



**Carmex**  
*Precision Tools Ltd.*

*The optimal tools for your industry™*

# **CMT** *Vertical Milling*



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# CMT Vertical Milling

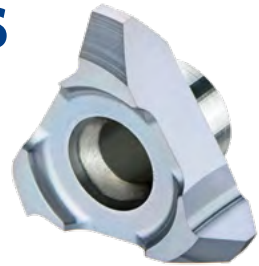
## Advantages

- Ground profile inserts for high precision and excellent performance.
- Working at high machining parameters, with high surface quality.
- Solid and accurate clamping method enables full repeatability.
- Same insert and holder for right-hand or left-hand threads.
- Toolholders include weldon shank and coolant bore.

## CMT Straight Flute Inserts

### Carbide Grade: MT7

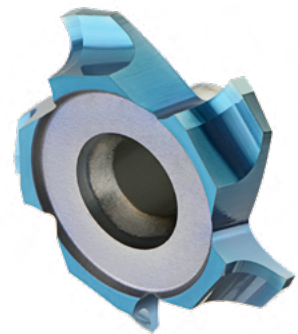
Inserts are available in MT7 Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, covering a very wide range of materials.



## CMT Spiral Multi Flute Inserts

- Multi flute: 4-8 cutting edges
- Spiral flute for smooth cutting

The new cutters are designed for large range of materials including hardened steel up to 62 HRc.



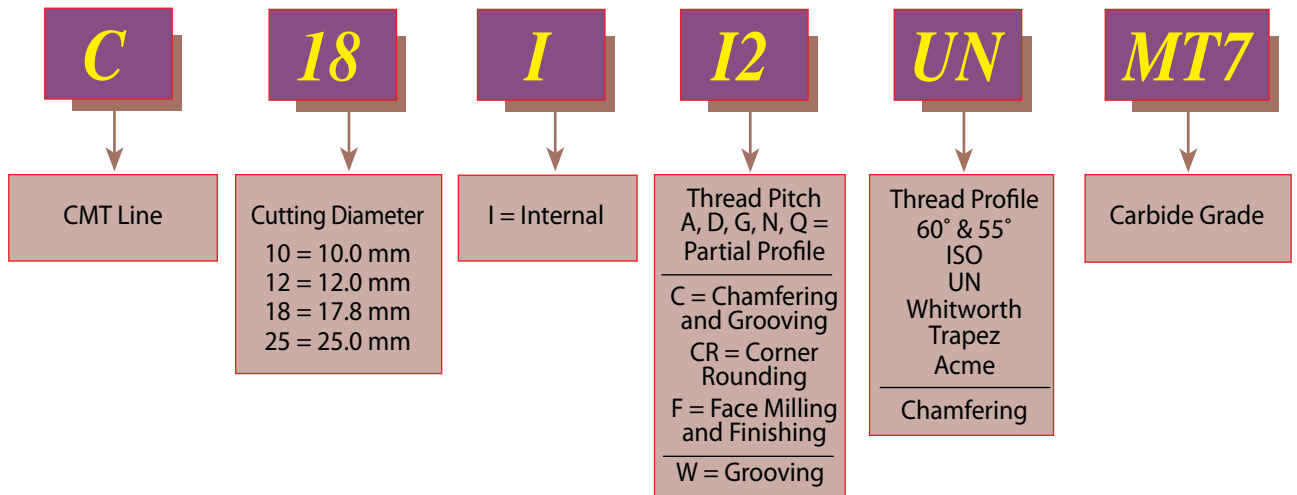
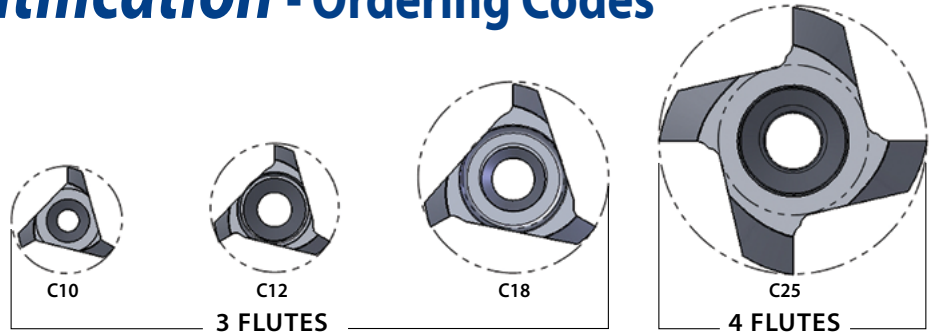
### Advantages

- Longer tool life
- High material removal and higher feeds results increased productivity
- Excellent surface finish
- Reduced cycle time
- Low cutting forces due to the spiral multi flutes

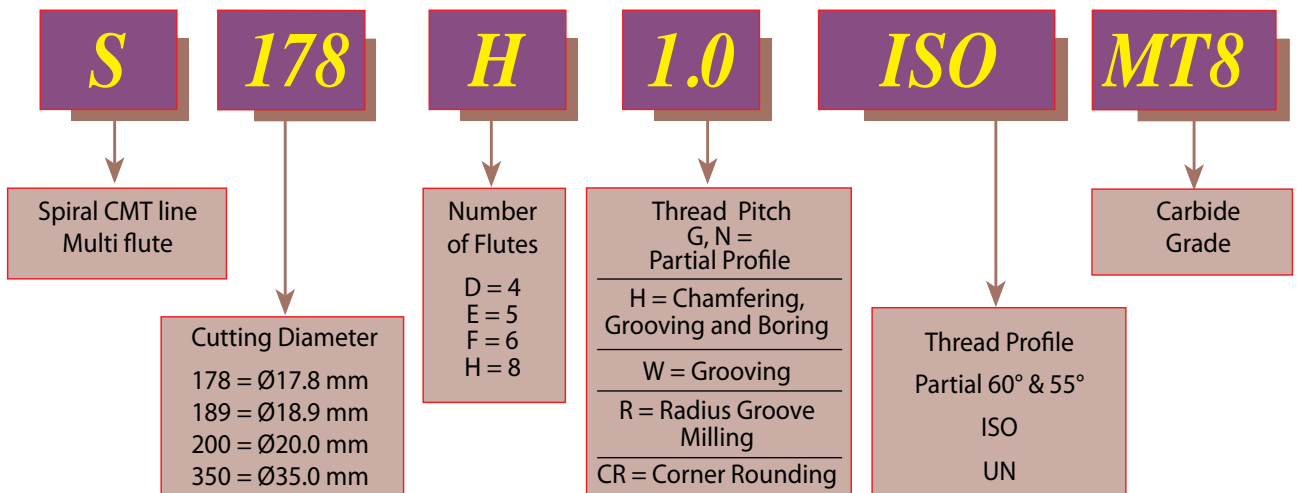
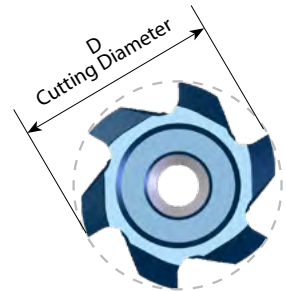
### Carbide Grade: MT8

Sub Micron grade with advanced PVD triple coating (ISO K10-K20). Extremely high heat resistant and smooth cutting operation, high performance, for all machining conditions.

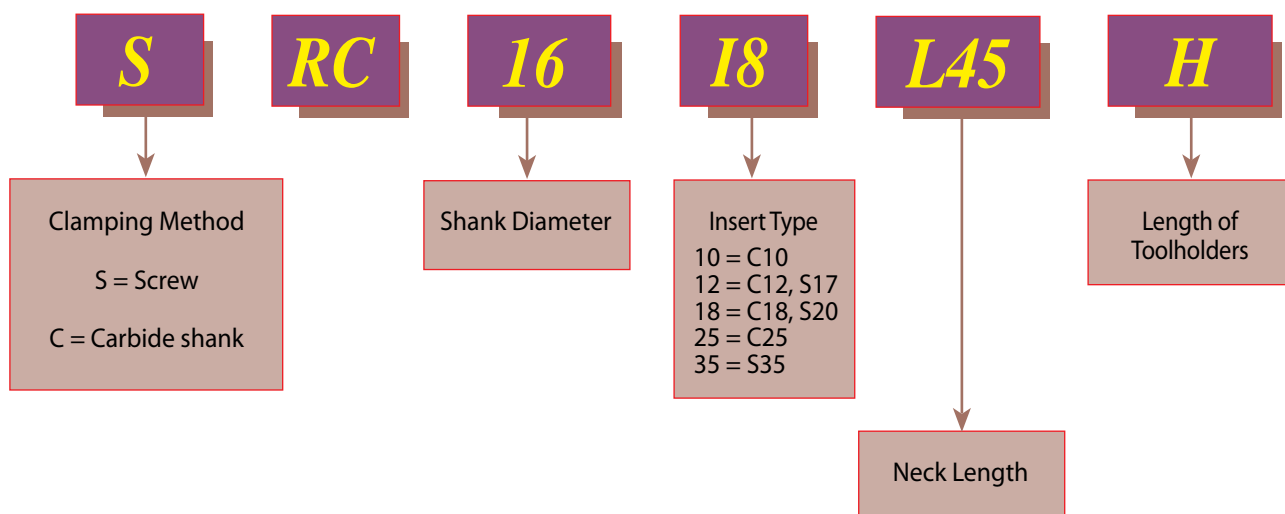
## Product Identification - Ordering Codes



