ileriye fırlatılması için, düz tip ise talaşların geriye fırlatılması için tasarlanmıştır.



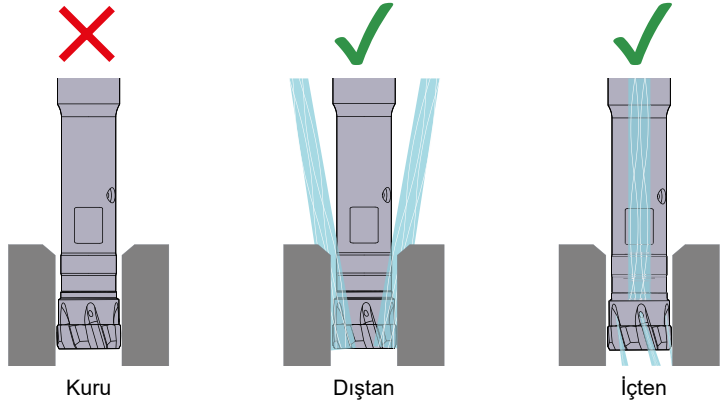
Helisel Tip



Düz Tip

- Raybalama öncesinde, pilot deliğin girişine pah kırılması tavsiye edilir.
- Raybalama yaparken, genellikle takımı aynı ilerleme oranlarıyla geriye çekme önerilir.
- Takımı makineye yerleştirirken, kesme kenarının salgı hassasiyeti 5 µm veya altında olmalıdır.
- Tutucu için hidrolik takım tutucu tavsiye ederiz.

- En iyi sonuçlar için ilk tavsiye, önce içten soğutma sıvısı, ardından da dıştan soğutma sıvısı kullanılması yönündedir. Kuru kesme tavsiye edilmez. Kör delikler için, harici soğutma sıvısı ile DC x 3 derinlikten daha ötesinde raybalama yapılması tavsiye edilmez.



Kuru

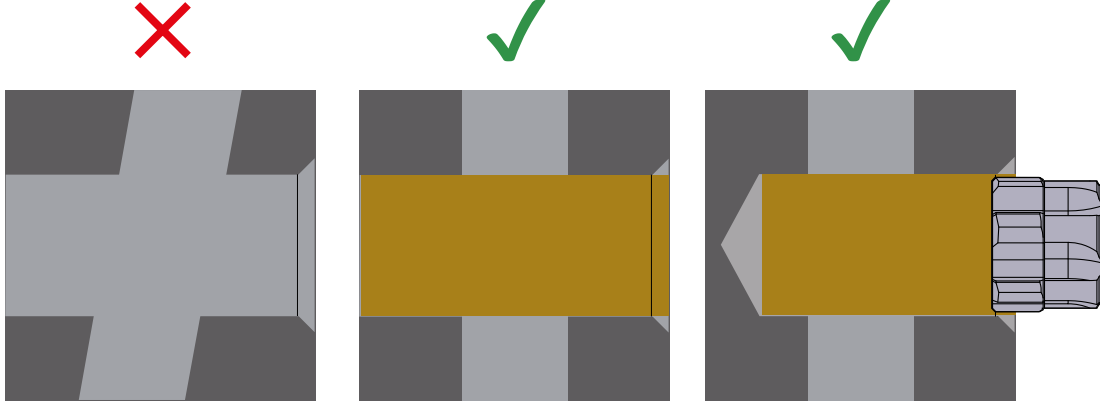
Dıştan

İçten

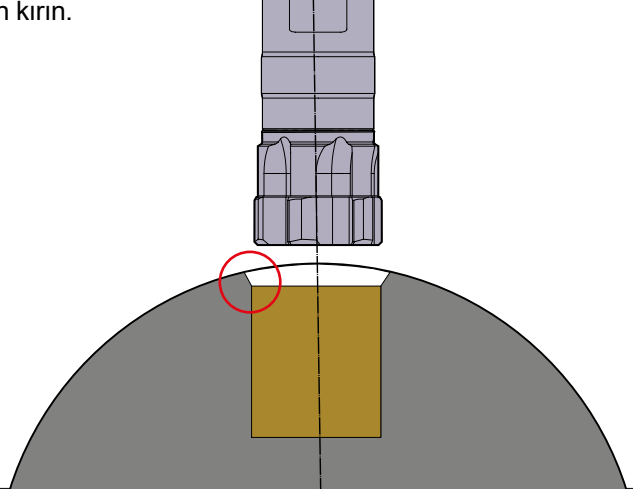
- İçten soğutma sıvısı ile raybalama için, geçerli basınç 8MPa değerinin altında olmalıdır.



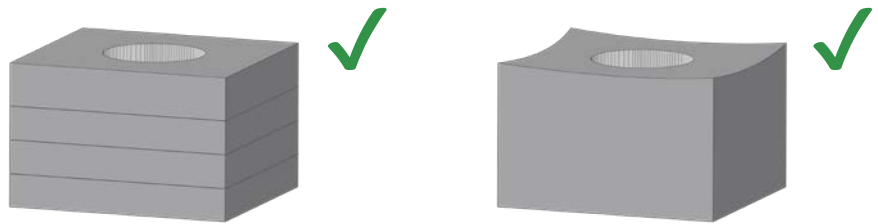
- Çapraz olarak kesişen deliklerin raybalanması tavsiye edilmez.



- Lütfen raybalama öncesinde silindirik yüzeylere pah kırın.



- İstiflenmiş plakalar ve konkav bir merkez ile raybalama yapılabilir.



- Eğer pilot deliğin girişi/çıkışı eğimli bir yüzey üzerinde bulunuyorsa, raybalama yapılması tavsiye edilmez.



Not

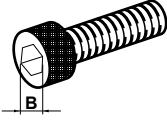
YEDEK PARÇALAR

TANIMLAMA	N002
YEDEK PARÇALAR	
BAĞLAMA VİDASI	N003
TESPİT CIVATASI	N008
AYAR VİDASI/SOMUNU	N009
ALTLIK	N010
ALTLIK PİMİ VE SIKMA LEVYESİ	N013
KİLİT PİMİ	N014
BASKI PABUCU	N014
KIRICI PARÇASI	N016
SIKIŞMA ÖNLEYİCİ YAĞLAYICI	N017



TANIMLAMA

BAĞLAMA VİDASININ TANIMLAMASI (Metrik kaba dişli sağ vida)



H SC 060 05

Uzunluk

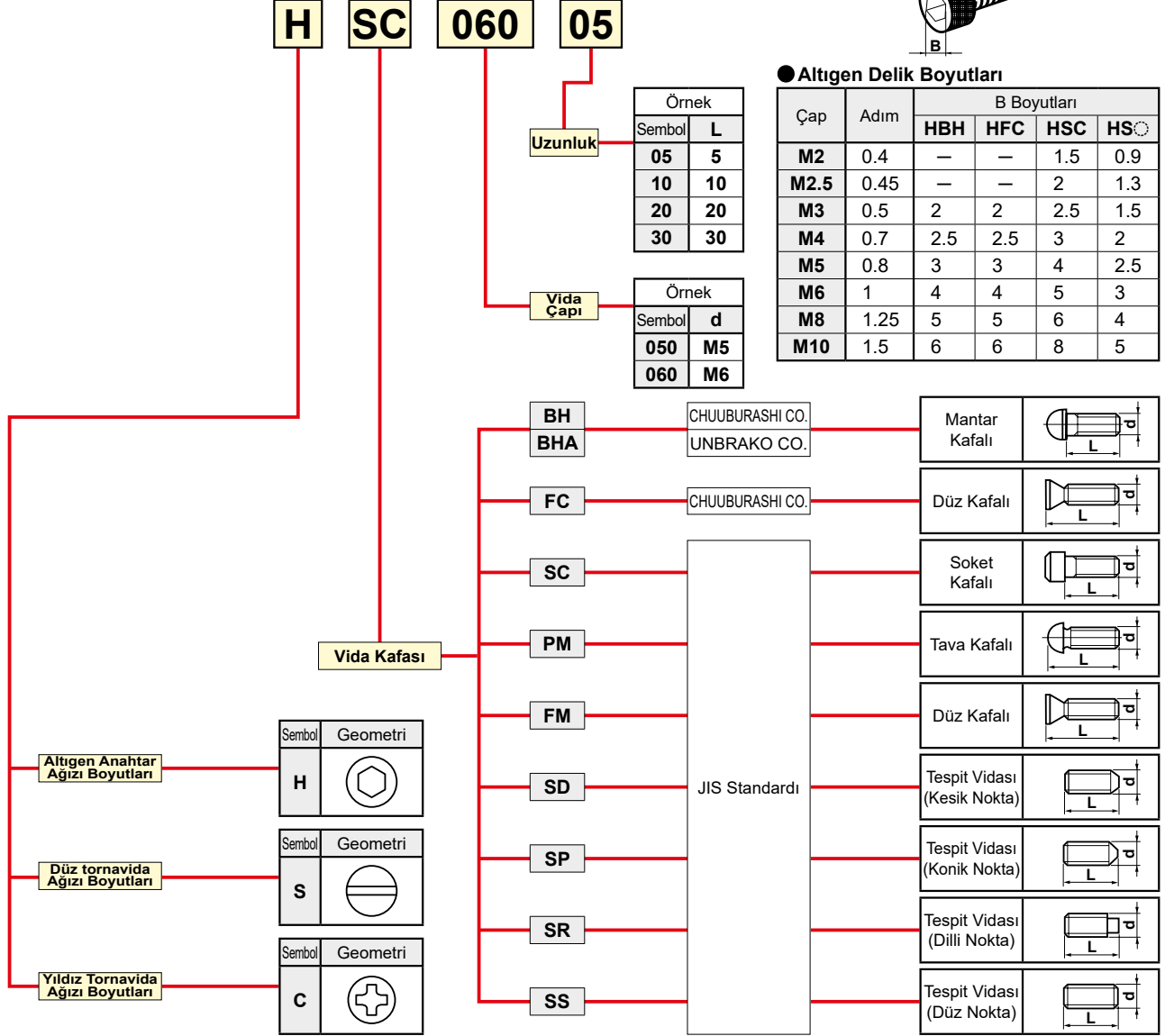
Örnek	
Sembol	L
05	5
10	10
20	20
30	30

Vida Çapı

Örnek	
Sembol	d
050	M5
060	M6

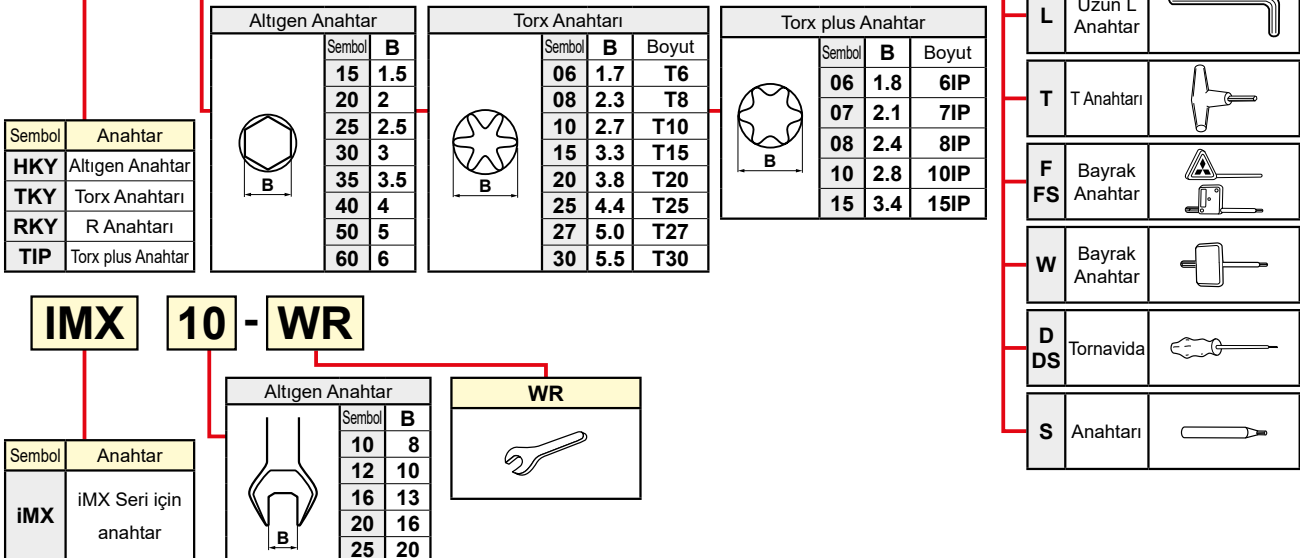
Altgen Delik Boyutları

Çap	Adım	B Boyutları			
		HBH	HFC	HSC	HS
M2	0.4	—	—	1.5	0.9
M2.5	0.45	—	—	2	1.3
M3	0.5	2	2	2.5	1.5
M4	0.7	2.5	2.5	3	2
M5	0.8	3	3	4	2.5
M6	1	4	4	5	3
M8	1.25	5	5	6	4
M10	1.5	6	6	8	5



ANAHTARIN TANIMLAMASI

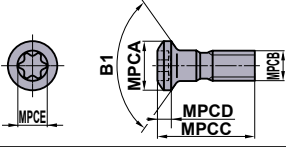
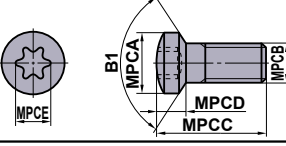
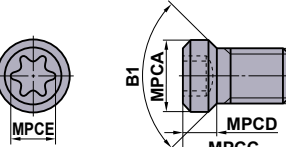
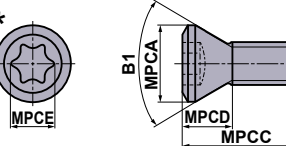
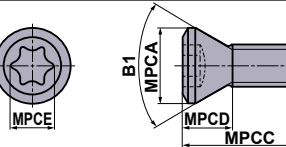
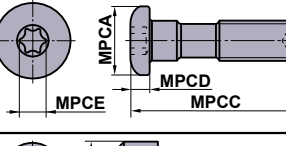
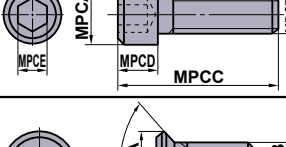
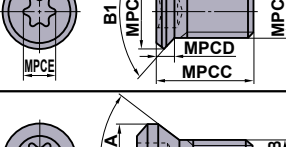
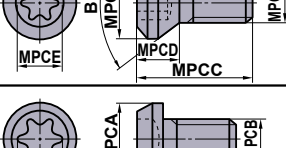
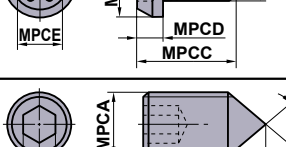
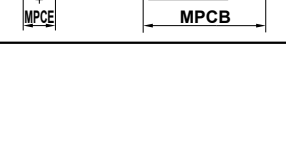
HKY 15 R



IMX 10 - WR

YEDEK PARÇALAR

BAĞLAMA VİDASI

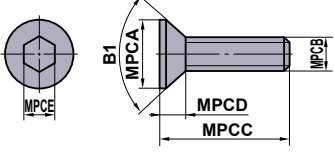
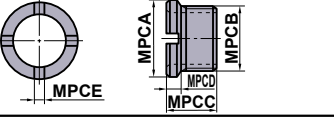
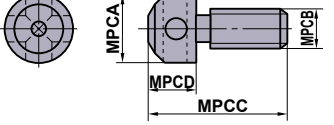
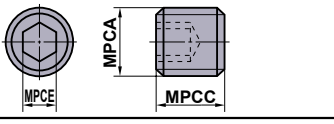
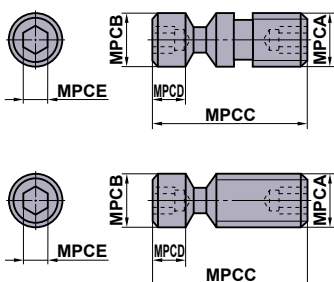
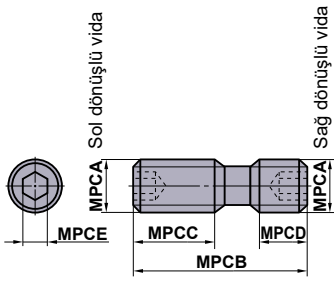
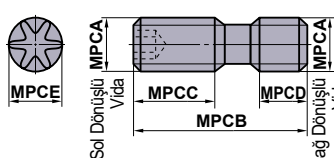
Geometri	Sipariş No.	Boyutlar (mm)					Açı	MPCCS	TQ (N.m)	Takım Tutucu
		MPCA	MPCB	MPCC	MPCD	MPCE				
	AJS3010T10	5	M3×0.5	10	1.5	2.8	120°	T10	2.5	Profil Tutucu (☉C032) AJX (☉K194) AJX (☉K194)
	AJS4012T15	7	M4×0.7	12	2.2	3.4	120°	T15	3.5	
	AJS5014T25	8	M5×0.8	14	2.7	4.5	120°	T25	7.5	
	BRS103	5	M3×0.5	9.9	2.9	3.4	120°	T15	3.5	
	BRS105	8	M5×0.8	13.8	3.8	4.5	120°	T25	7.5	
 	CS200T	3.2	M2×0.4	5	1.6	1.8	90°	T6	0.6	F Tipi Delik İşleme Barası (☉E028) Frezeleme Takımları Serisi (☉K001) BRP (☉K206) DCCC (☉K216) MMTI Tipi Delik İşleme Barası (☉G026) BRP (☉K206) DCCC (☉K216) AL Tipi Tutucu (☉C034) AHX640S (☉K042)
	CS250T	3.7	M2.5×0.45	6	1.8	2.4	90°	T8	1.0	
	* CS250560T	3.9	M2.5×0.45	5.2	2.5	2.4	60°	T8	1.0	
	CS300590T	4.1	M3×0.5	5.5	2.1	2.4	90°	T8	1.0	
	CS300890T	4.1	M3×0.5	8	2.1	2.4	90°	T8	1.0	
	* CS350860T	5.5	M3.5×0.6	8.4	4.0	3.4	60°	T15	3.5	
	CS350990T	4.8	M3.5×0.6	9	2.4	2.8	90°	T10	2.5	
	CS401160T	5.7	M4×0.7	11	4.5	3.4	60°	T15	3.5	
	CS401990T	6.0	M4×0.7	19	3.0	3.9	90°	T20	3.5	
	CS451190T	6.3	M4.5×0.75	11	2.9	3.9	90°	T20	5.0	
	* CS5015060T	7.2	M5×0.8	15	2.4	3.9	60°	T20	5.0	
CS502190T	8.5	M5×0.8	21	4.0	5.1	90°	T27	7.5		
	CSF401260T	7.2	M4×0.5	12	5.2	3.9	60°	T20	5.0	PMR (☉K252)
	DC0520T	8.5	M5×0.8	22.5	2.5	3.4	—	T15	3.5	ÇİFT KELEPÇE Tutucu (☉C008) ÇİFT KELEPÇELİ ANTI VİBRASYON (☉E015) HSK Takım Tutucu (☉H001)
	DC0621T	10.5	M6×1.0	25	4	3.9	—	T20	5.0	
	DKS4	5.6	M4×0.7	18	3.5	3	—	—	3.3	
	FC400890T	5.6	M4×0.7	7.5	1.3	2.8	90°	T10	2.5	AL Tipi Tutucu (☉C035) AL Tipi Delik İşleme Barası (☉E043)
	GY05016S	8.7	M5×0.8	16	3.5	3.9	90°	T20	5.0	GY Serisi (☉F004)
	GY06013M	12	M6×1	18	5	5.6	—	T30	6.0	GY Serisi (☉F004)
	HSP05008C	M5×0.8	8	—	—	2.5	—	—	2.5	MP Tipi Tutucu (☉C019)

