

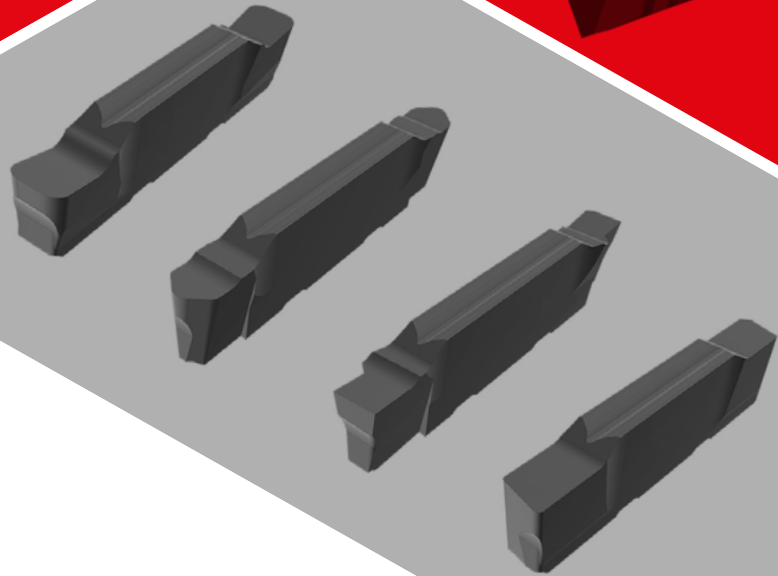
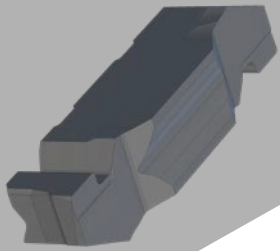
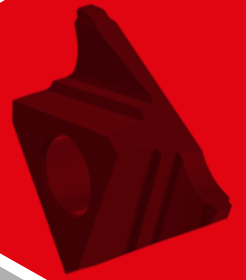
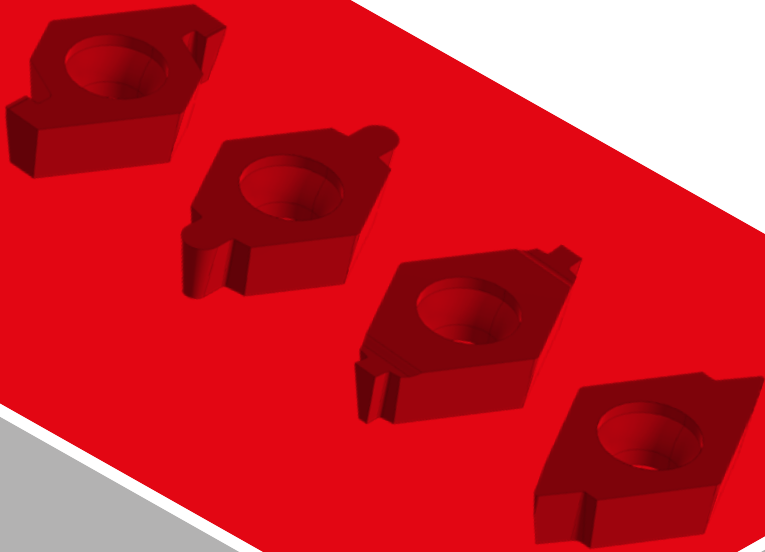
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# CUSTOM-MADE INSERTS

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SPECIAL SOLUTIONS

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# OUR COMPANY

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The European plant of the Mitsubishi Materials Group is located in Valencia and has been manufacturing high quality carbide tools for more than 45 years.

In order to meet the most specific and complex requirements, Mitsubishi Materials Spain is constantly developing solutions to generate results that benefit customers. Cutting-edge design and manufacturing technologies are used to create tools for the most demanding applications, reducing machining times and increasing productivity.

