Carmex®
Precision Tools Ltd.
The optimal tools for your industry™

CMT Vertical Milling

Inch 2021

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Carmex Precision Tools Ltd.

Demonstration

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 resistance and smooth cutting operation, high performance, for all machining conditions.

Product Identification - Ordering Codes

C	18	I	12	UN	MT7
CMT Line	Cutting Diameter 10 = 10.0 mm 12 = 12.0 mm 18 = 17.8 mm 25 = 25.0 mm	I = Internal	Thread Pitch A, D, G, N, Q = Partial Profile C = Chamfering and Grooving CR = Corner Rounding F = Face Milling and Finishing W = Grooving	Thread Profile 60° & 55° ISO UN Whitworth Trapez Acme Round DIN 405 Chamfering	Carbide Grade

CMT Spiral Multi Flute Inserts

S	178	F	2.5	ISO	MT8
Spiral CMT line Multi flute	Cutting Diameter 178 = Ø17.8 mm 189 = Ø18.9 mm 200 = Ø20.0 mm 350 = Ø35.0 mm	Number of Flutes D = 4 E = 5 F = 6 H = 8	Thread Pitch G, N = Partial Profile H = Chamfering, Grooving and Boring W = Grooving R = Radius Groove Milling CR = Corner Rounding	Thread Profile Partial 60° & 55° ISO UN	Carbide Grade

Product Identification - Ordering Codes

CMT Toolholders

S	RC	0750		H	18
Clamping Method S = Screw C = Carbide shank		Shank Diameter	Neck Length L17= 1.77" L18 = 1.90" L33 = 3.36"	Length of Toolholders	Insert Type 10 = C10 12 = C12, S17 18 = C18, S20 25 = C25 35 = S35

Carmex Mill-Thread catalog and CNC programming Software

The Threading Tools included in this catalog are supported by Carmex Mill-Thread catalog and CNC programming software (Tool Wizard).

The software is available on our website **www.carmexusa.com**

Click on programming software.

Partial Profile 60° - ISO, UN

Same insert for internal and external thread

Insert Type	Ordering Code	Pitch Range mm	Pitch Range TPI	D	Thread Dia. (min) Pitch Low Range	Thread Dia. (min) Pitch High Range	Holder Code*
C10	C10 A60	Int. 0.5 - 0.8	56 - 28	.39	Ø ≥ .43	Ø ≥ .47	H1, 1.1, 2, 15, 16, 17
		Ex. 0.4 - 0.8	64 - 32				
	C10 G60	Int. 1.0 - 2.0	28 - 13	.39	Ø ≥ .47	Ø ≥ .55	H1, 2, 15, 17
		Ex. 0.8 - 1.75	32 - 15				
C12	C12 A60	Int. 0.5 - 0.8	56 - 28	.47	Ø ≥ .51	Ø ≥ .55	H3, 3.1, 4, 5, 18, 19, 20
		Ex. 0.4 - 0.8	64 - 32				
	C12 G60	Int. 1.0 - 2.0	28 - 13	.49	Ø ≥ .55	Ø ≥ .63	H3, 4, 5, 18, 19, 20
		Ex. 0.8 - 1.75	32 - 15				
	C12 AG60	Int. 1.5 - 2.5	18 - 11	.49	Ø ≥ .59	Ø ≥ .67	H3, 4, 5, 18, 20
		Ex. 1.25 - 2.0	24 - 13				
C18	C18 A60	Int. 0.5 - 0.8	56 - 28	.70	Ø ≥ .75		H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
		Ex. 0.4 - 0.8	64 - 32				
	C18 G60	Int. 1.0 - 1.75	28 - 14	.70	Ø ≥ .79	Ø ≥ .83	
		Ex. 0.8 - 1.5	32 - 16				
	C18 D60	Int. 2.0 - 3.0	13 - 8	.70	Ø ≥ .83	Ø ≥ .91	
		Ex. 1.75 - 2.5	15 - 10				
C25	C25 G60	Int. 1.5 - 2.5	16 - 10	.98	Ø ≥ 1.10	Ø ≥ 1.18	H10, 11, 24, 25
		Ex. 1.0 - 2.0	28 - 13				
	C25 N60	Int. 3.0 - 5.0	8 - 5	.98	Ø ≥ 1.18	Ø ≥ 1.34	
		Ex. 2.5 - 4.5	10 - 6				
	C25 Q60	Int. 5.0 - 6.0	5 - 4	.98	Ø ≥ 1.34	Ø ≥ 1.42	
		Ex. 4.5 - 5.0	6 - 5				