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Geometri	Sipariş No.	Boyutlar (mm)					Açı B1	MPCDS	TQ (N·m)	Takım Tutucu
		MPCA	MPCB	MPCC	MPCD	MPCPE				
	HY-A1	4.4	M3×0.5	7	2.1	2	82°	—	1.5	
	HY-V1	5.5	M3×0.5	7	2.5	2	82°	—	1.5	
	HY2	5.5	M3×0.5	10	2.5	2	82°	—	1.5	
	HY3	7	M3.5×0.6	12	2.9	2	82°	—	1.5	
	HY4	9.3	M5×0.8	16	3.6	3	82°	—	3.3	
	JSS6	6.9	M6×0.75	4.5	1.5	0.8	—	—	—	
	JSS7	8	M7×0.75	4.4	1.5	1	—	—	—	
	KS1	7	M4×0.7	14	5	—	—	—	—	
	KS2	10	M6×1	18	7	—	—	—	—	
	KS2S	10	M6×1	18	7	—	—	—	—	
	LLR1	M5×0.8	—	3.5	—	2.5	—	—	—	
	LLR2	M6×1	—	5	—	3	—	—	—	
 <p>LLCS103, LLCS105 LLCS112, LLCS125 LLCS205</p> <p>"*" işaretli ürünler sonunda MPCB işaretli altıgen bir deliğe sahip değildir. "☆" işaretli ürünler sonunda MPCA işaretli altıgen bir deliğe sahip değildir.</p>	☆ LLCS103	M3×0.5	4	11	4.6	2	—	—	1.5	P Tipi Delik İşleme Barası (E038) HSK Takım Tutucu (H001)
	* LLCS105	M5×0.8	M5×0.8	10	1.5	2	—	—	1.5	
	LLCS106	M6×1	6	16.5	3.5	2.5	—	—	2.2	
	* LLCS106S	M6×1	6	13.4	0.7	2.5	—	—	2.2	
	LLCS108	M8×1.25	8	21	6.5	3	—	—	3.3	
	* LLCS108S	M8×1.25	8	16.5	2	3	—	—	3.3	
	LLCS110	M10×1.5	10	29	8	4	—	—	7.0	
	LLCS112	M12×1	11.9	36.2	9	5	—	—	8.0	
	LLCS125	M5×0.8	M5×0.8	12	2	2	—	—	1.5	
	LLCS205	M5×0.8	M5×0.8	16	4	2	—	—	1.5	
	LLCS206	M6×1	6	26	13	2.5	—	—	2.2	
	LLCS208	M8×1.25	8	24	6.5	3	—	—	3.3	
	LLCS306	M6×1	6	21	4	2.5	—	—	2.2	
	LLCS310	M10×1	10	29	8	4	—	—	7.0	
	LLCS410	M10×1	10	30	6.6	4	—	—	7.0	
LLCS508	M8×1	8	24	6.5	3	—	—	3.3		
* LLCS508S	M8×1	8	20.5	3	3	—	—	3.3		
 <p>Sol dönüşlü vida Sağ dönüşlü vida</p> <p>*Sağ Dönüşlü Vida Üzerinde Altıgen deliği Yoktur</p>	LS1	M6×1	22	8	8	3	—	—	5.0	Frezeleme Takımları Serisi (K001)
	LS2	M8×1	29	13	10	4	—	—	8.2	
	* LS4	M6×1	15	8	4	3	—	—	5.0	
	* LS5	M6×1	18	8	5	3	—	—	5.0	
	* LS6	M8×1	24	13	5	4	—	—	8.2	
	* LS7	M8×1	27	13	8	4	—	—	8.2	
	* LS8	M6×0.75	18	7	7	3	—	—	5.0	
	* LS9	M6×0.75	22	8	8	3	—	—	5.0	
	* LS10	M7×0.75	16	6	6	4	—	—	8.2	
	* LS11	M8×1	16	6	6	4	—	—	7.8	
	* LS12	M8×1	24	7	7	4	—	—	7.8	
	* LS16	M7×0.75	23	11	8	4	—	—	7.8	
	* LS20	M10×1.5	26	9	9	5	—	—	9.0	
	* LS21	M10×1.5	32	12	12	5	—	—	9.0	
	LS24	M8×1.25	24	8.5	8.5	4	—	—	7.8	
LS25	M8×1	28.5	12.0	10.5	4	—	—	8.2		
 <p>Sol Dönüşlü Vida Sağ Dönüşlü Vida</p>	LS14T	M7×0.75	24	10	10	4.5	—	T25	8.0	ÇİFT KELEPÇE Tutucu (C009)
	LS15T	M7×0.75	18	7	7	4.5	—	T25	8.0	
	LS10TS	M7×0.75	13	6	4	4.5	—	T25	8.5	
	LS0622T	M6×0.75	22	8	8	3.4	—	T15	6.0	

Geometri	Sipariş No.	Boyutlar (mm)					Açı	MPCCS	TQ (N·m)	Takım Tutucu
		MPCA	MPCB	MPCC	MPCD	MPCE				
	MGS6	10	M6×1	26	4	5	—	—	9.0	APX3000 (⊕K146)
	MHT1	11	M8×1	18.5	3.5	4	—	—	8.7	
	NS251	3.6	M2.5×0.45	7	—	2.2	60°	—	0.7	BTVH (⊕D016)
	NS401	5.8	M4×0.7	6	—	3.6	60°	—	3.5	CTAH-S (⊕D020)
	NS402W	5.85	M4×0.7	10	—	2.2	60°	—	0.7	CTAH (⊕D020) CTBH (⊕D022)
	NS403W	5.85	M4×0.7	12	—	2.2	60°	—	0.7	
	NS404W	5.8	M4×0.7	10	—	2.2	90°	—	0.7	
	NS501W	8	M5×0.8	16	—	2.5	120°	—	2.2	KÜÇÜK TAKIMLAR (⊕D001)
	NS502W	8	M5×0.8	20	—	2.5	120°	—	2.2	
	RS3008T	4.3	M3×0.35	8.6	2	2.4	61°	T8	1.5	SRF (⊕K228) SUF (⊕K232)
	RS3510T	5	M3.5×0.35	10	2.3	2.8	61°	T10	2.5	
	RS4015T	6	M4×0.5	14	2.7	3.4	61°	T15	3.3	
	RS5020T	8.1	M5×0.5	16.4	3.6	3.9	61°	T20	5.0	
	RS6025T	9.5	M6×0.75	21.5	4.2	4.5	61°	T25	7.5	
	RS8030T	12	M8×0.75	25	5	5.6	61°	T30	10.0	
	S1	3.5	M2×0.4	5.5	2.2	1.5	92°	—	0.6	
	S3	4.5	M3×0.5	7.7	2.4	2	92°	—	1.5	
	S4	5.3	M4×0.7	8	1.8	2.5	62°	—	2.2	
	S5	6.8	M5×0.8	9	2.4	3	62°	—	3.3	
	SD32	12	M8×1.25	28	7.2	6	50°	—	9.5	
	SD40	12	M8×1.25	36	7.2	6	50°	—	9.5	
	SD50	16	M10×1.5	46	8.2	8	50°	—	1.0	
	SD63	16	M10×1.5	61	8.2	8	50°	—	1.0	
	SETS51	6.8	M5×0.8	14.8	1.5	3.4	—	T15	3.5	MMTE Tipi Tutucu (⊕G019)
	SETS61	8	M6×1	20	1.8	3.9	—	T20	5.0	MMTI Tipi Delik İşleme Barası (⊕G026) HSK Takım Tutucu (⊕H001)
	SLCS105	10	M5×0.8	25	6.3	4	90°	—	7.0	WP Tipi Tutucu (⊕C017)
	SLCS106	12	M6×1	32	6.2	4	90°	—	7.0	
	SPS1	8.5	M5×0.8	16	4	4.5	70°	T25	5.0	
	SRS5	6.7	M5×0.8	16	3.5	3.9	—	T20	5.0	

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BAĞLAMA VİDASI

Geometri	Sipariş No.	Boyutlar (mm)					Açı	MPCDS	TQ (N.m)	Takım Tutucu
		MPCA	MPCB	MPCC	MPCD	MPCE				
	* TS16	2.5	M1.6×0.35	3.2	1.6	1.8	60°	T6	0.6	MICRO-DEX (☉E018)
	TS2	2.7	M2×0.4	4.6	1.4	1.8	60°	T6	0.6	
	* TS2A	2.7	M2×0.4	4.5	1.2	1.8	60°	T6	0.6	AQX (☉K186)
	TS2C	2.7	M2×0.4	3.8	1.4	1.8	60°	T6	0.6	
	☆ TS2D	3.8	M2×0.4	5.3	1.9	1.8	82°	T6	0.6	ÇUKUR ÇUBUĞU (☉E007)
	TS21	2.7	M2×0.4	3.4	1.4	1.8	60°	T6	0.6	F Tipi Delik İşleme Barası (☉E030)
	* TS22	3.0	M2.2×0.45	5	1.2	1.8	60°	T6	0.6	S Tipi Delik İşleme Barası (☉E031)
	* TS25	3.3	M2.5×0.45	5.5	1.7	2.4	60°	T8	1.0	AQX (☉K186) AJX (☉K194)
	☆ TS25D	4.4	M2.5×0.45	6.2	2.2	2.4	82°	T8	1.0	MMTI Tipi Delik İşleme Barası (☉G026)
	* TS25H	3.6	M2.5×0.45	5.5	2	2.4	60°	T8	1.0	SRM2 (☉K236)
	TS202	2.7	M2×0.4	5.5	1.8	1.8	60°	T6	0.6	
	TS253	3.3	M2.5×0.45	4.5	1.7	2.4	60°	T8	1.0	Frezeleme Takımları Serisi (☉K001)
	TS254	3.3	M2.5×0.45	7	1.7	2.4	60°	T8	1.0	KÜÇÜK TAKIMLAR (☉D001) PMF (☉K250)
	* TS255	3.5	M2.5×0.45	7.5	1.6	2.4	60°	T8	1.0	Profil Tutucu (☉C032)
	TS3	3.9	M3×0.5	6	2	2.4	60°	T8	1.0	TSMP (☉K248)
	TS3D	5.0	M3×0.5	6	2.3	2.8	82°	T10	2.5	ÇUKUR ÇUBUĞU (☉E007)
	* TS3SB	4.4	M3×0.5	8	2	2.4	80°	T8	1.5	AXD4000 (☉K168)
	TS3SBS	4.4	M3×0.5	6.5	2	2.4	80°	T8	1.5	AXD4000 (☉K168)
	☆ TS31D	4.8	M3×0.5	7.2	2.2	2.8	82°	T10	2.5	ÇUKUR ÇUBUĞU (☉E007)
	* TS32	3.9	M3×0.5	7.5	2	2.4	60°	T8	2.0	SRM2 (☉K236)
	* TS33	3.9	M3×0.5	6.7	2	2.4	60°	T8	1.5	AQX (☉K186) AJX (☉K194)
	TS35	4.8	M3.5×0.6	6.5	2.4	2.8	60°	T10	2.5	
	* TS35D	5.3	M3.5×0.6	12	2.8	3.4	60°	T15	3.5	HSK Takım Tutucu (☉H001)
	★ TS35R	5.7	M3.5×0.6	10	2.1	3.4	—	T15	3.5	AHX440S (☉K034) AHX475S (☉K038)
	TS351	4.8	M3.5×0.6	7.2	2.4	2.8	60°	T10	2.5	AJX (☉K194) SRM2 (☉K236)
	TS352	4.8	M3.5×0.6	10	3	2.8	60°	T10	2.5	VFX5 (☉K208)
	* TS4SB	5.8	M4×0.7	9	2.7	3.4	80°	T15	3.5	AXD7000 (☉K180)
	* TS4SBL	5.8	M4×0.7	10.5	2.7	3.4	80°	T15	3.5	GY SERİSİ (☉F004) AXD7000 (☉K180)
	TS4	5.4	M4×0.7	8	2.6	3.4	60°	T15	3.5	CE/CF/CGSP (☉K246) TSMP (☉K248)
	TS4D	5.6	M4×0.7	7.7	2.5	3.4	82°	T15	3.5	ÇUKUR ÇUBUĞU (☉E007)
	TS42	5.4	M4×0.7	6	2.6	3.4	60°	T15	3.5	
	TS43	5.4	M4×0.7	10	2.6	3.4	60°	T15	3.5	AJX (☉K194) BRP (☉K206) SRM2 (☉K236)
	TS44	5.4	M4×0.7	12	2.6	3.4	60°	T15	3.5	
	TS406	5.4	M4×0.7	15.5	2.6	3.4	60°	T15	3.5	
	TS407	5.4	M4×0.7	9	2.6	3.4	60°	T15	3.5	AQX (☉K186) AJX (☉K194)
	TS450	5.9	M4.5×0.75	13	3.6	3.9	60°	T20	5.0	VFX6 (☉K212)
	TS5S	6.8	M5×0.8	9	2.9	4.5	80°	T25	7.5	
	TS5	6.8	M5×0.8	9	3.2	4.5	60°	T25	7.5	SP Tutucu (☉C024) CE/CF/CGSP (☉K246) TSMP (☉K248)
	TS5L	6.8	M5×0.8	15	2.9	4.5	80°	T25	7.5	
	★ TS5R	6.9	M5×0.8	12	3.5	3.9	—	T20	5.0	WWX400 (☉K067) WJX (☉K085)
	TS52	6.8	M5×0.8	8	3.2	4.5	60°	T25	7.5	CE/CF/CGSP (☉K246)
	TS53	6.8	M5×0.8	16	3.2	4.5	60°	T25	7.5	
	TS54	6.8	M5×0.8	12	3.2	4.5	60°	T25	7.5	AJX (☉K194)
	TS55	6.8	M5×0.8	10.5	3.2	4.5	60°	T25	7.5	GY SERİSİ (☉F004) AQX (☉K186) SPX (☉K219) SRM2 (☉K236)
	* TS6S	8.5	M6×1.0	13	4.4	5.6	60°	T30	10.0	AQX (☉K186) SRM2 (☉K236)
	* TS6	8.5	M6×1.0	16	4.4	5.6	60°	T30	10.0	SRM2 (☉K236)

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Geometri	Sipariş No.	Boyutlar (mm)					Açı	MPCDS	TQ (N.m)	Takım Tutucu
		MPCA	MPCB	MPCD	MPCF	MPCG				
	TPS20-1	2.65	M2×0.4	4.7	2.4	1.8	60°	6IP	0.6	MVX (⊕M158)
	TPS25	3.3	M2.5×0.45	5.5	1.7	2.1	60°	7IP	1.0	APX3000 (⊕K146) MVX (⊕M158)
	TPS25-1	3.3	M2.5×0.45	6.5	1.7	2.1	60°	7IP	1.0	APX3000 (⊕K146)
	TPS27F1	3.7	M2.7×0.35	6.5	1.8	2.1	60°	7IP	1.0	VPX200 (⊕K099)
	TPS27F2	3.7	M2.7×0.35	8.0	1.8	2.1	60°	7IP	1.0	VPX300 (⊕K113)
	TPS3	3.9	M3×0.5	6.7	1.4	2.82	60°	10IP	1.0	MVX (⊕M158)
	* TPS3R	4.6	M3×0.5	8.5	1.4	2.82	—	10IP	2.0	WJX09 (⊕K085)
	TPS3SB	4.4	M3×0.5	8	2.0	2.82	80°	10IP	3.0	AXD4000A (⊕K176)
	TPS35	5.3	M3.5×0.6	11.5	2.8	3.4	60°	15IP	3.5	ASX445 (⊕K026) ASX400 (⊕K080) PMR (⊕K252)
	TPS351	4.8	M3.5×0.6	7.2	1.4	2.82	60°	10IP	2.5	MVX (⊕M158)
	TPS351B	5.1	M3.5×0.6	7.2	1.4	2.82	60°	10IP	2.5	ARP (⊕K254)
	TPS4	5.3	M4×0.7	8	2.6	3.4	60°	15IP	3.5	APX4000 (⊕K153) ARP (⊕K254) MVX (⊕M158)
	TPS40F1	5.3	M4×0.5	10.5	2.8	3.4	60°	15IP	3.0	VPX300 (⊕K113)
	TPS43	5.3	M4×0.7	10	2.6	3.4	60°	15IP	4.0	APX4000 (⊕K153) MVX (⊕M158)
	* TPS4R	6.4	M4×0.7	10.6	2.9	3.4	—	15IP	3.5	WSX445 (⊕K016)
	TPS54	6.8	M5×0.8	12	3.2	4.5	60°	25IP	7.5	MVX (⊕M158)
		TSS04005	—	M4×0.7	5	—	2.4	—	T8	—
TSS04505S		—	M4.5×0.7	5	—	3.5	—	T10	3.5	FMAX (⊕K056)
TSS05006		—	M5×0.8	6	—	2.8	—	T10	—	
TSS06010		—	M6×1	10	—	3.9	—	T20	—	
	WCS503507H	6.3	M5×0.5	7	3.3	3.5	—	—	5.0	ASX445 (⊕K026) ASX400 (⊕K080) PMR (⊕K252)
	WCS604010H	7.8	M6×0.75	10	4.1	4.0	—	—	7.0	PMR (⊕K252)
	WS203107TPS	3.1	M2×0.25	7.3	1.7	1.8	60°	6IP	1.0	STAW (⊕M139)
	WS203108TPS	3.1	M2×0.25	8.3	1.9	1.8	60°	6IP	1.0	
	WS253909TPS	3.9	M2.5×0.35	9.5	2.4	2.4	60°	8IP	2.0	
	WS304912TPS	4.9	M3×0.35	12	3.25	2.82	60°	10IP	2.5	
	WS254012T	4	M2.5×0.45	11.5	2.2	2.4	80°	T8	2.0	TAW (⊕M148)
	WS254013T	4	M2.5×0.45	12.5	2.2	2.4	80°	T8	2.0	
	WS254014T	4	M2.5×0.45	13.5	2.2	2.4	80°	T8	2.0	
	WS254015T	4	M2.5×0.45	14.5	2.2	2.4	80°	T8	2.0	
	WS254016T	4	M2.5×0.45	15.5	2.2	2.4	80°	T8	2.0	
	WS304517T	4.5	M3×0.5	16.5	3.4	2.8	60°	T10	3.5	
	WS304518T	4.5	M3×0.5	17.5	3.4	2.8	60°	T10	3.5	
	WS355520T	5.5	M3.5×0.6	19.5	3.9	3.4	60°	T15	5.5	
	WS355521T	5.5	M3.5×0.6	20.5	3.9	3.4	60°	T15	5.5	
	WS406023T	6	M4×0.7	22.0	4.4	4.5	60°	T25	8.5	
	WS406024T	6	M4×0.7	23.0	4.4	4.5	60°	T25	8.5	
	WS508026T	8	M5×0.8	25.0	5.2	5.1	60°	T27	12.0	
WS508027T	8	M5×0.8	26.0	5.2	5.1	60°	T27	12.0		

Geometri	Sipariş No.	Boyutlar (mm)					Açı	MPCDS	TQ (N.m)	Takım Tutucu
		MPCA	MPCB	MPCD	MPCF	MPCG				
	RX1ST8TP1	M4×0.7	M4×0.5	16.5	7.0	7.0	—	TX8	2.0	RX1S (⊕M197)
	RX1ST10TP23	M5×0.8	M5×0.5	17.0	7.5	7.0	—	TX10	3.0	
	RX1ST15TP45	M6×1.0	M6×0.75	18.0	6.5	8.5	—	TX15	6.5	
	RX1ST25TP6	M10×1.5	M10×1.25	30.0	7.5	9.5	—	TX25	15.0	

YEDEK PARÇALAR

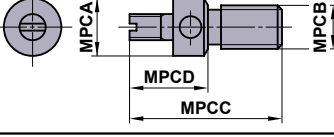
TESPİT CIVATASI

Geometri	Sipariş No.	Boyutlar (mm)					Açı	MPCDS	TQ (N·m)	Takım Tutucu
		MPCA	MPCB	MPCC	MPCD	MPCE				
	BOES101	15	M10×1.5	45	10	8	60°	—	10.0	
	* HSC08025H	13	M8×1.25	33	8	5	—	—	24	VPX200/300 (⊕K099,K113) ARP (⊕K254)
	HSC05030	8.5	M5×0.8	35	5	4	—	—	10	APX3000/4000 (⊕K146,K153)
	* HSC08030H	13	M8×1.25	38	8	5	—	—	24	WSX445 (⊕K016)
	HSC08045	13	M8×1.25	53	8	5	—	—	24	VPX200/300 (⊕K099,K113)
	HSC08040	13	M8×1.25	48	8	5	—	—	24	WSX445 (⊕K016)
	HSC08050	13	M8×1.25	58	8	5	—	—	24	VPX200/300 (⊕K099,K113)
	* HSC10030H	16	M10×1.5	40	10	6	—	—	40	APX3000/4000 (⊕K146,K153) AJX (⊕K194) WSX445 (⊕K016)
	HSC10035	16	M10×1.5	45	10	6	—	—	44	VFX5 (⊕K208) VFX6 (⊕K212)
	HSC10050	16	M10×1.5	60	10	8	—	—	44	APX3000/4000 (⊕K146,K153) VPX200/300 (⊕K099,K113)
	HSC10055	16	M10×1.5	65	10	8	—	—	44	VFX5 (⊕K208)
	HSC10060	16	M10×1.5	70	10	8	—	—	44	VPX200/300 (⊕K099,K113)
	HSC10070	16	M10×1.5	80	10	8	—	—	44	VPX200/300 (⊕K099,K113) ASPX (⊕K224)
	HSC12035	18	M12×1.75	47	12	10	—	—	80	WSX445 (⊕K016)
	* HSC12035H	18	M12×1.75	47	12	10	—	—	80	APX3000/4000 (⊕K146,K153) AJX (⊕K194)
	HSC12040	18	M12×1.75	52	12	10	—	—	80	
	HSC12045	18	M12×1.75	57	12	10	—	—	80	WSX445 (⊕K016)
	HSC12060	18	M12×1.75	72	12	10	—	—	80	VPX200/300 (⊕K099,K113)
	HSC12070	18	M12×1.75	82	12	10	—	—	80	APX3000/4000 (⊕K146,K153) AJX (⊕K194) WSX445 (⊕K016)
	HSC16040	24	M16×2	56	16	14	—	—	150	WSX445 (⊕K016)
	* HSC16040H	24	M16×2	56	16	14	—	—	150	APX3000/4000 (⊕K146,K153) AJX (⊕K194)
HSC16055	24	M16×2	71	16	14	—	—	150	VPX200/300 (⊕K099,K113)	
HSC16065	24	M16×2	81	16	14	—	—	150	VPX200/300 (⊕K099,K113)	
HSC16080	24	M16×2	96	16	14	—	—	150		
HSC20040	30	M20×2.5	60	20	17	—	—	320		
HSC20090	30	M20×2.5	110	20	17	—	—	320		
	HSCX12030H	24	M12×1.75	37	7	8	—	—	40	FMAX (⊕K056)
	HSCX16035H	30	M16×2	44	9	12	—	—	100	
	HSCX20035H	36	M20×2.5	46	11	14	—	—	180	
	HFF08033H	11	M8×1.25	33	5	5	90°	—	8.2	WJX09 (⊕K085)
	HFF08043H	11	M8×1.25	43	5	5	90°	—	8.2	AXD4000 (⊕K168)
	MBA16033H	40	M16×2	43	10	14	—	—	150	AHX640 (Ø100 için) (⊕K042) WSX445 (⊕K016)
	MBA20040H	50	M20×2.5	54	14	17	—	—	320	APX4000 (⊕K153) AHX475S (⊕K038) AHX640S (⊕K042) AXD4000 (⊕K168) AXD7000 (⊕K180) AJX (⊕K194)

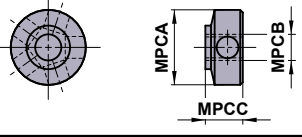
* Soğutma delikli.