## CMT Spiral Multi Flute Inserts

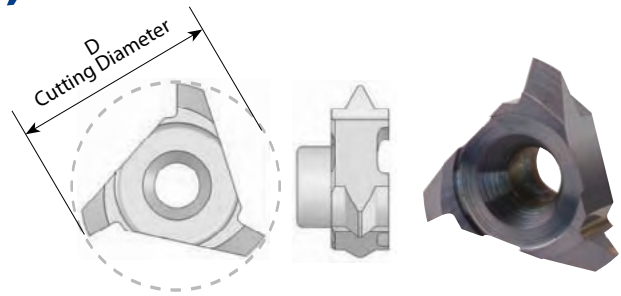


## Product Identification - Ordering Codes CMT Toolholders



## Partial Profile 60° - ISO, UN

Same insert for internal and external thread



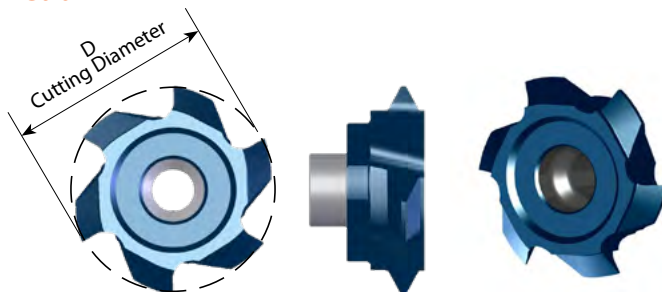
Insert Type	Ordering Code	Pitch Range mm	Pitch Range TPI	D	Thread Diameter (min)		Holder Code*
					Pitch Low Range	Pitch High Range	
C10	<b>C10 A60</b>	Int. 0.5 - 0.8	56 - 28	10.0	Ø ≥ 11	Ø ≥ 12	H1, 1.1, 2, 15, 16, 17
		Ex. 0.4 - 0.8	64 - 32				
	<b>C10 G60</b>	Int. 1.0 - 2.0	28 - 13	10.0	Ø ≥ 12	Ø ≥ 14	
		Ex. 0.8 - 1.75	32 - 15				
C12	<b>C12 A60</b>	Int. 0.5 - 0.8	56 - 28	12.0	Ø ≥ 13	Ø ≥ 14	H3, 3.1, 4, 5, 18, 19, 20
		Ex. 0.4 - 0.8	64 - 32				
	<b>C12 G60</b>	Int. 1.0 - 2.0	28 - 13	12.4	Ø ≥ 14	Ø ≥ 16	
		Ex. 0.8 - 1.75	32 - 15				
	<b>C12 AG60</b>	Int. 1.5-2.5	18-11	12.4	Ø ≥ 15	Ø ≥ 17	
		Ex. 1.25-2.0	24-13				
C18	<b>C18 A60</b>	Int. 0.5 - 0.8	56 - 28	17.8	Ø ≥ 19	Ø ≥ 19	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
		Ex. 0.4 - 0.8	64 - 32				
	<b>C18 G60</b>	Int. 1.0 - 1.75	28 - 14	17.8	Ø ≥ 20	Ø ≥ 21	
		Ex. 0.8 - 1.5	32 - 16				
	<b>C18 D60</b>	Int. 2.0 - 3.0	13 - 8	17.8	Ø ≥ 21	Ø ≥ 23	
		Ex. 1.75 - 2.5	15 - 10				
C25	<b>C25 G60</b>	Int. 1.5 - 2.5	16 - 10	25.0	Ø ≥ 28	Ø ≥ 30	H10, 11, 24, 25
		Ex. 1.0 - 2.0	28 - 13				
	<b>C25 N60</b>	Int. 3.0 - 5.0	8 - 5	25.0	Ø ≥ 30	Ø ≥ 34	
		Ex. 2.5 - 4.5	10 - 6				
	<b>C25 Q60</b>	Int. 5.0 - 6.0	5 - 4	25.0	Ø ≥ 34	Ø ≥ 35	
		Ex. 4.5 - 5.0	6 - 5				

\* For complete toolholder description see pages 23-24

## Partial Profile 60° - ISO, UN

Same insert for internal and external thread

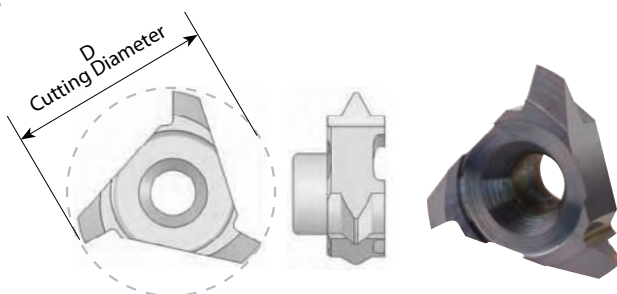
Multi Flute



Insert Type	Ordering Code	Pitch Range mm	Pitch Range TPI	D	No. of Flutes	Thread Dia (min)		Holder Code*
						Pitch Low range	Pitch High range	
S17	<b>S160 F AG60</b>	Int. 1.0-3.5	28-7	16.0	6	Ø≥20	Ø≥22	H3, 3.1, 4, 5, 18, 19, 20
		Ex. 0.8-3.0	32-8.5					
S20	<b>S200 F G60</b>	Int. 1.5-2.5	16-10	20.0	6	Ø ≥ 23	Ø ≥ 25	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
		Ex. 1.0-2.0	28-13					
	<b>S200 D N60</b>	Int. 3.0-5.0	8- 5	20.0	4	Ø ≥ 25	Ø ≥ 29	H5.1, 5.2, 21
		Ex. 2.5-4.5	10-6					
S35	<b>S350 F N60</b>	Int. 3.0-5.0	8-5	35.0	6	Ø≥38	Ø≥40	H12, 13, 14, 26
		Ex. 2.5-4.5	10-6					
	<b>S350 F Q60</b>	Int. 5.0-6.0	5-4	35.0	6	Ø≥40	Ø≥44	H12, 13, 14, 26
		Ex. 4.5-5.0	6-5					

## Partial Profile 60° - NPT

Same insert for internal and external thread

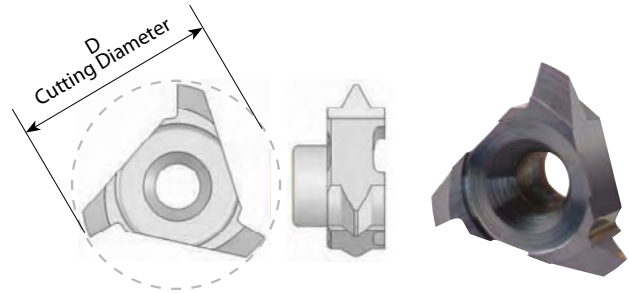


Insert Type	Ordering Code	Pitch TPI	Standard	D	Holder Code*
C10	<b>C10 18 NPT</b>	18	1/4 - 3/8	10.0	H1, 1.1, 2, 15, 17
C18	<b>C18 14 NPT</b>	14	1/2 - 3/4	15.8	H5.1, 5.2, 21
C25	<b>C25 11.5NPT</b>	11.5	1-2	25.0	H10, 11, 24, 25
	<b>C25 8 NPT</b>	8	≥ 2 1/2	25.0	

\* For complete toolholder description see pages 23-24

## Partial Profile 55° - BSP(G), BSF, BSW

Same insert for internal and external thread

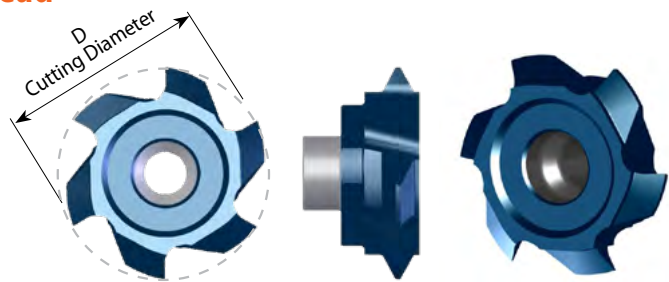


Insert Type	Ordering Code	Pitch Range TPI	D	Thread Dia. (min)	Holder Code*
C10	<b>C10 G55</b>	19-14	10.0	$\varnothing \geq 13$	H1, 2, 15, 17
C12	<b>C12 G55</b>	28-19	12.0	$\varnothing \geq 14$	H3, 3.1, 4, 5, 18, 19, 20
	<b>C12 N55</b>	14- 11	12.2	$\varnothing \geq 16$	H3, 4, 5, 18, 20
C18	<b>C18 G55</b>	14- 8	18.0	$\varnothing \geq 23$	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
C25	<b>C25 N55</b>	7- 5	25.0	$\varnothing \geq 31$	H10, 11, 24, 25

## Partial Profile 55° - BSP(G), BSF, BSW

Same insert for internal and external thread

**Multi Flute**



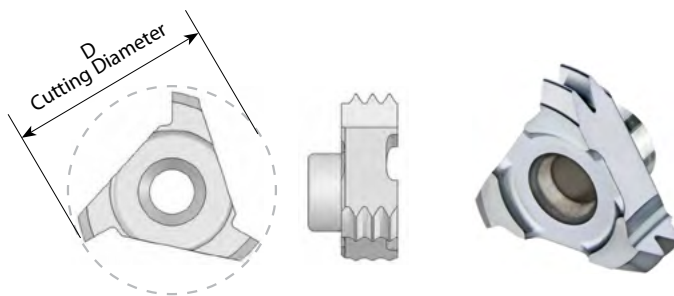
Insert Type	Ordering Code	Pitch Range TPI	D	No. of Flutes	Thread Dia (min)	Holder Code*
S17	<b>S170 F G55</b>	11-8	17.0	6	$\varnothing \geq 18.5$	H3, 3.1, 4, 5, 18, 19, 20
S20	<b>S195 F G55</b>	14	19.5	6	$\varnothing \geq 23$	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
	<b>S200 D N55</b>	8-6	20.0	4	$\varnothing \geq 25$	H5.1, 5.2, 21

\* For complete toolholder description see pages 23-24



## Full Profile - ISO

Inserts for internal thread



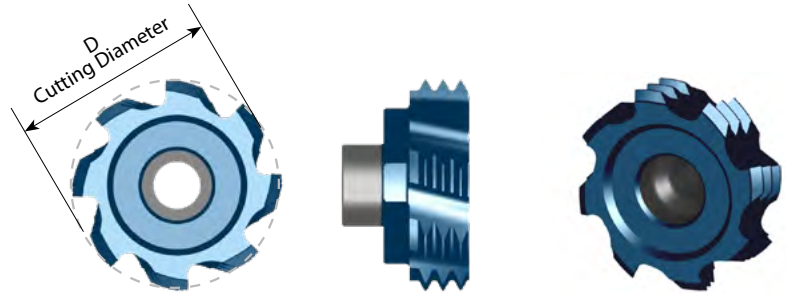
Insert Type	Ordering Code	Pitch mm	M coarse	M fine	Number of Teeth	D	Holder Code*
C10	<b>C10 I 0.5 ISO</b>	0.5		M10, M12	6	9.0	H1, 1.1, 2, 15, 16, 17
	<b>C10 I 0.75ISO</b>	0.75		M12	4	10.0	
	<b>C10 I 1.0 ISO</b>	1.0		M12, M13	3	10.0	
	<b>C10 I 1.5 ISO</b>	1.5		M13, M14	2	10.0	
	<b>C10 I 1.75ISO</b>	1.75	M12		1	9.6	H1, 2, 15, 17
	<b>C10 I 2.0 ISO</b>	2.0	M14	M18	1	10.0	
C12	<b>C12 I 0.5 ISO</b>	0.5		M13-M18	6	12.0	H3, 3.1, 4, 5, 18, 19, 20
	<b>C12 I 0.75ISO</b>	0.75		M13-M18	4	12.0	
	<b>C12 I 1.0 ISO</b>	1.0		M14-M19	3	12.0	
	<b>C12 I 1.5 ISO</b>	1.5		M15-M19	2	12.0	
	<b>C12 I 2.0 ISO</b>	2.0	M16	M18, M20	1	12.4	
	<b>C12 I 2.5 ISO</b>	2.5	M18, M20		1	12.0	H3, 4, 5, 18, 20
	<b>C12 I 3.0 ISO</b>	3.0	M24		1	12.4	
C18	<b>C18 I 0.5 ISO</b>	0.5		M19-M60	9	17.8	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
	<b>C18 I 0.75ISO</b>	0.75		M19-M60	6	17.8	
	<b>C18 I 1.0 ISO</b>	1.0		M20-M60	5	17.8	
	<b>C18 I 1.5 ISO</b>	1.5		M20-M60	3	17.8	
	<b>C18 I 2.0 ISO</b>	2.0		M21-M60	2	17.8	
	<b>C18 I 2.5 ISO</b>	2.5	M22		2	17.8	
	<b>C18 I 3.0 ISO</b>	3.0	M24, M27	M28-M60	1	17.8	
	<b>C18 I 3.5 ISO</b>	3.5	M30, M33		1	17.8	
C25	<b>C25 I 3.0 ISO</b>	3.0	M32, M33	M30-M80	2	25.0	H10, 11, 24, 25
	<b>C25 I 3.5 ISO</b>	3.5	M33		1	25.0	
	<b>C25 I 4.0 ISO</b>	4.0	M36, M39	M48-M80	1	25.0	
	<b>C25 I 4.5 ISO</b>	4.5	M42, M45		1	25.0	
	<b>C25 I 5.0 ISO</b>	5.0	M48, M52		1	25.0	
	<b>C25 I 5.5 ISO</b>	5.5	M56, M60		1	25.0	
	<b>C25 I 6.0 ISO</b>	6.0	M64, M68	M70-M80	1	25.0	

