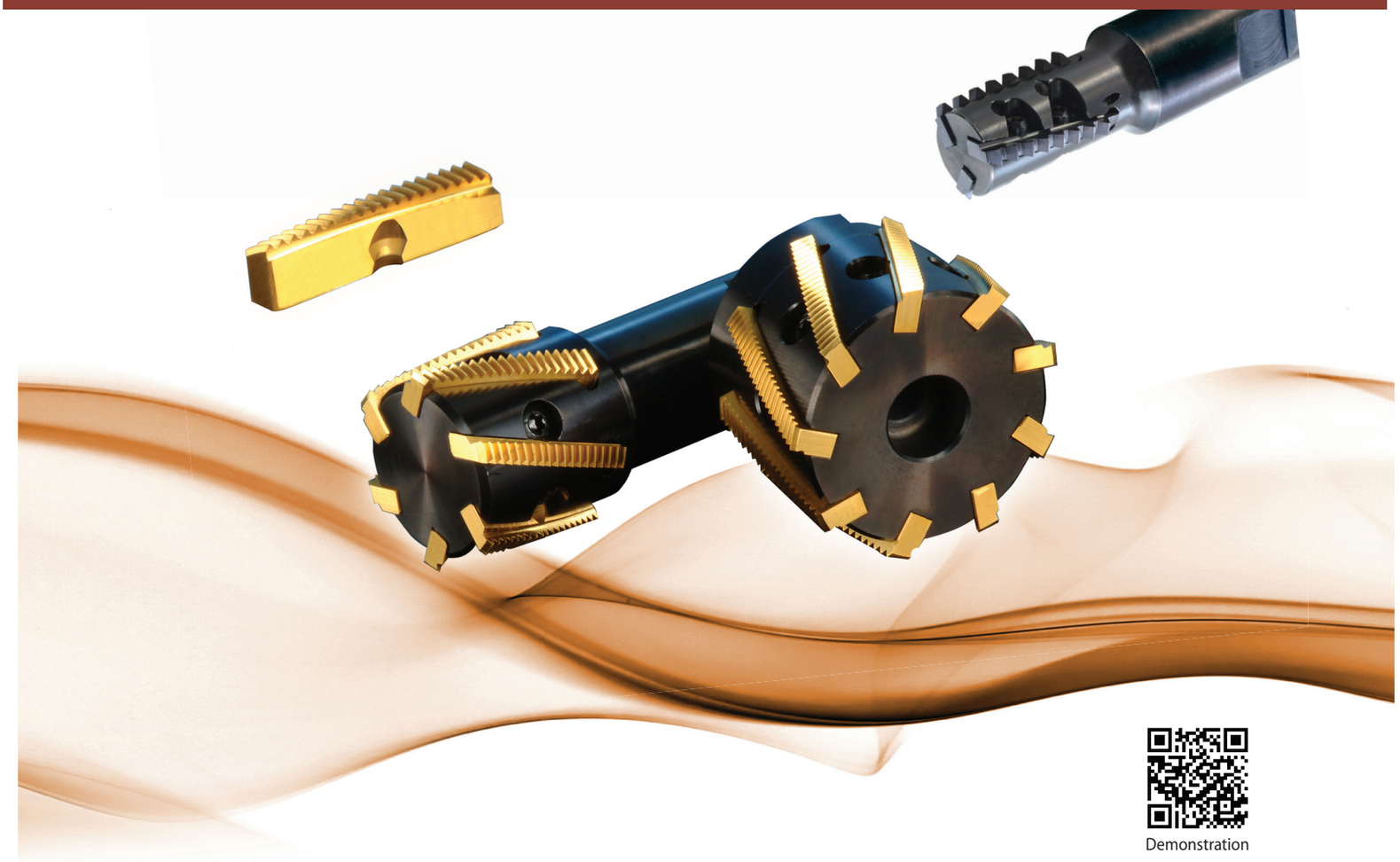
Spiral Mill-Thread | B04



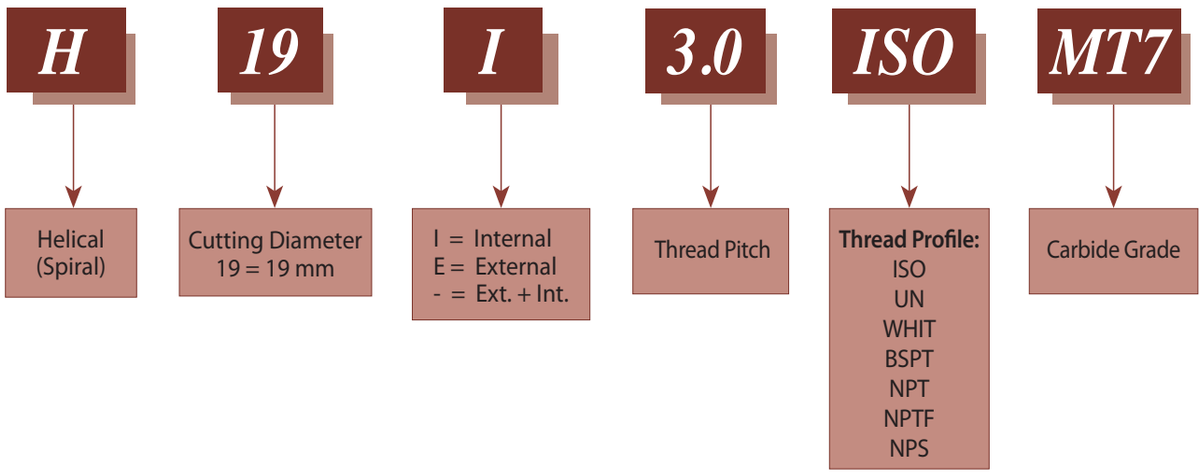
Demonstration

Advantages of Spiral Mill-Thread Tools

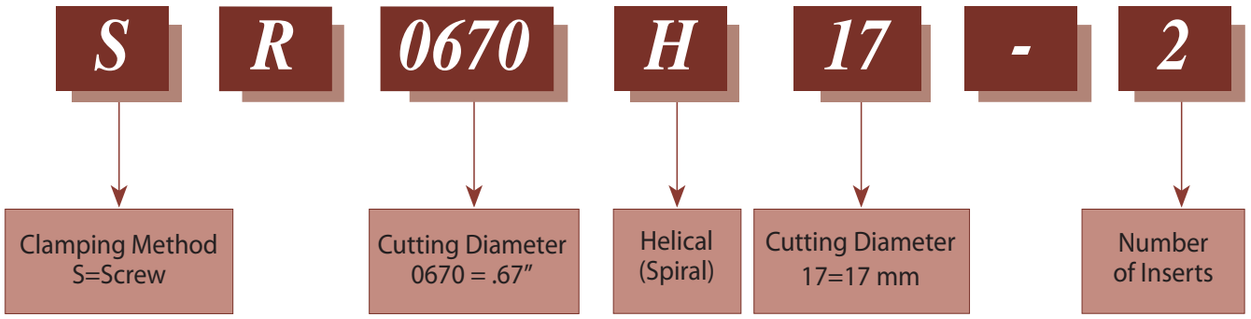
- The spiral designed tools enable a smooth cutting operation at a high feed rate and reduced machining time.
- The tools suit a wide range of applications, from machining small components in small machining centers to heavy-duty applications in high power milling machines.
- Spiral fluted toolholders 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.

Product Identification - Ordering Codes
Spiral Mill - Thread Inserts

