

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 2 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	194
ISO	195
UN	196-197
Whitworth	197
BSPT	198
NPT	198

Contents:

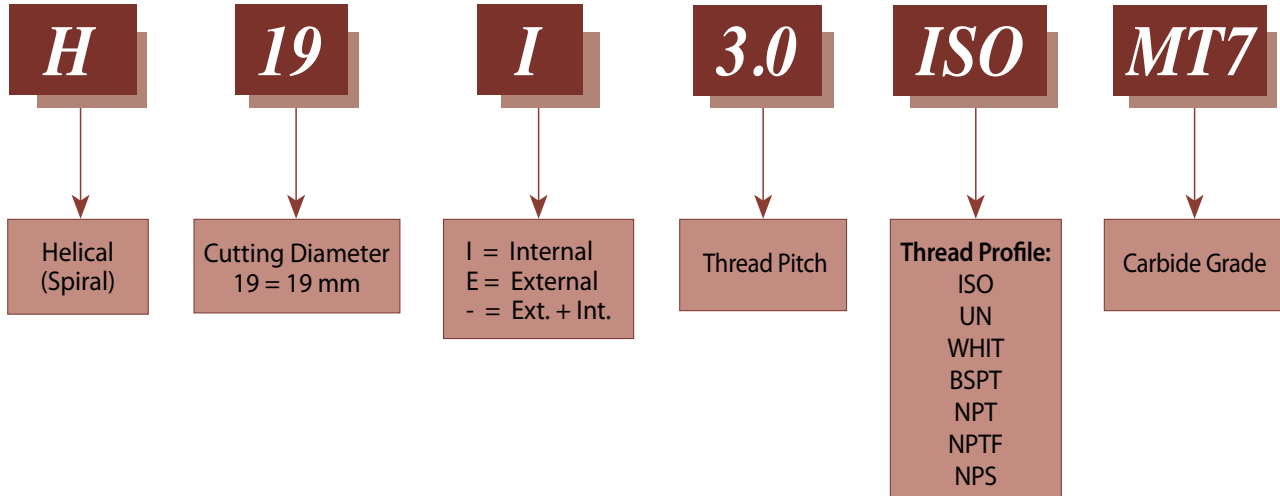
Page:

NPTF	199
NPS	199
Spiral Finishing Inserts	200
Toolholders	201-202
Special Tools	203
Case Studies	204

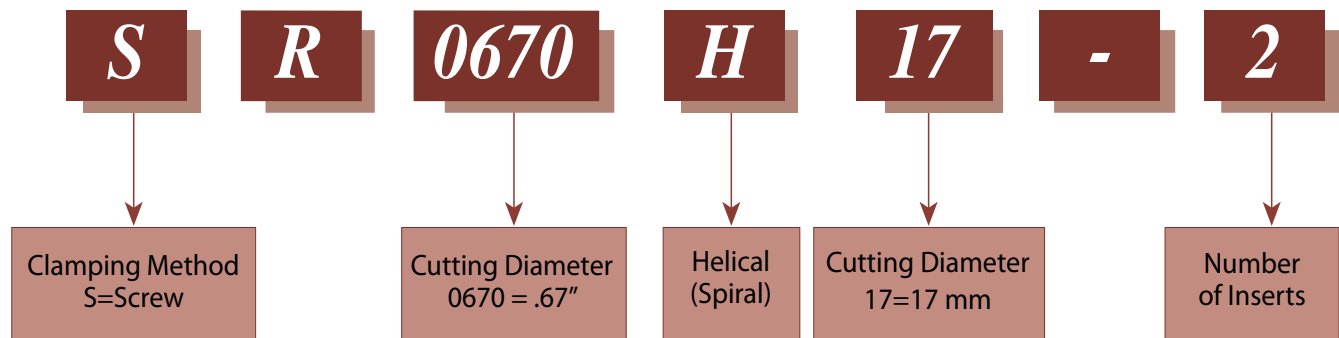
Product Identification - Ordering Codes

Spiral Mill - Thread Inserts

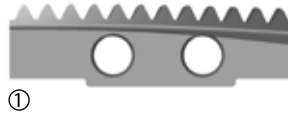
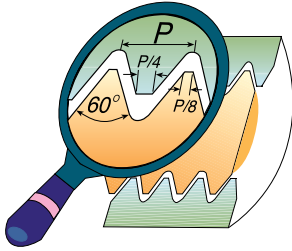
Inserts