Geometri	Sipariş No.	Boyutlar (mm)						TQ (N·m)	Takım Tutucu
		MPCA	MPCB	MPCC	MPCD	MPCE	MPCF		
	HDS08030	M8×0.75	M8×1.25	30	13.5	11.5	4	8.2	BRP (⊕K206)
	HDS10031	M10×1.0	M10×1.5	31	14	12	5	9.0	PMF (⊕K250)

BÜYÜK AYAR VİDASI

Geometri	Sipariş No.	Boyutlar (mm)					Açı	MPCCS	TQ (N·m)	Takım Tutucu
		MPCA	MPCB	MPCC	MPCD	MPCE	B1			
	KSS2	6.6	M5×0.8	17.5	9	—	—	—	FMAX (K056)	

MİKRO AYAR SOMUNU

Geometri	Sipariş No.	Boyutlar (mm)					Açı	MPCCS	TQ (N·m)	Takım Tutucu
		MPCA	MPCB	MPCC	MPCD	MPCE	B1			
	KSN3	8.6	M3×0.35	4.3	—	—	—	—	FMAX (K056)	

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YEDEK PARÇALAR

YEDEK PARÇALAR

ALTLIK

Geometri	Sipariş No.	Boyutlar (mm)						Takım Tutucu
		MPCA	MPCB	MPCC	MPCD	MPCE	MPCF	
	* PS42	11.46	3.18	0.2	0.2	0.6	1.0	
	* PT21 * PT32 * PT42	5.11 8.28 10.85	2.38 3.18 3.18	0.2 0.2 0.3	0.2 0.2 0.3	0.6 0.6 0.7	— — —	F Tipi Delik İşleme Barası (E029)
	DCSVN32	9.52	3.18	0.8	1.2	—	—	ÇİFT KELEPÇE Tutucu (C019) ÇİFT KELEPÇELİ ANTI VİBRASYON (E017)
	LLSCN3T3 LLSCN33 LLSCN42 LLSCN53 LLSCN63 * LLSCP42 * LLSCP63	9.52 9.52 12.70 15.87 19.05 12.70 19.05	3.97 4.76 3.18 4.76 4.76 3.18 4.76	0.4 0.4 0.8 1.2 1.2 0.8 1.2	0.4 0.4 0.8 1.2 1.2 0.8 1.2	0.8 0.8 1.2 1.6 1.6 1.2 1.6	0.8 0.8 1.2 1.6 1.6 1.2 1.6	LL Tipi Tutucu (C008) LL Tipi Tutucu (C008) ÇİFT KELEPÇELİ ANTI VİBRASYON (E015) P Tipi Delik İşleme Barası (E039) HSK Takım Tutucu (H001) ÇİFT KELEPÇELİ ANTI VİBRASYON (E015) P Tipi Delik İşleme Barası (E039) HSK Takım Tutucu (H001)
	LLSDN32 LLSDN42 LLSDN43 LLSDN53 * LLSDP42	9.52 12.70 12.70 15.87 12.70	3.18 3.18 4.76 4.76 3.18	0.8 0.8 0.8 1.2 0.8	1.2 1.2 1.2 1.6 1.2	— — — — —	— — — — —	ÇİFT KELEPÇE Tutucu (C010) LL Tipi Tutucu (C010) ÇİFT KELEPÇELİ ANTI VİBRASYON (E015) P Tipi Delik İşleme Barası (E039) HSK Takım Tutucu (H001) ÇİFT KELEPÇELİ ANTI VİBRASYON (E015)
	LLSRN103 LLSRN123 LLSRN164 LLSRN204 LLSRN326	8.3 9.8 13.6 17.3 28.0	3.18 3.18 4.76 4.76 6.35	— — — — —	— — — — —	— — — — —	— — — — —	LL Tipi Tutucu (C026) HSK Takım Tutucu (H001)
	LLSSN33 LLSSN42 LLSSN53 LLSSN63 LLSSN84 * LLSSP42	9.52 12.70 15.87 19.05 25.40 12.70	4.76 3.18 4.76 4.76 6.35 3.18	0.8 0.8 1.2 1.2 1.6 0.8	0.8 0.8 1.2 1.2 1.6 0.8	1.2 1.2 1.6 1.6 2.4 1.2	1.2 1.6 1.6 2.0 2.4 1.6	ÇİFT KELEPÇELİ ANTI VİBRASYON (C014) P Tipi Delik İşleme Barası (E038) ÇİFT KELEPÇELİ ANTI VİBRASYON (E016)
	LLSTE32 LLSTN32 LLSTN33 LLSTN42 LLSTN53 * LLSTP32	7.6 9.52 9.52 12.70 15.87 9.52	3.18 3.18 4.76 3.18 4.76 3.18	0.4 0.4 0.4 0.4 0.8 0.4	0.4 0.8 1.2 1.2 1.6 0.8	0.4 1.2 — — — 1.2	— — — — — —	LL Tipi Tutucu (C016) ÇİFT KELEPÇELİ ANTI VİBRASYON (E016) P Tipi Delik İşleme Barası (E038)
	LLSWN32 LLSWN3T3 LLSWN42 * LLSWP32 * LLSWP42	9.52 9.52 12.70 9.52 12.70	3.18 3.97 3.18 3.18 3.18	0.4 0.4 0.4 0.4 0.4	0.8 0.8 0.8 0.8 0.8	1.2 1.2 1.2 1.2 1.2	— — — — —	LL Tipi Tutucu (C022) ÇİFT KELEPÇE Tutucu (C022) ÇİFT KELEPÇELİ ANTI VİBRASYON (E017)

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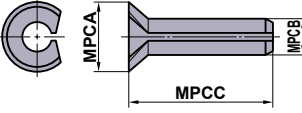
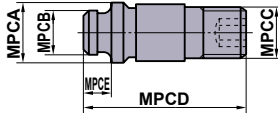
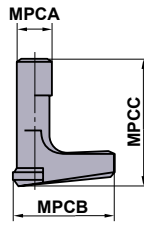
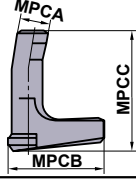
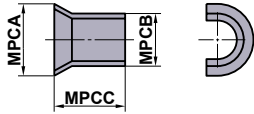
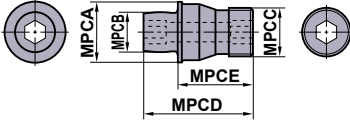
Geometri	Sipariş No.	Boyutlar (mm)						Takım Tutucu
		MPCA	MPCB	MPCC	MPCD	MPCE	MPCF	
	MHS532R	9.4	15.7	4.5	0.8	0.8	—	
<p>Bu parçanın delik konumu merkezden kaydırılmıştır.</p>	MLCP42	12.58	3.18	1.2	1.2	1.2	1.2	P Tipi Delik İşleme Barası (E039)
<p>Bu parçanın delik konumu merkezden kaydırılmıştır.</p>	MLDP42	12.56	3.18	1.2	1.2	—	—	P Tipi Delik İşleme Barası (E039)
<p>Bu parçanın delik konumu merkezden kaydırılmıştır.</p>	MLSP42	12.63	3.18	1.2	1.2	1.2	1.2	P Tipi Delik İşleme Barası (E038)
<p>Bu parçanın delik konumu merkezden kaydırılmıştır.</p>	MLTP32	9.50	3.18	1.2	1.2	1.2	—	P Tipi Delik İşleme Barası (E038)
	MSCN63	18.8	4.76	1.6	1.6	1.6	1.6	ÇİFT KELEPÇE Tutucu (C009) (Ağır Kesme için)
	MSSN63	18.8	4.76	1.6	1.6	1.6	1.6	ÇİFT KELEPÇE Tutucu (C012) (Ağır Kesme için)
	* PT32T1R * PT32T2R	8.28 8.28	13.34 13.19	3.18 3.18	— —	— —	— —	
	PV321 PV322 PV323	9.52 9.52 9.52	3.18 3.18 3.18	0.4 0.8 1.2	0.4 0.8 1.2	— — —	— — —	MP Tipi Tutucu (C019)
	SPSVN32	8.06	3.18	0.3	0.3	—	—	SP Tipi Tutucu (C030) HSK Takım Tutucu (H001)

YEDEK PARÇALAR

ALTLIK

Geometri	Sipariş No.	Boyutlar (mm)						Takım Tutucu
		MPCA	MPCB	MPCC	MPCD	MPCE	MPCF	
	STASX400N	11.00	3.00	0.4	0.4	0.4	0.4	ASX400 (K080)
	STASX445N	10.76	3.00	—	—	—	—	ASX445 (K026)
	WPSTN33 WPSTN43	9.3 12.50	4.76 4.76	0.8 0.8	0.4 0.4	1.2 1.2	— —	WP Tipi Tutucu (C017)
	* WPSWC43 WPSWN43	12.50 12.50	4.76 4.76	0.4 0.4	0.8 0.8	1.2 1.2	— —	WP Tipi Tutucu (C023)

ALTLIK PİMİ VE BAĞLAMA LEVYESİ

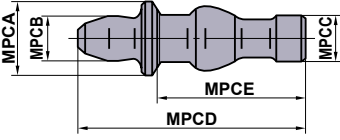
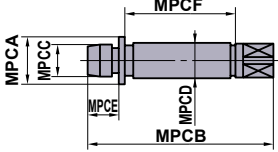
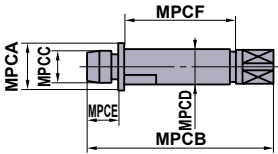
Geometri	Sipariş No.	Boyutlar (mm)					Takım Tutucu
		MPCA	MPCB	MPCC	MPCD	MPCE	
	BCP141	3.0	1.4	5.6	—	—	SP Tipi Tutucu (☉C030) F Tipi Delik İşleme Barası (☉E029) HSK Takım Tutucu (☉H013)
	BCP201	4.3	2	7.4	—	—	
	BCP202	4.3	2	6.4	—	—	
	CCP33	6.5	3.66	M5×0.8	18.5	3	WP Tutucu (☉C017)
	CCP34	7.5	5.0	M6×1.0	18.5	3	
	CCP44	7.5	5.0	M5×0.8	14.2	3	
	LLCL12S	2.1	9.3	5.6	—	—	LL Tipi Tutucu (☉C016) P Tipi Delik İşleme Barası (☉E039) HSK Takım Tutucu (☉H001)
	LLCL13	3.6	10	12.5	—	—	
	LLCL13S	3.6	10	7.8	—	—	
	LLCL14	4.7	13.4	13.2	—	—	
	LLCL14S	4.7	13.6	12.2	—	—	
	LLCL15	6.0	19	17	—	—	
	LLCL16	7.5	20.8	21	—	—	
	LLCL18	8.6	25.4	25.2	—	—	
	LLCL23	3.6	12.0	11.5	—	—	
	LLCL23S	3.6	11.6	9.5	—	—	
	LLCL24	4.7	16.2	14.8	—	—	
	LLCL25	6.0	17.1	17	—	—	
	LLCL110	3.0	10.7	11.6	—	—	
	LLCL112	3.5	13	13.5	—	—	
	LLCL116	4.5	18.5	18	—	—	
	LLCL120	5.6	20.3	19	—	—	
	LLCL125	6	24	24	—	—	
	LLCL132	8	30	27	—	—	
	LLP13	5.55	4.85	5.3	—	—	LL Tipi Tutucu (☉C008) ÇİFT KELEPÇE Tutucu (☉C008) ÇİFT KELEPÇELİ ANTI VİBRASYON (☉E015) P Tipi Delik İşleme Barası (☉E038) HSK Takım Tutucu (☉H001)
	LLP14	7.25	6.55	5.8	—	—	
	LLP15	8.8	8.05	8.6	—	—	
	LLP16	10.85	9.85	11.1	—	—	
	LLP18	15.35	13.05	12.0	—	—	
	LLP23	5.55	4.85	6.8	—	—	
	LLP24	7.25	6.55	9.1	—	—	
	MP6	11.9	7.8	M10×1	22.1	15	ÇİFT KELEPÇE Tutucu (☉C009) (Ağır Kesme için)

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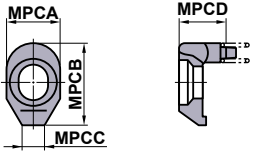
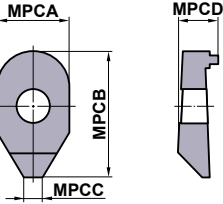
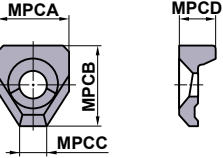
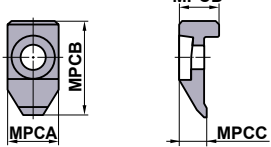
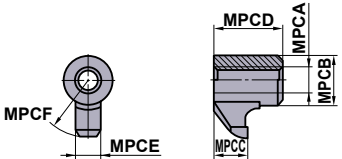
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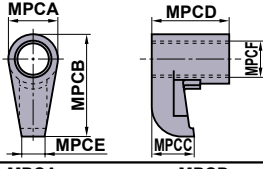
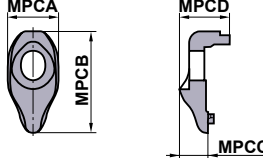
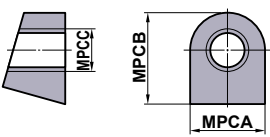
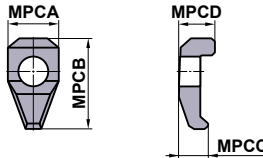
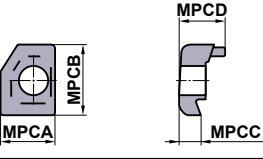
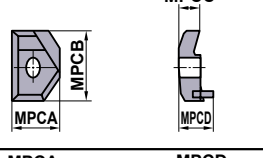
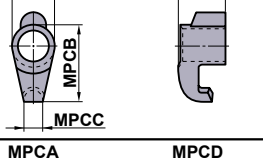
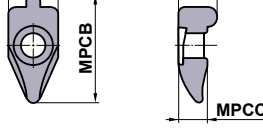
YEDEK PARÇALAR

KİLİTLE PİMİ

Geometri	Sipariş No.	Boyutlar (mm)						Takım Tutucu
		MPCA	MPCB	MPCC	MPCD	MPCE	MPCF	
	P11S	6	3.7	4	17	11.1	—	MP Tipi Tutucu (C019)
	P21S	7.5	4.9	4.5	17.2	11.5	—	
	P221US	4	18	2.11	3.5	3.3	7.7	
	P333WS	5.75	24	3.64	5.0	4.9	11.3	
	P434W	7.75	30	5.03	7.0	4.9	16.8	

BASKI PABUCU

Geometri	Sipariş No.	Boyutlar (mm)						Takım Tutucu
		MPCA	MPCB	MPCC	MPCD	MPCE	MPCF	
	AMS3	7	12	3	3.3	—	—	Profil Tutucu (C032) AJX (K196)
	AMS4	9	13.5	3	3.8	—	—	
	AMS5	10	15	3.5	5	—	—	
	CA161	13	20	6	8	—	—	
	CCK13	15	18.5	6	9	—	—	WP Tipi Tutucu (C017)
	CCK14	19	22	8	9.5	—	—	
	CCTC1	13	25	7	10.2	—	—	
	CK231	M6×1	8	4	7.5	4.5	9.5	
	CK232	M6×1	8	4.5	8	4.5	11.5	
	CK341	M8×1	11	5.5	13.5	6	13.5	
	CK342	M8×1	11	6	14	6	16.5	


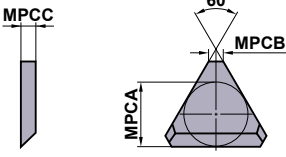
Geometri	Sipariş No.	Boyutlar (mm)						Takım Tutucu
		MPCA	MPCB	MPCC	MPCD	MPCE	MPCF	
	CKW6	10.9	22.5	9.2	16.8	5	M8×1	ÇİFT KELEPÇE Tutucu (☉C009) (Ağır Kesme için)
	DCK2211	11	22	6.57	11.1	—	—	ÇİFT KELEPÇE Tutucu (☉C008) ÇİFT KELEPÇELİ ANTI VİBRASYON (☉E015) HSK Takım Tutucu (☉H001)
	DCK2613	13	26.5	7.35	12.9	—	—	
	DCK3113	13	31	9	14.5	—	—	
	KGC1	12.0	15.0	M7×0.75	—	—	—	
	LK1	8	14.3	4.5	5.9	—	—	
	MTK1R/L	13	17.5	5	12	—	—	MG Tipi Tutucu (☉F132) MT Tipi Tutucu (☉G024) HSK Takım Tutucu (☉H001)
	MTK2R/L	18	28	7	14	—	—	
	SETK51	6.8	14.5	2.9	8	—	—	MMTE Tipi Tutucu (☉G019) MMTI Tipi Tutucu (☉G026) HSK Takım Tutucu (☉H001)
	SETK61	8.9	18.1	4.1	8.6	—	—	
	SRK1R	9.4	21	5.5	7.5	—	—	

N

YEDEK PARÇALAR

YEDEK PARÇALAR

KIRICI PARÇA

Geometri	Sipariş No.	Boyutlar (mm)					Takım Tutucu
		MPCA	MPCB	MPCC	IC	LBB	
	CBS3D	8.0	—	1.5	9.525	1.5	
	CBS4D	10.2	—	2.5	12.70	2.5	
	CBT2N	5.67	1.4	1.5	6.35	1.0	F Tipi Delik İşleme Barası (E029) * Pozitif kesici uçlar için, kırıcı genişliği listedeki rakamlardan 0.5mm daha büyüktür.
	CBT3F	8.53	1.4	2.5	9.525	1.5	
	CBT4N	11.07	1.4	2.5	12.70	2.5	

N

YEDEK PARÇALAR

SIKIŞMA ÖNLEYİCİ YAĞLAYICI

SIKIŞMA ÖNLEYİCİ YAĞ

Şekil	Sipariş No.	Stok	Hacim (g)
	MK1K	★	20
	MK1KS	★	3

N

YEDEK PARÇALAR

★ : Japonya standart stok.

