

Spiral Mill-Thread



Advantages of Spiral Mill-Thread Tools

- The spiral designed tools enable a smooth cutting operation at a high feed rate and reduced machining time.
- The tools suit a wide range of applications, from machining small components in small machining centers to heavy-duty applications in high power milling machines.
- Spiral fluted toolholders hold 1 to 9 inserts in a comparatively small cutting diameter.
- The unique clamping method enables optimal indexability.
- Spiral tools reduce vibration and chatter.
- High grade finish is achieved in all applications: threading, end milling roughing and finishing.
- Inserts are available in 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.

Contents:

Page:

Product Identification	162
ISO	163
UN	164-165
Whitworth	165
BSPT	166
NPT	166
NPTF	167
NPS	167

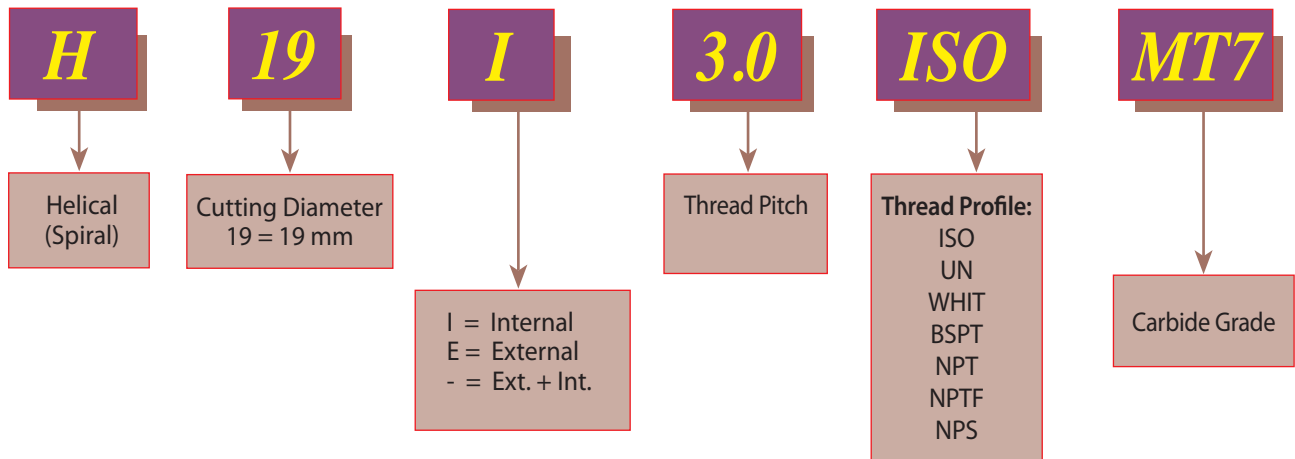
Contents:

Page:

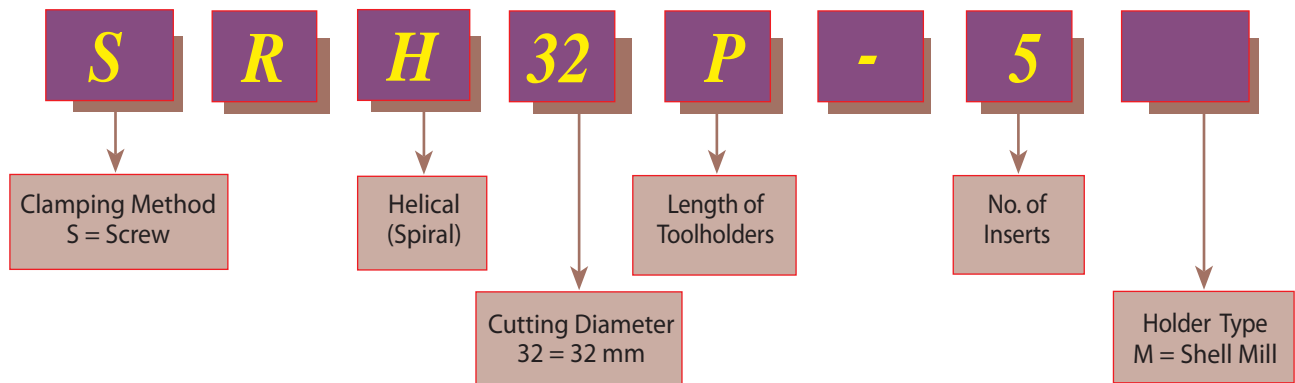
Spiral Finishing Inserts	168
Toolholders	169-171
Special Tools	171
Case Studies	172