Order example: C18 D60 MT7

* For complete toolholder description see page 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) Pitch Low range	Thread Dia (min) Pitch High range	Holder Code*
S17	**S160 F AG60**	Int. 1.0-3.5	28-7	.63	6	Ø ≥ .71	Ø ≥ .87	H3, 3.1, 4, 5, 18, 19, 20
		Ex. 0.8-3.0	32-8.5					
S20	**S200 F G60**	Int. 1.5-2.5	16-10	.79	6	Ø ≥ .91	Ø ≥ .98	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
		Ex. 1.0-2.0	28-13					
	S200 D N60	Int. 3.0-5.0	8-5	.79	4	Ø ≥ .98	Ø ≥ 1.14	H5.1, 5.2, 20.1, 21
		Ex. 2.5-4.5	10-6					
S35	**S350 F N60**	Int. 3.0-5.0	8-5	1.38	6	Ø ≥ 1.57	Ø ≥ 1.73	H12, 13, 14, 26
		Ex. 2.5-4.5	10-6					
	S350 F Q60	Int. 5.0-6.0	5-4	1.38	6	Ø ≥ 1.73	Ø ≥ 1.61	H12, 13, 14, 26
		Ex. 4.5-5.0	6-5					

Order example: S200 D N60 MT8

Partial Profile 60° - NPT

Same insert for internal and external thread

Insert Type	Ordering Code	Pitch TPI	Standard	D	Holder Code*
C10	**C10 18 NPT**	18	1/4 - 3/8	.39	H1, 1.1, 2, 15, 17
C18	**C18 14 NPT**	14	1/2 - 3/4	.62	H5.1, 5.2, 20.1, 21
C25	**C25 11.5NPT**	11.5	1-2	.98	H10, 11, 24, 25
	C25 8 NPT	8	≥ 2 1/2	.98	

* For complete toolholder description see page 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	**C10 G55**	19-14	.39	Ø ≥ .51	H1, 2, 15,17
C12	**C12 G55**	28-19	.47	Ø ≥ .55	H3, 4, 5, 18, 19, 20
	C12 N55	14-11	.48	Ø ≥ .63	H3, 4, 5, 18, 20
C18	**C18 G55**	14-8	.71	Ø ≥ .91	H5.1, 5.2, 20.1, 21
C25	**C25 N55**	7-5	.98	Ø ≥ 1.34	H10, 11, 24, 25

Order example: C18 G55 MT7

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	**S170 F G55**	11-8	.67	6	Ø ≥ 1.34	H3, 3.1, 4, 5, 18, 19, 20
S20	**S195 F G55**	14	.77	6	Ø ≥ .91	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	S200 D N55	8-6	.79	4	Ø ≥ .98	

Order example: S200 D N55 MT8

* For complete toolholder description see page 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	C10 I 0.5 ISO	0.5		M10, M12	6	.35	H1, 1.1, 2, 15, 16, 17
	C10 I 0.75 ISO	0.75		M12	4	.39	
	C10 I 1.0 ISO	1.0		M12, M13	3	.39	
	C10 I 1.5 ISO	1.5		M13, M14	2	.39	
	C10 I 1.75 ISO	1.75	M12		1	.38	H1, 2, 15, 17
	C10 I 2.0 ISO	2.0	M14	M18	1	.39	
C12	C12 I 0.5 ISO	0.5		M13-M18	6	.47	H3, 3.1, 4, 5, 18, 19, 20
	C12 I 0.75 ISO	0.75		M13-M18	4	.47	
	C12 I 1.0 ISO	1.0		M14-M19	3	.47	
	C12 I 1.5 ISO	1.5		M15-M19	2	.47	
	C12 I 2.0 ISO	2.0	M16	M18, M20	1	.49	
	C12 I 2.5 ISO	2.5	M18, M20		1	.47	H3, 4, 5, 18, 20
	C12 I 3.0 ISO	3.0	M24		1	.49	
C18	C18 I 0.5 ISO	0.5		M19-M60	9	.70	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	C18 I 0.75 ISO	0.75		M19-M60	6	.70	
	C18 I 1.0 ISO	1.0		M20-M60	5	.70	
	C18 I 1.5 ISO	1.5		M20-M60	3	.70	
	C18 I 2.0 ISO	2.0		M21-M60	2	.70	
	C18 I 2.5 ISO	2.5	M22		2	.70	
	C18 I 3.0 ISO	3.0	M24, M27	M28-M60	1	.70	
	C18 I 3.5 ISO	3.5	M30, M33		1	.70	
C25	C25 I 3.0 ISO	3.0	M32, M33	M30-M80	2	.98	H10, 11, 24, 25
	C25 I 3.5 ISO	3.5	M33		1	.98	
	C25 I 4.0 ISO	4.0	M36, M39	M48-M80	1	.98	
	C25 I 4.5 ISO	4.5	M42, M45		1	.98	
	C25 I 5.0 ISO	5.0	M48, M52		1	.98	
	C25 I 5.5 ISO	5.5	M56, M60		1	.98	
	C25 I 6.0 ISO	6.0	M64, M68	M70-M80	1	.98	