Toolholders

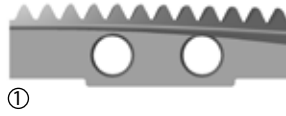
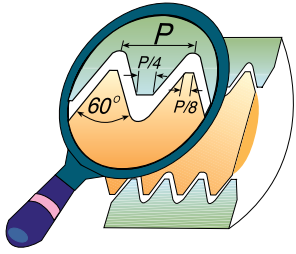


ISO



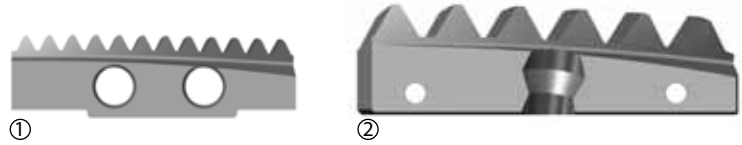
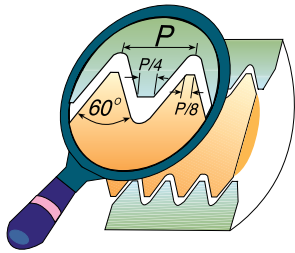
Insert Size	Fig.	Pitch mm	Ext./ Int.	M coarse	M fine	Ordering code	Toolholder
H13	1	1.0	Int.		≥ 15	H13 I 1.0 ISO	SR0510H13...
		1.5	Int.		≥ 16	H13 I 1.5 ISO	
		2.0	Int.	M16	≥ 17	H13 I 2.0 ISO	
H15	1	1.0	Int.		≥ 17	H15 I 1.0 ISO	SR0590H15...
		1.5	Int.		≥ 18	H15 I 1.5 ISO	
		2.0	Int.		≥ 19	H15 I 2.0 ISO	
H17	1	2.5	Int.	M18	≥ 20	H15 I 2.5 ISO	SR0670H17...
		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	SR0750H19...
		2.5	Int.	M20, M22	≥ 22	H17 I 2.5 ISO	
		3.0	Int.	M24, M27	≥ 23	H19 I 2.0 ISO	
H23	2	3.0	Int.		≥ 25	H19 I 3.0 ISO	SR091H23...
		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.		≥ 29	H23 I 3.0 ISO			
H32	2	3.5	Int.	M30, M33	≥ 30	H23 I 3.5 ISO	SR126H32...
		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			
H45	2	3.5	Int.		≥ 39	H32 I 3.5 ISO	SR177H45...
		4.0	Ext.			H32 E 4.0 ISO	
		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			
4.0	Int.		≥ 53	H45 I 4.0 ISO			
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			
H63	2	1.5	Int.		≥ 66	H63 I 1.5 ISO	SR248H63...
		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	SR0510H13...	
		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	SR0590H15...	
		14	Int.				3/4	H15 I 14 UN		
		12	Int.	3/4, 13/16				H15 I 12 UN		
		10	Int.		3/4		7/8, 1	H15 I 10 UN		
H17	1	16	Int.	13/16 - 1				H17 I 16 UN	SR0670H17...	
		14	Int.			7/8, 1		H17 I 14 UN		
		12	Int.	7/8				H17 I 12 UN		
		9	Int.		7/8			H17 I 9 UN		
H19	1	12	Int.	15/16		1		H19 I 12 UN	SR0750H19...	
		8	Int.	1 1/16, 1 1/8	1			H19 I 8 UN		
H23	2	32	Int.	1			1 - 1 1/4	H23 I 32 UN	SR091H23...	
		24	Int.					H23 I 24 UN		
		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	SR110H28...	
		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	SR126H32...	
		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	SR157H40...	
		4.5	Int.		2			H40 I 4.5 UN		

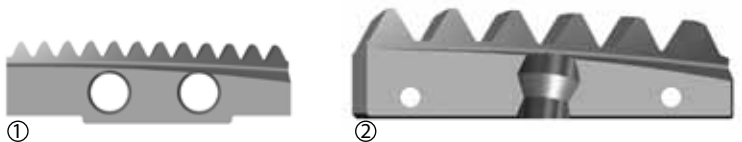
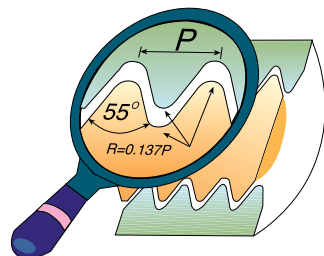
UN



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	SR177H45...
		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	SR248H63...
		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