Product Identification - Ordering Codes

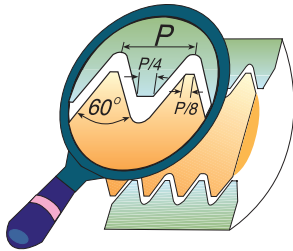
Spiral Mill - Thread Inserts



Spiral Mill - Thread Toolholders

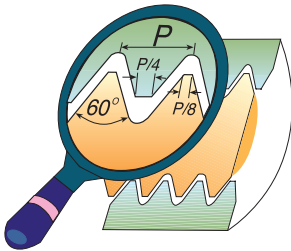


ISO



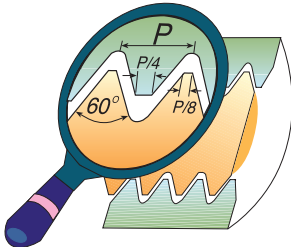
Insert Size	Fig.	Pitch mm	Ext./ Int.	M coarse	M fine	Ordering code	Toolholder
H13	1	1.0	Int.		≥ 15	H13 I 1.0 ISO	SRH13...
		1.5	Int.		≥ 16	H13 I 1.5 ISO	
		2.0	Int.	M16	≥ 17	H13 I 2.0 ISO	
H15	1	1.0	Int.		≥ 17	H15 I 1.0 ISO	SRH15...
		1.5	Int.		≥ 18	H15 I 1.5 ISO	
		2.0	Int.		≥ 19	H15 I 2.0 ISO	
H17	1	2.5	Int.	M18	≥ 20	H15 I 2.5 ISO	SRH17...
		1.0	Int.		≥ 19	H17 I 1.0 ISO	
		1.5	Int.		≥ 20	H17 I 1.5 ISO	
H19	1	2.0	Int.		≥ 21	H17 I 2.0 ISO	SRH19...
		2.5	Int.	M20, M22	≥ 22	H17 I 2.5 ISO	
		3.0	Int.	M24	≥ 23	H19 I 2.0 ISO	
H23	2	3.0	Int.		≥ 25	H19 I 3.0 ISO	SRH23...
		1.0	Ext.			H23 E 1.0 ISO	
		1.0	Int.		≥ 25	H23 I 1.0 ISO	
		1.5	Ext.			H23 E 1.5 ISO	
		1.5	Int.		≥ 26	H23 I 1.5 ISO	
		2.0	Ext.			H23 E 2.0 ISO	
		2.0	Int.		≥ 27	H23 I 2.0 ISO	
		3.0	Ext.			H23 E 3.0 ISO	
3.0	Int.	M27	≥ 29	H23 I 3.0 ISO			
H32	2	3.5	Int.	M30, M33	≥ 30	H23 I 3.5 ISO	SRH32...
		4.0	Int.	M36	≥ 31	H23 I 4.0 ISO	
		1.0	Int.		≥ 34	H32 I 1.0 ISO	
		1.5	Ext.			H32 E 1.5 ISO	
		1.5	Int.		≥ 35	H32 I 1.5 ISO	
		2.0	Ext.			H32 E 2.0 ISO	
		2.0	Int.		≥ 36	H32 I 2.0 ISO	
		3.0	Ext.			H32 E 3.0 ISO	
		3.0	Int.		≥ 38	H32 I 3.0 ISO	
		3.5	Int.		≥ 39	H32 I 3.5 ISO	
H45	2	4.0	Ext.			H32 E 4.0 ISO	SRH45...
		4.0	Int.	M39	≥ 40	H32 I 4.0 ISO	
		4.5	Int.	M42, M45	≥ 41	H32 I 4.5 ISO	
		5.0	Int.	M48	≥ 42	H32 I 5.0 ISO	
		1.5	Ext.			H45 E 1.5 ISO	
		1.5	Int.		≥ 48	H45 I 1.5 ISO	
		2.0	Ext.			H45 E 2.0 ISO	
		2.0	Int.		≥ 49	H45 I 2.0 ISO	
		3.0	Int.		≥ 51	H45 I 3.0 ISO	
		3.5	Int.		≥ 52	H45 I 3.5 ISO	
H63	2	4.0	Int.		≥ 53	H45 I 4.0 ISO	SRH63...
		4.5	Int.		≥ 54	H45 I 4.5 ISO	
		5.0	Int.	M52	≥ 55	H45 I 5.0 ISO	
		5.5	Int.	M56, M60	≥ 56	H45 I 5.5 ISO	
		6.0	Int.	M64, M68	≥ 57	H45 I 6.0 ISO	
		1.5	Int.		≥ 66	H63 I 1.5 ISO	
		2.0	Int.		≥ 67	H63 I 2.0 ISO	
		3.0	Int.		≥ 69	H63 I 3.0 ISO	
4.0	Int.		≥ 71	H63 I 4.0 ISO			
		6.0	Int.		≥ 75	H63 I 6.0 ISO	