N017

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ISO13399 UYUMLULUĞU

ISO13399'a Uygun Özellik Sembolleri Listesi

Alfabetik

Kaynak: ISO13399 standardı

URL : <https://www.iso.org/search/x/query/13399>

ISO13399 Özellik Sembolleri	İçerik
ADJLX	Maksimum ayar limiti
ADJRG	Ayar aralığı
ALF	Radyal boşluk açısı
ALP	Aksiyal boşluk açısı
AN	Ana boşluk açısı
ANN	Küçük boşluk açısı
APMX	Maksimum kesme derinliği
AS	Silici kenar boşluk açısı
ASP	Ayar vidası çıkıntısı
AZ	Maksimum dalma derinliği
B	Şaft genişliği
BBD	Tasarın balansı
BCH	Köşe pah uzunluğu
BD	Gövde çapı
BDX	Maks. gövde çapı
BHCC	Cıvata deliği döngü sayısı
BHTA	Gövde yarı konik açısı
BMC	Gövde malzeme kodu
BS	Silici kenar uzunluğu
BSR	Silici kenar radyusu
CASC	Kartuş ölçü kodu
CB	Talaş kırıcı yüzey sayısı
CBDP	Bağlantı deliği derinliği
CBMD	Talaş kırıcı üreticiler simgesi
CBP	Talaş kırıcı özelliği
CCMS	Makine kenar bağlantı kodu
CCWS	İş parçası kenar bağlantı kodu
CCP	Köşe pah özelliği
CDI	Kesici uç kesme çapı
CDX	Maksimum kesme derinliği
CEATC	Takım kesme kenarı açısı tip kodu
CECC	Kesme kenarı durum kodu
CEDC	Kesme kenarı sayısı
CF	Spot pah
CHW	Köşe pah genişliği
CICT	Kesme kalemi sayısı
CNC	Köşe sayısı
CND	Soğutma suyu giriş çapı
CNSC	Soğutma suyu giriş stili kodu
CNT	Soğutma suyu girişi vida ölçüsü
CP	Soğutma suyu basıncı
CRE	Spot radyus
CRKS	Bağlama vidası dış ölçüsü
CSP	Soğutma suyu besleme özelliği
CTP	Kaplama özelliği
CTX	Kesme noktası dönüşü X yönü
CTY	Kesme noktası dönüşü Y yönü
CUTDIA	İş parçası maksimum dilimleme çapı
CUB	Temel bağlantı ünitesi
CW	Kesme genişliği
CWX	Maksimum kesme genişliği
CXD	Soğutma suyu çıkış çapı

ISO13399 Özellik Sembolleri	İçerik
CXSC	Soğutma suyu çıkış stil kodu
CZC	Bağlantı ölçü kodu
D1	Sabitleme deliği çapı
DAH	Giriş deliği çapı
DAXN	Eksenel kanal minimum dış çapı
DAXX	Eksiyel kanal maksimum dış çapı
DBC	Cıvata dairesel çapı
DC	Kesme çapı
DCB	Bağlantı deliği çapı
DCBN	Bağlantı deliği minimum çapı
DCBX	Bağlantı deliği maksimum çapı
DCC	Tasarım konfigürasyon stil kodu
DCCB	Bağlantı deliği havşa çapı
DCIN	Kesme çapı iç
DCINN	Kesme çapı iç minimumu
DCINX	Kesme çapı iç maksimumu
DCN	Minimum kesme çapı
DCON	Bağlantı çapı
DCONMS	Bağlantı çapı makine kenarı
DCONWS	Bağlantı çapı iş parçası kenarı
DCSC	Kesme çapı ölçü kodu
DCSFMS	Bağlantı temas yüzeyi çapı
DCX	Maksimum kesme çapı
DF	Flanş çapı
DHUB	Göbek çapı
DMIN	Minimum delik çapı
DMM	Şaft çapı
DN	Boyun çapı
DRVA	Tahrik açısı
EPSR	Kesici uç yerleşim açısı
FHA	Kanal helis açısı
FHCSA	Tespit deliği açısı
FHCSD	Sabitleme deliği havşa çapı
FLGT	Flanş kalınlığı
FMT	Form tipi
FXHLP	Sabitleme deliği özelliği
GAMF	Radyal eğim açısı
GAMN	Normal eğim açısı
GAMO	Dalma açısı dik
GAMP	Dalma açısı aksial
GAN	Kesici uç eğim açısı
H	Şaft yüksekliği
HA	Teorik dış yüksekliği
HAND	EI
HBH	Kafa taban ofset yüksekliği
HBKL	Arka başlık ofset uzunluğu
HBKW	Kafa arka ofset genişliği
HBL	Alt başlık ofset uzunluğu
HC	Gerçek dış yüksekliği
HF	Foksiyonel yükseklik
HHUB	Göbek yüksekliği
HTB	Gövde yüksekliği
IC	İç teğet çember çapı
IFS	Kesici uç montaj stil kodu
IIC	Kesici uç arayüz kodu
INSL	Kesici uç uzunluğu
KAPR	Takımın kesme kenarı açısı
KCH	Köşe pah açısı

ISO13399 Özellik Sembolleri	İçerik
KRINS	Temel kesme kenarı açısı
KWW	Kama kanal genişliği
KYP	Kama kanalı özelliği
L	Kesme kenarı uzunluğu
LAMS	Eğim Açısı
LB	Gövde yüksekliği
LBB	Talaş kırıcı genişliği
LBX	Maksimum gövde yüksekliği
LCCB	Bağlantı deliği havşa derinliği
LCF	Talaş yuvası uzunluğu
LDRED	Düştürülmüş gövde çapı boyu
LE	Efektif kesme kenarı uzunluğu
LF	Fonksiyonel yükseklik
LFA	If üzerinde bir ölçü
LH	Kafa yüksekliği
LPR	Çıkıntı yüksekliği
LS	Şaft uzunluğu
LSC	Bağlama uzunluğu
LSCN	Minimum bağlama uzunluğu
LSCX	Maksimum bağlama uzunluğu
LTA	LTA boyu (MCS'ten CRP'ye uzunluk)
LU	Kullanılabilir uzunluk
LUX	Maksimum kullanılabilir uzunluk
M	m-boyutu
M2	Nominal ikinci içe çizilmiş açığa sahip iç teğet çemberi ile bir kesici ucun köşesi arasındaki mesafe
MHA	Montaj deliği açısı
MHD	Montaj deliği uzaklığı
MHH	Montaj deliği yüksekliği
MIID	Mastar kesici uç tanımlaması
MTP	Sıkma tipi kodu
NCE	Kesme ucu sayısı
NOF	Kanal sayısı
NOI	Kesici uç indeks sayısı
NT	Diş sayısı
OAH	Toplam yükseklik
OAL	Toplam uzunluk
OAW	Toplam genişlik
PDPT	Kesici uç profil derinliği
PDX	Profil uzaklığı ex
PDY	Profil uzaklığı ey
PFS	Profil stili kodu
PL	Nokta uzunluğu
PNA	Profille birlikte açığı
PRFRAD	Profil radyusu
PSIR	Takım giriş açısı
PSIRL	Temel sol yön kesme kenarı açısı
PSIRR	Temel sağ yön kesme kenarı açısı
RAL	Sol yön boşluk açısı
RAR	Sağ yön boşluk açısı
RCP	Yuvarlatılmış köşe özelliği
RE	Köşe radyusu
REL	Sol yön köşe radyusu
RER	Sağ yön köşe radyusu
RMPX	Maksimum rampalama açısı
RPMX	Maksimum dönüş hızı
S	Kesici uç kalınlığı
S1	Kesici uç kalınlığı
SC	Kesici uç toplamı kalınlığı
SDL	Adım çapı uzunluğu
SIG	Uç açısı

ISO13399 Özellik Sembolleri	İçerik
SSC	Kesici uç yuvası kodu
SX	Şaft kesiti şekil kodu
TC	Kesici uç tolerans grubu
TCE	Uç kesme kenarı kodu
TCTR	Vida tolerans sınıfı
TD	Vida çapı
THFT	Vida form tipi
THL	Vida çekme boyu
THLGTH	Vida boyu
THSC	Takım tutucu şekil kodu
THUB	Göbek kalınlığı
TP	Vida Adımı
TPI	İnç başına vida
TPIN	İnç başına minimum vida
TPIX	İnç başına maksimum vida
TPN	Minimum vida adımı
TPT	Vida profili tipi
TPX	Maksimum vida adımı
TQ	Tork
TSYC	Takım stili kodu
TTP	Vida Tipi
ULDR	Kullanılabilir uzunluk çapı oranı
UST	Birim sistemi
W1	Kesici uç genişliği
WEP	Silici kenar özelliği
WF	Foksiyonel genişlik
WF2	Bir tornalama takımının alın oturma yüzeyi ile kesme referans noktası arasındaki mesafe
WFS	İkinci derece işlevsel genişlik
WT	Ürün ağırlığı
ZEFF	Yüzey etkili kesme kenarı sayısı
ZEFP	Etkin çevresel kesme kenarı sayısı
ZNC	Kesme kenarı merkez sayısı
ZNF	Yüzeye bağlanmış kesici uç sayısı
ZNP	Çevresel bağlanmış kesici uç sayısı

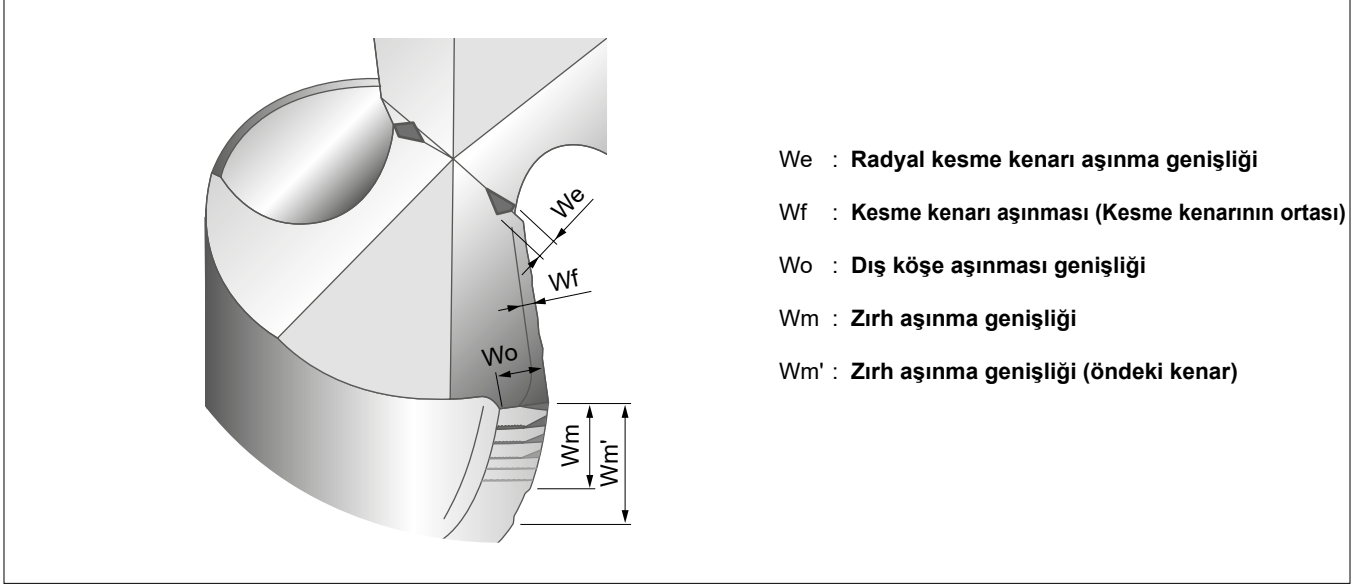
ISO13399'a Uygun Referans Sembolleri Listesi

ISO13399 Referans Semboller	İçerik
CIP	İşleme Koordinat sistemi
CRP	Kesme Referans Noktası
CSW	İş Parçası kenarında koordinat sistemi
MCS	Montaj Koordinat Sistemi
PCS	Temel Koordinat Sistemi

MATKAP AŞINMASI VE KESME KENARI HASARI

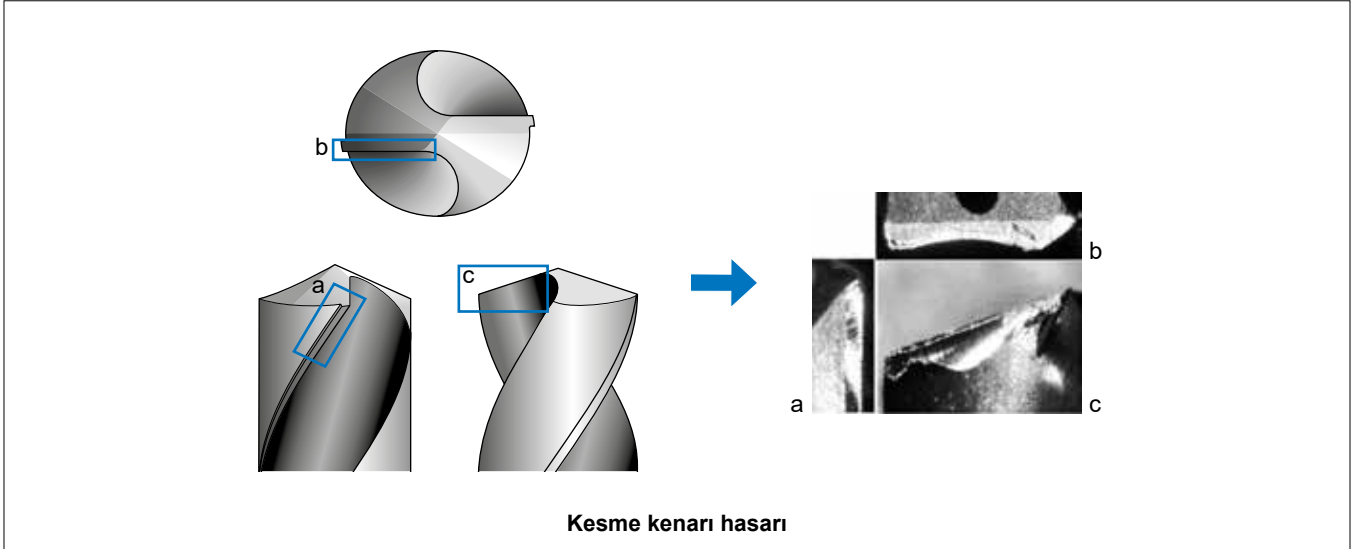
■ MATKAP AŞINMA ŞARTLARI

Aşağıdaki tablo matkabin kesme kenarının aşınmasını açıklayan basit bir çizimi gösterir. Aşınmanın nevi ve miktarı kullanılan iş parçası malzemelerine ve kesme koşullarına göre değişir. Ancak genellikle, çevresel aşınma en büyüğüdür ve matkap delme ucunun takım ömrünü belirler. Tekrar taşlarken, yanak aşınma noktasındaki aşınma miktarının tamamen taşlanması gerekir. Bu nedenle, büyük aşınma varsa, kesme kenarını yenilemek için daha fazla malzemenin taşlanması gerekir.



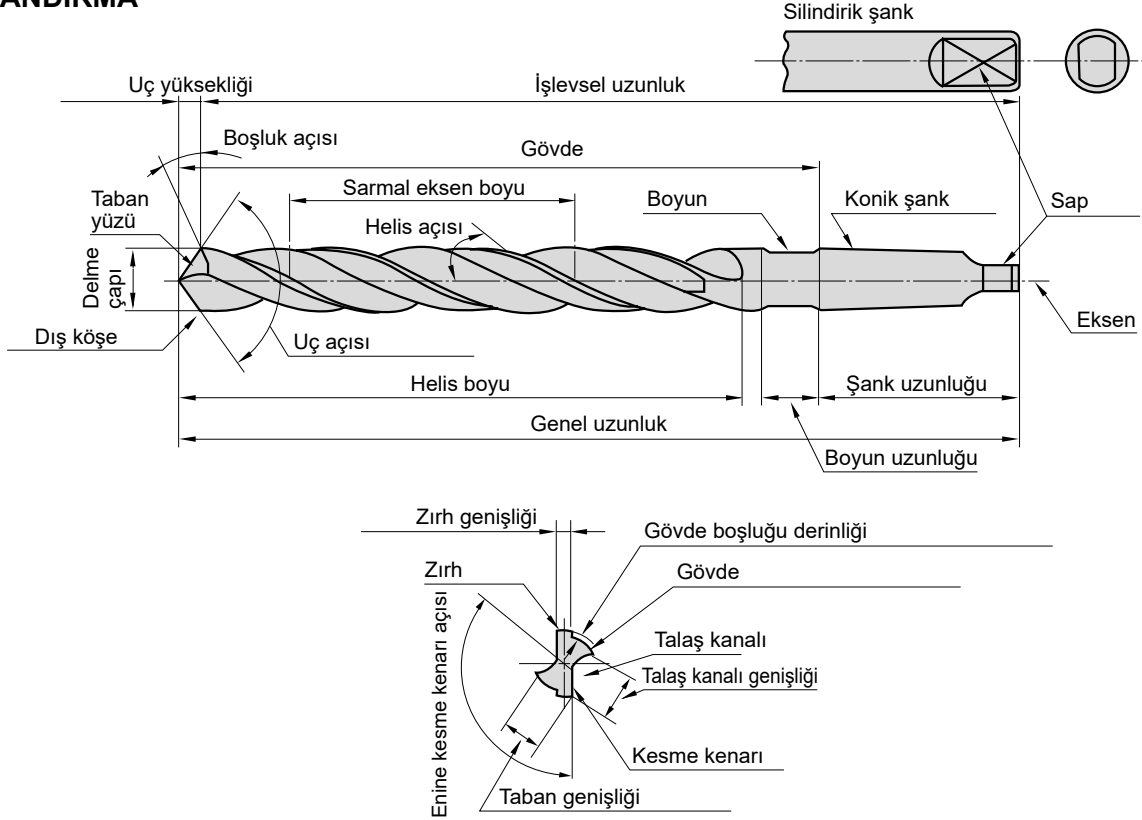
■ KESME KENARI HASARI

Delme esnasında, matkabin kesme kenarında çentiklenme, dökülme, kırılma ve anormal bozulmalar görülebilir. Bu gibi durumlarda, bozulmalara yakından bakmak, nedenini araştırmak ve karşı önlemler almak önemlidir.



DELME UCU ÖZELLİKLERİ VE SPESİFİKASYON

ADLANDIRMA



ŞEKİL TANIMLANMASI VE KESME ÖZELLİKLERİ

Helis Açısı	Matkap ucunun eğim açısına karşılık gelen, delme ucunun aksiyal eksenine göre kanal eğimidir. Delme ucunun eğim açısı, kesme kenarının konumuna göre değişir ve çevre merkezine yaklaştıkça büyük ölçüde azalır. Sertliği Yüksek malzeme Küçük ← Eğim açısı → Büyük Yumuşak malzeme (Alüminyum, vs.)
Helis Kanal Uzunluğu	Delikliğin derinliği, burç uzunluğu ve tekrar bileme hesabı ile belirlenir. Takım ömrü üzerindeki etkisi büyük olduğundan, olabildiğince minimuma indirmek gereklidir.
Uç açısı	Standart uç açısı 118°'dir ve farklı uygulamalar için uygun açı değişiklikleri yapılabilir. İyi işlenebilirlik özellikli yumuşak malzeme Küçük ← Uç açısı → Büyük Sert malzeme ve yüksek verimli işleme için
Öz kalınlığı	Sertliği ve bir matkabın talaş kırma performansını belirleyen önemli bir öğedir. öz kalınlığı uygulamalara göre ayarlanır. Küçük kesme direnci Düşük sertlik İyi talaş eğme performansı İşlenebilir malzeme } İnce ← Öz kalınlığı → Kalın { Büyük kesme direnci Yüksek rijidlik Düşük talaş eğme performansı Sertliği yüksek malzeme, boydan boya delik delme, vs.
Zırh	Delici uç matkabın çapını belirler ve delme sırasında delme ucuna yataklama işlevi gösterir. Zırh genişliği delinmiş bir delikte sürtünme dikkate alınarak belirlenir. Düşük yataklama Küçük ← Zırh genişliği → Büyük İyi yataklama performansı
Çap Arka konikliği	Delik içindeki sürtünmeyi düşürmek için, helis kanalın ucundan şanka kadar bölümü hafifçe konikleştirilir. Koniğin derecesi genellikle helis kanalı uzunluğuna göre arka çap düşüklüğü miktarı ile temsil edilir, bu da yaklaşık 0.04–0.1 mm'dir. Yüksek verimli delme ve kapalı deliklerin delinmesi için daha büyük değerlerde olabilir.

■ KESME KENARI GEOMETRİSİ VE ETKİSİ

Aşağıdaki tabloda gösterildiği gibi, farklı uygulamalar için en uygun kesme kenarı geometrisini seçmek mümkündür. En uygun kesme kenarı geometrisi seçildiğinde, daha yüksek işleme verimliliği ve daha yüksek delik hassasiyeti sağlanabilir.