\* For complete toolholder description see pages 23-24

## Full Profile - ISO

Inserts for internal thread

Multi Flute

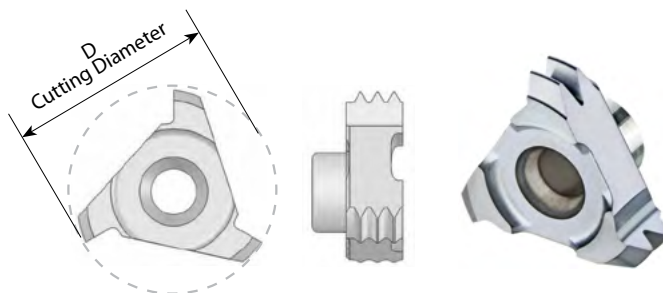


Insert Type	Ordering Code	Pitch mm	M coarse	M fine	Number of Teeth	D	No. of Flutes	Holder Code*
S17	<b>S160 F 2.5 ISO</b>	2.5	M20		1	16.0	6	H3, 3.1, 4, 5, 18, 19, 20
S20	<b>S163 H 1.0 ISO</b>	1.0		M18-M60	5	16.3	8	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
	<b>S175 H 1.5 ISO</b>	1.5		M20-M60	3	17.5	8	
	<b>S186 F 2.0 ISO</b>	2.0		M22-M60	2	18.6	6	
	<b>S178 F 2.5 ISO</b>	2.5	M22		2	17.8	6	
	<b>S189 F 3.0 ISO</b>	3.0	M24, M27	M28-M60	1	18.9	6	
	<b>S200 F 3.5 ISO</b>	3.5	M30, M33		1	20.0	6	
	<b>S200 F 4.0 ISO</b>	4.0	M36, M39	M40-M60	1	20.0	6	
	<b>S200 E 4.5 ISO</b>	4.5	M42		1	20.0	5	
	<b>S200 D 5.0 ISO</b>	5.0	M48, M52		1	20.0	4	
S35	<b>S350 F 4.5 ISO</b>	4.5	M45	M54	1	35.0	6	H12, 13, 14, 26
	<b>S350 F 6.0 ISO</b>	6.0	M64, M68		1	35.0	6	
	<b>S350 F 8.0 ISO</b>	8.0		M130-M200	1	35.0	6	

\* For complete toolholder description see pages 23-24

## Full Profile - UN

Inserts for internal thread



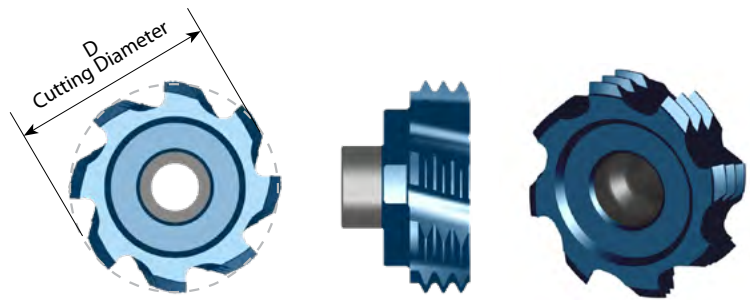
Insert Type	Ordering Code	Pitch TPI	Nominal Size	UNC	UNF	UNEF	Number of Teeth	D	Holder Code*
C10	<b>C10 I 20 UN</b>	20			1/2		2	10.0	H1, 1.1, 2, 15, 16, 17
	<b>C10 I 18 UN</b>	18			9/16		2	10.0	
	<b>C10 I 13 UN</b>	13		1/2			1	10.0	H1, 2, 15, 17
	<b>C10 I 12 UN</b>	12	5/8, 11/16, 3/4	9/16			1	10.0	
C12	<b>C12 I 32 UN</b>	32	9/16, 5/8				3	12.0	H3, 3.1, 4, 5, 18, 19, 20
	<b>C12 I 28 UN</b>	28	9/16, 5/8, 11/16				3	12.0	
	<b>C12 I 24 UN</b>	24				9/16, 5/8, 11/16	2	12.0	
	<b>C12 I 20 UN</b>	20	9/16, 5/8, 11/16			3/4	2	12.0	
	<b>C12 I 18 UN</b>	18			5/8		2	12.0	
	<b>C12 I 16 UN</b>	16	5/8, 11/16		3/4		1	12.0	
	<b>C12 I 12 UN</b>	12	5/8				1	12.4	H3, 4, 5, 18, 20
	<b>C12 I 11 UN</b>	11		5/8			1	12.0	
	<b>C12 I 10 UN</b>	10		3/4			1	12.0	
C18	<b>C18 I 32 UN</b>	32	3/4, 13/16, 7/8				6	17.8	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
	<b>C18 I 28 UN</b>	28	3/4, 13/16, 7/8				5	17.8	
	<b>C18 I 24 UN</b>	24					4	17.8	
	<b>C18 I 20 UN</b>	20	11/16, 11/8			13/16, 7/8, 15/16	3	17.8	
	<b>C18 I 18 UN</b>	18					3	17.8	
	<b>C18 I 16 UN</b>	16	7/8, 1				3	17.8	
	<b>C18 I 14 UN</b>	14			7/8		2	17.8	
	<b>C18 I 12 UN</b>	12	7/8		1, 11/8		2	17.8	
	<b>C18 I 11 UN</b>	11					2	17.8	
	<b>C18 I 9 UN</b>	9		7/8			1	17.8	
	<b>C18 I 8 UN</b>	8		1			1	17.8	
C25	<b>C25 I 8 UN</b>	8	13/16, 11/4, 15/16				2	25.0	H10, 11, 24, 25
	<b>C25 I 7 UN</b>	7		11/4			1	25.0	
	<b>C25 I 6 UN</b>	6	17/16, 19/16	13/8, 11/2			1	25.0	
	<b>C25 I 5 UN</b>	5		1 3/4			1	25.0	
	<b>C25 I 4 UN</b>	4		2 1/2, 2 3/4			1	25.0	

\* For complete toolholder description see pages 23-24

## Full Profile - UN

Inserts for internal thread

Multi Flute

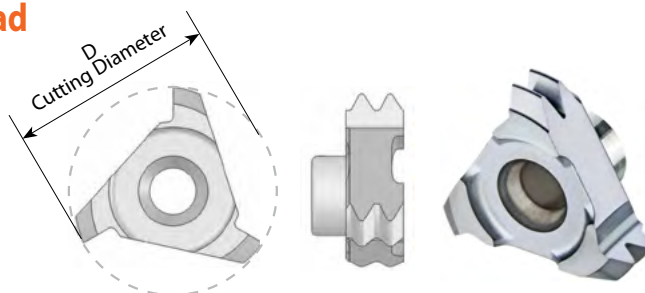


Insert Type	Ordering Code	Pitch TPI	Nominal size	UNC	UNF	UNEF	Number of Teeth	D	No. of Flutes	Holder Code*
S17	<b>S150 F 10UN</b>	10		3/4			1	15.0	6	H3, 3.1, 4, 5, 18, 19, 20
S20	<b>S160 H 24 UN</b>	24				11/16	4	16.0	8	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
	<b>S169 H 20 UN</b>	20				3/4, 13/16, 7/8, 15/16, 1	4	16.9	8	
	<b>S164 F 16 UN</b>	16	7/8, 15/16, 1		3/4		3	16.4	6	
	<b>S191 F 14 UN</b>	14			7/8		2	19.1	6	
	<b>S186 F 12 UN</b>	12	7/8, 15/16		1		2	18.6	6	
	<b>S178 F 9 UN</b>	9		7/8			1	17.8	6	
	<b>S200 F 8 UN</b>	8	1 1/8	1			1	20.0	6	
	<b>S200 F 7 UN</b>	7		1 1/8, 1 1/4			1	20.0	6	
	<b>S200 E 6 UN</b>	6	1 7/16	1 3/8, 1 1/2			1	20.0	5	
	<b>S200 D 5 UN</b>	5		1 3/4			1	20.0	4	H5.1, 5.2, 21
S35	<b>S350 F 8UN</b>	8	1 5/8, 1 3/4				2	35.0	6	H12, 13, 14, 26
	<b>S350 F 4 UN</b>	4		2 1/2, 2 3/4, 3			1	35.0	6	

\* For complete toolholder description see pages 23-24

## G 55° BSW, BSF, BSP

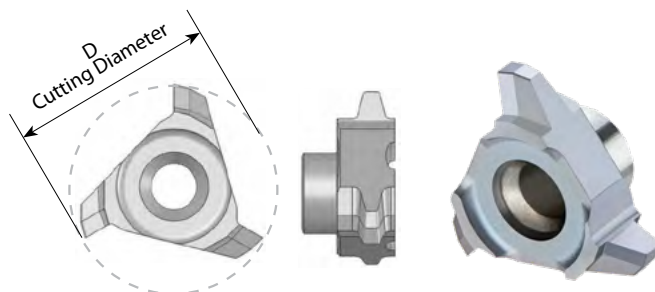
Same Insert for internal and external thread



Insert Type	Ordering Code	Pitch TPI	Standard	Number of Teeth	D	Holder Code*
C10	<b>C10 19 W</b>	19	G 1/4	2	10.0	H1, 1.1, 2, 15, 16, 17
C12	<b>C12 19 W</b>	19	G 3/8	2	12.0	H3, 3.1, 4, 5, 18, 19, 20
C18	<b>C18 14 W</b>	14	G 1/2 - 7/8	2	17.8	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
	<b>C18 11 W</b>	11	G ≥ 1	2	17.8	