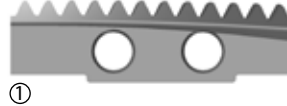
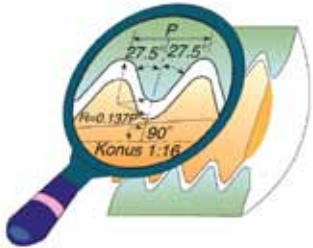
Same insert for internal and external thread



Insert Size	Fig.	Pitch TPI	Ordering code	Thread Size	Toolholder
H13	1	19	H13-19 W	G 3/8	SR0510H13...
H15	1	14	H15-14 W	G 1/2	SR0590H15...
H17	1	14	H17-14 W	G 1/2 - 5/8	SR0670H17...
		11	H17-11 W	G ≥ 1"	
H19	1	14	H19-14 W	G 3/4 - 7/8	SR0750H19...
		11	H19-11 W	G ≥ 1"	
H23	2	14	H23-14 W	Int. G 7/8" Ext. ≥ G 1/2"	SR091H23...
		11	H23-11 W	≥ G1"	
H32	2	14	H32-14 W	Ext. ≥ G 1/2"	SR126H32...
		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"	SR177H45...
H63	2	11	H63-11 W	Int. ≥ G 2 3/8" Ext. ≥ G 1"	SR248H63...

BSPT

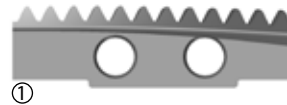
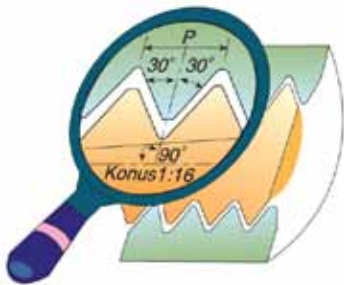
Same insert for internal and external thread



Insert Size	Fig.	Pitch TPI	Ordering code	Thread Size	Toolholder
H13	1	19	H13-19 BSPT	3/8	SR0510H13...
H15	1	14	H15-14 BSPT	1/2 - 3/4	SR0590H15...
H17	1	14	H17-14 BSPT	1/2 - 3/4	SR0670H17...
H23	2	11	H23-11 BSPT	≥ 1"	SR091H23...
H32	2	11	H32-11 BSPT	Int. ≥ 1 1/8" Ext. ≥ 1"	SR126H32...
H45	2	11	H45-11 BSPT	Int. ≥ 1 3/4" Ext. ≥ 1"	SR177H45...
H63	2	11	H63-11 BSPT	Int. ≥ 2 1/2" Ext. ≥ 1"	SR248H63...

NPT

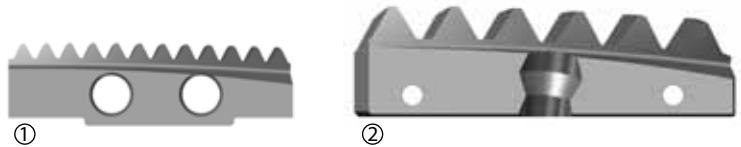
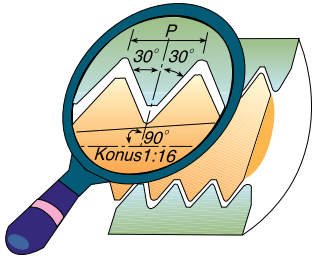
Same insert for internal and external thread



Insert Size	Fig.	Pitch TPI	Ordering code	Thread Size	Toolholder
H13	1	18	H13-18 NPT	3/8	SR0510H13...
H15	1	14	H15-14 NPT	1/2 - 3/4	SR0590H15...
H17	1	14	H17-14 NPT	1/2 - 3/4	SR0670H17...
H23	2	11.5	H23-11.5 NPT	1"-2"	SR091H23...
H32	2	11.5	H32-11.5 NPT	Int. 1 1/4"-2" Ext. 1" - 2"	SR126H32...
H45	2	11.5	H45-11.5 NPT	Int. ≥ 1 5/8" Ext. ≥ 1"	SR177H45...
		8	H45- 8 NPT	≥ 2 1/2"	
H63	2	11.5	H63-11.5 NPT	Ext. 1-2"	SR248H63...
		8	H63- 8 NPT	≥ 3"	

NPTF

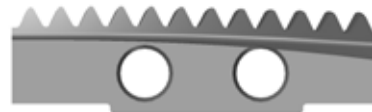
Same insert for internal and external thread