UN



Insert Size	Fig.	Pitch TPI	Ext./ Int.	UN	UNC	UNF	UNS	Ordering code	Toolholder
H13	1	16	Int.	5/8, 11/16				H13 I 16 UN	SRH13...
		14	Int.				5/8	H13 I 14 UN	
		12	Int.	11/16				H13 I 12 UN	
H15	1	16	Int.			3/4		H15 I 16 UN	SRH15...
		14	Int.				3/4	H15 I 14 UN	
		12	Int.	3/4, 13/16				H15 I 12 UN	
H17	1	16	Int.	13/16 - 1				H17 I 16 UN	SRH17...
		14	Int.			7/8, 1		H17 I 14 UN	
		12	Int.	7/8				H17 I 12 UN	
H19	1	12	Int.	15/16		1		H19 I 12 UN	SRH19...
		8	Int.	1 1/16, 1 1/8	1			H19 I 8 UN	
		32	Int.	1			1 - 1 1/4	H23 I 32 UN	
H23	2	24	Int.					H23 I 24 UN	SRH23...
		20	Ext.					H23 E 20 UN	
		20	Int.	1 1/16 - 1 5/16				H23 I 20 UN	
		18	Ext.					H23 E 18 UN	
		18	Int.				1	H23 I 18 UN	
		16	Ext.					H23 E 16 UN	
		16	Int.	1 1/16 - 1 5/16				H23 I 16 UN	
		14	Ext.					H23 E 14 UN	
		14	Int.				≥1 1/8	H23 I 14 UN	
		12	Ext.					H23 E 12 UN	
		12	Int.	1 1/16 - 1 3/16		1 1/8		H23 I 12 UN	
		10	Ext.					H23 E 10 UN	
		10	Int.				≥1 1/8	H23 I 10 UN	
		8	Ext.					H23 E 8 UN	
		8	Int.	1 3/16 - 1 5/16				H23 I 8 UN	
7	Ext.					H23 E 7 UN			
7	Int.			1 1/4		H23 I 7 UN			
H28	2	12	Int.	1 5/16		1 1/4, 1 3/8		H28 I 12 UN	SRH28...
		8	Int.	1 3/8 - 1 7/16				H28 I 8 UN	
		6	Int.	1 3/8 - 1 9/16	1 1/2			H28 I 6 UN	
H32	2	24	Ext.				≥1 3/8	H32 E 24 UN	SRH32...
		20	Ext.					H32 E 20 UN	
		20	Int.	≥1 3/8				H32 I 20 UN	
		18	Ext.					H32 E 18 UN	
		18	Int.				≥1 3/4	H32 I 18 UN	
		16	Ext.					H32 E 16 UN	
		16	Int.	1 3/8 - 1 7/8				H32 I 16 UN	
		12	Ext.					H32 E 12 UN	
		12	Int.	1 7/16 - 1 7/8		1 1/2		H32 I 12 UN	
		8	Ext.					H32 E 8 UN	
		8	Int.	1 1/2 - 2				H32 I 8 UN	
6	Ext.					H32 E 6 UN			
6	Int.	1 5/8 - 1 7/8				H32 I 6 UN			
5	Int.			1 3/4		H32 I 5 UN			
H40	2	6	Int.	1 15/16, 2				H40 I 6 UN	SRH40...
		4.5	Int.		2			H40 I 4.5 UN	