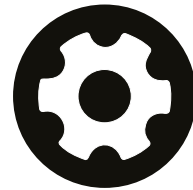
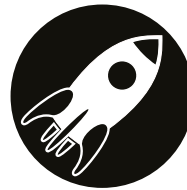


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## INDUSTRY SECTORS

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MEDICAL — AUTOMOTIVE — AEROSPACE — GENERAL MACHINING  
ENERGY — VALVES — MINING — RAILROAD

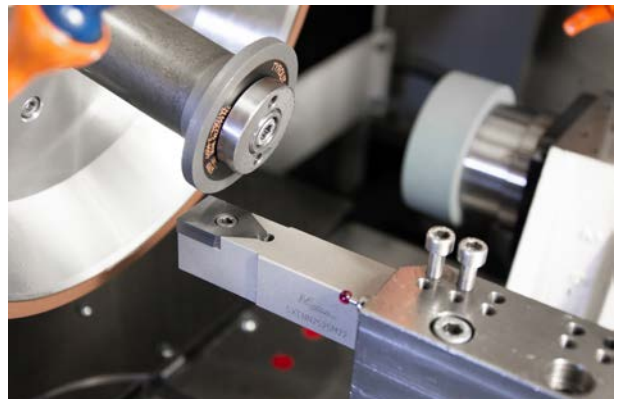


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## COMPLEX SOLUTIONS MADE POSSIBLE

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To achieve the manufacture of special custom made tools there is a wide selection of machinery available: Presses, sintering furnaces, erosion and grinding machines to form complex chipbreakers and cutting edge profiles.



### MADE TO ORDER

Wide variety of choice and design.

# 1. MODULAR GROOVING

## 1.1 GY SERIES

The GY series offers a wide range of tool holders and inserts for internal and external grooving applications. Customised tool holders and inserts can be made based to meet the most specific machining requirements.

- Modular or monoblock tool holder
- Highly reliable insert location system
- Maximum stability and performance
- Extensive range of applications: grooving, parting off, copying, internal grooving.
- Sectors: Automotive, aerospace and general machining.



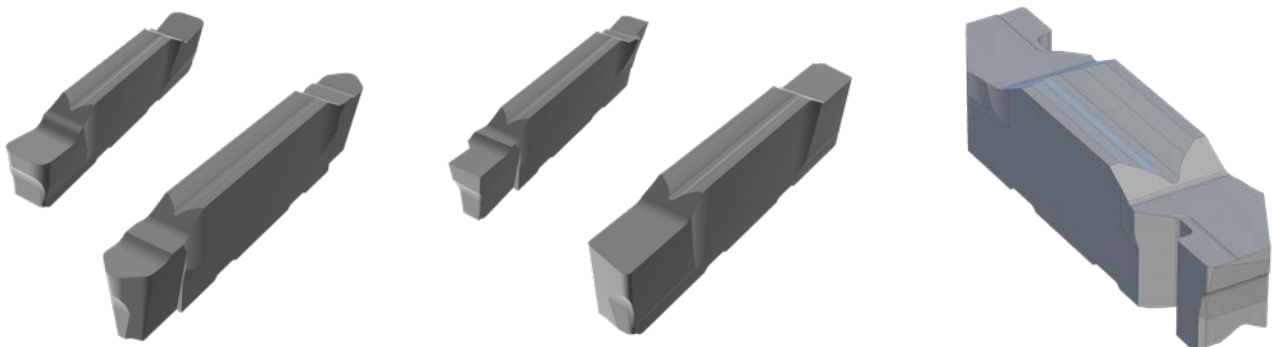
### CUSTOM SOLUTIONS

From blank inserts, it is possible to manufacture complex geometries that are not currently available from the standard range. These inserts can be adapted to any tool holder in order to achieve special solutions for the most specific of machining operations.

### COMPREHENSIVE SOLUTIONS

TOOL HOLDERS  
+  
CUSTOM-MADE INSERTS

### CUSTOM MADE EXAMPLES



### APPLICATION RANGE

P	Carbon and alloy steels	M	Stainless steels	K	Grey cast iron	N	Aluminium alloys	S	Titanium alloys	H	Hardened steels
P01		M01		K01		N01		S01		H01	
P10	VP10RT	M10	VP10RT	K10	VP10RT	N10	RT9010	S10	VP10RT	H10	VP10RT
P20	VP10RT VP20RT	M20	VP10RT VP20RT	K20	VP10RT VP20RT	N20	RT9010	S20	VP10RT VP20RT	H20	
P30		M30		K30		N30		S30		H30	
P40		M40		K40		N30		S40		H40	



For more information the standard GY series tools, refer to the catalogue B140E (GY SERIES):

<https://mhg-mediastore.net/B140/>

## 1.2 SPECIAL GROOVING SERIES

With increasing demand for high quality parts, the modern metalworking industry is constantly creating challenges for manufacturers and customers. However, processes have become ever more complex and expensive, therefore improvements in the manufacturing costs can be achieved with a customised proposal.