## Trapez - DIN 103

Inserts for internal thread

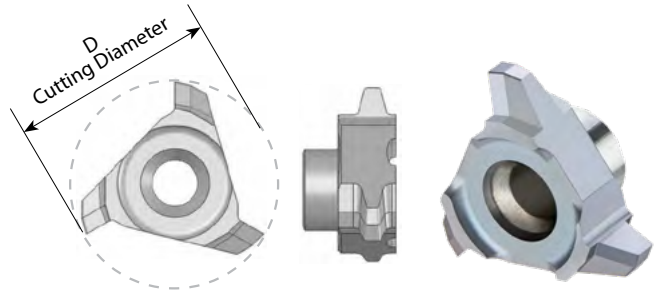


Insert Type	Ordering Code	Pitch mm	Standard	D	Holder Code*
C10	<b>C10 I 2 TR</b>	2.0	Tr16x2, Tr18x2	10.0	H1, 2, 15, 17
C12	<b>C12 I 2TR</b>	2.0	Tr20x2	12.0	H3, 4, 5, 18, 20
C18	<b>C18 I 3 TR</b>	3.0	Tr24x3	17.8	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
	<b>C18 I 4 TR</b>	4.0	Tr26x4	17.8	
	<b>C18 I 5 TR</b>	5.0	Tr28x5	17.8	
C25	<b>C25 I 6 TR</b>	6.0	Tr36x6	25.0	H10, 11, 24, 25

\* For complete toolholder description see pages 23-24

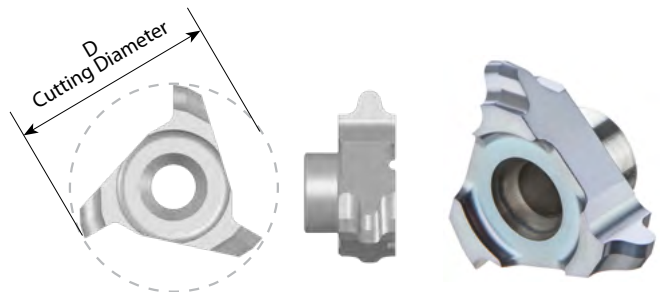
## Acme

Inserts for internal thread



Insert Type	Ordering Code	Pitch TPI	Standard	D	Holder Code*
C18	<b>C18 I 5 ACME</b>	5	1 <sup>1</sup> / <sub>8</sub> , 1 <sup>1</sup> / <sub>4</sub>	18.0	H5.1, 5.2, 21
C25	<b>C25 I 4 ACME</b>	4	1 <sup>1</sup> / <sub>2</sub> , 1 <sup>3</sup> / <sub>4</sub> , 2	25.0	H10, 11, 24, 25

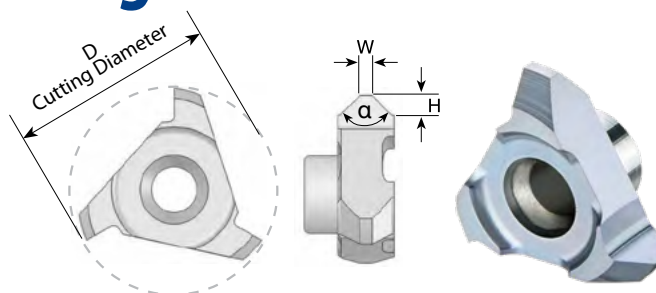
## Round-DIN 405



Insert Type	Ordering Code	Pitch TPI	Standard	D	Holder Code*
C18	<b>C18 1/8RD</b>	8	1/8RD	17.8	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
	<b>C18 1/6RD</b>	6	1/6RD	17.8	H5.1, 5.2, 21
C25	<b>C25 1/4RD</b>	4	1/4RD	25.0	H10, 11, 24, 25

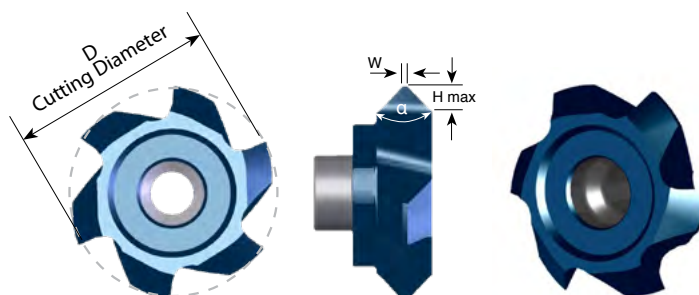
\* For complete toolholder description see pages 23-24

## Chamfering and Grooving



Insert Type	Ordering Code	D	H	W	α	Holder Code*
C10	<b>C10 C90</b>	10.0	1.30	0.4	90°	H1, 2, 15, 17
C12	<b>C12 C90</b>	12.0	1.35	0.3	90°	H3, 4, 5, 18, 20
C18	<b>C18 C90</b>	17.8	1.95	1.1	90°	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
C25	<b>C25 C90</b>	25.0	2.50	1.0	90°	H10, 11, 24, 25

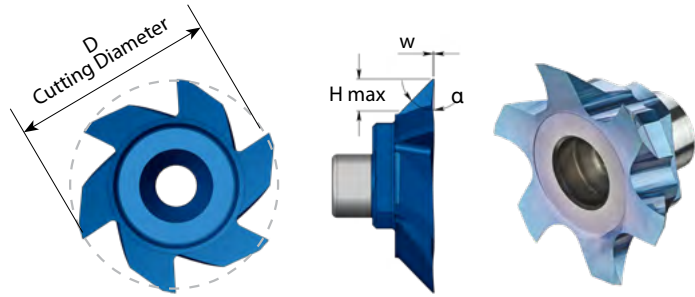
## Chamfering, Grooving and Boring Multi Flute



Insert Type	Ordering Code	D	H max	W	α	No. of Flutes	Holder Code*
S17	<b>SC160 E H14</b>	16.0	1.35	0.2	90°	5	H3, 3.1, 4, 5, 18, 19, 20
S20	<b>SC170 E H14</b>	17.0	1.35	0.2	90°	5	H6, 7, 8, 9, 21, 22, 23
	<b>SC200 F H14</b>	20.0	1.35	0.2	90°	6	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
	<b>SC200 F H24</b>	20.0	2.35	0.2	90°	6	
	S35	<b>SC350 F H42</b>	35.0	4.20	0.2	90°	6
S20	<b>SC200 F H20</b>	20.0	1.95	1.0	90°	6	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
	<b>SC200 F H17</b>	20.0	1.70	1.5	90°	6	
	<b>SC200 F H15</b>	20.0	1.50	2.0	90°	6	
	<b>SC200 F H12</b>	20.0	1.20	2.5	90°	6	

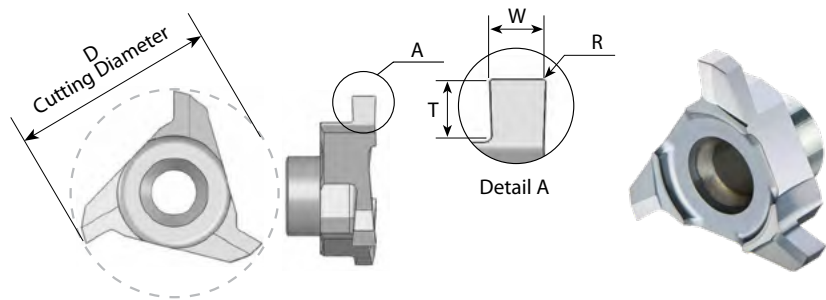
\* For complete toolholder description see pages 23-24

## Dovetail 45° Multi Flute



Insert Type	Ordering Code	D	H	W	α	No. of Flutes	Holder Code*
S17	<b>SC170 F A45</b>	17.0	2.5	0.1	45°	6	H3, 3.1, 4, 5, 18, 19, 20
S20	<b>SC200 F A45</b>	20.0	3.0	0.1	45°	6	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23

## Groove Milling



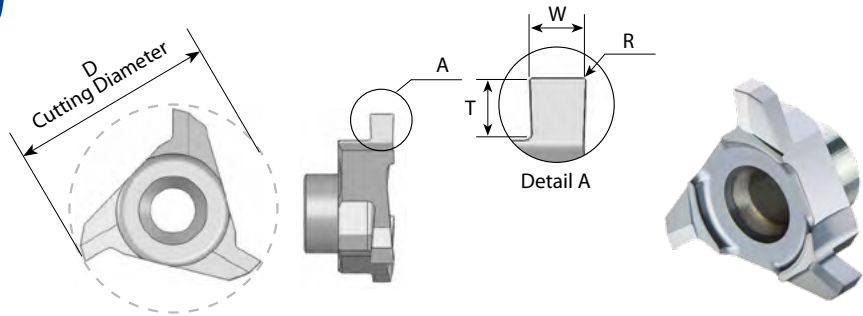
Insert Type	Ordering Code	D	W ±0.02	T max.	R	Groove Dia. (min.)	Holder Code*
C10	<b>C10 W08</b>	10.0	0.80	0.80	0.1	∅ > 10.0	H1, 1.1, 2, 15, 16, 17
	<b>C10 W09</b>	10.0	0.90	0.90	0.1	∅ > 10.0	
	<b>C10 W10</b>	10.0	1.00	0.90	0.1	∅ > 10.0	
	<b>C10 W15</b>	10.0	1.50	1.20	0.1	∅ > 10.0	
	<b>C10 W20</b>	10.0	2.00	1.20	0.1	∅ > 10.0	
C12	<b>C12 W08</b>	12.0	0.80	0.80	0.1	∅ > 12.0	H3, 3.1, 4, 5, 18, 19, 20
	<b>C12 W10</b>	12.0	1.00	0.90	0.1	∅ > 12.0	
	<b>C12 W10T</b>	12.3	1.00	1.60	0.2	∅ > 12.3	H3, 4, 5, 18, 20
	<b>C12 W15</b>	12.4	1.50	1.60	0.1	∅ > 12.4	
	<b>C12 W20</b>	12.4	2.00	1.60	0.1	∅ > 12.4	
	<b>C12 W25</b>	12.4	2.50	1.60	0.1	∅ > 12.4	
C18	<b>C18 W10</b>	17.8	1.00	1.50	0.1	∅ > 17.8	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
	<b>C18 W12</b>	17.8	1.20	1.50	0.1	∅ > 17.8	
	<b>C18 W15</b>	17.8	1.50	1.95	0.1	∅ > 17.8	
	<b>C18 W20</b>	17.8	2.00	2.80	0.1	∅ > 17.8	H5.1, 5.2, 21
C25	<b>C25 W20</b>	25.0	2.00	3.00	0.2	∅ > 25.0	H10, 11, 24, 25
	<b>C25 W25</b>	25.0	2.50	3.00	0.2	∅ > 25.0	
	<b>C25 W30</b>	25.0	3.00	3.00	0.2	∅ > 25.0	
	<b>C25 W35</b>	25.0	3.50	3.50	0.2	∅ > 25.0	
	<b>C25 W40</b>	25.0	4.00	3.50	0.2	∅ > 25.0	
	<b>C25 W50</b>	25.0	5.00	3.50	0.2	∅ > 25.0	

