

MINI-EY-SERIES

PRECISION GROOVING SYSTEM



Mplus...

MINI-EY-IC

WITH INTERNAL COOLANT

The advanced Mini-EY-IC series with internal coolant supply provides a positive step in usability. The improved coolant supply reduces heat generation as well as enabling longer tool life. Optimised chip control and higher cutting parameters, plus increased wear resistance means greater efficiencies can be achieved.

PRODUCT RANGE

- Insert width: 2 mm and 3 mm
- Holder size: 12 x 12, 16 x 16, 20 x 20
- Hand: R/L
- Max. cut off diameter: Ø 25 mm, 32 mm, 42 mm

APPLICATION

- External grooving and cut off

FEATURES

- Higher cutting parameters
- Cost effective double sided inserts
- Sizes 12 & 16 with clamping screw axis tilted at 115° for easy, on machine access
- Internal coolant supply

LONGER TOOL LIFE

EXCELLENT SURFACES

IMPROVED CHIP CONTROL

INCREASED WEAR RESISTANCE

WITH INTERNAL COOLANT



MINI-EY

WITH EXTERNAL COOLANT

The Mini-EY is designed for Swiss-type lathes as a precision grooving system. A range of suitable insert grades and chipbreakers makes it usable for steels, stainless steels, cast irons and difficult-to-cut materials. Complete with economical double sided inserts.

PRODUCT RANGE

- Insert width: 1.5 mm – 3.0 mm
- Holder size: 10x10, 12x12, 16x16
- Hand: R/L
- Max. cut off diameter: Ø 25 mm, 32 mm

APPLICATION

- External grooving and cut off

FEATURES

- Cost effective double sided Inserts
- Designed for Swiss-type lathes

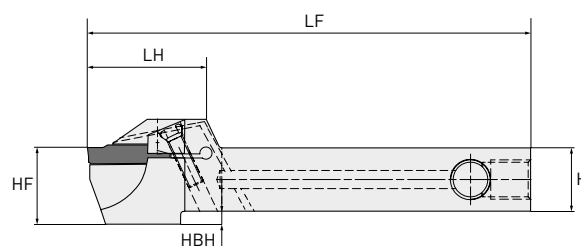
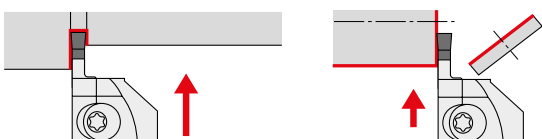
**LONG TOOL LIFE****GOOD SURFACE FINISHES****EXCELLENT CHIP CONTROL****Mplus...**

MINI-EY-IC

WITH INTERNAL COOLANT SUPPLY

00° type mono block holder

Insert	GY2M	-GS	Insert	GY2M	-GS
		-GM			-GM
Insert	GY2M	-GU	Insert	GY2M	-GU
Insert	GY2G	-MF	Insert	GY2M	R/L
					-GM



Right hand tool holder shown.

Order number	Stock	Seat size	CW	Hand	CDX	CUTDIA	H	B	LF	LH	HF	HBH
EYHL1212D125-IC	●	D	2.0	L	12.5	25	12	12	110	30	16	4
EYHR1212D125-IC	●			R	12.5	25	12	12	110	30	16	4
EYHL1212F125-IC	●	F	3.0	L	12.5	25	12	12	110	30	16	4
EYHR1212F125-IC	●			R	12.5	25	12	12	110	30	16	4
EYHL1616D160-IC	●	D	2.0	L	16.0	32	16	16	110	33.5	16	—
EYHR1616D160-IC	●			R	16.0	32	16	16	110	33.5	16	—
EYHL1616F160-IC	●	F	3.0	L	16.0	32	16	16	110	33.5	16	—
EYHR1616F160-IC	●			R	16.0	32	16	16	110	33.5	16	—
EYHL2020F210-IC	●			L	21.0	42	20	20	125	37	20	—
EYHR2020F210-IC	●			R	21.0	42	20	20	125	37	20	—