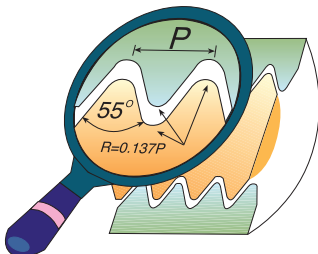
UN



Insert Size	Fig.	Pitch TPI	Ext./ Int.	UN	UNC	UNF	UNS	Ordering code	Toolholder
H45	2	16	Int.	1 15/16 - 2 1/2			2 1/16 - 2	H45 I 16 UN	SRH45...
		12	Int.	1 15/16 - 2 5/8				H45 I 12 UN	
		8	Int.	2 1/8 - 2 5/8				H45 I 8 UN	
		6	Int.	2 1/8 - 2 3/4				H45 I 6 UN	
		4.5	Int.			2 1/4		H45 I 4.5 UN	
		4	Int.			2 1/2 - 2 3/4		H45 I 4 UN	
H63	2	16	Int.	≥ 2 5/8				H63 I 16 UN	SRH63...
		12	Int.	≥ 2 3/4				H63 I 12 UN	
		8	Int.	≥ 2 3/4				H63 I 8 UN	
		6	Int.	≥ 2 7/8				H63 I 6 UN	
		4	Int.			≥ 3		H63 I 4 UN	

Whitworth

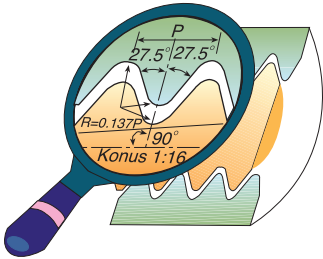
Same insert for internal and external thread



Insert Size	Fig.	Pitch TPI	Ordering code	Thread Size	Toolholder
H13	1	19	H13- 19 W	G 3/8	SRH13...
H15	1	14	H15- 14 W	G 1/2	SRH15...
H17	1	14	H17- 14 W	G 1/2 - 5/8	SRH17...
		11	H17- 11 W	G ≥ 1"	
H19	1	14	H19- 14 W	G 3/4 - 7/8	SRH19...
		11	H19- 11 W	G ≥ 1"	
H23	2	14	H23-14 W	Int. G 7/8" Ext. ≥ G 1/2"	SRH23...
		11	H23-11 W	≥ G 1"	
H32	2	14	H32-14 W	Ext. ≥ G 1/2"	SRH32...
		11	H32-11 W	Int. ≥ G 1 1/8" Ext. ≥ G 1"	
H45	2	11	H45-11 W	Int. ≥ G 1 5/8" Ext. ≥ G 1"	SRH45...
H63	2	11	H63-11 W	Int. ≥ G 2 3/8" Ext. ≥ G 1"	SRH63...

BSPT

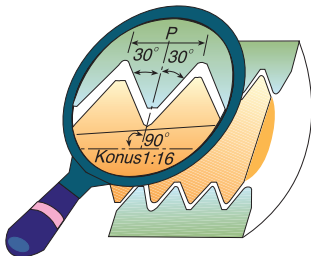
Same insert for internal and external thread



Insert Size	Fig.	Pitch TPI	Ordering code	Thread Size	Toolholder
H13	1	19	H13-19 BSPT	3/8	SRH13...
H15	1	14	H15-14 BSPT	1/2 - 3/4	SRH15...
H17	1	14	H17-14 BSPT	1/2 - 3/4	SRH17...
H23	2	11	H23-11 BSPT	≥ 1"	SRH23...
H32	2	11	H32-11 BSPT	Int. ≥ 1 1/8" Ext. ≥ 1"	SRH32...
H45	2	11	H45-11 BSPT	Int. ≥ 1 3/4" Ext. ≥ 1"	SRH45...
H63	2	11	H63-11 BSPT	Int. ≥ 2 1/2" Ext. ≥ 1"	SRH63...