Insert Size	Fig.	Pitch TPI	Ordering code	Thread Size	Toolholder
H13	1	18	H13-18 NPTF	$\frac{3}{8}$	SR0510H13...
H15	1	14	H15-14 NPTF	$\frac{1}{2} - \frac{3}{4}$	SR0590H15...
H17	1	14	H17-14 NPTF	$\frac{1}{2} - \frac{3}{4}$	SR0670H17...
H23	2	11.5	H23-11.5 NPTF	1"-2"	SR091H23...
H32	2	11.5	H32-11.5 NPTF	Int. $1\frac{1}{4}$ "-2" Ext. 1"-2"	SR126H32...

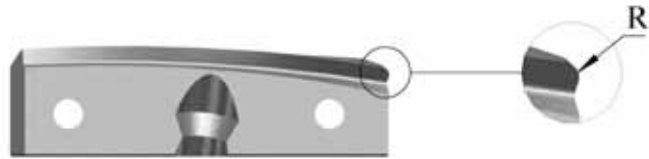
NPS

Same insert for internal and external thread



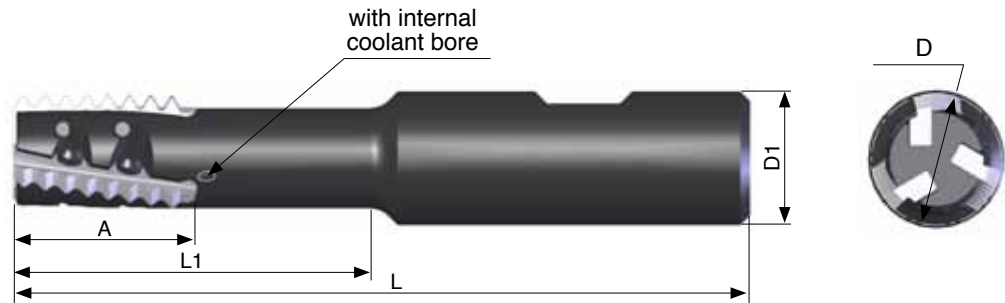
Insert Size	Pitch TPI	Thread	Ordering code	Toolholder
H13	18	$\frac{3}{8}$	H13-18 NPS	SR0510H13...
H15	14	$\frac{1}{2} - \frac{3}{4}$	H15-14 NPS	SR0590H15...
H17	14	$\frac{1}{2} - \frac{3}{4}$	H17-14 NPS	SR0670H17...

Spiral Finishing Inserts



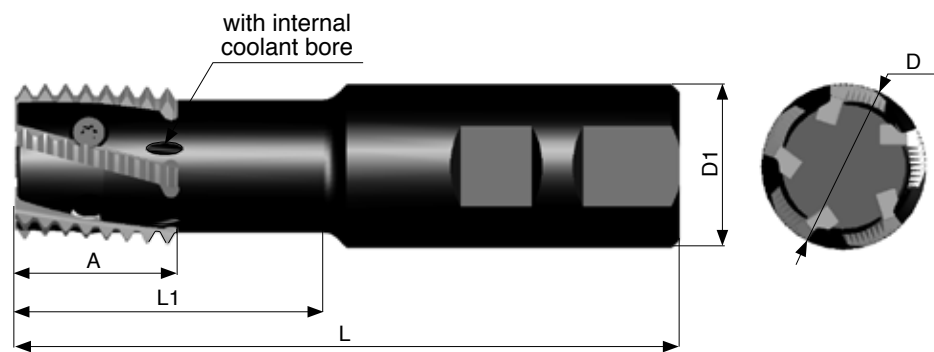
Insert Size	R	Ordering code	Toolholder
H23	0.2	H23 F R 0.2	SR091H23...
	0.5	H23 F R 0.5	
	1.0	H23 F R 1.0	
H32	0.2	H32 F R 0.2	SR126H32...
	0.5	H32 F R 0.5	
	1.0	H32 F R 1.0	
H45	0.2	H45 F R 0.2	SR177H45...
	0.5	H45 F R 0.5	
	1.0	H45 F R 1.0	
	1.5	H45 F R 1.5	
	2.0	H45 F R 2.0	
H63	0.2	H63 F R 0.2	SR248H63...
	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