* For complete toolholder description see page 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	**S160 F 2.5 ISO**	2.5	M20		1	.63	6	H3, 3.1, 4, 5, 18, 19, 20
S20	**S163 H 1.0 ISO**	1.0		M18-M60	5	.64	8	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	S175 H 1.5 ISO	1.5		M20-M60	3	.69	8	
	S186 F 2.0 ISO	2.0		M22-M60	2	.73	6	
	S178 F 2.5 ISO	2.5	M22		2	.70	6	
	S189 F 3.0 ISO	3.0	M24, M27	M28-M60	1	.74	6	
	S200 F 3.5 ISO	3.5	M30, M33		1	.79	6	
	S200 F 4.0 ISO	4.0	M36, M39	M40-M60	1	.79	6	
	S200 E 4.5 ISO	4.5	M42		1	.79	5	
	S200 D 5.0 ISO	5.0	M48, M52		1	.79	4	
S35	**S350 F 4.5 ISO**	4.5	M45	M54	1	1.38	6	H12, 13, 14, 26
	S350 F 6.0 ISO	6.0	M64, M68		1	1.38	6	
	S350 F 8.0 ISO	8.0		M130-M200	1	1.38	6	

Order example: S350 F 6.0 ISO MT8

* For complete toolholder description see page 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	C10 I 20 UN	20			1/2		2	.39	H1, 1.1, 2, 15, 16, 17
	C10 I 18 UN	18			9/16		2	.39	
	C10 I 13 UN	13		1/2			1	.39	H1, 2, 15, 17
	C10 I 12 UN	12	5/8, 11/16, 3/4	9/16			1	.39	
C12	C12 I 32 UN	32	9/16, 5/8				3	.47	H3, 3.1, 4, 5, 18, 19, 20
	C12 I 28 UN	28	9/16, 5/8, 11/16				3	.47	
	C12 I 24 UN	24				9/16, 5/8, 11/16	2	.47	
	C12 I 20 UN	20	9/16, 5/8, 11/16			3/4	2	.47	
	C12 I 18 UN	18			5/8		2	.47	
	C12 I 16 UN	16	5/8, 11/16		3/4		1	.47	
	C12 I 12 UN	12	5/8				1	.49	
	C12 I 11 UN	11		5/8			1	.47	H3, 4, 5, 18, 20
	C12 I 10 UN	10		3/4			1	.47	
C18	C18 I 32 UN	32	3/4, 13/16, 7/8				6	.70	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	C18 I 28 UN	28	3/4, 13/16, 7/8				5	.70	
	C18 I 24 UN	24					4	.70	
	C18 I 20 UN	20	11/16, 11/8			13/16, 7/8, 15/16	3	.70	
	C18 I 18 UN	18					3	.70	
	C18 I 16 UN	16	7/8, 1				3	.70	
	C18 I 14 UN	14			7/8		2	.70	
	C18 I 12 UN	12	7/8		1, 11/8		2	.70	
	C18 I 11 UN	11					2	.70	
	C18 I 9 UN	9		7/8			1	.70	
	C18 I 8 UN	8		1			1	.70	
C25	C25 I 8 UN	8	13/16, 11/4, 15/16				2	.98	H10, 11, 24, 25
	C25 I 7 UN	7		11/4			1	.98	
	C25 I 6 UN	6	17/16, 19/16	13/8, 11/2			1	.98	
	C25 I 5 UN	5		1 3/4			1	.98	
	C25 I 4 UN	4		21/2, 23/4			1	.98	

* For complete toolholder description see page 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	**S150 F 10 UN**	10		3/4			1	.59	6	H3, 3.1, 4, 5, 18, 19, 20
S20	**S160 H 24 UN**	24				11/16	4	.63	8	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	S169 H 20 UN	20				3/4, 13/16, 7/8, 15/16, 1	4	.67	8	
	S164 F 16 UN	16	7/8, 15/16, 1		3/4		3	.65	6	
	S191 F 14 UN	14			7/8		2	.75	6	
	S186 F 12 UN	12	7/8, 15/16		1		2	.73	6	
	S178 F 9 UN	9		7/8			1	.70	6	
	S200 F 8 UN	8	1 1/8	1			1	.79	6	
	S200 F 7 UN	7		1 1/8, 1 1/4			1	.79	6	
	S200 E 6 UN	6	1 7/16	1 3/8, 1 1/2			1	.79	5	
	S200 D 5 UN	5		1 3/4			1	.79	4	
S35	**S350 F 8 UN**	8	1 5/8, 1 3/4				2	1.38	6	H12, 13, 14, 26
	S350 F 4 UN	4		2 1/2, 2 3/4, 3			1	1.38	6	

Order example: S200 F 8 UN MT8

* For complete toolholder description see page 23-24

Carmex Precision Tools Ltd.