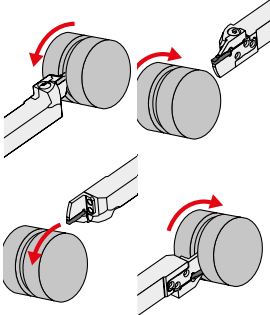
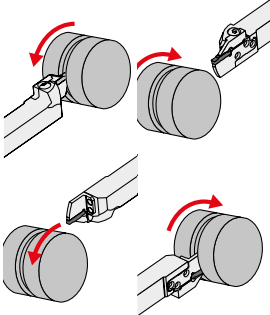
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1. When using insert widths 2.39 mm and 2.50 mm with E type seat sizes, in F type holders, the centre height will differ.
2. Dimensions shown are when the gauge insert is used. If other insert geometries are used then LF, LH and HF values may vary.
3. Size 12 holder without socket.
4. Sizes 12 & 16 with clamping screw axis tilted at 115° for easy on machine access.



MINI-EY-IC

CUTTING MODE AND INSERTS

Holder number	Cutting mode (Right hand holder shown)	Insert Geometry / Insert number
EYH○1212D125-IC		GY2M0300F030N-GU
EYH○1212F125-IC		GY2M0200D020N-GU
EYH○1616D160-IC		GY2M0200D020N-GS
EYH○1616F160-IC		GY2M0300F020N-GS
EYH○2020F210-IC		GY2M0200D020N-GM
		GY2M0300F030N-GM
		GY2M0200D020R05-GM
		GY2M0200D020L05-GM
		GY2M0300F030R05-GM
		GY2M0300030L05-GM

1. ○ = R/L

SPARE PARTS

Holder number	 Clamp screw	 Wrench	 Plug	 Adaptor
EYH○1212D125-IC	TS406 (Clamp Torque: 3.5 Nm)	TKY15R	Plug-M08-100-05	—
EYH○1212F125-IC				
EYH○1616D160-IC			Plug-G1/8-05	Socket-G1/8
EYH○1616F160-IC				
EYH○2020F210-IC				

* Wrench for Clamp screw

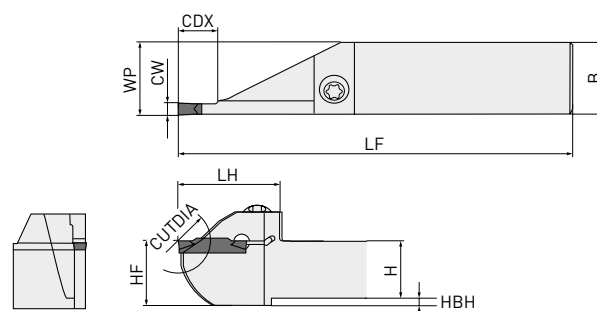
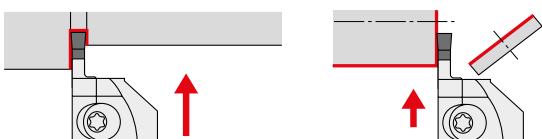
1. ○ = R/L

MINI-EY

WITH EXTERNAL COOLANT SUPPLY

00° type mono block holder

Insert	GY2M○○○○○○○○○	-GS -GM	Insert	GY2M○○○○○○○○○	-GS -GM
Insert	GY2M○○○○○○○○○	-GU	Insert	GY2M○○○○○○○○○	-GU
Insert	GY2G○○○○○○○○○	-MF	Insert	GY2M○○○○○○R/L○○	-GM



Right hand tool holder shown.