Special geometries and profiles for any type of grooving can be made by modifying standard inserts and tool holders.

### INTERNAL GROOVING

Chips may be more difficult to evacuate when using long overhangs in internal grooving and can cause problems when machining. In order to avoid chip blockages, boring bars and tool holders are available starting from very small diameters. Inserts with minimum widths and small radii to reduce cutting forces are available for highly efficient and cost-effective machining. Carbide boring bars are available if vibrations occur.

#### FSL5 BAR

- Steel or carbide shank.
- Clamp screw fastening.
- Ø 8, 10, 12, 14 and 16.
- Ø Minimum cutting diameter 10 mm.
- Maximum groove depth 3 mm.
- Carbide shanks are recommended for resisting vibration during deep hole machining.

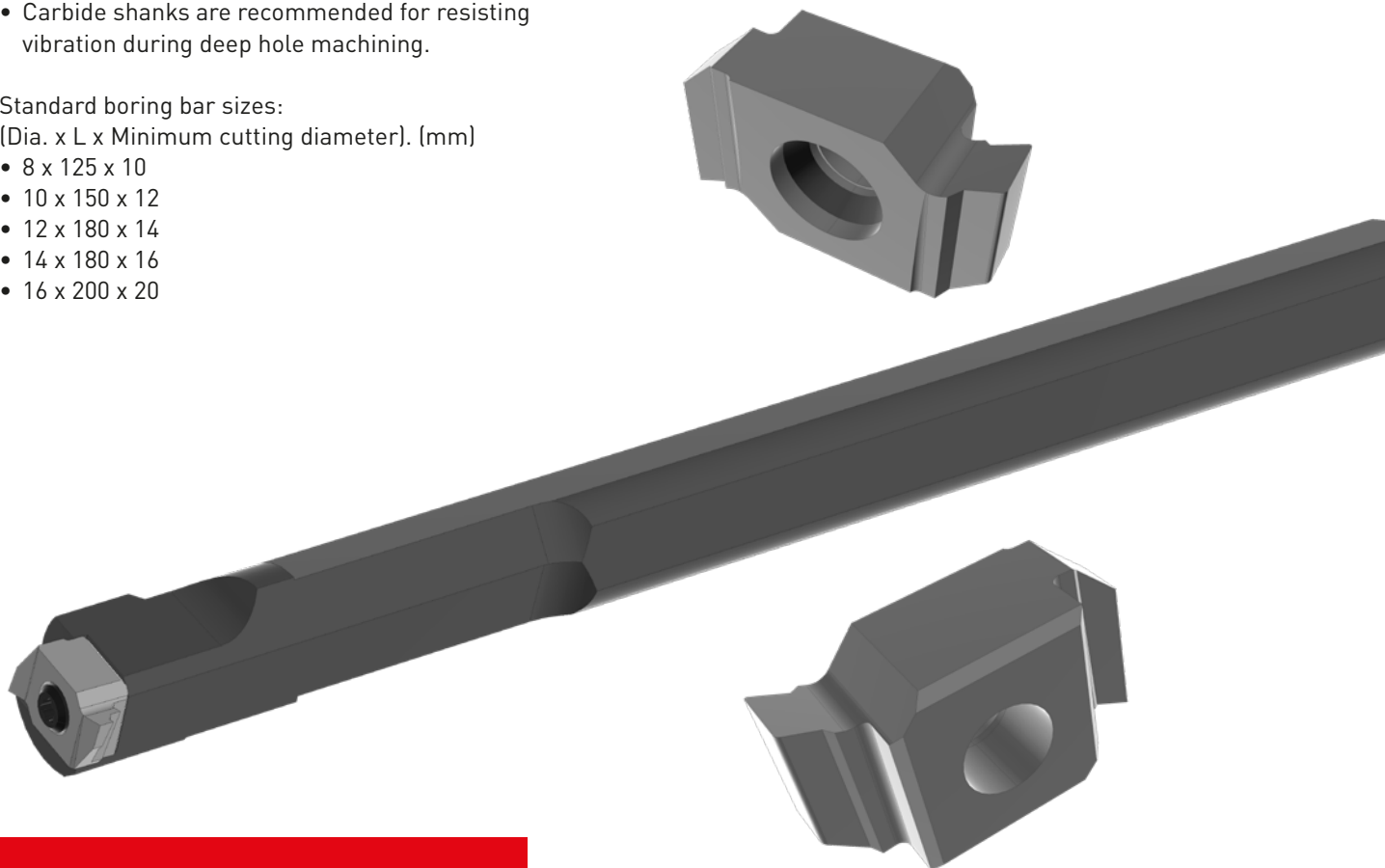
Standard boring bar sizes:

(Dia. x L x Minimum cutting diameter). (mm)

- 8 x 125 x 10
- 10 x 150 x 12
- 12 x 180 x 14
- 14 x 180 x 16
- 16 x 200 x 20

#### MLG INSERTS

- Left and right handed inserts.
- Robust, versatile and reliable.



**STANDARD TOOL HOLDER**  
+  
**SPECIAL PLATES**



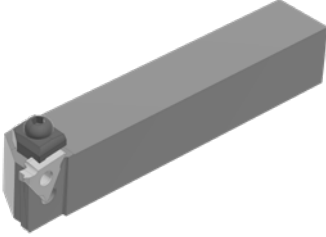
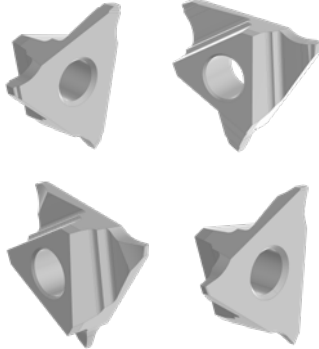
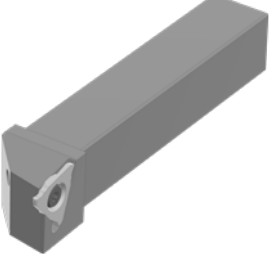
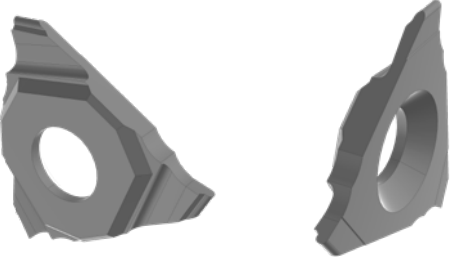
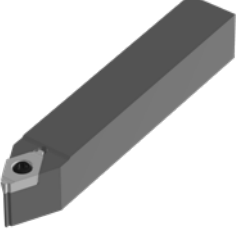
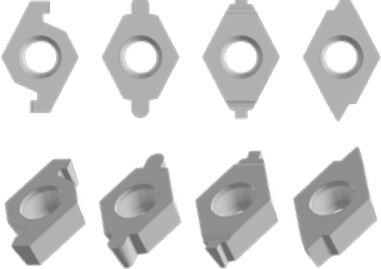
For more information on our standard tools, please refer to general catalogue C009S - Turning:

<https://mhg-mediastore.net/C009TT/>

# 1.2 SPECIAL GROOVING SERIES

## EXTERNAL GROOVING

Enhancing profitability and productivity is the main goal with customised external grooving tool holders and inserts. Good chip evacuation during machining is achieved by the optimised geometry of the inserts.