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	**C10 19 W**	19	G 1/4	2	.39	H1, 1.1, 2, 15, 16, 17
C12	**C12 19 W**	19	G 3/8	2	.47	H3, 3.1, 4, 5, 18, 19, 20
C18	**C18 14 W**	14	G 1/2 - 7/8	2	.70	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	C18 11 W	11	G ≥ 1	2	.70	

Trapez - DIN 103

Inserts for internal thread

Insert Type	Ordering Code	Pitch mm	Standard	D	Holder Code*
C10	**C10 I 2 TR**	2.0	Tr16x2, Tr18x2	.39	H1, 2, 15, 17
C12	**C12 I 2 TR**	2.0	Tr20x2	.47	H3, 4, 5, 18, 20
C18	**C18 I 3 TR**	3.0	Tr24x3	.70	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	C18 I 4 TR	4.0	Tr26x4	.70	H5.1, 5.2, 20.1, 21
	C18 I 5 TR	5.0	Tr28x5	.70	H5.1 ,5.2 ,20.1
C25	**C25 I 6 TR**	6.0	Tr36x6	.98	H10, 11, 24, 25

* For complete toolholder description see page 23-24

Acme

Inserts for internal thread

Insert Type	Ordering Code	Pitch TPI	Standard	D	Holder Code*
C18	**C18 I 5 ACME**	5	$1^1/8$, $1^1/4$	.71	H5.1, 5.2, 20.1
C25	**C25 I 4 ACME**	4	$1^1/2$, $1^3/4$, 2	.98	H10, 11, 24, 25

Order example: C18 I 5 ACME MT7

Round-DIN 405

Inserts for internal thread

Insert Type	Ordering Code	Pitch TPI	Standard	D	Holder Code*
C18	**C18 1/8 RD**	8	1/8RD	.70	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	C18 1/6 RD	6	1/6RD	.70	H5.1, 5.2, 20.1, 21
C25	**C25 1/4 RD**	4	1/4RD	.98	H10, 11, 24, 25

* For complete toolholder description see page 23-24

Chamfering and Grooving

Insert Type	Ordering Code	D	H	W	α	Holder Code*
C10	**C10 C90**	.39	.051	.016	90˚	H1, 2, 15, 17
C12	**C12 C90**	.47	.053	.012	90˚	H3, 4, 5, 18, 20
C18	**C18 C90**	.70	.077	.043	90˚	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
C25	**C25 C90**	.98	.098	.039	90˚	H10, 11, 24, 25

Order example: C10 C90 MT7

Chamfering, Grooving and Boring

Multi Flute

Insert Type	Ordering Code	D	H max	W	α	No. of Flutes	Holder Code*
S17	**SC160 E H14**	.63	.053	.008	90°	5	H3, 3.1, 4, 5,18,19, 20
S20	**SC170 E H14**	.67	.053	.008	90°	5	H6, 7, 8, 9, 21, 22, 23
	SC200 F H14	.79	.053	.008	90°	6	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	SC200 F H24	.79	.093	.008	90°	6	
S35	**SC350 F H42**	1.38	.165	.008	90°	6	H12, 13, 14, 26
S20	**SC200 F H20**	.79	.077	.039	90°	6	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	SC200 F H17	.79	.067	.059	90°	6	
	SC200 F H15	.79	.059	.079	90°	6	
	SC200 F H12	.79	.047	.098	90°	6	

* For complete toolholder description see page 23-24

Dovetail 45°

Multi Flute

Insert Type	Ordering Code	D	H	W	α	No. of Flutes	Holder Code*
S17	**SC170 F A45**	.67	.10	.004	45°	6	H3, 3.1, 4, 5, 18, 19, 20
S20	**SC200 F A45**	.79	.12	.004	45°	6	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23