● Kesme Kenarı Şekilleri

Taşılama adı	Şekil	Özellikler ve etkisi	Uygulama
Konik		<ul style="list-style-type: none"> Kesici ağız koniktir ve boşluk açısı matkabın merkezine doğru artar. 	<ul style="list-style-type: none"> Genel Kullanım
Düz		<ul style="list-style-type: none"> Kesici ağız düzdür. Kolay taşılama. 	<ul style="list-style-type: none"> Temel olarak küçük çaplı matkaplar içindir.
Üç kesici ağız açısı		<ul style="list-style-type: none"> Enine kesme kenarı olmadığından, bunun sonucu yüksek merkezci kuvvet ve küçük miktarda daha büyük delik çapı oluşur. Özel bir taşılama makinası gerektirir. Üç kenarlı yüzey taşılaması. 	<ul style="list-style-type: none"> Yüksek delik hassasiyeti ve pozisyon doğruluğu gerektiren delme işlemleri için.
Spiral uç		<ul style="list-style-type: none"> Delme ucu merkezinin yakınındaki boşluk açısını arttırmak için, konik taşılama düzensiz helis ile birleştirilmiştir. S tipi enine kesme kenarı ile yüksek merkezci kuvvet ve işleme hassasiyeti. 	<ul style="list-style-type: none"> Yüksek doğruluk gerektiren delme işlemi için.
Radyal ağız		<ul style="list-style-type: none"> Kesme kenarı yükünü dağıtmak amacıyla radyal taşlanmıştır. Yüksek işleme doğruluğu ve finiş yüzey pürüzlülüğü. Boydan boya deliklerde, küçük çapaklar oluşabilir. Özel bir taşılama makinesi gerektirir. 	<ul style="list-style-type: none"> Dökme Demir, Alüminyum Alaşım Dökme demir plakalar için. Çelik
Merkez Noktalı delme		<ul style="list-style-type: none"> Bu geometri daha iyi eş merkezlilik ve iş parçasından çıkarken darbeye azalma için iki aşamalı bir uç açısına sahiptir. 	<ul style="list-style-type: none"> İnce sac levhalar için.



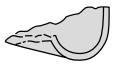

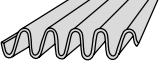
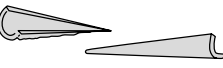
■ ÖZ KALINLIĞI İNCELTME

Bir matkap kesme kenarı eğim açısı merkeze doğru düşer ve enine kesme kenarında negatif bir açıya dönüşür. Delme sırasında, matkap merkezi, iş parçasını sıkıştırır, kesme direncinin %50-70'sini oluşturur. Öz inceltme matkabın kesme direncini azaltmada, kesme kenarında kesilen talaşların çabuk boşaltılmasında ve daha iyi koparmada çok etkilidir.

Şekil	X tipi	XR tipi	S tipi	N tipi
Özellikler	Baskı yükü büyük oranda azalır ve koparma performansı iyileşir. Bu şekil, öz ince olduğunda etkilidir.	Koparma performansı X tipinden hafif derecede daha düşüktür, ancak kesme kenarı serttir ve geçerli çalışma aralığı geniştir.	Kesme kolaydır. Genellikle bu şekil kullanılır.	Öz nispeten kalın olduğunda etkilidir.
Başlıca Uygulamalar	Genel delme ve derin delik delme.	Uzun ömür. Genel delme ve paslanmaz çeliği delme.	Çelik, dökme demir ve demir içermeyen metaller için genel delme.	Derin delik delme.

DELME UCU ÖZELLİKLERİ VE SPESİFİKASYON

DELME TALAŞLARI

Talaş Tipleri	Şekil	Özellikler ve Kolay Eğrilme
Konik Spiral		Kesme kenarında kesilen fan şekilli talaşlar helis kanalı ile eğrilir. Küçük ilerleme oranında duktil malzeme delinirken bu tip talaşlar üretilir. Talaş birkaç devirden sonra kırılırsa, talaş kırma performansı başarılıdır.
Uzun Adımlı		Uzun adımlı talaşlar bükülmeksizin çıkar ve delme ucunun çevresine kolayca sarılır.
Fan		Bu, helis kanalı ve delinmiş deliğin duvarı ile kırılan bir talaştır. İlerleme oranı yüksek olduğunda oluşur.
Segment		Talaşın , yetersiz duktilliği nedeniyle delinmiş deliğin duvarına doğru uzun adımlı şekilde büyümesinden hemen önce kırılmış konik bir spiral talaştır. Mükemmel talaş atımı ve talaş tahliyesi.
Zigzag		Helis kanalının şekli ve malzemenin özellikleri nedeniyle bombelene ve katlanan bir talaştır. Helis kanalında kolayca talaş paketlenmesine neden olur.
İğne		Titreşimle kırılan veya kırılmal malzeme küçük bir yarıçap ile kıvrıldığında kırılan talaşlardır. Kırma performansı karşılaştırmalı olarak başarılıdır, ancak bu talaşlar fazlasıyla dolu hale gelebilir.

DELME FORMÜLLERİ

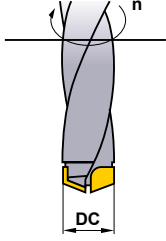
■ KESME HIZI (Vc)

$$V_c = \frac{\pi \cdot DC \cdot n}{1000} \text{ (m/dak)}$$

Vc (m/dak) : Kesme Hızı
 π (3.14) : Pi

DC (mm) : Delme Çapı
n (dak⁻¹) : Fener Mili Devir Hızı

*mm'den mtr'ye çevirmek için 1.000'e bölün.



(Örnek) Devir hızı 1350 dak⁻¹ ve matkap çapı 12 mm olduğunda kesme hızı nedir?

(Cevap) $\pi=3.14$, DC=12, n=1350'yi formülde yerine koyun

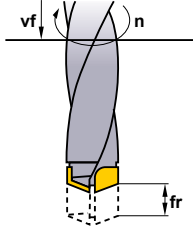
$$V_c = \frac{\pi \cdot DC \cdot n}{1000} = \frac{3.14 \times 12 \times 1350}{1000} = 50.9 \text{ m/dak}$$

Kesme hızı 50.9 m/dak'dır.

■ ANA MİL İLERLEMESİ (Vf)

$$V_f = fr \cdot n \text{ (mm/dak)}$$

Vf (mm/dak) : Ana Milin İlerleme Hızı (Z eksenli)
fr (mm/dev) : Devir başına ilerleme
n (dak⁻¹) : Fener Mili Devir Hızı



(Örnek) Devir başına ilerleme 0.2 mm/dev ve devir 1350 dak⁻¹ olduğunda ilerleme hızı (Vf) nedir?

(Cevap) fr=0.2, n=1350'yi formülde yerine koyun

$$V_f = fr \cdot n = 0.2 \times 1350 = 270 \text{ mm/dak}$$

İlerleme hızı 270 mm/dak'dır.

■ DELME SÜRESİ (Tc)

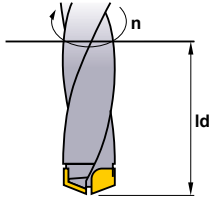
$$T_c = \frac{ld \cdot i}{n \cdot fr}$$

Tc (dak) : Delme Süresi
n (dak⁻¹) : Devir
ld (mm) : Delik Derinliği
fr (mm/dev) : Devir başına ilerleme
i : Delik Sayısı

(Soru) 50 m/dak kesme hızı ve 0.15 mm/dev ilerleme alışımlı çelik 30 mm uzunlukta bir deliği delmek için gereken delme süresi nedir?

(Cevap) Devir $n = \frac{50 \times 1000}{15 \times 3.14} = 1061.57 \text{ dak}^{-1}$

$$T_c = \frac{30 \times 1}{1061.57 \times 0.15} = 0.188$$
$$= 0.188 \times 60 \approx 11.3 \text{ sn}$$



: Fener Mili Devri

METALİK MALZEMELER ÇAPRAZ REFERANS LİSTESİ

■ KARBON ÇELİKLERİ

Almanya		İngiltere		Fransa	İtalya	İspanya	İsveç	Japonya	ABD	Çin
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
1.0038	RSt.37-2	4360 40 C	–	E 24-2 Ne	–	–	1311	STKM 12A STKM 12C	A570.36	15
1.0401	C15	080M15	–	CC12	C15, C16	F.111	1350	–	1015	15
1.0402	C22	050A20	2C	CC20	C20, C21	F.112	1450	–	1020	20
1.0715	9SMn28	230M07	1A	S250	CF9SMn28	F.2111 11SMn28	1912	SUM22	1213	Y15
1.0718	9SMnPb28	–	–	S250Pb	CF9SMnPb28	11SMnPb28	1914	SUM22L	12L13	–
1.0722	10SPb20	–	–	10PbF2	CF10Pb20	10SPb20	–	–	–	–
1.0736	9SMn36	240M07	1B	S300	CF9SMn36	12SMn35	–	–	1215	Y13
1.0737	9SMnPb36	–	–	S300Pb	CF9SMnPb36	12SMnP35	1926	–	12L14	–
1.1141	Ck15	080M15	32C	XC12	C16	C15K	1370	S15C	1015	15
1.1158	Ck25	–	–	–	–	–	–	S25C	1025	25
1.8900	StE380	4360 55 E	–	–	FeE390KG	–	2145	–	A572-60	–
1.0501	C35	060A35	–	CC35	C35	F.113	1550	–	1035	35
1.0503	C45	080M46	–	CC45	C45	F.114	1650	–	1045	45
1.0726	35S20	212M36	8M	35MF4	–	F210G	1957	–	1140	–
1.1157	40Mn4	150M36	15	35M5	–	–	–	–	1039	40Mn
1.1167	36Mn5	–	–	40M5	–	36Mn5	2120	SMn438(H)	1335	35Mn2
1.1170	28Mn6	150M28	14A	20M5	C28Mn	–	–	SCMn1	1330	30Mn
1.1183	Cf35	060A35	–	XC38TS	C36	–	1572	S35C	1035	35Mn
1.1191	Ck45	080M46	–	XC42	C45	C45K	1672	S45C	1045	Ck45
1.1213	C50	060A52	–	XC48TS	C53	–	1674	S50C	1050	50
1.0535	C55	070M55	9	–	C55	–	1655	–	1055	55
1.0601	C60	080A62	43D	CC55	C60	–	–	–	1060	60
1.1203	Ck55	070M55	–	XC55	C50	C55K	–	S55C	1055	55
1.1221	Ck60	080A62	43D	XC60	C60	–	1678	S58C	1060	60Mn
1.1274	Ck101	060A96	–	XC100	–	F.5117	1870	–	1095	–
1.1545	C105W1	BW1A	–	Y105	C36KU	F.5118	1880	SK3	W1	–
1.1545	C105W1	BW2	–	Y120	C120KU	F.515	2900	SUP4	W210	–

■ ALAŞIMLI ÇELİKLER

Almanya		İngiltere		Fransa	İtalya	İspanya	İsveç	Japonya	ABD	Çin
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
1.0144	St.44.2	4360 43 C	–	E28-3	–	–	1412	SM400A, SM400B SM400C	A573-81	–
1.0570	St52-3	4360 50 B	–	E36-3	Fe52BFN Fe52CFN	–	2132	SM490A, SM490B SM490C	–	–
1.0841	St52-3	150M19	–	20MC5	Fe52	F.431	2172	–	5120	–
1.0904	55Si7	250A53	45	55S7	55Si8	56Si7	2085	–	9255	55Si2Mn
1.0961	60SiCr7	–	–	60SC7	60SiCr8	60SiCr8	–	–	9262	–
1.3505	100Cr6	534A99	31	100C6	100Cr6	F.131	2258	SUJ2	ASTM 52100	Gr15, 45G
1.5415	15Mo3	1501-240	–	15D3	16Mo3KW	16Mo3	2912	–	ASTM A204Gr.A	–
1.5423	16Mo5	1503-245-420	–	–	16Mo5	16Mo5	–	–	4520	–
1.5622	14Ni6	–	–	16N6	14Ni6	15Ni6	–	–	ASTM A350LF5	–
1.5662	X8Ni9	1501-509-510	–	–	X10Ni9	XBNI09	–	–	ASTM A353	–
1.5710	36NiCr6	640A35	111A	35NC6	–	–	–	SNC236	3135	–
1.5732	14NiCr10	–	–	14NC11	16NiCr11	15NiCr11	–	SNC415(H)	3415	–
1.5752	14NiCr14	655M13	36A	12NC15	–	–	–	SNC815(H)	3415, 3310	–
1.6523	21NiCrMo2	805M20	362	20NCD2	20NiCrMo2	20NiCrMo2	2506	SNCM220(H)	8620	–
1.6546	40NiCrMo22	311-Type 7	–	–	40NiCrMo2(KB)	40NiCrMo2	–	SNCM240	8740	–
1.6587	17CrNiMo6	820A16	–	18NCD6	–	14NiCrMo13	–	–	–	–
1.7015	15Cr3	523M15	–	12C3	–	–	–	SCr415(H)	5015	15Cr

Almanya		İngiltere		Fransa	İtalya	İspanya	İsveç	Japonya	ABD	Çin
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
1.7045	42Cr4	–	–	–	–	42Cr4	2245	SCr440	5140	40Cr
1.7176	55Cr3	527A60	48	55C3	–	–	–	SUP9(A)	5155	20CrMn
1.7262	15CrMo5	–	–	12CD4	–	12CrMo4	2216	SCM415(H)	–	–
1.7335	13CrMo4 4	1501-620Gr27	–	15CD3.5 15CD4.5	14CrMo45	14CrMo45	–	–	ASTM A182 F11, F12	–
1.7380	10CrMo910	1501-622 Gr31, 45	–	12CD9 12CD10	12CrMo9 12CrMo10	TU.H	2218	–	ASTM A182 F.22	–
1.7715	14MoV63	1503-660-440	–	–	–	13MoCrV6	–	–	–	–
1.8523	39CrMoV13 9	897M39	40C	–	36CrMoV12	–	–	–	–	–
1.6511	36CrNiMo4	816M40	110	40NCD3	38NiCrMo4(KB)	35NiCrMo4	–	–	9840	–
1.6582	34CrNiMo6	817M40	24	35NCD6	35NiCrMo6(KB)	–	2541	–	4340	40CrNiMoA
1.7033	34Cr4	530A32	18B	32C4	34Cr4(KB)	35Cr4	–	SCr430(H)	5132	35Cr
1.7035	41Cr4	530M40	18	42C4	41Cr4	42Cr4	–	SCr440(H)	5140	40Cr
1.7131	16MnCr5	(527M20)	–	16MC5	16MnCr5	16MnCr5	2511	–	5115	18CrMn
1.7218	25CrMo4	1717CDS110 708M20	–	25CD4	25CrMo4(KB)	55Cr3	2225	SCM420 SCM430	4130	30CrMn
1.7220	34CrMo4	708A37	19B	35CD4	35CrMo4	34CrMo4	2234	SCM432 SCCRM3	4137 4135	35CrMo
1.7223	41CrMo4	708M40	19A	42CD4TS	41CrMo4	42CrMo4	2244	SCM 440	4140 4142	40CrMoA
1.7225	42CrMo4	708M40	19A	42CD4	42CrMo4	42CrMo4	2244	SCM440(H)	4140	42CrMo 42CrMnMo
1.7361	32CrMo12	722M24	40B	30CD12	32CrMo12	F.124.A	2240	–	–	–
1.8159	50CrV4	735A50	47	50CV4	50CrV4	51CrV4	2230	SUP10	6150	50CrVA
1.8509	41CrAlMo7	905M39	41B	40CAD6 40CAD2	41CrAlMo7	41CrAlMo7	2940	–	–	–
1.2067	100Cr6	BL3	–	Y100C6	–	100Cr6	–	–	L3	CrV, 9SiCr
1.2419	105WCr6	–	–	105WC13	100WCr6 107WCr5KU	105WCr5	2140	SKS31 SKS2, SKS3	–	CrWMo
1.2713	55NiCrMoV6	BH224/5	–	55NCDV7	–	F.520.S	–	SKT4	L6	5CrNiMo
1.5662	X8Ni9	1501-509	–	–	X10Ni9	XBNI09	–	–	ASTM A353	–
1.5680	12Ni19	–	–	Z18N5	–	–	–	–	2515	–
1.6657	14NiCrMo134	832M13	36C	–	15NiCrMo13	14NiCrMo131	–	–	–	–
1.2080	X210Cr12	BD3	–	Z200C12	X210Cr13KU X250Cr12KU	X210Cr12	–	SKD1	D3 ASTM D3	Cr12
1.2601	X153CrMoV12	BD2	–	–	X160CrMoV12	–	–	SKD11	D2	Cr12MoV
1.2363	X100CrMoV5	BA2	–	Z100CDV5	X100CrMoV5	F.5227	2260	SKD12	A2	Cr5Mo1V
1.2344	X40CrMoV51 X40CrMoV51	BH13	–	Z40CDV5	X35CrMoV05KU X40CrMoV51KU	X40CrMoV5	2242	SKD61	H13 ASTM H13	40CrMoV5
1.2436	X210CrW12	–	–	–	X215CrW121KU	X210CrW12	2312	SKD2	–	–
1.2542	45WCrV7	BS1	–	–	45WCrV8KU	45WCrSi8	2710	–	S1	–
1.2581	X30WCrV93	BH21	–	Z30WCV9	X28W09KU	X30WCrV9	–	SKD5	H21	30WCrV9
1.2601	X165CrMoV12	–	–	–	X165CrMoV12KU	X160CrMoV12	2310	–	–	–
1.2833	100V1	BW2	–	Y1105V	–	–	–	SKS43	W210	V
1.3255	S 18-1-2-5	BT4	–	Z80WKCV	X78WCo1805KU	HS18-1-1-5	–	SKH3	T4	W18Cr4VCo5
1.3355	S 18-0-1	BT1	–	Z80WCV	X75W18KU	HS18-0-1	–	SKH2	T1	–
1.3401	G-X120Mn12	Z120M12	–	Z120M12	XG120Mn12	X120MN12	–	SCMnH/1	–	–
1.4718	X45CrSi93	401S45	52	Z45CS9	X45CrSi8	F.322	–	SUH1	HW3	X45CrSi93
1.3343	S6-5-2	4959BA2	–	Z40CSD10	15NiCrMo13	–	2715	SUH3	D3	–
1.3343	S6/5/2	BM2	–	Z85WDCV	HS6-5-2-2	F.5603	2722	SKH9, SKH51	M2	–
1.3348	S 2-9-2	–	–	–	HS2-9-2	HS2-9-2	2782	–	M7	–
1.3243	S6/5/2/5	BM35	–	6-5-2-5	HS6-5-2-5	F.5613	2723	SKH55	M35	–

METALİK MALZEMELER ÇAPRAZ REFERANS LİSTESİ

■ PASLANMAZ ÇELİKLER (FERRİTİK, MARTENSİTİK)

Almanya		İngiltere		Fransa	İtalya	İspanya	İsveç	Japonya	ABD	Çin
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
1.4000	X7Cr13	403S17	–	Z6C13	X6Cr13	F.3110	2301	SUS403	403	OCr13 1Cr12
1.4001	X7Cr14	–	–	–	–	F.8401	–	–	–	–
1.4005	X12CrS13	416S21	–	Z11CF13	X12CrS13	F.3411	2380	SUS416	416	–
1.4006	X10Cr13	410S21	56A	Z10C14	X12Cr13	F.3401	2302	SUS410	410	1Cr13
1.4016	X8Cr17	430S15	60	Z8C17	X8Cr17	F.3113	2320	SUS430	430	1Cr17
1.4027	G-X20Cr14	420C29	56B	Z20C13M	–	–	–	SCS2	–	–
1.4034	X46Cr13	420S45	56D	Z40CM Z38C13M	X40Cr14	F.3405	2304	SUS420J2	–	4Cr13
1.4003	–	405S17	–	Z8CA12	X6CrAl13	–	–	–	405	–
1.4021	–	420S37	–	Z8CA12	X20Cr13	–	2303	–	420	–
1.4057	X22CrNi17	431S29	57	Z15CNi6.02	X16CrNi16	F.3427	2321	SUS431	431	1Cr17Ni2
1.4104	X12CrMoS17	–	–	Z10CF17	X10CrS17	F.3117	2383	SUS430F	430F	Y1Cr17
1.4113	X6CrMo17	434S17	–	Z8CD17.01	X8CrMo17	–	2325	SUS434	434	1Cr17Mo
1.4313	X5CrNi134	425C11	–	Z4CND13.4M	(G)X6CrNi304	–	2385	SCS5	CA6-NM	–
1.4724	X10CrA113	403S17	–	Z10C13	X10CrA112	F.311	–	SUS405	405	OCr13Al
1.4742	X10CrA118	430S15	60	Z10CAS18	X8Cr17	F.3113	–	SUS430	430	Cr17
1.4747	X80CrNiSi20	443S65	59	Z80CSN20.02	X80CrSiNi20	F.320B	–	SUH4	HNV6	–
1.4762	X10CrA124	–	–	Z10CAS24	X16Cr26	–	2322	SUH446	446	2Cr25N
1.4871	X53CrMnNiN219	349S54	–	Z52CMN21.09	X53CrMnNiN219	–	–	SUH35	EV8	5Cr2Mn9Ni4N
1.4521	X1CrMoTi182	–	–	–	–	–	2326	–	S44400	–
1.4922	X20CrMoV12-1	–	–	–	X20CrMoNi1201	–	2317	–	–	–
1.4542	–	–	–	Z7CNU17-04	–	–	–	–	630	–

■ PASLANMAZ ÇELİKLER (OSTENİTLİ)