STANDARD TOOL HOLDER	SPECIAL INSERT
<p><b>MG Tool holder</b></p> <ul style="list-style-type: none"><li>• Ø 20 and 25</li><li>• Left and right handed inserts.</li><li>• Wide insert enables secure clamping</li><li>• Ideal for narrow grooves.</li></ul> 	<p><b>MGT Inserts</b></p> <ul style="list-style-type: none"><li>• Productive multi edge inserts.</li><li>• For precision grooving.</li></ul> 
<p><b>SMG Tool holder</b></p> <ul style="list-style-type: none"><li>• Ø 10, 12, 16, 20 and 25</li><li>• Recommended for narrow grooving and threading.</li><li>• Right hand inserts.</li><li>• Clamp screw fastening.</li></ul> 	<p><b>MGT Inserts</b></p> <ul style="list-style-type: none"><li>• Precision grooving inserts for smaller diameter grooves.</li><li>• Provides excellent surface finishes with a positive rake geometry.</li></ul> 
<p><b>SDNC Tool holder</b></p> <ul style="list-style-type: none"><li>• Tool holder for face machining.</li><li>• Left and right handed inserts.</li></ul> 	<p><b>DCGW Inserts</b></p> <ul style="list-style-type: none"><li>• Positive rhombic insert geometry.</li><li>• It is possible to customise the insert radii.</li></ul> 



For more information on standard tools, refer to general catalogue C009S - Turning:

<https://mhg-mediastore.net/C009TT/>

# 1.3 FOR SPECIAL PROFILE WIDTHS

Customised tools designed and manufactured based on the customer's request are a perfect solution for different types of machines and cutting widths.

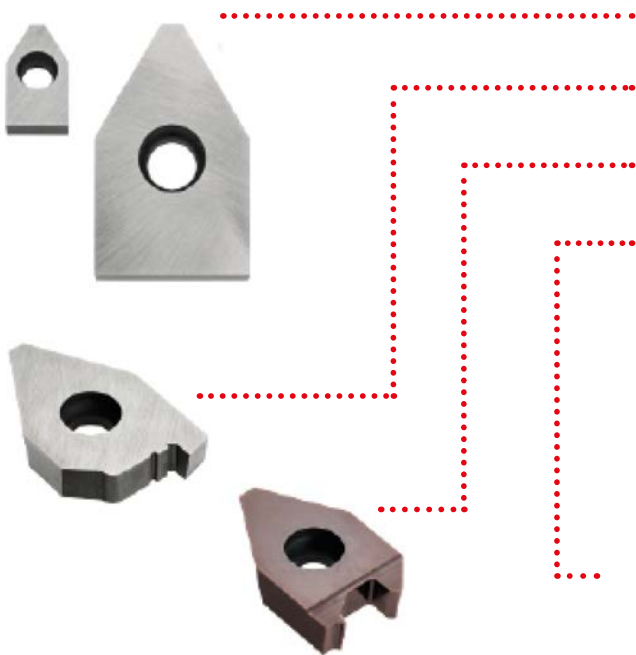
## CUSTOM SOLUTIONS

Standard tools can be modified to the most complex geometries. Once finished, these tools are the perfect solution for different machines and applications. As a result, these more complex tools can achieve reduced machining costs compared to standard turning processes. Productivity is increased with precision repeatability when the insert needs changing.



**COMPREHENSIVE SOLUTIONS**

## SPECIFICATIONS



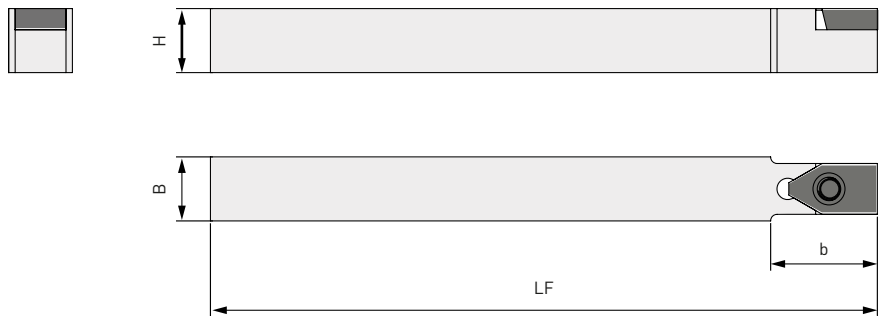
- There are 4 types to choose from with a width range from 9 mm to 22 mm.
- Applicable to all types of standard lathes and also for multi-spindle lathes.
- The profile type provides superior surface quality finishes.
- Significant savings with reduced tool change times.