Groove Milling

Insert Type	Ordering Code	D	W ±.001	T max.	R	Groove Dia. (min.)	Holder Code*
C10	**C10 W08**	.39	.031	.03	.004	Ø > .39	H1, 1.1, 2, 15, 16, 17
	C10 W09	.39	.035	.04	.004	Ø > .39	
	C10 W10	.39	.039	.04	.004	Ø > .39	
	C10 W15	.39	.059	.05	.004	Ø > .39	H1, 2, 15, 17
	C10 W20	.39	.079	.05	.004	Ø > .39	
C12	**C12 W08**	.47	.031	.03	.004	Ø > .47	H3, 3.1, 4, 5, 18, 19, 20
	C12 W10	.47	.039	.04	.004	Ø > .47	
	C12 W10T	.48	.039	.06	.008	Ø > .48	H3, 4, 5, 18, 20
	C12 W15	.49	.059	.06	.004	Ø > .49	
	C12 W20	.49	.079	.06	.004	Ø > .49	
	C12 W25	.49	.098	.06	.004	Ø > .49	
C18	**C18 W10**	.70	.039	.06	.004	Ø > .70	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	C18 W12	.70	.047	.06	.004	Ø > .70	
	C18 W15	.70	.059	.08	.004	Ø > .70	
	C18 W20	.70	.079	.11	.004	Ø > .70	H5.1, 5.2, 20.1
C25	**C25 W20**	.98	.079	.12	.008	Ø > .98	H10, 11, 24, 25
	C25 W25	.98	.098	.12	.008	Ø > .98	
	C25 W30	.98	.118	.12	.008	Ø > .98	
	C25 W35	.98	.138	.14	.008	Ø > .98	
	C25 W40	.98	.157	.14	.008	Ø > .98	
	C25 W50	.98	.197	.14	.008	Ø > .98	

* For complete toolholder description see page 23-24

Groove Milling

DIN 471/472

Insert Type	Ordering Code	D	Nominal groove width	W -.002	T max.	R	Groove Dia. (min.)	Holder Code*
C10	**C10 W087**	.39	.031	.034	.051	0	Ø > .39	H1, 2, 15, 17
	C10 W097	.39	.035	.038	.051	0	Ø > .39	
	C10 W121	.39	.043	.048	.051	0	Ø > .39	
	C10 W141	.39	.051	.056	.051	.004	Ø > .39	
	C10 W171	.39	.063	.067	.051	.004	Ø > .39	
C12	**C12 W121**	.49	.043	.048	.067	0	Ø > .49	H3, 4, 5, 18, 20
	C12 W141	.49	.051	.056	.067	.004	Ø > .49	
	C12 W171	.49	.063	.067	.067	.004	Ø > .49	
C18	**C18 W121**	.70	.043	.048	.114	.004	Ø > .70	H5.1, 5.2, 20.1
	C18 W141	.70	.051	.056	.114	.004	Ø > .70	
	C18 W171	.70	.063	.067	.114	.004	Ø > .70	
	C18 W196	.70	.073	.077	.114	.006	Ø > .70	

Order example: C12 W141 MT7

* For complete toolholder description see page 23-24

Groove Milling

Multi Flute

Insert Type	Ordering Code	D	W ±.001	T max.	R	Groove Dia. (min)	No. of Flutes	Holder Code*
S17	**SG170 F W15**	.67	.059	.11	.008	Ø > .67	6	H3, 3.1, 4, 5, 18, 19, 20
	SG170 F W20	.67	.079	.11	.008	Ø > .67	6	
	SG170 F W25	.67	.098	.11	.008	Ø > .67	6	
S20	**SG200 F W15**	.79	.059	.11	.008	Ø > .79	6	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	SG200 F W20	.79	.079	.11	.008	Ø > .79	6	
	SG200 F W25	.79	.098	.11	.008	Ø > .79	6	
	SG200 F W30	.79	.118	.11	.008	Ø > .79	6	
	SG200 F W40	.79	.157	.11	.008	Ø > .79	6	
	SG200 F W49	.79	.193	.11	.008	Ø > .79	6	
S20	**SG200 E W20T**	.79	.079	.15	.008	Ø > .79	5	H5.1, 5.2, 20.1
	SG200 E W25T	.79	.098	.15	.008	Ø > .79	5	
	SG200 E W30T	.79	.118	.15	.008	Ø > .79	5	
S35	**SG350 F W30T**	1.38	.118	.26	.008	Ø > 1.38	6	H12, 13, 14, 26
	SG350 F W40T	1.38	.157	.26	.008	Ø > 1.38	6	
	SG350 F W50T	1.38	.197	.26	.008	Ø > 1.38	6	
	SG350 F W60T	1.38	.236	.26	.008	Ø > 1.38	6	
	SG350 F W80T	1.38	.315	.26	.008	Ø > 1.38	6	

Order example: SG200 E W20T MT8

* For complete toolholder description see page 23-24

Groove Milling

Multi Flute

DIN 471/472

Insert Type	Ordering Code	D	Nominal groove width	W -.002	T max.	R	Groove Dia. (min)	No. of Flutes	Holder Code*
S20	**SG200 F W121**	.79	.043	.048	.16	0	Ø > .79	6	H5.1, 5.2, 20.1
	SG200 F W141	.79	.051	.055	.16	.004	Ø > .79	6	
	SG200 F W171	.79	.063	.067	.16	.004	Ø > .79	6	
	SG200 F W196	.79	.073	.077	.16	.004	Ø > .79	6	