Almanya		İngiltere		Fransa	İtalya	İspanya	İsveç	Japonya	ABD	Çin
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
1.4306	X2CrNi1911	304S11	–	Z2CN18.10	X2CrNi18.11	–	2352	SUS304L	304L	OCr19Ni10
1.4350	X5CrNi189	304S11	58E	Z6CN18.09	X5CrNi1810	F.3551 F.3541 F.3504	2332	SUS304	304	OCr18Ni9
1.4305	X12CrNiS188	303S21	58M	Z10CNF18.09	X10CrNiS18.09	F.3508	2346	SUS303	303	1Cr18Ni9MoZr
–	–	304C12	–	Z3CN19.10	–	–	2333	SUS304L	–	–
1.4306	X2CrNi189	304S12	–	Z2CrNi1810	X2CrNi18.11	F.3503	2352	SCS19	304L	–
1.4310	X12CrNi177	–	–	Z12CN17.07	X12CrNi1707	F.3517	2331	SUS301	301	Cr17Ni7
1.4311	X2CrNiN1810	304S62	–	Z2CN18.10	–	–	2371	SUS304LN	304LN	–
1.4401	X5CrNiMo1810	316S16	58J	Z6CND17.11	X5CrNiMo1712	F.3543	2347	SUS316	316	OCr17Ni11Mo2
1.4308	G-X6CrNi189	304C15	–	Z6CN18.10M	–	–	–	SCS13	–	–
1.4408	G-X6CrNiMo1810	316C16	–	–	–	F.8414	–	SCS14	–	–
1.4581	G-X5CrNiMoNb1810	318C17	–	Z4CNDNb1812M	XG8CrNiMo1811	–	–	SCS22	–	–
1.4429	X2CrNiMoN1813	–	–	Z2CND17.13	–	–	2375	SUS316LN	316LN	OCr17Ni13Mo
1.4404	–	316S13	–	Z2CND17.12	X2CrNiMo1712	–	2348	–	316L	–
1.4435	X2CrNiMo1812	316S13	–	Z2CND17.12	X2CrNiMo1712	–	2353	SCS16 SUS316L	316L	OCr27Ni12Mo3
1.4436	–	316S13	–	Z6CND18-12-03	X8CrNiMo1713	–	2343, 2347	–	316	–
1.4438	X2CrNiMo1816	317S12	–	Z2CND19.15	X2CrNiMo1816	–	2367	SUS317L	317L	OCr19Ni13Mo
1.4539	X1NiCrMo	–	–	Z6CNT18.10	–	–	2562	–	UNS V 0890A	–
1.4541	X10CrNiTi189	321S12	58B	Z6CNT18.10	X6CrNiTi1811	F.3553 F.3523	2337	SUS321	321	1Cr18Ni9Ti
1.4550	X10CrNiNb189	347S17	58F	Z6CNNb18.10	X6CrNiNb1811	F.3552 F.3524	2338	SUS347	347	1Cr18Ni11Nb
1.4571	X10CrNiMoTi1810	320S17	58J	Z6CNDT17.12	X6CrNiMoTi1712	F.3535	2350	–	316Ti	Cr18Ni12Mo2T
1.4583	X10CrNiMoNb1812	–	–	Z6CNDNb1713B	X6CrNiMoNb1713	–	–	–	318	Cr17Ni12Mo3Mb

Almanya		İngiltere		Fransa	İtalya	İspanya	İsveç	Japonya	ABD	Çin
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
1.4828	X15CrNiSi2012	309S24	–	Z15CNS20.12	X6CrNi2520	–	–	SUH309	309	1Cr23Ni13
1.4845	X12CrNi2521	310S24	–	Z12CN2520	X6CrNi2520	F.331	2361	SUH310	310S	OCr25Ni20
1.4406	X10CrNi18.08	–	58C	Z1NCDU25.20	–	F.8414	2370	SCS17	308	–
1.4418	X4CrNiMo165	–	–	Z6CND16-04-01	–	–	–	–	–	–
1.4568	–	316S111	–	Z8CNA17-07	X2CrNiMo1712	–	–	–	17-7PH	–
1.4504	–	–	–	Z1NCDU31-27-03	–	–	2584	–	NO8028	–
1.4563	–	–	–	Z1CNDU20-18-06AZ	–	–	2378	–	S31254	–
1.4878	X12CrNiTi189	321S32	58B, 58C	Z6CNT18.12B	X6CrNiTi18.11	F.3523	–	SUS321	321	1Cr18Ni9Ti

■ ISIYA DİRENÇLİ ÇELİKLER

Almanya		İngiltere		Fransa	İtalya	İspanya	İsveç	Japonya	ABD	Çin
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
1.4864	X12NiCrSi3616	–	–	Z12NCS35.16	–	–	–	SUH330	330	–
1.4865	G-X40NiCrSi3818	330C11	–	–	XG50NiCr3919	–	–	SCH15	HT, HT 50	–

■ GRİ DÖKME DEMİR

Almanya		İngiltere		Fransa	İtalya	İspanya	İsveç	Japonya	ABD	Çin
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
–	–	–	–	–	–	–	0100	–	–	–
–	GG 10	–	–	Ft 10 D	–	–	0110	FC100	No 20 B	–
0.6015	GG 15	Grade 150	–	Ft 15 D	G15	FG15	0115	FC150	No 25 B	HT150
0.6020	GG 20	Grade 220	–	Ft 20 D	G20	–	0120	FC200	No 30 B	HT200
0.6025	GG 25	Grade 260	–	Ft 25 D	G25	FG25	0125	FC250	No 35 B	HT250
–	–	–	–	–	–	–	–	–	No 40 B	–
0.6030	GG 30	Grade 300	–	Ft 30 D	G30	FG30	0130	FC300	No 45 B	HT300
0.6035	GG 35	Grade 350	–	Ft 35 D	G35	FG35	0135	FC350	No 50 B	HT350
0.6040	GG 40	Grade 400	–	Ft 40 D	–	–	0140	–	No 55 B	HT400
0.6660	GGL NiCr202	L-NiCuCr202	–	L-NC 202	–	–	0523	–	A436 Type 2	–

■ DUKTİL DÖKME DEMİR

Almanya		İngiltere		Fransa	İtalya	İspanya	İsveç	Japonya	ABD	Çin
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
0.7040	GGG 40	SNG 420/12	–	FCS 400-12	GS 370-17	FGE 38-17	07 17-02	FCD400	60-40-18	QT400-18
–	GGG 40.3	SNG 370/17	–	FGS 370-17	–	–	07 17-12	–	–	–
0.7033	GGG 35.3	–	–	–	–	–	07 17-15	–	–	–
0.7050	GGG 50	SNG 500/7	–	FGS 500-7	GS 500	FGE 50-7	07 27-02	FCD500	80-55-06	QT500-7
0.7660	GGG NiCr202	Grade S6	–	S-NC202	–	–	07 76	–	A43D2	–
–	GGG NiMn137	L-NiMn 137	–	L-MN 137	–	–	07 72	–	–	–
–	GGG 60	SNG 600/3	–	FGS 600-3	–	–	07 32-03	FCD600	–	QT600-3
0.7070	GGG 70	SNG 700/2	–	FGS 700-2	GS 700-2	FGE 70-2	07 37-01	FCD700	100-70-03	QT700-18

■ DÖVÜLEBİLİR DÖKME DEMİR

Almanya		İngiltere		Fransa	İtalya	İspanya	İsveç	Japonya	ABD	Çin
W-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	JIS	AISI/SAE	GB
–	–	8 290/6	–	MN 32-8	–	–	08 14	FCMB310	–	–
–	GTS-35	B 340/12	–	MN 35-10	–	–	08 15	FCMW330	32510	–
0.8145	GTS-45	P 440/7	–	Mn 450	GMN45	–	08 52	FCMW370	40010	–
0.8155	GTS-55	P 510/4	–	MP 50-5	GMN55	–	08 54	FCMP490	50005	–
–	GTS-65	P 570/3	–	MP 60-3	–	–	08 58	FCMP540	70003	–
0.8165	GTS-65-02	P 570/3	–	Mn 650-3	GMN 65	–	08 56	FCMP590	A220-70003	–
–	GTS-70-02	P 690/2	–	Mn 700-2	GMN 70	–	08 62	FCMP690	A220-80002	–

YÜZEY PÜRÜZLÜLÜĞÜ

YÜZEY PÜRÜZLÜLÜĞÜ

(JIS B 0601-1994'den)

Tip	Kod	Belirleme	Belirleme Örneği (Şekli)
Aritmetik Ortalama Pürüzlülük	Ra	<p>Ra aşağıdaki formül ile elde edilen değeri belirtir ve bu örneklenen parçanın uzunlaşmasında büyük boyundan Y eksenine ve ortalama hat doğrultusunda X eksenine alınarak, ortalama çizginin yönünde pürüzlülük eğrisinden yalnızca referans uzunluk örneklediğinde mikrometre (μm) olarak ifade edilir ve pürüzlülük eğrisi $y=f(x)$ ile ifade edilir:</p> $Ra = \frac{1}{l} \int_0^l f(x) dx$	
Maksimum Yükseklik	Rz	<p>Rz referans uzunlukta yalnızca ortalama çizginin yönündeki pürüzlülük eğrisinden örneklenir, bu örneklenen bölümdeki üst profil tepe çizgisi ve alt profil çukur çizgisi arasındaki mesafe pürüzlülük eğrisini uzunlaşmasına büyük yönde ölçülür ve edinilen değer mikrometre (μm) olarak ifade edilir. Not) Rz bulunurken, istisnai derecede yüksek tepeye veya düşük çukura sahip olmayan, kusur olarak kabul edilebilen bir bölüm örneklem uzunluğu olarak seçilir.</p> $Rz = Rp + Rv$	
On Noktalı Ortalama Pürüzlülük	RzJIS	<p>RzJIS yalnızca referans uzunluğu ortalama çizgisinin yönünde pürüzlülük eğrisinden örneklediğinde olacaktır, bu örneklenen bölümün ortalama çizgisinin dikey büyük yönünde ölçülen en yüksek beş profil tepenin yüksekliklerinin (Yp) ve en derin beş profil çukur derinliklerinin (Yv) mutlak değerlerinin ortalama değerinin toplamıdır ve bu toplam mikrometre (μm) olarak ifade edilir.</p> $Rz_{JIS} = \frac{(Yp1 + Yp2 + Yp3 + Yp4 + Yp5) + (Yv1 + Yv2 + Yv3 + Yv4 + Yv5)}{5}$	<p>$Yp1, Yp2, Yp3, Yp4, Yp5$: referans uzunluğuna karşılık gelen örneklenen bölümün en yüksek beş profil tepe yükseklikleri. $Yv1, Yv2, Yv3, Yv4, Yv5$: referans uzunluğuna karşılık gelen örneklenen bölümün en derin beş profil çukur yükseklikleri.</p>

ARİTMETİK ORTALAMA (Ra) VE GELENEKSEL TANIMI (REFANS VERİ) ARASINDAKİ İLİŞKİ

Aritmetik Ortalama Pürüzlülük Ra		Maks. Yükseklik Rz	On Noktalı Ortalama Pürüzlülük RzJIS	Örneklem Uzunluğu Rz • RzJIS l (mm)	Geleneksel Finiş İşareti
Standart Seri	Limit Değeri λc (mm)	Standart Seri			
0.012 a	0.08	0.05s	0.05z	0.08	▽▽▽▽
0.025 a		0.1 s	0.1 z		
0.05 a	0.25	0.2 s	0.2 z	0.25	
0.1 a		0.4 s	0.4 z		
0.2 a		0.8 s	0.8 z		
0.4 a	0.8	1.6 s	1.6 z	0.8	▽▽▽
0.8 a		3.2 s	3.2 z		
1.6 a		6.3 s	6.3 z		
3.2 a		12.5 s	12.5 z		
6.3 a	2.5	25 s	25 z	2.5	▽▽
12.5 a		50 s	50 z		
25 a	8	100 s	100 z	8	▽
50 a		200 s	200 z		
100 a		400 s	400 z		

*Üçü arasındaki bağıntı kolaylık için gösterilmiştir ve tam değildir.

*Ra: Rz ve RzJIS'nin değerlendirme uzunluğu sırasıyla limit değeri ve örneklem uzunluğunun 5 ile çarpılmasıdır.

SERTLİK KARŞILAŞTIRMA TABLOSU

ÇELİĞİN SERTLİK DÖNÜŞÜM SAYILARI

Brinell Sertliği (HB), 10 mm Bilye, Yük: 3000kgf		Vickers Sertlik (HV)	Rockwell Sertliği				Shore Sertliği (HS)	Çekme I Mukavemeti (Yaklaşık) MPa	Brinell Sertliği (HB), 10 mm Bilye, Yük: 3000kgf		Vickers Sertlik (HV)	Rockwell Sertliği				Shore Sertliği (HS)	Çekme I Mukavemeti (Yaklaşık) MPa
Standart Bilye	Tungsten Karbür Bilye		A Ölçeği, Yük: 60kgf, Elmas Nokta (HRA)	B Ölçeği, Yük: 100kgf, 1/16" Bilye (HRB)	C Ölçeği, Yük: 150kgf, Elmas Nokta (HRC)	D Ölçeği, Yük: 100kgf, Elmas Nokta (HRD)			Standart Bilye	Tungsten Karbür Bilye		A Ölçeği, Yük: 60kgf, Elmas Nokta (HRA)	B Ölçeği, Yük: 100kgf, 1/16" Bilye (HRB)	C Ölçeği, Yük: 150kgf, Elmas Nokta (HRC)	D Ölçeği, Yük: 100kgf, Elmas Nokta (HRD)		
-	-	940	85.6	-	68.0	76.9	97	-	429	429	455	73.4	-	45.7	59.7	61	1510
-	-	920	85.3	-	67.5	76.5	96	-	415	415	440	72.8	-	44.5	58.8	59	1460
-	-	900	85.0	-	67.0	76.1	95	-	401	401	425	72.0	-	43.1	57.8	58	1390
-	(767)	880	84.7	-	66.4	75.7	93	-	388	388	410	71.4	-	41.8	56.8	56	1330
-	(757)	860	84.4	-	65.9	75.3	92	-	375	375	396	70.6	-	40.4	55.7	54	1270
-	(745)	840	84.1	-	65.3	74.8	91	-	363	363	383	70.0	-	39.1	54.6	52	1220
-	(733)	820	83.8	-	64.7	74.3	90	-	352	352	372	69.3	(110.0)	37.9	53.8	51	1180
-	(722)	800	83.4	-	64.0	73.8	88	-	341	341	360	68.7	(109.0)	36.6	52.8	50	1130
-	(712)	-	-	-	-	-	-	-	331	331	350	68.1	(108.5)	35.5	51.9	48	1095
-	(710)	780	83.0	-	63.3	73.3	87	-	321	321	339	67.5	(108.0)	34.3	51.0	47	1060
-	(698)	760	82.6	-	62.5	72.6	86	-	-	-	-	-	-	-	-	-	-
-	(684)	740	82.2	-	61.8	72.1	-	-	311	311	328	66.9	(107.5)	33.1	50.0	46	1025
-	(682)	737	82.2	-	61.7	72.0	84	-	302	302	319	66.3	(107.0)	32.1	49.3	45	1005
-	(670)	720	81.8	-	61.0	71.5	83	-	293	293	309	65.7	(106.0)	30.9	48.3	43	970
-	(656)	700	81.3	-	60.1	70.8	-	-	285	285	301	65.3	(105.5)	29.9	47.6	-	950
-	(653)	697	81.2	-	60.0	70.7	81	-	277	277	292	64.6	(104.5)	28.8	46.7	41	925
-	(647)	690	81.1	-	59.7	70.5	-	-	269	269	284	64.1	(104.0)	27.6	45.9	40	895
-	(638)	680	80.8	-	59.2	70.1	80	-	262	262	276	63.6	(103.0)	26.6	45.0	39	875
-	630	670	80.6	-	58.8	69.8	-	-	255	255	269	63.0	(102.0)	25.4	44.2	38	850
-	627	667	80.5	-	58.7	69.7	79	-	248	248	261	62.5	(101.0)	24.2	43.2	37	825
-	-	677	80.7	-	59.1	70.0	-	-	241	241	253	61.8	100	22.8	42.0	36	800
-	601	640	79.8	-	57.3	68.7	77	-	235	235	247	61.4	99.0	21.7	41.4	35	785
-	-	640	79.8	-	57.3	68.7	-	-	229	229	241	60.8	98.2	20.5	40.5	34	765
-	578	615	79.1	-	56.0	67.7	75	-	223	223	234	-	97.3	(18.8)	-	-	-
-	-	607	78.8	-	55.6	67.4	-	-	217	217	228	-	96.4	(17.5)	-	33	725
-	555	591	78.4	-	54.7	66.7	73	2055	212	212	222	-	95.5	(16.0)	-	-	705
-	-	579	78.0	-	54.0	66.1	-	2015	207	207	218	-	94.6	(15.2)	-	32	690
-	534	569	77.8	-	53.5	65.8	71	1985	201	201	212	-	93.8	(13.8)	-	31	675
-	-	533	77.1	-	52.5	65.0	-	1915	197	197	207	-	92.8	(12.7)	-	30	655
-	514	547	76.9	-	52.1	64.7	70	1890	192	192	202	-	91.9	(11.5)	-	29	640
(495)	-	539	76.7	-	51.6	64.3	-	1855	187	187	196	-	90.7	(10.0)	-	-	620
-	495	528	76.3	-	51.0	63.8	68	1820	183	183	192	-	90.0	(9.0)	-	28	615
(477)	-	516	75.9	-	50.3	63.2	-	1780	179	179	188	-	89.0	(8.0)	-	27	600
-	477	508	75.6	-	49.6	62.7	-	1740	174	174	182	-	87.8	(6.4)	-	-	585
(461)	-	495	75.1	-	48.8	61.9	-	1680	170	170	178	-	86.8	(5.4)	-	26	570
-	461	491	74.9	-	48.5	61.7	-	1670	167	167	175	-	86.0	(4.4)	-	-	560
-	-	474	74.3	-	47.2	61.0	-	1595	163	163	171	-	85.0	(3.3)	-	25	545
-	-	472	74.2	-	47.1	60.8	-	1585	156	156	163	-	82.9	(0.9)	-	-	525
-	444	472	74.2	-	47.1	60.8	63	1585	149	149	156	-	80.8	-	-	23	505
-	-	474	74.3	-	47.2	61.0	-	1595	143	143	150	-	78.7	-	-	22	490
-	-	472	74.2	-	47.1	60.8	-	1585	137	137	143	-	76.4	-	-	21	460
-	444	472	74.2	-	47.1	60.8	63	1585	131	131	137	-	74.0	-	-	-	450
-	-	474	74.3	-	47.2	61.0	-	1595	126	126	132	-	72.0	-	-	20	435
-	-	472	74.2	-	47.1	60.8	-	1585	121	121	127	-	69.8	-	-	19	415
-	444	472	74.2	-	47.1	60.8	63	1585	116	116	122	-	67.6	-	-	18	400
-	-	474	74.3	-	47.2	61.0	-	1595	111	111	117	-	65.7	-	-	15	385

Not 1) Yukarıdaki liste yaklaşık metrik değerlerde çekme mukavemeti ve önerilen aralık boyunca Brinell sertliği ile ilgili olarak AMS Metal El Kitabı'nınla aynıdır.

Not 2) 1MPa=1N/mm²

Not 3) () içinde yer alan rakamlar nadiren kullanılır ve referans için eklenmiştir. Bu liste JIS Çelik El Kitabı 'den alınmıştır.