\* For complete toolholder description see pages 23-24



## Groove Milling

DIN 471/472

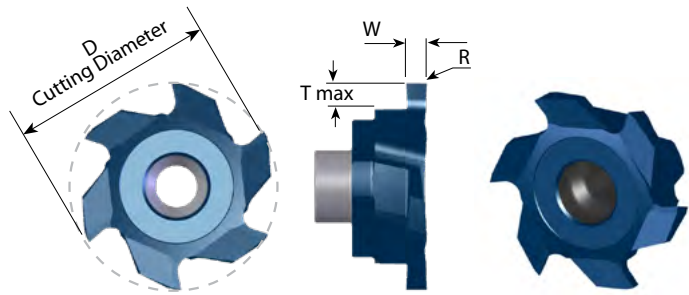


Insert Type	Ordering Code	D	Nom` groove width	W -0.04	T max.	R	Groove Dia. (min.)	Holder Code*
C10	<b>C10 W087</b>	10.0	0.8	0.87	1.3	0	Ø > 10.0	H1, 2, 15, 17
	<b>C10 W097</b>	10.0	0.9	0.97	1.3	0	Ø > 10.0	
	<b>C10 W121</b>	10.0	1.10	1.21	1.3	0	Ø > 10.0	
	<b>C10 W141</b>	10.0	1.30	1.41	1.3	0.1	Ø > 10.0	
	<b>C10 W171</b>	10.0	1.60	1.71	1.3	0.1	Ø > 10.0	
C12	<b>C12 W121</b>	12.4	1.10	1.21	1.7	0	Ø > 12.4	H3, 4, 5, 18, 20
	<b>C12 W141</b>	12.4	1.30	1.41	1.7	0.1	Ø > 12.4	
	<b>C12 W171</b>	12.4	1.60	1.71	1.7	0.1	Ø > 12.4	
C18	<b>C18 W121</b>	17.8	1.10	1.21	2.9	0.1	Ø > 17.8	H5.1, 5.2, 21
	<b>C18 W141</b>	17.8	1.30	1.41	2.9	0.1	Ø > 17.8	
	<b>C18 W171</b>	17.8	1.60	1.71	2.9	0.1	Ø > 17.8	
	<b>C18 W196</b>	17.8	1.85	1.96	2.9	0.15	Ø > 17.8	

\* For complete toolholder description see pages 23-24

## Groove Milling

### Multi Flute



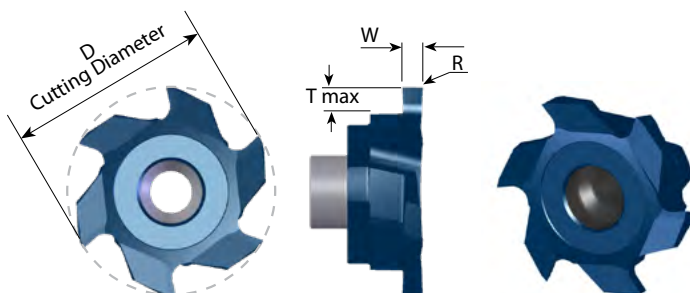
Insert Type	Ordering Code	D	W ±0.02	T Max.	R	Groove Dia. (min)	No. of Flutes	Holder Code*
S17	<b>SG170 F W15</b>	17.0	1.5	2.8	0.2	Ø > 17	6	H3, 3.1, 4, 5, 18, 19, 20
	<b>SG170 F W20</b>	17.0	2.0	2.8	0.2	Ø > 17	6	
	<b>SG170 F W25</b>	17.0	2.5	2.8	0.2	Ø > 17	6	
S20	<b>SG200 F W15</b>	20.0	1.5	2.9	0.2	Ø > 20	6	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
	<b>SG200 F W20</b>	20.0	2.0	2.9	0.2	Ø > 20	6	
	<b>SG200 F W25</b>	20.0	2.5	2.9	0.2	Ø > 20	6	
	<b>SG200 F W30</b>	20.0	3.0	2.9	0.2	Ø > 20	6	
	<b>SG200 F W40</b>	20.0	4.0	2.9	0.2	Ø > 20	6	
	<b>SG200 F W49</b>	20.0	4.9	2.9	0.2	Ø > 20	6	
S20	<b>SG200 E W20T</b>	20.0	2.0	3.7	0.2	Ø > 20	5	H5.1, 5.2, 21
	<b>SG200 E W25T</b>	20.0	2.5	3.7	0.2	Ø > 20	5	
	<b>SG200 E W30T</b>	20.0	3.0	3.7	0.2	Ø > 20	5	
S35	<b>SG350 F W30T</b>	35.0	3.0	6.3	0.2	Ø > 35	6	H12, 13, 14, 26
	<b>SG350 F W40T</b>	35.0	4.0	6.3	0.2	Ø > 35	6	
	<b>SG350 F W50T</b>	35.0	5.0	6.3	0.2	Ø > 35	6	
	<b>SG350 F W60T</b>	35.0	6.0	6.3	0.2	Ø > 35	6	
	<b>SG350 F W80T</b>	35.0	8.0	6.3	0.2	Ø > 35	6	

\* For complete toolholder description see pages 23-24

## Groove Milling

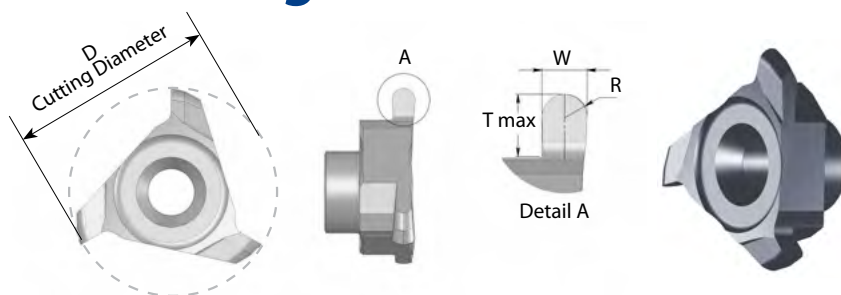
Multi Flute

DIN 471/472



Insert Type	Ordering Code	D	Nom groove width	W -0.04	T Max.	R	Groove Dia. (min)	No. of Flutes	Holder Code*
S20	<b>SG200 F W121</b>	20.0	1.10	1.21	4.0	0	$\varnothing > 20$	6	H5.1, 5.2, 21
	<b>SG200 F W141</b>	20.0	1.30	1.41	4.0	0.1	$\varnothing > 20$	6	
	<b>SG200 F W171</b>	20.0	1.60	1.71	4.0	0.1	$\varnothing > 20$	6	
	<b>SG200 F W196</b>	20.0	1.85	1.96	4.0	0.1	$\varnothing > 20$	6	

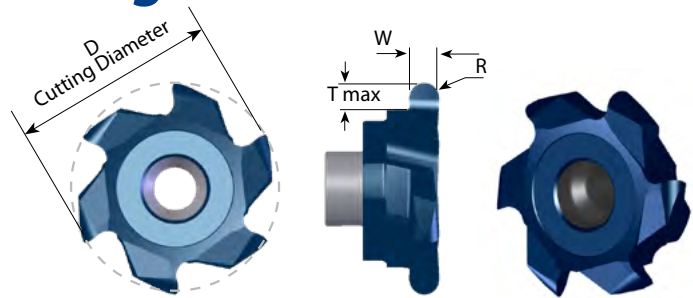
## Full Radius Groove Milling



Insert Type	Ordering Code	D	R	W $\pm 0.02$	T Max.	Groove Dia. (min)	Holder Code*
C12	<b>C12 R11</b>	12.4	1.1	2.2	1.7	$\varnothing > 12.4$	H3, 4, 5, 18, 20
C18	<b>C18 R08</b>	17.8	0.8	1.6	2.9	$\varnothing > 17.8$	H5.1, 5.2, 21
	<b>C18 R11</b>	17.8	1.1	2.2	2.9	$\varnothing > 17.8$	

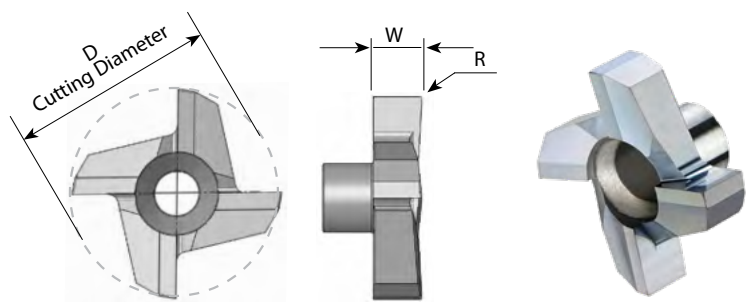
\* For complete toolholder description see pages 23-24

## Full Radius Groove Milling Multi Flute



Insert Type	Ordering Code	D	R	W ±0.02	T Max.	Groove Dia. (min)	No. of Flutes	Holder Code*
S20	<b>SG200 F R10</b>	20.0	1.0	2.0	2.9	Ø > 20	6	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
	<b>SG200 F R12</b>	20.0	1.2	2.4	2.9	Ø > 20	6	
	<b>SG200 F R15</b>	20.0	1.5	3.0	2.9	Ø > 20	6	
	<b>SG200 F R20</b>	20.0	2.0	4.0	2.9	Ø > 20	6	

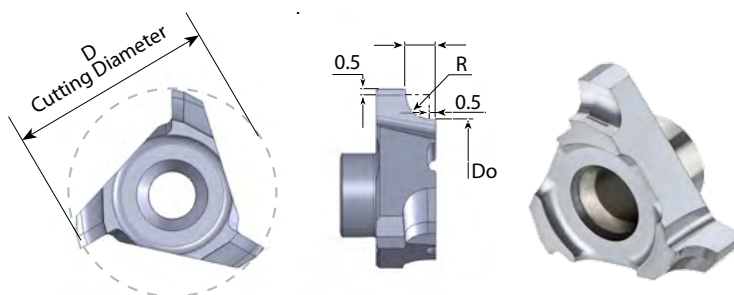
## Face Milling and Finishing



Insert Type	Ordering Code	D	W ± 0.1	R	Holder Code*
C10	<b>C10 F R0.1</b>	10	3.0	0.1	H1, 1.1, 2, 15, 16, 17
C12	<b>C12 F R0.1</b>	12	3.0	0.1	H3, 3.1, 4, 5, 18, 19, 20
C18	<b>C18 F R0.1</b>	17.8	5.0	0.1	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
C25	<b>C25 F R0.2</b>	25.0	6.0	0.2	H10, 11, 24, 25

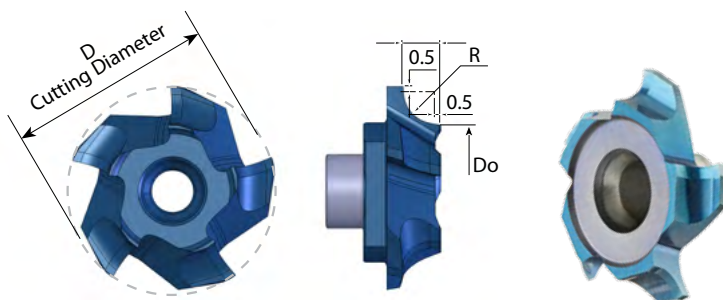
\* For complete toolholder description see pages 23-24