Full Radius Groove Milling

Insert Type	Ordering Code	D	R	W ±.001	T max.	Groove Dia. (min)	Holder Code*
C12	**C12 R11**	.49	.043	.087	.07	Ø >.49	H3, 4, 5, 18, 20
C18	**C18 R08**	.70	.031	.063	.11	Ø >.70	H5.1, 5.2, 20.1
	C18 R11	.70	.043	.087	.11	Ø >.70	

Order example: C18 R11 MT7

* For complete toolholder description see page 23-24

Full Radius Groove Milling

Multi Flute

Insert Type	Ordering Code	D	R	W ±.001	T max.	Groove Dia. (min)	No. of Flutes	Holder Code*
S20	**SG200 F R10**	.79	.039	.079	.11	Ø > .79	6	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	SG200 F R12	.79	.047	.094	.11	Ø > .79	6	
	SG200 F R15	.79	.059	.118	.11	Ø > .79	6	
	SG200 F R20	.79	.079	.157	.11	Ø > .79	6	

Order example: SG200 F R15 MT8

Face Milling and Finishing

Insert Type	Ordering Code	D	W ±.004	R	Holder Code*
C10	**C10 F R0.1**	.39	.12	.004	H1, 1.1, 2, 15, 16, 17
C12	**C12 F R0.1**	.47	.12	.004	H3, 3.1, 4, 5, 18, 19, 20
C18	**C18 F R0.1**	.70	.20	.004	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
C25	**C25 F R0.2**	.98	.24	.008	H10, 11, 24, 25

* For complete toolholder description see page 23-24

Corner Rounding

Insert Type	Ordering Code	D	Do	R	I	Holder Code*
C10	**C10 CR05**	.39	.31	.020	.04	H1, 1.1, 2, 15, 16, 17
	C10 CR10	.39	.27	.039	.06	
C18	**C18 CR13**	.70	.56	.049	.07	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	C18 CR15	.70	.54	.059	.08	
	C18 CR20	.70	.50	.079	.10	
C25	**C25 CR30**	.98	.70	.118	.14	H10, 11, 24, 25

Corner Rounding

Multi Flute

Insert Type	Ordering Code	D	Do	R	I	No. of Flutes	Holder Code*
S17	**S170 E CR10**	.67	.55	.039	.06	5	H3, 3.1, 4, 5, 18, 19, 20
	S170 E CR13	.67	.53	.049	.07	5	
	S170 E CR15	.67	.51	.059	.08	5	

Order example: S170 E CR13 MT8

* For complete toolholder description see page 23-24

Front and Back Corner Rounding

Insert Type	Ordering Code	D	Do	R	W	I	Holder Code*
C10	**C10 CRD08**	.39	.32	.031	.05	.035	H1, 1.1, 2, 15, 16, 17
C18	**C18 CRD15**	.70	.57	.059	.07	.063	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
C25	**C25 CRD20**	.98	.81	.079	.08	.083	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	**S170 F CRD08**	.67	.60	.031	.05	.035	6	H3, 3.3, 4, 5, 18, 19, 20
S20	**S200 F CRD15**	.79	.66	.059	.07	.063	6	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23

Order example: S200 F CRD15 MT8

* For complete toolholder description see page 23-24

Steel Toolholders

With internal coolant

Version A

Version B

Tool No.	Ordering Code	Insert Type	d	D2	l	L	Insert Screw	Torx Key	Version
H1	**SRC 0500 E10**	C10	1/2	.29	.74	2.8	S5	K5	A
H1.1	**SRC 0500 F10**		1/2	.31	.98	3.1	S5	K5	A
H2	**SRC 0625 G10**		5/8	.29	.74	3.5	S5	K5	A
H3	**SRC 0500 E12**	C12, S17	1/2	.35	.98	2.8	S10	K10	A
H3.1	**SRC 0500 G12**		1/2	.39	1.57	3.5	S10	K10	A
H4	**SRC 0625 G12**		5/8	.35	.98	3.5	S10	K10	A
H5	**SRC 0625 H12**		5/8	.35	1.37	4.0	S10	K10	A
H5.1	**SRC 0625 F18**	C18, S20	5/8	.47	.98	3.1	S16	K16	A
H5.2	**SRC 0625 G18**		5/8	.47	1.57	3.5	S16	K16	A
H6	**SRC 0625 H18**		5/8	.54	1.90	4.0	S16	K16	A
H7	**SRC 0750 H18**		3/4	.54	1.27	4.0	S16	K16	A
H8	**SRC 0750 J18**		3/4	.54	1.90	4.5	S16	K16	A
H9	**SRC 0750 L18**		3/4	.54	2.92	5.5	S16	K16	A
H10	**SRC 1000 J25**	C25	1	.69	1.91	4.5	S27	K27	A
H11	**SRC 1000 M25**		1	.69	3.28	5.9	S27	K27	A
H12	**SRC 0750 P35**	S35	3/4	.87	4.41	6.7	S33	K33	B
H13	**SRC 1000 H35**		1	.87	1.55	3.9	S33	K33	A
H14	**SRC 1000 K35**		1	.87	2.34	5.1	S33	K33	A