P

TEKNİK BİLGİ

GEÇME TOLERANS TABLOSU (DELİK)

Standart Ölçülerin Sınıflandırılması (mm)		Deliklerin Geometrik Tolerans Bölgesinin Sınıfı															
>	≤	B10	C9	C10	D8	D9	D10	E7	E8	E9	F6	F7	F8	G6	G7	H6	H7
-	3	+180	+85	+100	+34	+45	+60	+24	+28	+39	+12	+16	+20	+8	+12	+6	+10
		+140	+60	+60	+20	+20	+20	+14	+14	+14	+6	+6	+6	+2	+2	0	0
3	6	+188	+100	+118	+48	+60	+78	+32	+38	+50	+18	+22	+28	+12	+16	+8	+12
		+140	+70	+70	+30	+30	+30	+20	+20	+20	+10	+10	+10	+4	+4	0	0
6	10	+208	+116	+138	+62	+76	+98	+40	+47	+61	+22	+28	+35	+14	+20	+9	+15
		+150	+80	+80	+40	+40	+40	+25	+25	+25	+13	+13	+13	+5	+5	0	0
10	14	+220	+138	+165	+77	+93	+120	+50	+59	+75	+27	+34	+43	+17	+24	+11	+18
		+150	+95	+95	+50	+50	+50	+32	+32	+32	+16	+16	+16	+6	+6	0	0
14	18	+244	+162	+194	+98	+117	+149	+61	+73	+92	+33	+41	+53	+20	+28	+13	+21
		+160	+110	+110	+65	+65	+65	+40	+40	+40	+20	+20	+20	+7	+7	0	0
18	24	+270	+182	+220	+119	+142	+180	+75	+89	+112	+41	+50	+64	+25	+34	+16	+25
		+170	+120	+120	+80	+80	+80	+50	+50	+50	+25	+25	+25	+9	+9	0	0
24	30	+280	+192	+230	+146	+174	+220	+90	+106	+134	+49	+60	+76	+29	+40	+19	+30
		+180	+130	+130	+100	+100	+100	+60	+60	+60	+30	+30	+30	+10	+10	0	0
30	40	+310	+214	+260	+174	+207	+260	+107	+126	+159	+58	+71	+90	+34	+47	+22	+35
		+190	+140	+140	+120	+120	+120	+72	+72	+72	+36	+36	+36	+12	+12	0	0
40	50	+320	+224	+270	+208	+245	+305	+125	+148	+185	+68	+83	+106	+39	+54	+25	+40
		+200	+150	+150	+145	+145	+145	+85	+85	+85	+43	+43	+43	+14	+14	0	0
50	65	+360	+257	+310	+242	+285	+355	+146	+172	+215	+79	+96	+122	+44	+61	+29	+46
		+220	+170	+170	+170	+170	+170	+100	+100	+100	+50	+50	+50	+15	+15	0	0
65	80	+380	+267	+320	+271	+320	+400	+162	+191	+240	+88	+108	+137	+49	+69	+32	+52
		+240	+180	+180	+190	+190	+190	+110	+110	+110	+56	+56	+56	+17	+17	0	0
80	100	+420	+300	+360	+299	+350	+440	+182	+214	+265	+98	+119	+151	+54	+75	+36	+57
		+260	+200	+200	+210	+210	+210	+125	+125	+125	+62	+62	+62	+18	+18	0	0
100	120	+440	+310	+370	+210	+210	+210	+125	+125	+125	+62	+62	+62	+18	+18	0	0
		+280	+210	+210	+210	+210	+210	+125	+125	+125	+62	+62	+62	+18	+18	0	0
120	140	+470	+330	+390	+327	+385	+480	+198	+232	+290	+108	+131	+165	+60	+83	+40	+63
		+310	+230	+230	+230	+230	+230	+135	+135	+135	+68	+68	+68	+20	+20	0	0
140	160	+525	+355	+425	+230	+230	+230	+135	+135	+135	+68	+68	+68	+20	+20	0	0
		+340	+240	+240	+230	+230	+230	+135	+135	+135	+68	+68	+68	+20	+20	0	0
160	180	+565	+375	+445	+299	+350	+440	+182	+214	+265	+98	+119	+151	+54	+75	+36	+57
		+380	+260	+260	+210	+210	+210	+125	+125	+125	+62	+62	+62	+18	+18	0	0
180	200	+605	+395	+465	+210	+210	+210	+125	+125	+125	+62	+62	+62	+18	+18	0	0
		+420	+280	+280	+210	+210	+210	+125	+125	+125	+62	+62	+62	+18	+18	0	0
200	225	+690	+430	+510	+327	+385	+480	+198	+232	+290	+108	+131	+165	+60	+83	+40	+63
		+480	+300	+300	+327	+385	+480	+198	+232	+290	+108	+131	+165	+60	+83	+40	+63
225	250	+750	+460	+540	+230	+230	+230	+135	+135	+135	+68	+68	+68	+20	+20	0	0
		+540	+330	+330	+230	+230	+230	+135	+135	+135	+68	+68	+68	+20	+20	0	0
250	280	+830	+500	+590	+299	+350	+440	+182	+214	+265	+98	+119	+151	+54	+75	+36	+57
		+600	+360	+360	+210	+210	+210	+125	+125	+125	+62	+62	+62	+18	+18	0	0
280	315	+910	+540	+630	+210	+210	+210	+125	+125	+125	+62	+62	+62	+18	+18	0	0
		+680	+400	+400	+210	+210	+210	+125	+125	+125	+62	+62	+62	+18	+18	0	0
315	355	+1010	+595	+690	+327	+385	+480	+198	+232	+290	+108	+131	+165	+60	+83	+40	+63
		+760	+440	+440	+327	+385	+480	+198	+232	+290	+108	+131	+165	+60	+83	+40	+63
355	400	+1090	+635	+730	+230	+230	+230	+135	+135	+135	+68	+68	+68	+20	+20	0	0
		+840	+480	+480	+230	+230	+230	+135	+135	+135	+68	+68	+68	+20	+20	0	0

Not 1) İlgili kutuların üst bölümünde gösterilen değerler üst boyutsal toleransken, alt bölümde gösterilen değerler alt boyutsal toleransdır.

Deliklerin Geometrik Tolerans Bölgesinin Sınıfı

H8	H9	H10	JS6	JS7	K6	K7	M6	M7	N6	N7	P6	P7	R7	S7	T7	U7	X7
+14 0	+25 0	+40 0	± 3	± 5	0 -6	0 -10	-2 -8	-2 -12	-4 -10	-4 -14	-6 -12	-6 -16	-10 -20	-14 -24	-	-18 -28	-20 -30
+18 0	+30 0	+48 0	± 4	± 6	+2 -6	+3 -9	-1 -9	0 -12	-5 -13	-4 -16	-9 -17	-8 -20	-11 -23	-15 -27	-	-19 -31	-24 -36
+22 0	+36 0	+58 0	± 4.5	± 7	+2 -7	+5 -10	-3 -12	0 -15	-7 -16	-4 -19	-12 -21	-9 -24	-13 -28	-17 -32	-	-22 -37	-28 -43
+27 0	+43 0	+70 0	± 5.5	± 9	+2 -9	+6 -12	-4 -15	0 -18	-9 -20	-5 -23	-15 -26	-11 -29	-16 -34	-21 -39	-	-26 -44	-33 -51 -56
+33 0	+52 0	+84 0	± 6.5	± 10	+2 -11	+6 -15	-4 -17	0 -21	-11 -24	-7 -28	-18 -31	-14 -35	-20 -41	-27 -48	-	-33 -54	-46 -67 -77
+39 0	+62 0	+100 0	± 8	± 12	+3 -13	+7 -18	-4 -20	0 -25	-12 -28	-8 -33	-21 -37	-17 -42	-25 -50	-34 -59	-39 -64 -70	-51 -76 -86	-
+46 0	+74 0	+120 0	± 9.5	± 15	+4 -15	+9 -21	-5 -24	0 -30	-14 -33	-9 -39	-26 -45	-21 -51	-30 -60 -62	-42 -72 -78	-55 -85 -94	-76 -106 -121	-
+54 0	+87 0	+140 0	± 11	± 17	+4 -18	+10 -25	-6 -28	0 -35	-16 -38	-10 -45	-30 -52	-24 -59	-38 -73 -81	-58 -93 -101	-78 -113 -126	-111 -146 -166	-
+63 0	+100 0	+160 0	± 12.5	± 20	+4 -21	+12 -28	-8 -33	0 -40	-20 -45	-12 -52	-36 -61	-28 -68	-48 -88 -90 -93	-77 -117 -125 -133	-107 -147 -159 -171	-	-
+72 0	+115 0	+185 0	± 14.5	± 23	+5 -24	+13 -33	-8 -37	0 -46	-22 -51	-14 -60	-41 -70	-33 -79	-60 -106 -109 -113	-113 -159 -123 -169	-	-	-
+81 0	+130 0	+210 0	± 16	± 26	+5 -27	+16 -36	-9 -41	0 -52	-25 -57	-14 -66	-47 -79	-36 -88	-74 -126 -78 -130	-	-	-	-
+89 0	+140 0	+230 0	± 18	± 28	+7 -29	+17 -40	-10 -46	0 -57	-26 -62	-16 -73	-51 -87	-41 -98	-87 -144 -93 -150	-	-	-	-
+97 0	+155 0	+250 0	± 20	± 31	+8 -32	+18 -45	-10 -50	0 -63	-27 -67	-17 -80	-55 -95	-45 -108	-103 -166 -109 -172	-	-	-	-

GEÇME TOLERANS TABLOSU (ŞAFT)

Standart Ölçülerin Sınıflandırılması (mm)		Şaftların Geometrik Tolerans Bölgesinin Sınıfı														
>	≤	b9	c9	d8	d9	e7	e8	e9	f6	f7	f8	g5	g6	h5	h6	h7
-	3	-140	-60	-20	-20	-14	-14	-14	-6	-6	-6	-2	-2	0	0	0
		-165	-85	-34	-45	-24	-28	-39	-12	-16	-20	-6	-8	-4	-6	-10
3	6	-140	-70	-30	-30	-20	-20	-20	-10	-10	-10	-4	-4	0	0	0
		-170	-100	-48	-60	-32	-38	-50	-18	-22	-28	-9	-12	-5	-8	-12
6	10	-150	-80	-40	-40	-25	-25	-25	-13	-13	-13	-5	-5	0	0	0
		-186	-116	-62	-76	-40	-47	-61	-22	-28	-35	-11	-14	-6	-9	-15
10	14	-150	-95	-50	-50	-32	-32	-32	-16	-16	-16	-6	-6	0	0	0
		-193	-138	-77	-93	-50	-59	-75	-27	-34	-43	-14	-17	-8	-11	-18
14	18	-160	-110	-65	-65	-40	-40	-40	-20	-20	-20	-7	-7	0	0	0
		-212	-162	-98	-117	-61	-73	-92	-33	-41	-53	-16	-20	-9	-13	-21
18	24	-170	-120	-80	-80	-50	-50	-50	-25	-25	-25	-9	-9	0	0	0
		-232	-182	-119	-142	-75	-89	-112	-41	-50	-64	-20	-25	-11	-16	-25
24	30	-180	-130	-100	-100	-60	-60	-60	-30	-30	-30	-10	-10	0	0	0
		-242	-192	-146	-174	-90	-106	-134	-49	-60	-76	-23	-29	-13	-19	-30
30	40	-190	-140	-120	-120	-72	-72	-72	-36	-36	-36	-12	-12	0	0	0
		-260	-200	-174	-207	-107	-126	-159	-58	-71	-90	-27	-34	-15	-22	-35
40	50	-200	-150	-145	-145	-85	-85	-85	-43	-43	-43	-14	-14	0	0	0
		-274	-224	-208	-245	-125	-148	-185	-68	-83	-106	-32	-39	-18	-25	-40
50	65	-210	-160	-170	-170	-90	-90	-90	-45	-45	-45	-15	-15	0	0	0
		-284	-234	-212	-249	-112	-136	-179	-70	-86	-110	-34	-41	-19	-26	-43
65	80	-220	-170	-190	-190	-95	-95	-95	-47	-47	-47	-16	-16	0	0	0
		-294	-244	-216	-253	-114	-138	-183	-72	-88	-112	-35	-42	-19	-26	-44
80	100	-230	-180	-200	-200	-100	-100	-100	-50	-50	-50	-17	-17	0	0	0
		-304	-254	-220	-259	-116	-140	-185	-73	-89	-113	-36	-43	-20	-27	-45
100	120	-240	-190	-210	-210	-105	-105	-105	-52	-52	-52	-18	-18	0	0	0
		-314	-264	-222	-261	-118	-142	-187	-74	-90	-114	-37	-44	-20	-27	-46
120	140	-250	-200	-220	-220	-110	-110	-110	-54	-54	-54	-19	-19	0	0	0
		-324	-274	-224	-263	-120	-144	-189	-75	-91	-115	-38	-45	-21	-28	-47
140	160	-260	-210	-230	-230	-115	-115	-115	-56	-56	-56	-20	-20	0	0	0
		-334	-284	-226	-265	-122	-146	-191	-76	-92	-116	-39	-46	-21	-28	-48
160	180	-270	-220	-240	-240	-120	-120	-120	-58	-58	-58	-21	-21	0	0	0
		-344	-294	-228	-267	-124	-148	-193	-77	-93	-117	-40	-47	-22	-29	-49
180	200	-280	-230	-250	-250	-125	-125	-125	-60	-60	-60	-22	-22	0	0	0
		-354	-304	-230	-269	-126	-150	-195	-78	-94	-118	-41	-48	-22	-29	-50
200	225	-290	-240	-260	-260	-130	-130	-130	-62	-62	-62	-23	-23	0	0	0
		-364	-314	-232	-271	-132	-152	-197	-79	-95	-119	-42	-49	-23	-30	-51
225	250	-300	-250	-270	-270	-135	-135	-135	-64	-64	-64	-24	-24	0	0	0
		-374	-324	-234	-273	-136	-154	-199	-80	-96	-120	-43	-50	-24	-31	-52
250	280	-310	-260	-280	-280	-140	-140	-140	-66	-66	-66	-25	-25	0	0	0
		-384	-334	-236	-275	-142	-156	-201	-81	-97	-121	-44	-51	-25	-32	-53
280	315	-320	-270	-290	-290	-145	-145	-145	-68	-68	-68	-26	-26	0	0	0
		-394	-344	-238	-277	-146	-158	-203	-82	-98	-122	-45	-52	-25	-32	-54
315	355	-330	-280	-300	-300	-150	-150	-150	-70	-70	-70	-27	-27	0	0	0
		-404	-354	-240	-279	-152	-160	-205	-83	-99	-123	-46	-53	-26	-33	-55
355	400	-340	-290	-310	-310	-155	-155	-155	-72	-72	-72	-28	-28	0	0	0
		-414	-364	-242	-281	-156	-162	-207	-84	-100	-124	-47	-54	-26	-33	-56
400	450	-350	-300	-320	-320	-160	-160	-160	-74	-74	-74	-29	-29	0	0	0
		-424	-374	-244	-283	-162	-164	-209	-85	-101	-125	-48	-55	-27	-34	-57
450	500	-360	-310	-330	-330	-165	-165	-165	-76	-76	-76	-30	-30	0	0	0
		-434	-384	-246	-285	-166	-166	-211	-86	-102	-126	-49	-56	-27	-34	-58

Not 1) İlgili kutuların üst bölümünde gösterilen değerler üst boyutsal toleransken, alt bölümde gösterilen değerler alt boyutsal toleransdır.

Şaftların Geometrik Tolerans Bölgesinin Sınıfı

h8	h9	js5	js6	js7	k5	k6	m5	m6	n6	p6	r6	s6	t6	u6	x6
0 -14	0 -25	± 2	± 3	± 5	+4 0	+6 0	+6 +2	+8 +2	+10 +4	+12 +6	+16 +10	+20 +14	—	+24 +18	+26 +20
0 -18	0 -30	± 2.5	± 4	± 6	+6 +1	+9 +1	+9 +4	+12 +4	+16 +8	+20 +12	+23 +15	+27 +19	—	+31 +23	+36 +28
0 -22	0 -36	± 3	± 4.5	± 7	+7 +1	+10 +1	+12 +6	+15 +6	+19 +10	+24 +15	+28 +19	+32 +23	—	+37 +28	+43 +34
0 -27	0 -43	± 4	± 5.5	± 9	+9 +1	+12 +1	+15 +7	+18 +7	+23 +12	+29 +18	+34 +23	+39 +28	—	+44 +33	+51 +40 +56 +45
0 -33	0 -52	± 4.5	± 6.5	± 10	+11 +2	+15 +2	+17 +8	+21 +8	+28 +15	+35 +22	+41 +28	+48 +35	— +54 +41	+54 +61 +48	+67 +54 +77 +64
0 -39	0 -62	± 5.5	± 8	± 12	+13 +2	+18 +2	+20 +9	+25 +9	+33 +17	+42 +26	+50 +34	+59 +43	+64 +48 +70 +54	+76 +60 +86 +70	—
0 -46	0 -74	± 6.5	± 9.5	± 15	+15 +2	+21 +2	+24 +11	+30 +11	+39 +20	+51 +32	+60 +41 +62 +43	+72 +53 +78 +59	+85 +66 +94 +75	+106 +87 +121 +102	—
0 -54	0 -87	± 7.5	± 11	± 17	+18 +3	+25 +3	+28 +13	+35 +13	+45 +23	+59 +37	+73 +51 +76 +54	+93 +71 +101 +79	+113 +91 +126 +104	+146 +124 +166 +144	—
0 -63	0 -100	± 9	± 12.5	± 20	+21 +3	+28 +3	+33 +15	+40 +15	+52 +27	+68 +43	+88 +63 +90 +65 +93 +68	+117 +92 +125 +100 +133 +108	+147 +122 +159 +134 +171 +146	—	—
0 -72	0 -115	± 10	± 14.5	± 23	+24 +4	+33 +4	+37 +17	+46 +17	+60 +31	+79 +50	+106 +77 +109 +80 +113 +84	+151 +122 +159 +130 +169 +140	—	—	—
0 -81	0 -130	± 11.5	± 16	± 26	+27 +4	+36 +4	+43 +20	+52 +20	+66 +34	+88 +56	+126 +94 +130 +98	—	—	—	—
0 -89	0 -140	± 12.5	± 18	± 28	+29 +4	+40 +4	+46 +21	+57 +21	+73 +37	+98 +62	+144 +108 +150 +114	—	—	—	—
0 -97	0 -155	± 13.5	± 20	± 31	+32 +5	+45 +5	+50 +23	+63 +23	+80 +40	+108 +68	+166 +126 +172 +132	—	—	—	—

DİŞ AÇMA İÇİN MATKAP ÇAPLARI

● Metrik Kaba Vida Dişi

Nominal	Matkap Çapı	
	HSS	Karbür
M1 ×0.25	0.75	0.75
M1.1×0.25	0.85	0.85
M1.2×0.25	0.95	0.95
M1.4×0.3	1.10	1.10
M1.6×0.35	1.25	1.30
M1.7×0.35	1.35	1.40
M1.8×0.35	1.45	1.50
M2 ×0.4	1.60	1.65
M2.2×0.45	1.75	1.80
M2.3×0.4	1.90	1.95
M2.5×0.45	2.10	2.15
M2.6×0.45	2.15	2.20
M3 ×0.5	2.50	2.55
M3.5×0.6	2.90	2.95
M4 ×0.7	3.3	3.4
M4.5×0.75	3.8	3.9
M5 ×0.8	4.2	4.3
M6 ×1.0	5.0	5.1
M7 ×1.0	6.0	6.1
M8 ×1.25	6.8	6.9
M9 ×1.25	7.8	7.9
M10 ×1.5	8.5	8.7
M11 ×1.5	9.5	9.7
M12 ×1.75	10.3	10.5
M14 ×2.0	12.0	12.2
M16 ×2.0	14.0	14.2
M18 ×2.5	15.5	15.7
M20 ×2.5	17.5	17.7
M22 ×2.5	19.5	19.7
M24 ×3.0	21.0	—
M27 ×3.0	24.0	—
M30 ×3.5	26.5	—
M33 ×3.5	29.5	—
M36 ×4.0	32.0	—
M39 ×4.0	35.0	—
M42 ×4.5	37.5	—
M45 ×4.5	40.5	—
M48 ×5.0	43.0	—

● Metrik İnce Vida Dişi

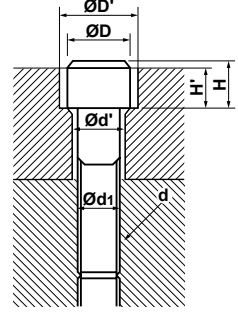
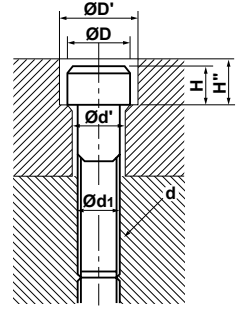
Nominal	Matkap Çapı		Nominal	Matkap Çapı		Nominal	Matkap Çapı	
	HSS	Karbür		HSS	Karbür		HSS	Karbür
M1 ×0.2	0.80	0.80	M20 ×2.0	18.0	18.3	M42 ×3.0	39.0	—
M1.1×0.2	0.90	0.90	M20 ×1.5	18.5	18.7	M42 ×2.0	40.0	—
M1.2×0.2	1.00	1.00	M20 ×1.0	19.0	19.1	M42 ×1.5	40.5	—
M1.4×0.2	1.20	1.20	M22 ×2.0	20.0	—	M45 ×4.0	41.0	—
M1.6×0.2	1.40	1.40	M22 ×1.5	20.5	—	M45 ×3.0	42.0	—
M1.8×0.2	1.60	1.60	M22 ×1.0	21.0	—	M45 ×2.0	43.0	—
M2 ×0.25	1.75	1.75	M24 ×2.0	22.0	—	M45 ×1.5	43.5	—
M2.2×0.25	1.95	2.00	M24 ×1.5	22.5	—	M48 ×4.0	44.0	—
M2.5×0.35	2.20	2.20	M24 ×1.0	23.0	—	M48 ×3.0	45.0	—
M3 ×0.35	2.70	2.70	M25 ×2.0	23.0	—	M48 ×2.0	46.0	—
M3.5×0.35	3.20	3.20	M25 ×1.5	23.5	—	M48 ×1.5	46.5	—
M4 ×0.5	3.50	3.55	M25 ×1.0	24.0	—	M50 ×3.0	47.0	—
M4.5×0.5	4.00	4.05	M26 ×1.5	24.5	—	M50 ×2.0	48.0	—
M5 ×0.5	4.50	4.55	M27 ×2.0	25.0	—	M50 ×1.5	48.5	—
M5.5×0.5	5.00	5.05	M27 ×1.5	25.5	—			
M6 ×0.75	5.30	5.35	M27 ×1.0	26.0	—			
M7 ×0.75	6.30	6.35	M28 ×2.0	26.0	—			
M8 ×1.0	7.00	7.10	M28 ×1.5	26.5	—			
M8 ×0.75	7.30	7.35	M28 ×1.0	27.0	—			
M9 ×1.0	8.00	8.10	M30 ×3.0	27.0	—			
M9 ×0.75	8.30	8.35	M30 ×2.0	28.0	—			
M10 ×1.25	8.80	8.90	M30 ×1.5	28.5	—			
M10 ×1.0	9.00	9.10	M30 ×1.0	29.0	—			
M10 ×0.75	9.30	9.35	M32 ×2.0	30.0	—			
M11 ×1.0	10.0	10.1	M32 ×1.5	30.5	—			
M11 ×0.75	10.3	10.3	M33 ×3.0	30.0	—			
M12 ×1.5	10.5	10.7	M33 ×2.0	31.0	—			
M12 ×1.25	10.8	10.9	M33 ×1.5	31.5	—			
M12 ×1.0	11.0	11.1	M35 ×1.5	33.5	—			
M14 ×1.5	12.5	12.7	M36 ×3.0	33.0	—			
M14 ×1.0	13.0	13.1	M36 ×2.0	34.0	—			
M15 ×1.5	13.5	13.7	M36 ×1.5	34.5	—			
M15 ×1.0	14.0	14.1	M38 ×1.5	36.5	—			
M16 ×1.5	14.5	14.7	M39 ×3.0	36.0	—			
M16 ×1.0	15.0	15.1	M39 ×2.0	37.0	—			
M17 ×1.5	15.5	15.7	M39 ×1.5	37.5	—			
M17 ×1.0	16.0	16.1	M40 ×3.0	37.0	—			
M18 ×2.0	16.0	16.3	M40 ×2.0	38.0	—			
M18 ×1.5	16.5	16.7	M40 ×1.5	38.5	—			
M18 ×1.0	17.0	17.1	M42 ×4.0	38.0	—			

Not 1) Delme koşulları nedeniyle delinmiş bir deliğin doğruluğu değişebildiğinden, delik boyutları ölçülmelidir ve diş açma deliği için uygunsuz bulunursa, delme ucu çapı buna göre düzeltilmelidir.