## Corner Rounding



Insert Type	Ordering Code	D	Do	R	I	Holder Code*
C10	<b>C10 CR05</b>	10.0	7.9	0.5	1.05	H1, 1.1, 2, 15, 16, 17
	<b>C10 CR10</b>	10.0	6.9	1.0	1.55	
C18	<b>C18 CR13</b>	17.8	14.2	1.25	1.80	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
	<b>C18 CR15</b>	17.8	13.7	1.5	2.05	
	<b>C18 CR20</b>	17.8	12.7	2.0	2.55	
C25	<b>C25 CR30</b>	25.0	17.7	3.0	3.60	H10, 11, 24, 25

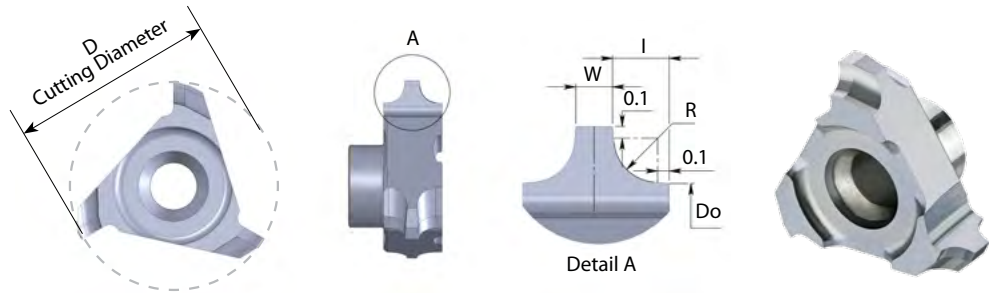
## Corner Rounding Multi Flute



Insert Type	Ordering Code	D	Do	R	I	No. of Flutes	Holder Code*
S17	<b>S170 E CR10</b>	17.0	13.9	1.0	1.55	5	H3, 3.1, 4, 5, 18, 19, 20
	<b>S170 E CR13</b>	17.0	13.4	1.25	1.80	5	
	<b>S170 E CR15</b>	17.0	12.9	1.5	2.05	5	

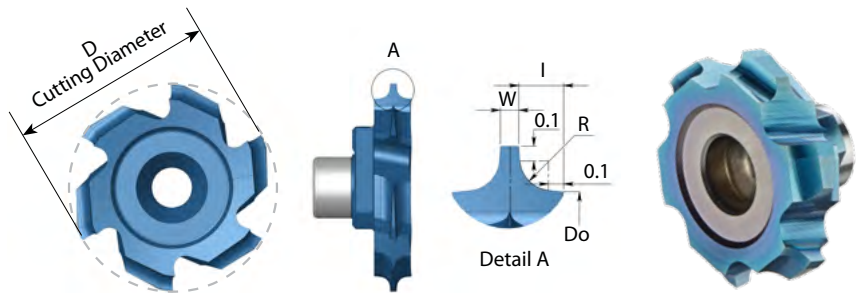
\* For complete toolholder description see pages 23-24

## Front and Back Corner Rounding



Insert Type	Ordering Code	D	Do	R	W	I	Holder Code*
C10	<b>C10 CRD08</b>	10.0	8.2	0.8	1.2	0.90	H1, 1.1, 2, 15, 16, 17
C18	<b>C18 CRD15</b>	17.8	14.6	1.5	1.8	1.60	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23
C25	<b>C25 CRD20</b>	25.0	20.7	2.0	2.0	2.10	H10, 11, 24, 25

## Front and Back Corner Rounding Multi Flute

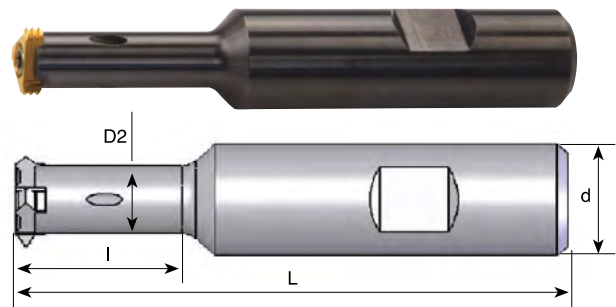


Insert Type	Ordering Code	D	Do	R	W	I	No. of Flutes	Holder Code*
S17	<b>S170 F CRD08</b>	17.0	15.2	0.8	1.2	0.90	6	H3, 3.3, 4, 5, 18, 19, 20
S20	<b>S200 F CRD15</b>	20.0	16.8	1.5	1.8	1.60	6	H5.1, 5.2, 6, 7, 8, 9, 21, 22, 23

\* For complete toolholder description see pages 23-24

## Steel Toolholders

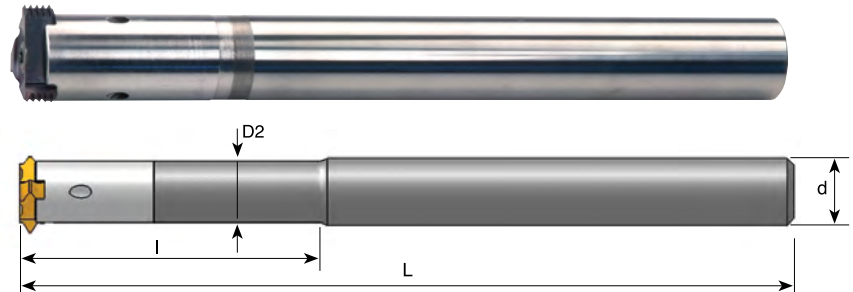
With internal coolant



Tool No.	Ordering Code	Insert Type	d	D2	l	L	Insert Screw	Torx Key
H1	<b>SRC 1210 E</b>	C10	12	7.3	19	70	S5	K5
H1.1	<b>SRC 1210 F</b>		12	8.0	25	80	S5	K5
H2	<b>SRC 1610 G</b>		16	7.3	19	90	S5	K5
H3	<b>SRC 1212 E</b>	C12, S17	12	9.0	25	70	S10	K10
H3.1	<b>SRC 1212 G</b>		12	10.0	40	90	S10	K10
H4	<b>SRC 1612 G</b>		16	9.0	25	90	S10	K10
H5	<b>SRC 1612 H</b>		16	9.0	35	100	S10	K10
H5.1	<b>SRC 1618 F</b>	C18, S20	16	12.0	25	80	S16	K16
H5.2	<b>SRC 1618 G</b>		16	12.0	40	90	S16	K16
H6	<b>SRC 1618 H</b>		16	13.8	48	100	S16	K16
H7	<b>SRC 2018 H</b>		20	13.8	32	100	S16	K16
H8	<b>SRC 2018 J</b>		20	13.8	48	110	S16	K16
H9	<b>SRC 2018 L</b>		20	13.8	74	140	S16	K16
H10	<b>SRC 2525 J</b>	C25	25	17.5	45	115	S27	K27
H11	<b>SRC 2525 M</b>		25	17.5	80	150	S27	K27
H12	<b>SRC 2035 K</b>	S35	20	22.0	44	130	S33	K33
H13	<b>SRC 2535 H</b>		25	22.0	40	100	S33	K33
H14	<b>SRC 2535 K</b>		25	22.0	60	130	S33	K33

## Carbide Shank Toolholders

With internal coolant



Tool No.	Ordering Code	Insert Type	d	D2	l	L	Insert Screw	Torx Key
H15	<b>CRC 0810 L35 K</b>	C10	8	7.3	35	125	S5	K5
H16	<b>CRC 0810 K</b>		8	8.0	---	125	S5	K5
H17	<b>CRC 1010 L45 M</b>		10	7.3	45	150	S5	K5
H18	<b>CRC 1012 L40 M</b>	C12, S17	10	9.0	40	150	S10	K10
H19	<b>CRC 1012 M</b>		10	10.0	---	150	S10	K10
H20	<b>CRC 1212 L57 P</b>		12	9.0	57	165	S10	K10
H21	<b>CRC 1218 P</b>	C18, S20	12	12.0	---	170	S16	K16
H22	<b>CRC 1618 L48 R</b>		16	13.8	48	195	S16	K16
H23	<b>CRC 1618 L74 R</b>		16	13.8	74	195	S16	K16
H24	<b>CRC 1625 R</b>	C25	16	17.5	28	205	S27	K27
H25	<b>CRC 2025 L85 S</b>		20	17.5	85	250	S27	K27
H26	<b>CRC 2035 S</b>	S35	20	22.0	37	260	S33	K33

Toolholders without Weldon



## *CMT Multi Insert Milling Cutters*

### **CMT indexable milling inserts and cutters for Grooving, Chamfering and Threading**



#### **Inserts**

- Insert profiles are fully ground
- Spiral inserts for smooth cutting operation
- Three cutting edges on each insert
- For a wide range of materials and applications

Carbide grade: MT7

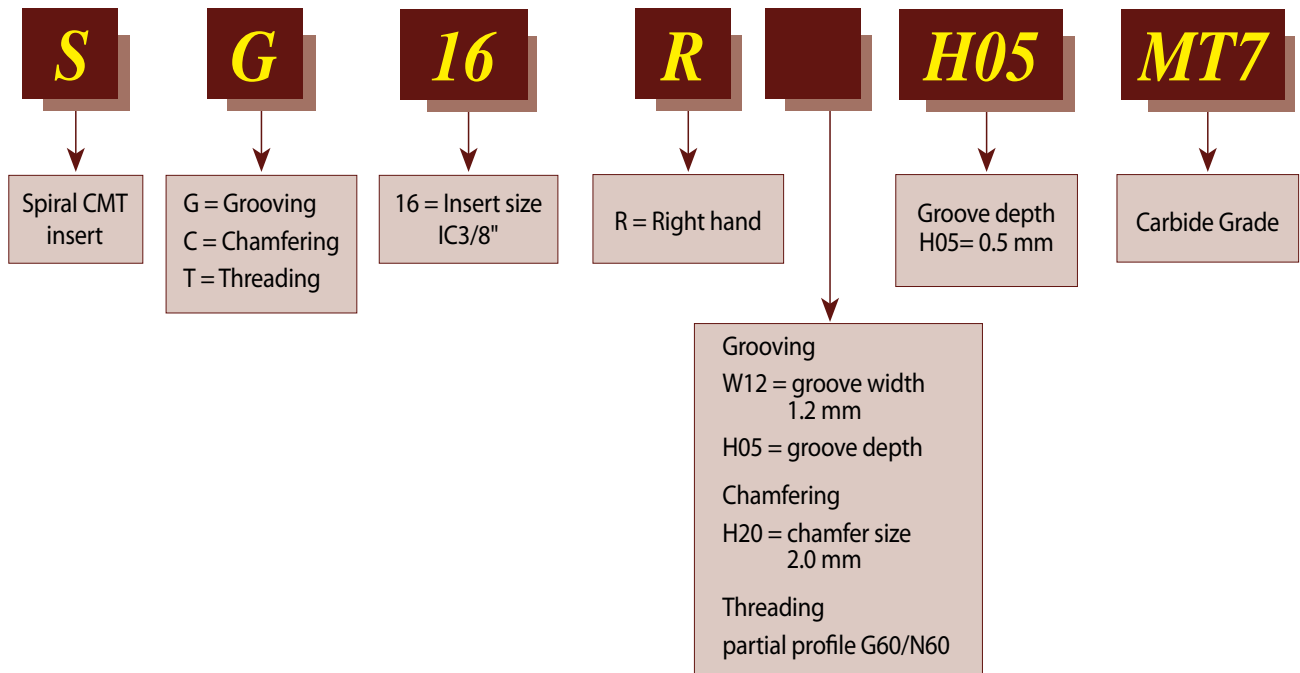
#### **Milling cutters / Disc milling cutter**