NPT

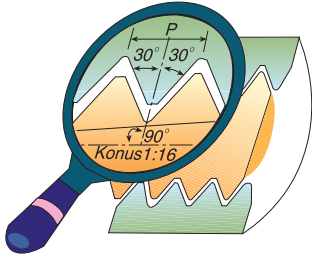
Same insert for internal and external thread



Insert Size	Fig.	Pitch TPI	Ordering code	Thread Size	Toolholder
H13	1	18	H13-18 NPT	3/8	SRH13...
H15	1	14	H15-14 NPT	1/2 - 3/4	SRH15...
H17	1	14	H17-14 NPT	1/2 - 3/4	SRH17...
H23	2	11.5	H23-11.5 NPT	1" - 2"	SRH23...
H32	2	11.5	H32-11.5 NPT	Int. 1 1/4" - 2" Ext. 1" - 2"	SRH32...
H45	2	11.5	H45-11.5 NPT	Int. ≥ 1 5/8" Ext. ≥ 1"	SRH45...
		8	H45- 8 NPT	≥ 2 1/2"	
H63	2	11.5	H63-11.5 NPT	Ext. 1 - 2"	SRH63...
		8	H63- 8 NPT	≥ 3"	

NPTF

Same insert for internal and external thread



Insert Size	Fig.	Pitch TPI	Ordering code	Thread Size	Toolholder
H13	1	18	H13-18 NPTF	3/8	SRH13...
H15	1	14	H15-14 NPTF	1/2 - 3/4	SRH15...
H17	1	14	H17-14 NPTF	1/2 - 3/4	SRH17...
H23	2	11.5	H23-11.5 NPTF	1"-2"	SRH23...
H32	2	11.5	H32-11.5 NPTF	Int. 1 1/4"-2" Ext. 1" -2"	SRH32...

NPS

Same insert for internal and external thread



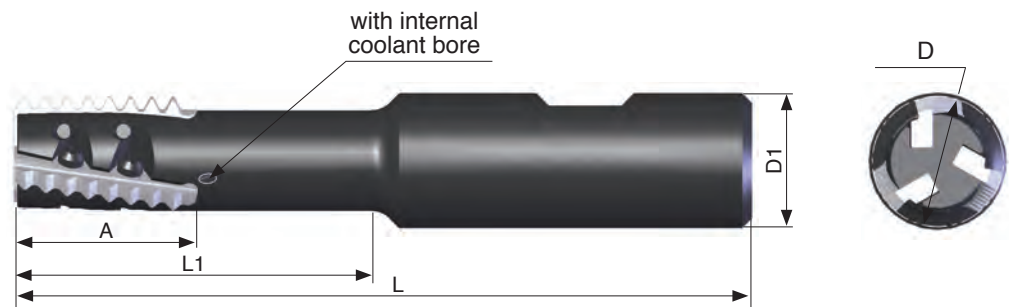
Insert Size	Pitch TPI	Ordering code	Thread Size	Toolholder
H13	18	H13- 18 NPS	3/8	SRH13...
H15	14	H15- 14 NPS	1/2 - 3/4	SRH15...
H17	14	H17- 14 NPS	1/2 - 3/4	SRH17...