Order number	Stock	Seat size	CW	Hand	CDX	CUTDIA	H	B	LF	LH	HF	HBH
EYHR1212C125	●	C	1.5	R	12.5	25	12	12	110	20	16	4
EYHL1212C125	●			L	12.5	25	12	12	110	20	16	4
EYHR1010D125	●	D	2.0	R	12.5	25	10	10	110	20	14	4
EYHL1010D125	●			L	12.5	25	10	10	110	20	14	4
EYHR1212D125	●	D	2.0	R	12.5	25	12	12	110	20	16	4
EYHL1212D125	●			L	12.5	25	12	12	110	20	16	4
EYHR1212F125	●	F	3.0	R	12.5	25	12	12	110	20	16	4
EYHL1212F125	●			L	12.5	25	12	12	110	20	16	4
EYHR1616C135	●	C	1.5	R	13.5	27	16	16	110	22	16	—
EYHL1616C135	●			L	13.5	27	16	16	110	22	16	—
EYHR1616D160	●	D	2.0	R	16	32	16	16	110	22	16	—
EYHL1616D160	●			L	16	32	16	16	110	22	16	—
EYHR1616F160	●	F	3.0	R	16	32	16	16	110	22	16	—
EYHL1616F160	●			L	16	32	16	16	110	22	16	—

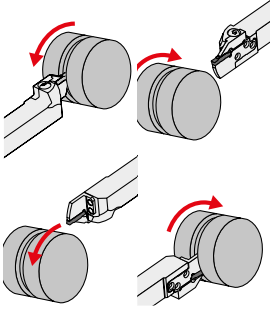
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1. When using insert widths 2.39 mm and 2.50 mm with E type seat sizes, in F type holders, the centre height will differ.
2. Dimensions shown are when the gauge insert is used. If other insert geometries are used then LF, LH and HF values may vary.



MINI-EY

CUTTING MODE AND INSERTS

Holder number	Cutting mode (Right hand holder shown)	Insert Geometry / Insert number
EYH $\odot$ 1212C125		GY2M0300F030N-GU
EYH $\odot$ 1616C135		GY2M0200D020N-GU
EYH $\odot$ 1010D125		GY2M0200D020N-GS
EYH $\odot$ 1212D125		GY2M0300F020N-GS
EYH $\odot$ 1616D160		GY2M0200D020N-GM
EYH $\odot$ 1212F125		GY2M0300F030N-GM
EYH $\odot$ 1616F160		GY2M0200D020R05-GM
		GY2M0200D020L05-GM
		GY2M0300F030R05-GM
		GY2M0300F030L05-GM



(Gauge insert)



1. $\odot$ = R/L

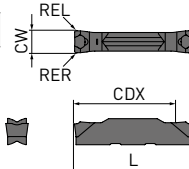
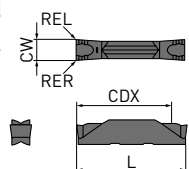
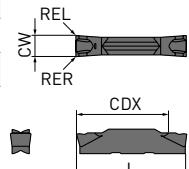
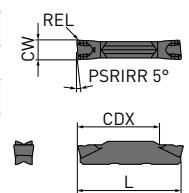
SPARE PARTS

Holder number	 Clamp screw	 Wrench
EYH $\odot$ 1212C125	TS406 (Clamp Torque: 3.5 Nm)	TKY15R
EYH $\odot$ 1616C135		
EYH $\odot$ 1010D125		
EYH $\odot$ 1212D125		
EYH $\odot$ 1616D160		
EYH $\odot$ 1212F125		
EYH $\odot$ 1616F160		

* Wrench for Clamp screw

1. $\odot$ = R/L

GY INSERTS

Order number	VP10RT	VP20RT	MY5015	MP9015	MP9025	NX2525	Seat size	Grooving width	Tolerance	RE	CDX	L	Geometry
FOR GROOVING/CUTTING OFF													
GY2M0200D020N-GU	●	●				●	D	2.00	±0.03	0.2	19.7	20.70	GU Breaker (For gummy steel) 
GY2M0239E020N-GU	●	●				●	E	2.39	±0.03	0.2	19.8	20.70	
GY2M0250E020N-GU	●	●				●	E	2.50	±0.03	0.2	19.5	20.70	
GY2M0300F030N-GU	●	●				●	F	3.00	±0.03	0.3	19.3	20.70	
GY2M0318F030N-GU	●	●				●	F	3.18	±0.03	0.3	19.3	20.70	
													