## COST BENEFITS

- Increased productivity.
- Reduced tooling costs.

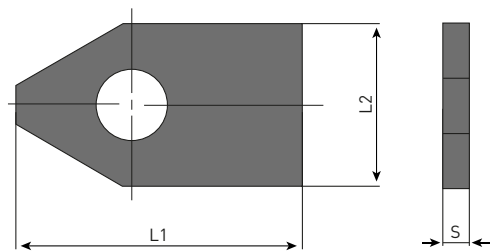
# TABLE OF DIMENSIONS



Tool holder	H	B	LF	b
SXCNN1212K09	12	12	125	20
SXCNN1212K12	12	12	125	25
SXCNN1616K09	16	16	125	20
SXCNN1616K12	16	16	125	25
SXCNN1616K16	16	16	125	30
SXCNN2020K09	20	20	125	20
SXCNN2020K12	20	20	125	25
SXCNN2020K16	20	20	125	30
SXCNN2020K22	20	20	125	40
SXCNN2525M16	25	25	150	30
SXCNN2525M22	25	25	150	40

1. The tool holders are only compatible with Mitsubishi Materials inserts.
2. For customised tool holders, please contact us.

## TABLE OF DIMENSIONS (UNFINISHED INSERTS)



Tool holder	L1	L2	S
XNCUW10T3	16.60	9.525	3.97
XNCUW1304	21.86	12.70	4.76
XNCUW1605	26.30	15.875	5.50
XNCUW2206	36.30	22.225	6.40



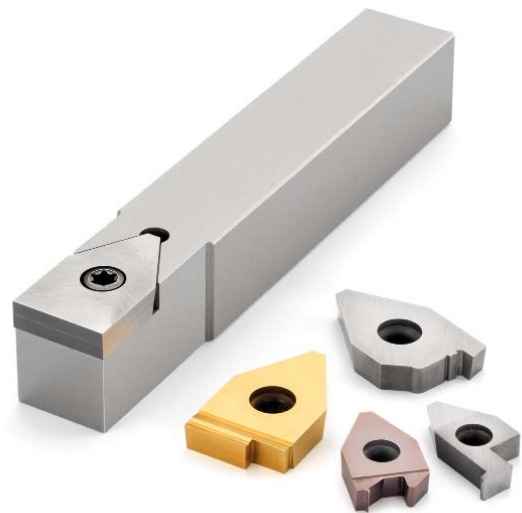
# SPARE PARTS

Blank tool holders	Insert	Screw	Fastening torque (Nm)	Wrench
SXCNN1212K09	XNCUW10T3	TS43	3.5	TKY15F
SXCNN1212K12	XNCUW1304	TS5	7.5	TKY25R
SXCNN1616K09	XNCUW10T3	TS43	3.5	TKY15F
SXCNN1616K12	XNCUW1304	TS5	7.5	TKY25R
SXCNN1616K16	XNCUW1605	TS5	7.5	TKY25R
SXCNN2020K09	XNCUW10T3	TS43	3.5	TKY15F
SXCNN2020K12	XNCUW1304	TS5	7.5	TKY25R
SXCNN2020K16	XNCUW1605	TS5	7.5	TKY25R
SXCNN2020K22	XNCUW2206	TS6S	10.0	TKY30R
SXCNN2525M16	XNCUW1605	TS5	7.5	TKY25R
SXCNN2525M22	XNCUW2206	TS6S	10.0	TKY30R

## COATINGS

In addition, Mitsubishi Materials use coatings on tools that further reduces machining costs due to increased tool life.

- Increased tool life.
- Faster cutting speeds.
- Reduced machining cycles.