Spiral Finishing Inserts



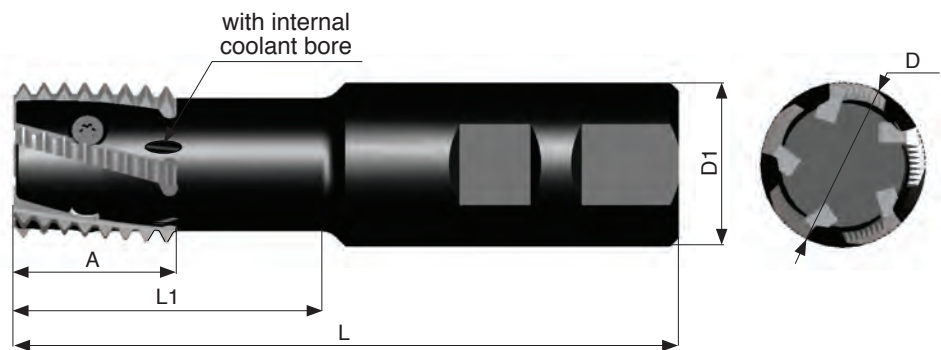
Insert Size	R	Ordering code	Toolholder
H23	0.2	H23 F R 0.2	SRH23...
	0.5	H23 F R 0.5	
	1.0	H23 F R 1.0	
H32	0.2	H32 F R 0.2	SRH32...
	0.5	H32 F R 0.5	
	1.0	H32 F R 1.0	
H45	0.2	H45 F R 0.2	SRH45...
	0.5	H45 F R 0.5	
	1.0	H45 F R 1.0	
	1.5	H45 F R 1.5	
	2.0	H45 F R 2.0	
H63	0.2	H63 F R 0.2	SRH63...
	0.5	H63 F R 0.5	
	1.0	H63 F R 1.0	
	1.5	H63 F R 1.5	
	2.0	H63 F R 2.0	

Toolholders

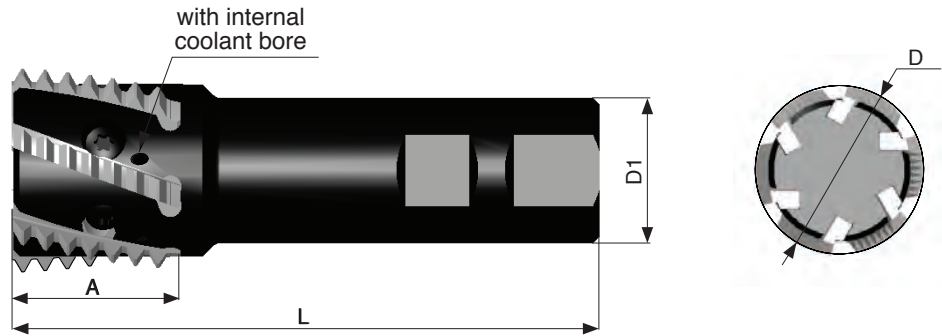


Ordering Code	Insert Type	Insert size A	D	D1	L	L1	No. of Inserts	Screw	Key
SRH13-1	H13	27	13	20	90	35	1	S13	K11
SRH15-1	H15	27	15	20	95	40	1	S15	K11
* SRH17-2	H17	27	17	20	85	30	2	S17	K11
* SRH17J-2	H17	27	17	20	100	45	2	S17	K11
SRH19-3	H19	27	19	20	85	30	3	S19	K11
SRH19J-3	H19	27	19	20	110	55	3	S19	K11

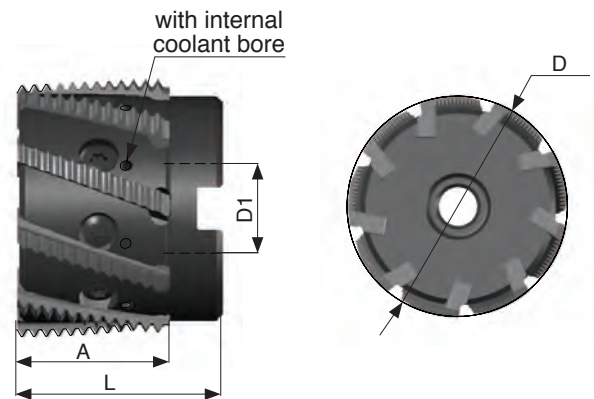
* When using NPT, NPTF, BSPT inserts the cutting diameter D = 18 mm