GY2M0150C010N-GS	●	●				●	C	1.50	±0.03	0.1	13.4	14.70	GS Breaker (Low feeds) 
GY2M0200D020N-GS	●	●				●	D	2.00	±0.03	0.2	18.7	20.70	
GY2M0239E020N-GS	●	●				●	E	2.39	±0.03	0.2	18.5	20.70	
GY2M0250E020N-GS	●	●				●	E	2.50	±0.03	0.2	18.5	20.70	
GY2M0300F020N-GS	●	●				●	F	3.00	±0.03	0.2	18.5	20.70	
GY2M0318F020N-GS	●	●				●	F	3.18	±0.03	0.2	18.5	20.70	
													
GY2M0150C020N-GM	●	●		●	●	●	C	1.50	±0.03	0.2	13.9	14.70	GM Breaker (Medium feeds) 
GY2M0200D020N-GM	●	●	●	●	●	●	D	2.00	±0.03	0.2	19.4	20.70	
GY2M0239E020N-GM	●	●	●	●	●	●	E	2.39	±0.03	0.2	19.4	20.70	
GY2M0250E020N-GM	●	●	●	●	●	●	E	2.50	±0.03	0.2	19.4	20.70	
GY2M0300F030N-GM	●	●	●	●	●	●	F	3.00	±0.03	0.3	19.4	20.70	
GY2M0318F030N-GM	●	●	●	●	●	●	F	3.18	±0.03	0.3	19.4	20.70	
													
FOR CUTTING OFF													
GY2M0200D020R05-GM	●	●					D	2.00	±0.03	0.2	19.5	20.80	R/L05-GM Breaker 
GY2M0200D020L05-GM	●	●					D	2.00	±0.03	0.2	19.5	20.80	
GY2M0250E020R05-GM	●	●					E	2.50	±0.03	0.2	19.5	20.825	
GY2M0250E020L05-GM	●	●					E	2.50	±0.03	0.2	19.5	20.825	
GY2M0300F030R05-GM	●	●					F	3.00	±0.03	0.3	19.5	20.85	
GY2M0300F030L05-GM	●	●					F	3.00	±0.03	0.3	19.5	20.85	
													

Right hand insert shown

Right hand insert shown.

1. When using insert widths 2.39 mm and 2.50 mm with E type seat sizes, in F type holders, the centre height will differ.



MINI-EY

RECOMMENDED CUTTING CONDITIONS

Material	Hardness	Grade	Vc
P	Mild steel <160 HB	VP20RT	165 [100 – 220]
		VP10RT	170 [110 – 230]
		MY5015	220 [140 – 300]
		NX2525	150 [90 – 210]
	Carbon steel Alloy steel 160 – 280 HB	VP20RT	130 [80 – 180]
		VP10RT	140 [90 – 190]
		MY5015	180 [110 – 250]
		NX2525	120 [70 – 170]
	>280 HB	VP20RT	100 [60 – 140]
		VP10RT	110 [70 – 150]
		MY5015	100 [90 – 210]
		NX2525	95 [55 – 135]
M	Stainless steel <270 HB	VP20RT	100 [60 – 140]
		VP10RT	110 [70 – 150]
K	Gray cast iron Tensile Strength <300 MPa	VP20RT	130 [80 – 180]
		VP10RT	280 [90 – 190]
		MY5015	220 [140 – 300]
	Ductile cast iron Tensile Strength <800 MPa	VP20RT	100 [60 – 140]
		VP10RT	110 [70 – 150]
		MY5015	100 [90 – 210]
S	Heat resistant alloy Titanium alloy —	VP20RT	45 [30 – 60]
		VP10RT	55 [40 – 70]
		MP9015	70 [40 – 100]
		MP9025	60 [30 – 90]

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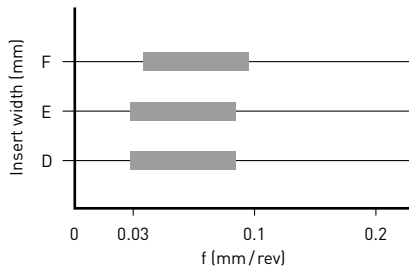
1. VP20RT is the first recommended grade for materials other than hardened steel.
2. For VP10RT, VP20RT and MY5015, wet cutting is recommended.