## INSERT GRADES FOR A WIDE VARIETY OF MATERIALS

P	Carbon and alloy steels	M	Stainless steels	K	Grey cast iron	N	Aluminium alloys	S	Titanium alloys	H	Hardened steels
P01		M01		K01		N01		S01		H01	
P10	VP10RT	M10	VP10RT	K10	VP10RT	N10	RT9010	S10	VP10RT	H10	VP10RT
P20	VP20RT	M20	VP10RT VP20RT	K20	VP10RT VP20RT	N20		S20	VP20RT RT9010	H20	VP20RT
P30		M30		K30		N30		S30		H30	
P40		M40		K40		N30		S40		H40	

# 2. SPECIAL APPLICATIONS

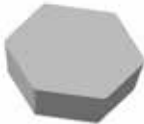
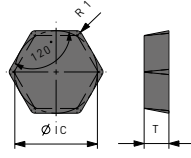

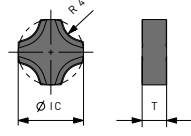

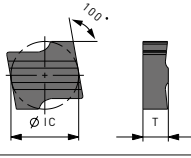

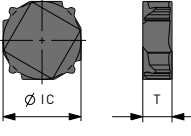

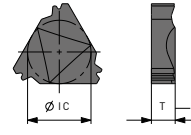
Due to many years experience in manufacturing special tools, Mitsubishi Materials are able to manufacture and customise inserts to the most stringent requirements. Providing tools across a huge variety of applications and industrial sectors.

Below is a selection of products that have previously been made and successfully facilitated to the most demanding of grooving applications.

## SUCCESS STORIES

Item no.	Grade	Dimensions (mm)			Geometry
		IC	T	dφ	
DCHW 090304	NX55 NX2525	7.94	3.18	3.6	
DCHW 11T304	NX55 NX2525	7.94	3.97	4.4	
SNHX 1203T	HTI10 UTI20T VP10H VP15TF	12.70	3.20	5	
SNHX 1205T	HTI10 UTI20T VP10H VP15TF	12.70	5.40	5	
SNHX 1205T	HTI10 UTI20T VP10H VP15TF	12.70	5.40	5	
SNHX 12045T	HTI10 UTI20T VP10H VP15TF	12.70	4.50	5	
XDHW 0206	HTI10 TF15 ZH104 ZH104P VP15TF VP10H	6.5	2.8	3	
XDHW 0310	HTI10 TF15 ZH104 ZH104P VP15TF VP10H	10	4	4	
BSE 16	HTI10 VP10H K01PVD VP15TF	16	4	4	
BSE 20	HTI10 VP10H K01PVD VP15TF	20	5	5	
BSE 25	HTI10 VP10H K01PVD VP15TF	25	6	6	
BSE 32	HTI10 VP10H K01PVD VP15TF	32	7	8	
SCMW 1204-R3... *Several radius	VP10H VP15TF	12.70	4.76	5.5	
APIRD 10H	UTI20T	15.87	6.35	5.35	
APIRD 8H	UTI20T	15.87	6.35	5.35	

## 2. SPECIAL APPLICATIONS

Item no.	Grade	Dimensions (mm)		Geometry	Geometry
		IC	T		
HPEN 090408	HTI10	15.87	4.76		
SNMF 43R4... *Several radius	NX2525	12.70	4.76		
IN-MME1	NX55 NX4545	12.70	4.76		
IN-MME2	NX55 NX4545	12.70	4.76		
IN-MME3	NX55 NX4545	12.70	4.76		



# 3. CORPORATE PHILOSOPHY

## FOR PEOPLE, SOCIETY AND THE EARTH

As industries evolve rapidly and market requirements grow at the same pace, Mitsubishi Materials constantly focuses on meeting the specific requirements of customers as well as meeting the challenges of the metalworking industry.



### MISSION AND VISION

A leading business group that is committed to creating a sustainable world through material innovation, using unique and distinctive technologies.



### VALUES

- Respecting diversity and teamwork.
- Working with integrity, speed and determination.
- Striving to meet the needs of customers and society.



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# 4. PROJECT ENGINEERING

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## CUSTOM SOLUTIONS

With a goal to provide the best solution for the machining process, provide quick responses together with production planning, supply and project management that focuses on the customer achieving efficiency in production.

As one of the world's leading suppliers and manufacturer, compliance with all required standards and certifications ensures the highest level of quality, service, standard and customised tools.



- Personalised care and guidance.
- Customised special tools for all projects.
- After-sales service.





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