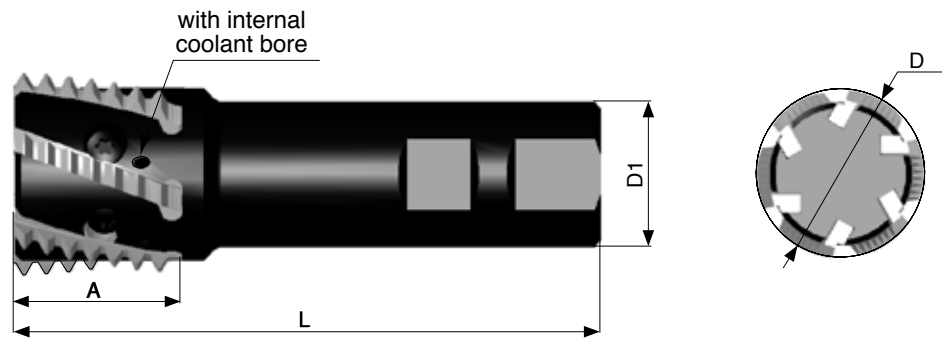


Ordering Code	Insert Type	Insert size A	D	D1	L	L1	No. of Inserts	Screw	Key
SR0510H13 -1	H13	1.06	.51	.75	3.54	1.38	1	S13	K16
SR0590H15 -1	H15	1.06	.59	.75	3.74	1.57	1	S15	K16
*SR0670H17 -2	H17	1.06	.67	.75	3.35	1.18	2	S17	K16
*SR0670H17J-2	H17	1.06	.67	.75	3.94	1.77	2	S17	K16
SR0750H19 -3	H19	1.06	.75	.75	3.35	1.18	3	S19	K16
SR0750H19J-3	H19	1.06	.75	.75	4.33	2.16	3	S19	K16

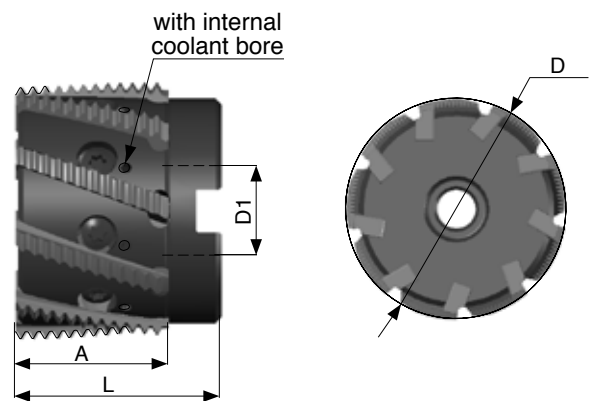
* When using NPT, NPTF, BSPT inserts the cutting diameter D = .71"



Ordering Code	Insert Type	Insert size A	D	D1	L	L1	No. of Inserts	Screw	Key
SR091H23 -2	H23	1.06	0.91	1.0	4.5	2.00	2	S23	K21
SR091H23M-2	H23	1.06	0.91	1.0	6.0	3.07	2	S23	K21
SR110H28 -3	H28	1.26	1.10	1.25	6.0	3.0	3	S32S	K22
SR126H32 -5	H32	1.26	1.26	1.25	5.0	2.36	5	S32	K22
SR126H32P-5	H32	1.26	1.26	1.25	7.0	3.58	5	S32	K22



Ordering Code	Insert Type	Insert size A	D	D1	L	No. of Inserts	Screw	Key
SR157H40-4	H40	1.46	1.57	1.25	7.5	4	S45S	K40
SR177H45-6	H45	1.46	1.77	1.25	5.0	6	S45S	K40



Ordering Code	Insert Type	Insert size A	D	D1	L	No. of Inserts	Screw	Key
SR126H32-5M	H32	1.26	1.26	0.50	2.05	5	S32S	K22
SR177H45-6M	H45	1.46	1.77	0.50	1.91	6	S45	K40
SR248H63-9	H63	1.5	2.48	0.75	2.00	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	1.3"
Raw Material	Ductile Iron
Cutting Speed – Vc	427 ft/min
Tooth Load – Fz	0.0059 inch/tooth
Toolholder	SR177H45-6
Insert	H45 I 1.5 ISO MT7
Result	600 pcs with 0.0008" offset (Competitor – 40 pcs with 0.0059 offset)



Case Study no. 2

Application	Grooves Milling
Internal/External	External
Raw Material	Cast Steel
Cutting Speed – Vc	640 ft/min
Tooth Load – Fz	0.0039 inch/tooth
Toolholder	SR248H63-9
Insert	Taylor Made H63
Result	1350 pcs (Competitor – 540 pcs)