MINI-EY

RECOMMENDED CUTTING CONDITIONS

GU Breaker

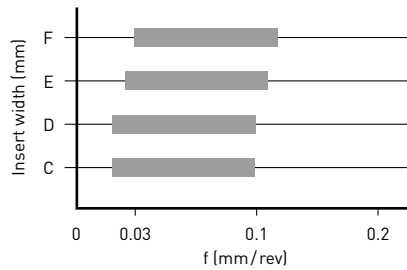
Grooving, Cutting off



■ : 1st recommended area

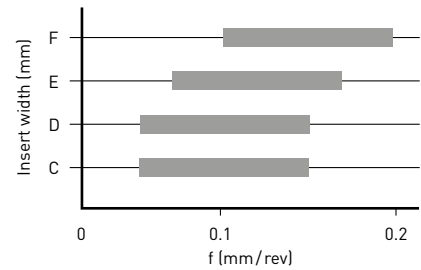
GS Breaker

Grooving, Cutting off



GM Breaker

Grooving, Cutting off

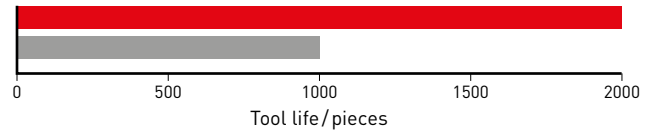


Seat size	C	D	E	F
	1.50	2.00	2.39	3.00
Insert width (mm)	—	2.24	2.50	3.18
	—	—	2.74	3.24

APPLICATION EXAMPLE

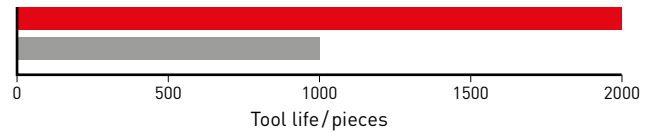
Material	1.4021
Tool	GY2G0300F020N-MF VP20RT
Vc (m/min)	160
f (mm/rev)	0.22
Cutting mode	Semi finishing
Coolant	Internal coolant
Machine	Multi spindle machine MS32

Results Tool life was doubled compared to the conventional tool.



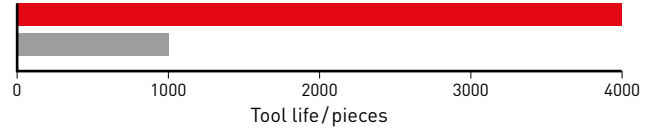
Material	1.4305
Tool	GY2M0200D020N-GM VP20RT
Vc (m/min)	160
f (mm/rev)	0.08/0.04
Cutting mode	Cutting off
Coolant	Internal coolant
Machine	Swiss Type Machine

Results Tool life was doubled compared to the conventional tool.



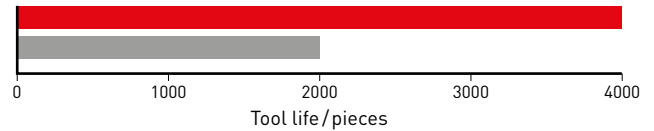
Material	1.4021
Tool	GY2G0300F020N-MF VP20RT
Vc (m/min)	160
f (mm/rev)	0.18/0.07
Cutting mode	Finish cutting
Coolant	Internal coolant
Machine	Multi spindle machine MS32

Results Tool life was 4 times longer than the conventional tool.



Material	1.4305
Tool	GY2M0200D020N-GM VP20RT
Vc (m/min)	120
f (mm/rev)	0.08/0.04
Cutting mode	Cutting off
Coolant	Internal coolant
Machine	Swiss type machine

Results Tool life was doubled compared to the conventional tool.





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