- 4 - 8 inserts per holder, for high productivity
- For use with Carmex standard CMT S35 toolholders
- The milling cutters are coated with a special layer (silver color) for high anti-corrosive resistance and extra protection against cutting burrs

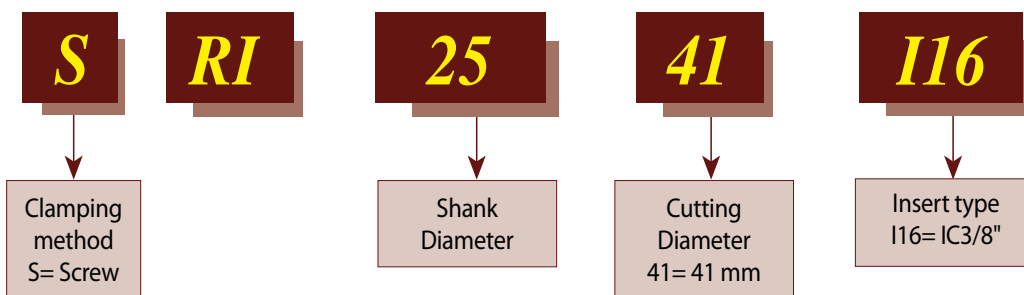


## Product Identification - Ordering Codes

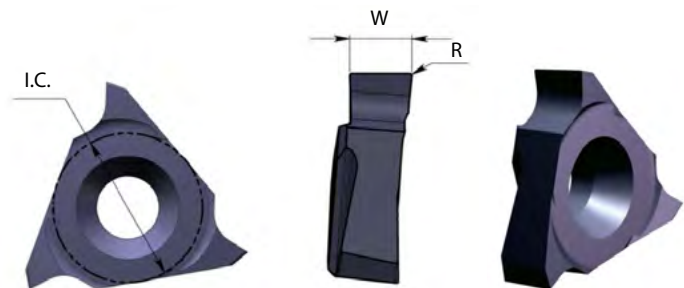
### Inserts



### Toolholders



## Groove Milling



### DIN 471 / 472

Insert Type	I.C.	Ordering Code	W	R	Holder Code*
SI16	3/8"	<b>SG 16 R W14</b>	1.40	0.10	H27, 28, 29
		<b>SG 16 R W17</b>	1.70	0.10	
		<b>SG 16 R W19</b>	1.95	0.15	
		<b>SG 16 R W22</b>	2.25	0.15	
		<b>SG 16 R W27</b>	2.75	0.20	
		<b>SG 16 R W32</b>	3.25	0.20	
		<b>SG 16 R W42</b>	4.25	0.20	
		<b>SG 16 R W43</b>	4.35	0.20	H27, 29, 30

Right hand cutting

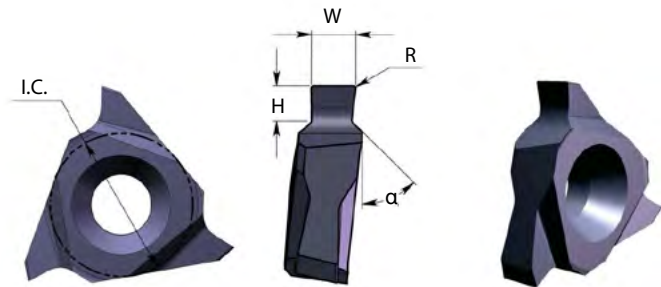
Insert Type	I.C.	Ordering Code	W	R	Holder Code*
SI16	3/8"	<b>SG 16 L W43</b>	4.35	0.20	H30

Left hand cutting

\*Maximum groove depth (T max) according to the toolholder.

\* For complete toolholder description see pages 30-31

## Groove Milling with Chamfer

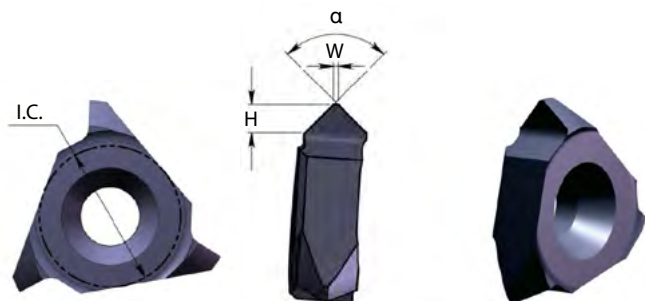


### DIN 471 / 472

Insert Type	I.C.	Ordering Code	W	H max	R	$\alpha$	Holder Code*
SI16	3/8"	<b>SG 16 R W12 H05</b>	1.20	0.50	0.10	45°	H27, 28, 29
		<b>SG 16 R W14 H07</b>	1.40	0.70			
		<b>SG 16 R W14 H08</b>	1.40	0.85			
		<b>SG 16 R W17 H08</b>	1.70	0.85			
		<b>SG 16 R W17 H10</b>	1.70	1.00			
		<b>SG 16 R W19 H12</b>	1.95	1.25	0.15		
		<b>SG 16 R W22 H15</b>	2.25	1.50			
		<b>SG 16 R W27 H15</b>	2.75	1.50			
		<b>SG 16 R W27 H17</b>	2.75	1.75			
		<b>SG 16 R W32 H17</b>	3.25	1.75			
		<b>SG 16 R W42 H20</b>	4.25	2.00			
<b>SG 16 R W42 H25</b>	4.25	2.50					

Right hand cutting

## Chamfering



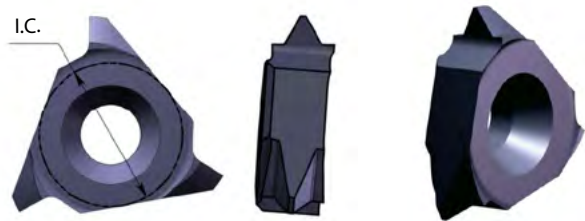
Insert Type	I.C.	Ordering Code	H max	W	$\alpha$	Holder Code*
SI16	3/8"	<b>SC 16 R H20</b>	2.00	0.2	90°	H27, 28, 29
		<b>SC 16 R H19</b>	1.90	0.5		

Right hand cutting

\* For complete toolholder description see pages 30-31

## Partial Profile 60° - ISO, UN

Same Insert for internal and external thread



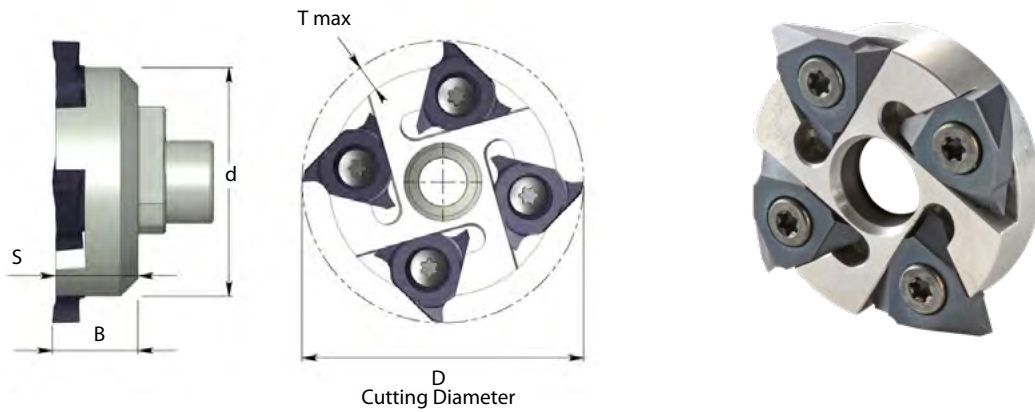
Insert Type	I.C.	Ordering Code	Pitch Range mm	Pitch Range TPI	Holder Code*
SI16	3/8"	<b>ST 16 R G60</b>	Int. 1.5-3.0	Int. 16-8	H27, 28, 29
			Ex. 1.25-3.0	Ex. 20-8	
		<b>ST 16 R N60</b>	Int. 3.5-5.0	Int. 7-5	
			Ex. 3.0-4.5	Ex. 8-6	

Right hand cutting

\* For complete toolholder description see pages 30-31

## Toolholders

### Milling Cutter- Arbor

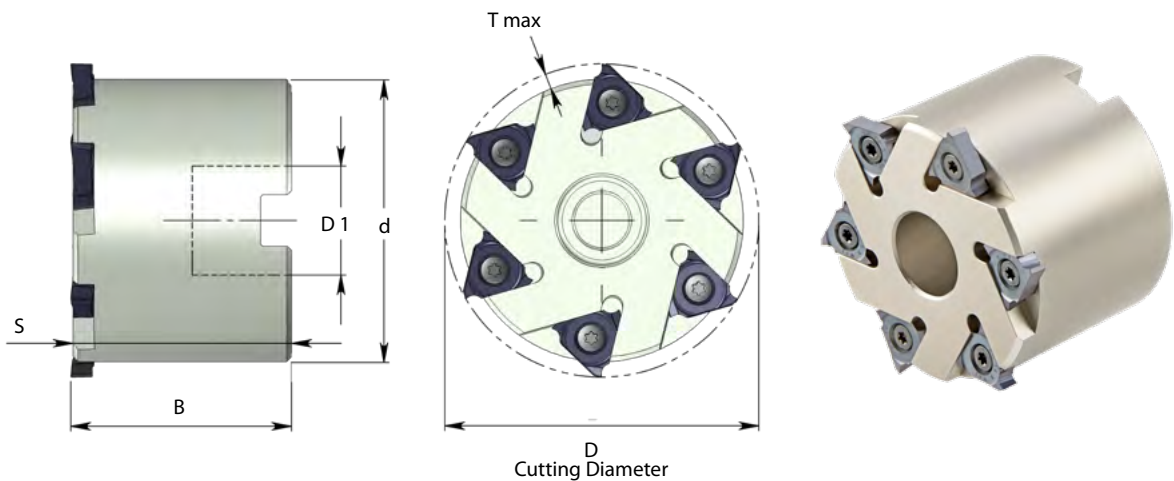


Tool No.	Ordering Code	Insert type	D	d	T max	B	S	Insert Screw	Torx Key
H27	<b>SRI 41- I16</b>	SI16	41	33.2	3.6	12.5	12.0	S16S	K16