Order example: SRC 0625 H18

Carbide Shank Toolholders

With internal coolant

Version A

Version B

Tool No.	Ordering Code	Insert Type	d	D2	l	L	Insert Screw	Torx Key	Version
H15	**CRC 0312 L13 K10**	C10	5/16	.29	1.37	5.0	S5	K5	A
H16	**CRC 0312 K10**		5/16	.312	---	5.0	S5	K5	A
H17	**CRC 0375 L17 M10**		3/8	.29	1.77	5.9	S5	K5	A
H18	**CRC 0375 L15 M12**	C12, S17	3/8	.35	1.65	6.0	S10	K10	A
H19	**CRC 0375 M12**		3/8	.375	---	6.0	S10	K10	A
H20	**CRC 0500 L22 P12**		1/2	.35	2.28	6.8	S10	K10	A
H20.1	**CRC 0500 L22 P18**	C18, S20	1/2	.47	2.28	7.0	S10	K16	A
H21	**CRC 0500 P18**		1/2	.500	---	7.0	S16	K16	A
H22	**CRC 0625 L18 R18**		5/8	.54	1.90	7.8	S16	K16	A
H23	**CRC 0625 L29 R18**		5/8	.54	2.92	7.8	S16	K16	A
H24	**CRC 0625 R25**	C25	5/8	.69	7.11	8.2	S27	K27	B
H25	**CRC 0750 L33 S25**		3/4	.69	3.36	10.0	S27	K27	A
H26	**CRC 0750 S35**	S35	3/4	.87	8.84	10.4	S33	K33	B

Order example: CRC 0625 L18 R18

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

Demonstration

Product Identification - Ordering Codes

Inserts

S → Spiral CMT insert

G → G = Grooving
C = Chamfering
T = Threading

16 → 16 = Insert size IC3/8"

R → R = Right hand

[ ] → Grooving
W12 = Groove width 1.2 mm
Threading
G60/N60 = Partial profile

H05 → Grooving
H05 = Groove depth 0.5 mm
Chamfering
H20 = Chamfer size 2.0 mm

MT7 → Carbide Grade

Toolholders

SRI → Clamping method
S = Screw

[ ] → Shank Diameter
1000 = 1"

41 → Cutting Diameter
41 = 1.61"
55 = 2.17"
2480 = 2.48"

I16 → Insert type
I16 = IC3/8"

Groove Milling

DIN 471 / 472

Insert Type	I.C.	Ordering Code	W	R	Holder Code*
SI16	3/8"	**SG 16 R W14**	.055	.004	H27, 28, 29
		SG 16 R W17	.067	.004	
		SG 16 R W19	.077	.006	
		SG 16 R W22	.089	.006	
		SG 16 R W27	.108	.008	
		SG 16 R W32	.128	.008	
		SG 16 R W42	.167	.008	
		SG 16 R W43	.171	.008	H27, 29, 30

Right hand cutting

Insert Type	I.C.	Ordering Code	W	R	Holder Code*
SI16	3/8"	**SG 16 L W43**	.171	.008	H30

Left hand cutting

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

* For complete toolholder description see page 30-31

Groove Milling with Chamfer

DIN 471 / 472

Insert Type	I.C.	Ordering Code	W	H max	R	α	Holder Code*
SI16	3/8"	SG 16 R W12 H05	.047	.020	.004	45˚	H27, 28, 29
		SG 16 R W14 H07	.055	.028			
		SG 16 R W14 H08	.055	.033			
		SG 16 R W17 H08	.067	.033			
		SG 16 R W17 H10	.067	.039			
		SG 16 R W19 H12	.077	.049	.006	45˚	
		SG 16 R W22 H15	.089	.059			
		SG 16 R W27 H15	.108	.059			
		SG 16 R W27 H17	.108	.069			
		SG 16 R W32 H17	.128	.069			
		SG 16 R W42 H20	.167	.079			
		SG 16 R W42 H25	.167	.098			

Right hand cutting

Chamfering

Insert Type	I.C.	Ordering Code	H max	W	α	Holder Code*
SI16	3/8"	SC 16 R H20	.079	.008	90˚	H27, 28, 29
		SC 16 R H19	.075	.020	90˚	

Right hand cutting

* For complete toolholder description see page 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"	**ST 16 R G60**	Int. 1.5-3.0	Int. 16-8	H27, 28, 29
			Ex. 1.25-3.0	Ex. 20-8	
		ST 16 R N60	Int. 3.5-5.0	Int. 7-5	
			Ex. 3.0-4.5	Ex. 8-6	

Right hand cutting

* For complete toolholder description see page 30-31

Toolholders

Milling Cutter - Arbor

Tool No.	Ordering Code	Insert Type	D	d	T max	B	S	Insert Screw	Torx Key
H27	**SRI 41- I16**	SI16	1.61	1.31	.14	.49	.47	S16S	K16

Right hand cutting

To connect to the standard CMT toolholders S35: SRC 0750 P35, SRC 1000 H35, SRC 1000 K35, CRC 0750 S35.