Ordering Code	Insert Type	Insert size A	D	D1	L	L1	No. of Inserts	Screw	Key
SRH23-2	H23	27	23	25	110	50	2	S23	K21
SRH23M-2	H23	27	23	25	150	75	2	S23	K21
SRH28-3	H28	32	28	32	150	75	3	S32S	K22
SRH32-5	H32	32	32	32	130	60	5	S32	K22
SRH32P-5	H32	32	32	32	180	90	5	S32	K22



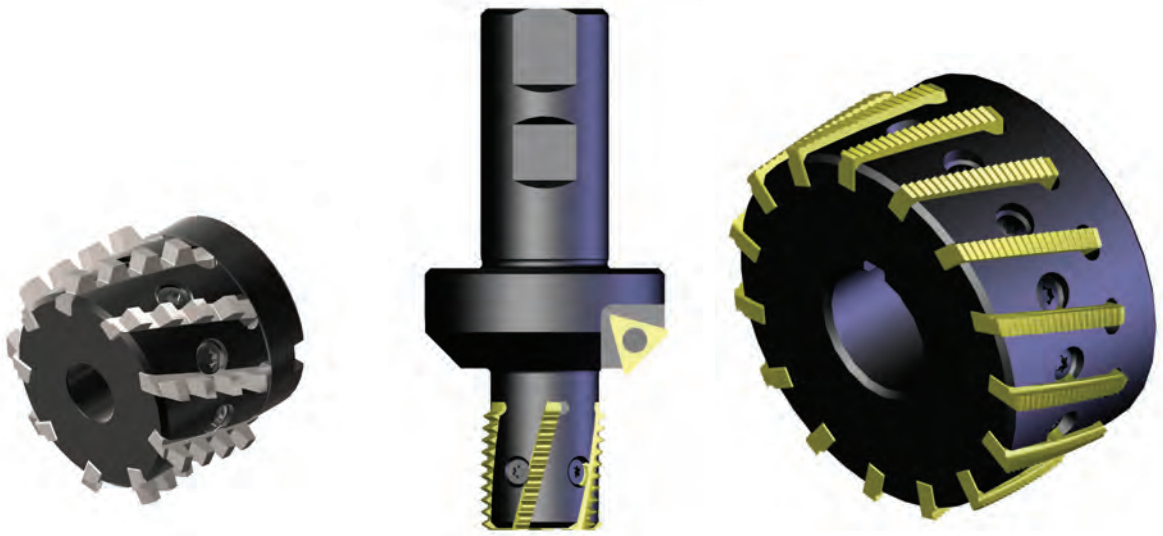
Ordering Code	Insert Type	Insert size A	D	D1	L	No. of Inserts	Screw	Key
SRH40-4	H40	37	40	32	180	4	S45S	K40
SRH45-6	H45	37	45	32	130	6	S45	K40



Ordering Code	Insert Type	Insert size A	D	D1	L	No. of Inserts	Screw	Key
SRH32-5M	H32	32	32	16	52	5	S32S	K22
SRH45-6M	H45	37	45	22	60	6	S45S	K40
SRH63-9	H63	38	63	22	50	9	S63	K40

Special Tools

In addition to standard products, Carmex manufactures special tools and inserts according to customers' requests. The toolholders are multi-purpose, making them suitable for both roughing and finishing inserts. Special tools are supplied in short delivery times.



Case Studies

Case Study no. 1

Thread	M56x1.5
Internal/External	Internal
Thread Length	33.0
Raw Material	Ductile Iron
Cutting Speed – Vc	130 m/min
Tooth Load – Fz	0.15 mm/tooth
Toolholder	SRH45 – 6
Insert	H45 I 1.5 ISO MT7
Result	600 pcs with 0.02 offset (Competitor – 40 pcs with 0.15 offset)



Case Study no. 2

Application	Grooves Milling
Internal/External	External
Raw Material	Cast Steel
Cutting Speed – Vc	195 m/min
Tooth Load – Fz	0.10 mm/tooth
Toolholder	SRH63 – 9
Insert	Taylor Made H63
Result	1350 pcs (Competitor – 540 pcs)