Right hand cutting

To connect to the standard CMT toolholders S35: SRC 2035 K, SRC 2535 H, SRC 2535 K, CRC 2035 S

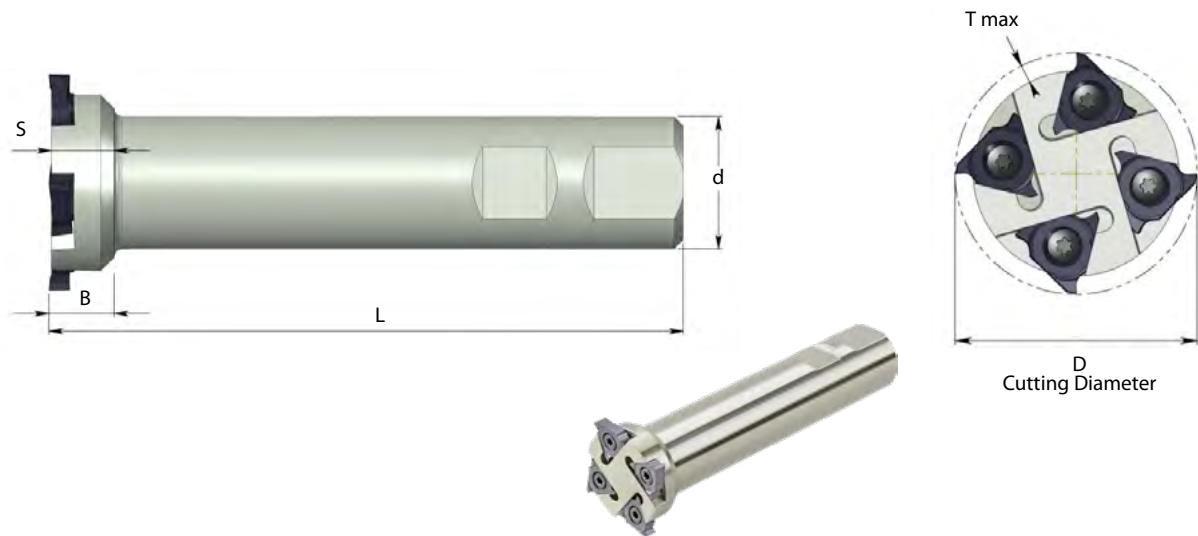
### Milling Cutter- Shell Mill



Tool No.	Ordering Code	Insert type	D	d	T max	B	S	D1	Insert Screw	Torx Key
H28	<b>SRI 0063-I16</b>	SI16	63	57	3.0	44.5	44.0	22	S16S	K16

Right hand cutting

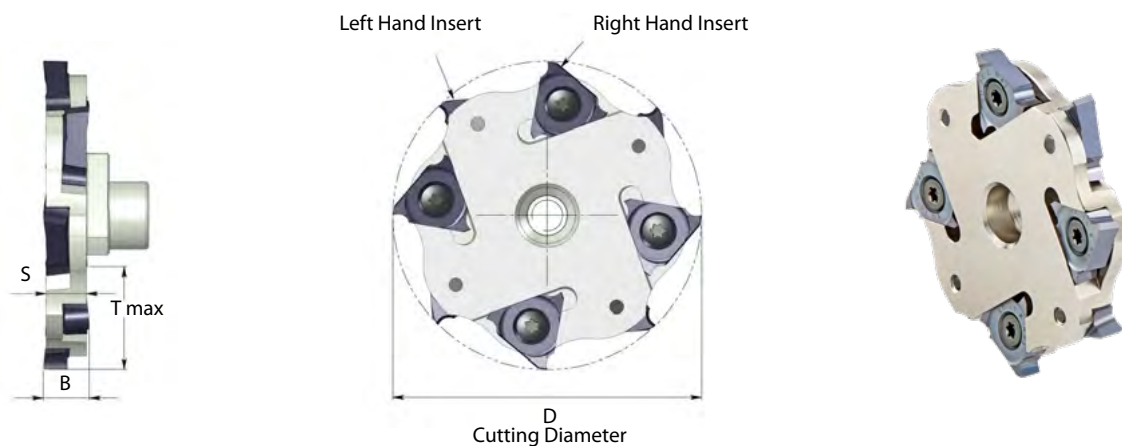
## Milling Cutter- Weldon Shank



Tool No.	Ordering Code	Insert type	D	d	T max	B	S	L	Insert Screw	Torx Key
H29	<b>SRI 2541-I16</b>	SI16	41	25	3.6	12.5	12.0	125	S16S	K16

Right hand cutting

## Milling Cutter - Disc Milling



Tool No.	Ordering Code	Insert type	D	T max	B	S	Insert Screw	Torx Key
H30	<b>SRI 55-I16</b>	SI16	55	15.5	8.2	7.2	S16M	K16

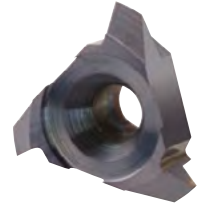
Right hand cutting

To use only with inserts SG 16 R W43, and SG 16 L W43

To connect to the standard CMT toolholders S35: SRC 2035 K, SRC 2535 H, SRC 2535 K, CRC 2035 S

## Technical Section

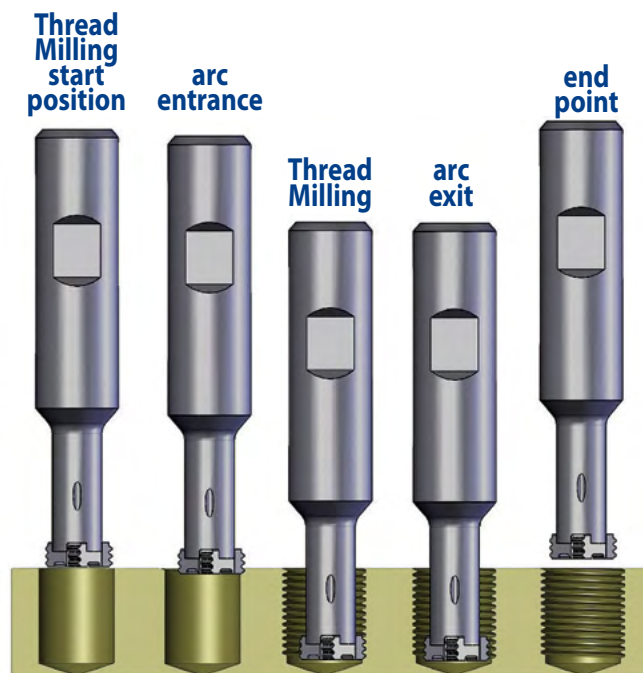
### CMT type



**MT7** Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, which can be used with all materials; it should be run at medium to high cutting speeds.

### Cutting Data

ISO	Materials	Cutting Speed m/min	Feed mm/tooth Cutting Diameter=D			
			Ø10	Ø12	Ø18	Ø25
<b>P</b>	Low and Medium Carbon Steels <0.55%C	60 - 120	0.16	0.17	0.20	0.22
	High Carbon Steels ≥0.55%C	60 - 90	0.14	0.16	0.20	0.22
	Alloy Steels, Treated Steels	50 - 80	0.10	0.12	0.16	0.18
<b>M</b>	Stainless Steels - Free Cutting	70 - 100	0.10	0.11	0.15	0.17
	Stainless Steels - Austenitic	60 - 90	0.10	0.11	0.15	0.17
	Cast Steels	70 - 90	0.10	0.12	0.16	0.18
<b>K</b>	Cast Iron	40 - 80	0.16	0.17	0.20	0.22
<b>N</b>	Aluminum ≤12%Si, Copper	100 - 200	0.16	0.17	0.20	0.22
	Aluminum >12% Si	60 - 140	0.10	0.11	0.16	0.18
	Synthetics, Duroplastics, Thermoplastics	50 - 200	0.19	0.19	0.22	0.24
<b>S</b>	Nickel Alloys, Titanium Alloys	20 - 40	0.07	0.07	0.10	0.12
<b>H</b>	Hardened Steel 45 - 50HRc	60 - 70	0.09	0.09	0.13	0.15
	Hardened Steel 50 - 55HRc	50 - 60	0.08	0.08	0.12	0.14







## CMT Spiral Multi Flute Inserts

**MT8** Sub-Micron Grade with Aluminum Titanium Nitride (AlTiN) multi-layer coating (ISO K10-K20).  
Extremely high heat resistant and smooth cutting operation, for high performance, and normal machining conditions. General purpose for all materials.

## Cutting Data

ISO Standard	Material	Cutting Speed m/min	Feed mm/tooth Cutting Diameter = D
			Ø16-Ø35
<b>P</b>	Low and Medium Carbon Steels <0.55%C	60-120	0.14-0.24
	High Carbon Steels ≥0.55%C	60- 90	0.12-0.24
	Alloy Steels, Treated Steels	50- 80	0.08-0.20
<b>M</b>	Stainless Steel-Free Cutting	70-100	0.08-0.19
	Stainless Steel-Austenitic	60- 90	0.08-0.19
	Cast Steels	70- 90	0.08-0.20
<b>K</b>	Cast Iron	40- 80	0.14-0.24
<b>N</b>	Aluminum ≤12%Si, Copper	100-200	0.14-0.26
	Aluminum >12%Si	60-140	0.08-0.22
	Synthetics, Duroplastics, Thermoplastics	50-200	0.17-0.28
<b>S</b>	Nickel Alloys, Titanium Alloys.	20- 40	0.05-0.14
<b>H</b>	Hardened Steel, 45-50HRc	60- 70	0.07-0.17
	Hardened Steel, 51-55HRc	50- 60	0.06-0.16

## CMT Milling cutter



**MT7** Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, which can be used with all materials; it should be run at medium to high cutting speeds.

## Cutting Data

ISO Standard	Material	Cutting Speed m/min	Feed mm/tooth
<b>P</b>	Low and Medium Carbon Steels <0.55%C	60-120	0.05-0.15
	High Carbon Steels ≥0.55%C	60-90	0.05-0.10
	Alloy Steels, Treated Steels	50-80	0.05-0.10
<b>M</b>	Stainless Steel-Free Cutting	70-100	0.04-0.13
	Stainless Steel-Austenitic	60-90	0.04-0.10
	Cast Steels	70-90	0.04-0.13
<b>K</b>	Cast Iron	40-80	0.05-0.15
<b>N</b>	Aluminum ≤12%Si, Copper	100-200	0.05-0.25
	Aluminum >12%Si	60-140	0.03-0.10
	Synthetics, Duroplastics, Thermoplastics	50-200	0.05-0.25
<b>S</b>	Nickel alloys, Titanium Alloys.	20-40	0.03-0.10
<b>H</b>	Hardened Steel, ≤ 45 HRc	60-70	0.03-0.10