ALTİGEN SOKET BAŞLI CIVATA DELİĞİ ÖLÇÜLERİ

ALTİGEN SOKET BAŞLI VİDA VE CIVATA DELİĞİ İÇİN HAVŞA AÇMA BOYUTLARI Birim : mm

d dişin nominal ölçüleri	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30
d1	3	4	5	6	8	10	12	14	16	18	20	22	24	27	30
d'	3.4	4.5	5.5	6.6	9	11	14	16	18	20	22	24	26	30	33
D	5.5	7	8.5	10	13	16	18	21	24	27	30	33	36	40	45
D'	6.5	8	9.5	11	14	17.5	20	23	26	29	32	35	39	43	48
H	3	4	5	6	8	10	12	14	16	18	20	22	24	27	30
H'	2.7	3.6	4.6	5.5	7.4	9.2	11	12.8	14.5	16.5	18.5	20.5	22.5	25	28
H''	3.3	4.4	5.4	6.5	8.6	10.8	13	15.2	17.5	19.5	21.5	23.5	25.5	29	32



ULUSLARARASI BİRİMLER SİSTEMİ

SI BİRİMLERİNE DAHA KOLAY DÖNÜŞTÜRMEK İÇİN BİRİM ÇEVİRİM TABLOSU (Kalın harfler SI birimini belirtir)

● Basınç

Pa	kPa	MPa	bar	kgf/cm ²	atm	mmH ₂ O	mmHg veya Tor
1	1×10 ⁻³	1×10 ⁻⁶	1×10 ⁻⁵	1.01972×10 ⁻⁵	9.86923×10 ⁻⁶	1.01972×10 ⁻¹	7.50062×10 ⁻³
1×10 ³	1	1×10 ⁻³	1×10 ⁻²	1.01972×10 ⁻²	9.86923×10 ⁻³	1.01972×10 ²	7.50062
1×10 ⁶	1×10 ³	1	1×10	1.01972×10	9.86923	1.01972×10 ⁵	7.50062×10 ³
1×10 ⁵	1×10 ²	1×10 ⁻¹	1	1.01972	9.86923×10 ⁻¹	1.01972×10 ⁴	7.50062×10 ²
9.80665×10 ⁴	9.80665×10	9.80665×10 ⁻²	9.80665×10 ⁻¹	1	9.67841×10 ⁻¹	1×10 ⁴	7.35559×10 ²
1.01325×10 ⁵	1.01325×10 ²	1.01325×10 ⁻¹	1.01325	1.03323	1	1.03323×10 ⁴	7.60000×10 ²
9.80665	9.80665×10 ⁻³	9.80665×10 ⁻⁶	9.80665×10 ⁻⁵	1×10 ⁻⁴	9.67841×10 ⁻⁵	1	7.35559×10 ⁻²
1.33322×10 ²	1.33322×10 ⁻¹	1.33322×10 ⁻⁴	1.33322×10 ⁻³	1.35951×10 ⁻³	1.31579×10 ⁻³	1.35951×10	1

Not 1) 1Pa=1N/m²

● Kuvvet

N	din	kgf
1	1×10 ⁵	1.01972×10 ⁻¹
1×10 ⁻⁵	1	1.01972×10 ⁻⁶
9.80665	9.80665×10 ⁵	1

● Gerilim

Pa	MPa veya N/mm ²	kgf/mm ²	kgf/cm ²
1	1×10 ⁻⁶	1.01972×10 ⁻⁷	1.01972×10 ⁻⁵
1×10 ⁶	1	1.01972×10 ⁻¹	1.01972×10
9.80665×10 ⁶	9.80665	1	1×10 ²
9.80665×10 ⁴	9.80665×10 ⁻²	1×10 ⁻²	1

Not 1) 1Pa=1N/m²

● İş / Enerji / Isı Miktarı

J	kW*s	kgf*m	kcal
1	2.77778×10 ⁻⁷	1.01972×10 ⁻¹	2.38889×10 ⁻⁴
3.600 ×10 ⁶	1	3.67098×10 ⁵	8.6000 ×10 ²
9.80665	2.72407×10 ⁻⁶	1	2.34270×10 ⁻³
4.18605×10 ³	1.16279×10 ⁻³	4.26858×10 ²	1

Not 1) 1J=1W*s, 1J=1N*m
1cal=4.18605J
(Ağırlık ve ölçüler yasası ile)

● Güç (Üretim / Tahrik Gücü Oranı) / Isı Akışı Oranı

W	kgf*m/s	PS	kcal/s
1	1.01972×10 ⁻¹	1.35962×10 ⁻³	8.6000 ×10 ⁻¹
9.80665	1	1.33333×10 ⁻²	8.43371
7.355 ×10 ²	7.5 ×10	1	6.32529×10 ²
1.16279	1.18572×10 ⁻¹	1.58095×10 ⁻³	1

Not 1) 1W=1J/s, PS:Fransız beygir gücü
1PS=0.7355 kW
1cal=4.18605J
(Ağırlık ve ölçüler yasası ile)

İNDEKS

TAKIM NUMARASI İÇİN İNDEKS

A.....	2
B.....	2
C.....	2
D.....	2
F.....	2
G.....	2
H.....	2
J.....	2
K.....	2
L.....	2
M.....	3
N.....	3
P.....	3
R.....	3
S.....	3
T.....	3
V.....	4
W.....	4



TAKIM NUMARASI İÇİN İNDEKS

Sipariş No.	ÜRÜN ADI	Sayfa	Sipariş No.	ÜRÜN ADI	Sayfa
A					
AJS0000T00	Bağlama vidası	N003	HKY00L	L-anahtarı	N002
AMS0	Bağlama pabucu	N014	HKY00R	L-anahtarı	N002
B					
BCP000	Altılık pimi	N013	HKY00T	T-anahtarı	N002
BOES101	Tespit civatası	N008	HKY00W	Bayrak anahtar	N002
BRS000	Bağlama vidası	N003	HSC00000	Bağlama vidası	N002, N008
C					
CA000	Bağlama pabucu	N014	HSC00000H	Tespit civatası	N008
CBS00	Kırıcı parça	N016	HSCX00000H	Tespit civatası	N008
CBT00	Kırıcı parça	N016	HSP05008C	Kilit vidası	N003
CCK00	Bağlama pabucu	N014	HSS00000	Bağlama vidası	N002
CCP00	Altılık pimi	N013	HY0	Kovan vidası	N004
CCTC1	Bağlama pabucu	N014	HY-A1	Kovan vidası	N004
CK000	Bağlama pabucu	N014	HY-V1	Kovan vidası	N004
CKW6	Bağlama pabucu	N015	J		
CSF401260T	Bağlama vidası	N003	JFS0	AYAR BURCU takım (set) numarası	M170
CS000T	Bağlama vidası	N003	JFS000000	AYAR BURCU (JFS)	M170
CS000000T	Bağlama vidası	N003	JSS0	Altılık vidası	N004
CS0000000T	Bağlama vidası	N003	K		
D					
DCK0000	Bağlama pabucu	N015	KGC1	Bağlama pabucu	N015
DCSVN32	Altılık	N010	KS00	Tespit civatası	N004
DC0000T	Bağlama vidası	N003	KSN0	Bağlama vidası	N009
DFAS	DFAS tip matkap	M020–M022	KSN3	Mikro metrik ayar somunu	N009
DKS0	Bağlama vidası	N003	KS0S	Önceden ayarlanmış vida	N004
DLE0000S000P000	DLE tip pilot matkap	M012, M013	KSS2	Kaba ayar civatası	N009
DSAS0000X00S000	DSAS tip matkap	M092–M096	L		
DVAS0000X00S000	DVAS tip matkap	M033–M036	LK1	Bağlama pabucu	N015
DWAE0000X00S000	MINI-DWAE Tip matkap	M024	LLCL000	Bağlama kolu	N013
DWAE0000X00S000	DWAE tip matkap	M025–M030	LLCL00S	Bağlama kolu	N013
F					
FC400890T	Bağlama vidası	N003	LLCS000	Bağlama vidası	N004
G					
GY05016S	Bağlama vidası	N003	LLCS000S	Bağlama vidası	N004
GY06013M	Bağlama vidası	N003	LLP00	Altılık pimi	N013
H					
HBH00000	Bağlama vidası	N002	LLR0	Radyal vida	N004
HBHA00000	Bağlama vidası	N002	LLSCN00	Altılık	N010
HDS00000	Bağlama vidası	N008	LLSCN0T0	Altılık	N010
HFF08000H	Bağlama vidası	N008	LLSCP00	Altılık	N010
HKY00D	Tornavida	N002	LLSDN00	Altılık	N010
HKY00F	Bayrak anahtar	N002	LLSDP42	Altılık	N010
			LLSRN000	Altılık	N010
			LLSSN00	Altılık	N010
			LLSSP42	Altılık	N010
			LLSTE32	Altılık	N010
			LLSTN00	Altılık	N010
			LLSTP00	Altılık	N010
			LLSWN000	Altılık	N010
			LLSWN0T0	Altılık	N010
			LLSWP00	Altılık	N010
			LS0	Bağlama vidası	N004
			LS00	Bağlama vidası	N004

Sipariş No.	ÜRÜN ADI	Sayfa
LS00T	Bağlama vidası	N004
LS0000T	Bağlama vidası	N004
LS10TS	Bağlama vidası	N004
M		
MAE0000MB	MAE tip matkap (Dışdan soğutma sıvısı)	M122–M126
MAS0000LB/MB	MAS tip matkap (İçten soğutma sıvısı)	M122–M126
MBA00000H	Bağlama vidası	N008
MCA	MCA tip matkap	M187
MCAH	MCAH tip matkap	M191
MCC	MCC tip matkap	M186
MCCH	MCCH tip matkap	M190
MCT	MCT tip matkap	M188
MCW	MCW tip matkap	M189
MFE	MINI-MFE tip matkap	M018
MGS6	Bağlama vidası	N005
MGS0000L000B	MICRO-MGS tip matkap	M075
MHS0000L000B	MHS tip matkap	M128–M135
MHS532R	Altılık	N011
MHT1	Bağlama vidası	N005
MK1K	Sıkışma önleyici yağ	N017
MK1KS	Sıkışma önleyici yağ	N017
MLCP42	Altılık	N011
MLDP42	Altılık	N011
MLSP42	Altılık	N011
MLTP32	Altılık	N011
MMS0000S/L-DIN	MMS tip matkap	M078–M089
MMS0000S/L-DIN-C	MMS tip matkap	M078–M089
MMS0000X0DB	MMS tip matkap	M078–M089
MNS0000LB/X0DB	MNS tip matkap	M098–M115
MNS0000L0C/L00C	MNS tip matkap	M098–M115
MNS0000S/L-DIN	MNS tip matkap DIN6537 (Açılı weldon şaftlı tip)	M098–M117
MNS0000S/L-DIN-C	MNS tip matkap DIN6537 (Silindirik şaftlı tip)	M098–M117
MP6	Altılık pimi	N013
MPS1-0000L0C/L00C	MPS1 tip matkap	M057–M071
MPS1-0000PC	MPS1 tip matkap	M057–M071
MPS1-0000S/L-DIN	MPS1 tip matkap DIN6537 (Açılı weldon şaftlı tip)	M057–M071
MPS1-0000S/L-DIN-C	MPS1 tip matkap DIN6537 (Silindirik şaftlı tip)	M057–M071
MSCN63	Altılık	N011
MSE0000SB	MSE tip matkap	M008, M009
MSP0300SB	MSP tip spot matkap	M011
MSSN63	Altılık	N011
MTK0R/L	Bağlama pabucu	N015
MVS0000X0S000	MINI-MVS tip matkap	M049, M050

Sipariş No.	ÜRÜN ADI	Sayfa
MX0000X0F00	MX tip matkap	M158–M165
MWS0000SB/LB/XB	MINI-MWS tip matkap	M053, M054
N		
NS000	Bağlama vidası	N005
NS000W	Bağlama vidası	N005
P		
P00S	Kilit pimi	N014
PS00	Altılık	N010
PT00	Altılık	N010
PT00TOR	Altılık	N011
P000US	Kilit pimi	N014
PV000	Altılık	N011
P000W	Kilit pimi	N014
P000WS	Kilit pimi	N014
R		
RKY00S	Anahtar	N002
RS0000T	Bağlama vidası	N005
RX1S00000H7D0TP0	Başlık	M195, M196
RX1SX00S00ATP0	Tutucu	M197
RX1ST00TP00	Bağlama vidası	M197
S		
S0	Bağlama vidası	N005
SD00	Tespit civatası	N005
SETK00	Bağlama pabucu	N015
SETS00	Bağlama vidası	N005
SLCS0000	Bağlama vidası	N005
SOMX0000000000	Kesici uç (MX tip matkap için)	M166
SPSVN32	Altılık	N011
SPS1	Konumlandırma vidası	N005
SRK1R	Bağlama pabucu	N015
SRS5	Bağlama vidası	N005
STASX000N	Altılık	N012
STAWN00000S00	STAW tip matkap için	M139–M141
STAWN00000T	Kesici uç (STAW tip matkap için)	M143
STAWN00000TH	Kesici uç (STAW tip matkap için)	M142, M143
STAWS00000S00	STAW tip matkap	M139–M141
T		
TAWNH00000T	Kesici uç (TAW tip matkap için)	M153, M154
TAWN00000S00	TAW tipi matkap ucu (Genel kullanım)	M148–M152
TIP000	Anahtar	N002
TKY00D	Tomavida	N002
TKY00F	Bayrak anahtar	N002
TKY00L	Uzun anahtar	N002

TAKIM NUMARASI İÇİN İNDEKS

Sipariş No.	ÜRÜN ADI	Sayfa	Sipariş No.	ÜRÜN ADI	Sayfa
TKY○○R	L-anahtarı	N002			
TKY○○T	T-anahtarı	N002			
TKY○○W	Bayrak anahtar	N002			
TPS○	Bağlama vidası	N007			
TPS○○	Bağlama vidası	N007			
TPS○○○	Bağlama vidası	N007			
TPS○○○○	Bağlama vidası	N007			
TPS○○○-1	Bağlama vidası	N007			
TS○	Bağlama vidası	N006			
TS○○	Bağlama vidası	N006			
TS○○○	Bağlama vidası	N006			
TS○○○○	Bağlama vidası	N006			
TSS○○○○○	Radyal vida	N007			
TSS○○○○○S	Bağlama vidası	N007			
V					
VAPDM	VIOLET matkap	M177–M179			
VAPDS	VIOLET matkap	M172–M175			
VAPDSCB	VIOLET matkap	M183, M184			
VSD	VIOLET matkap, Düz şaftlı	M181, M182			
W					
WCS○○○○○○○H	Altık vidası	N007			
WPSTN○○	Altık	N012			
WPSWC43	Altık	N012			
WPSWN43	Altık	N012			
WPT4405	Levha (TAW matkap için)	M148–M152			
WS○○○○○○○T	Bağlama vidası	N007			
WS○○○○○○○TPS	Bağlama vidası	N007			

DÜNYA ÇAPINDA

MITSUBISHI MATERIALS - METAL İŞLEME ÇÖZÜMLERİ ŞİRKETİ BAŞARI İÇİN BİRLİKTELİK

Mitsubishi Materials'ın Metal İşleme Çözümleri bölümü, metallerin, kesici malzemelerinin, kaplamaların ve hassas takımların geliştirilmesi ve işlenmesine odaklanmıştır. Üretim teknolojisindeki engin bilgi birikimi ve uzun yıllara dayanan tecrübesi Mitsubishi Materials'ı hassas kesici takımları pazarında lider tedarikçilerinden biri yapmaktadır.

Şirketin global pazardaki varlığı Japonya, Avrupa, Hindistan, Brezilya, Çin, Tayland, Meksika ve ABD'deki genel merkez ve satış ofislerinin yanı sıra uluslararası distribütörlerden oluşan geniş bir ağı ile hedeflenmiş olup, kapsamlı bir hizmet sunmaktadır.

Bilgi alışverişi ve teknoloji transferi, açık iletişim ve sınırların ötesinde artan iş birlikleri, maksimum performans ve sürdürülebilir müşteri başarısını garanti etmektedir.

METAL İŞLEME ÇÖZÜMLERİ FİRMALARI



POLONYA

İNGİLTERE

JAPONYA

ÇİN

TAYLAND

HİNDİSTAN

TÜRKİYE

AVRUPA SATIŞ ŞİRKETLERİ

GERMANY

MMC HARTMETALL GMBH
Comeniusstr. 2 . 40670 Meerbusch
Phone +49 2159 91890 . Fax +49 2159 918966
Email admin@mmchg.de

UK Office

MMC HARDMETAL UK LTD
1 Centurion Court, Centurion Way
Tamworth, B77 5PN
Phone +44 1827 312312
Email sales@mitsubishicarbide.co.uk

UK Deliveries/Returns

Unit 4 B5K Business Park, Quartz Close
Tamworth, B77 4GR

SPAIN

MITSUBISHI MATERIALS ESPAÑA, S.A.
Calle Emperador 2 . 46136 Museros/Valencia
Phone +34 96 1441711
Email comercial@mmevalencia.es

FRANCE

MMC METAL FRANCE S.A.R.L.
6, Rue Jacques Monod . 91400 Orsay
Phone +33 1 69 35 53 53 . Fax +33 1 69 35 53 50
Email mmfsales@mmc-metal-france.fr

POLAND

MMC HARDMETAL POLAND SP. Z O.O
Al. Armii Krajowej 61 . 50-541 Wrocław
Phone +48 71335 1620 . Fax +48 71335 1621
Email sales@mitsubishicarbide.com.pl

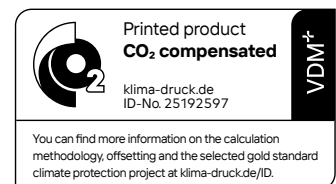
ITALY

MMC ITALIA S.R.L.
Viale Certosa 144 . 20156 Milano
Phone +39 0293 77031 . Fax +39 0293 589093
Email info@mmc-italia.it

TURKEY

MMC HARTMETALL GMBH ALMANYA - İZMİR MERKEZ ŞUBESİ
Adalet Mahallesi Anadolu Caddesi No: 41-1 . 15001 35530 Bayraklı / İzmir
Phone +90 232 5015000 . Fax +90 232 5015007
Email info@mmchg.com.tr

www.mmc-carbide.com



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