Milling Cutter - Shell Mill

Tool No.	Ordering Code	Insert Type	D	d	T max	B	S	D1	Insert Screw	Torx Key
H28	**SRI 2480-I16**	SI16	2.48	2.24	.12	1.75	1.73	1.00	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	**SRI 1000-I16**	SI16	1.61	1.00	.14	.49	.47	4.9	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	**SRI 55-I16**	SI16	2.17	.61	.32	.28	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 0750 P35, SRC 1000 H35, SRC 1000 K35, CRC 0750 S35.

Technical Section

CMT Straight Flute 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 ft/min	Feed inch/tooth Cutting Diameter=D			
			Ø.39	Ø.47	Ø.70	Ø.98
P	Low and Medium Carbon Steels <0.55%C	197 - 394	.0063	.0067	.0079	.0087
	High Carbon Steels ≥0.55%C	197 - 295	.0055	.0063	.0079	.0087
	Alloy Steels, Treated Steels	164 - 262	.0039	.0047	.0063	.0071
M	Stainless Steels - Free Cutting	230 - 328	.0039	.0043	.0059	.0067
	Stainless Steels - Austenitic	197 - 295	.0039	.0043	.0059	.0067
	Cast Steels	230 - 295	.0039	.0047	.0063	.0071
K	Cast Iron	131 - 262	.0063	.0067	.0079	.0087
N	Aluminum ≤12%Si, Copper	328 - 656	.0063	.0067	.0079	.0087
	Aluminum >12% Si	197 - 459	.0039	.0043	.0061	.0071
	Synthetics, Duroplastics, Thermoplastics	164 - 656	.0075	.0075	.0087	.0094
S	Nickel Alloys, Titanium Alloys	66 - 131	.0028	.0028	.0039	.0047
H	Hardened Steel 45 - 50HRc	197 - 230	.0035	.0035	.0051	.0059
	Hardened Steel 50 - 55HRc	164 - 197	.0031	.0031	.0047	.0055

CMT Spiral Multi Flute Inserts

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

Cutting Data

ISO Standard	Material	Cutting Speed ft/min	Feed unch/tooth Cutting Diameter = D
			Ø.63-Ø1.38
P	Low and Medium Carbon Steels <0.55%C	197 - 394	.0055 - .0094
	High Carbon Steels ≥0.55%C	197 - 295	.0047 - .0094
	Alloy Steels,Treated Steels	164 - 262	.0031 - .0079
M	Stainless Steel-Free Cutting	230 - 328	.0031 - .0075
	Stainless Steel-Austenitic	197 - 295	.0031 - .0075
	Cast Steels	230 - 295	.0031 - .0079
K	Cast Iron	131 - 262	.0055 - .0094
N	Aluminum ≤12%Si, Copper	328 - 656	.0055 - .0102
	Aluminum >12%Si	197 - 459	.0031 - .0087
	Synthetics, Duroplastics, Thermoplastics	164 - 656	.0067 - .0110
S	Nickel Alloys, Titanium Alloys	66 - 131	.0020 - .0055
H	Hardened Steel, 45-50HRc	197 - 230	.0028 - .0067
	Hardened Steel, 51-55HRc	164 - 197	.0024 - .0063

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 ft/min	Feed inch/tooth
P	Low and Medium Carbon Steels <0.55%C	197 - 394	.0020-.0059
	High Carbon Steels ≥0.55%C	197 - 295	.0020-.0039
	Alloy Steels, Treated Steels	164 - 262	.0020-.0039
M	Stainless Steel-Free Cutting	230 - 328	.0016-.0051
	Stainless Steel-Austenitic	197 - 295	.0016-.0039
	Cast Steels	230 - 295	.0016-.0051
K	Cast Iron	131 - 262	.0020-.0059
N	Aluminum ≤12%Si, Copper	328 - 656	.0020-.0098
	Aluminum >12%Si	197 - 459	.0012-.0039
	Synthetics, Duroplastics, Thermoplastics	164 - 656	.0020-.0098
S	Nickel alloys, Titanium Alloys	66 - 131	.0012-.0039
H	Hardened Steel, ≤ 45 HRc	197 - 230	.0012-.0039

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Carmex CMT 03/2021 - Inch

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