Inserts



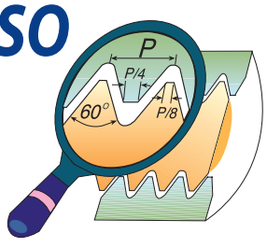
Toolholders

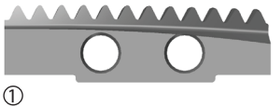


Spiral Mill - Thread Inserts

Carmex Precision Tools Ltd.

ISO





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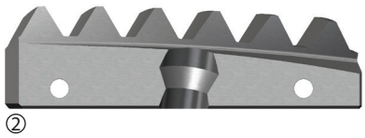
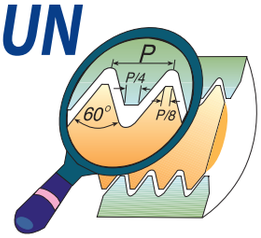


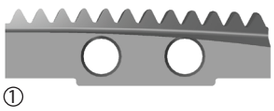
②

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**	
		2.5	Int.	M18	≥ 20	**H15 I 2.5 ISO**	
H17	1	1.0	Int.		≥ 19	**H17 I 1.0 ISO**	SR0670H17...
		1.5	Int.		≥ 20	**H17 I 1.5 ISO**	
		2.0	Int.		≥ 21	**H17 I 2.0 ISO**	
		2.5	Int.	M20, M22	≥ 22	**H17 I 2.5 ISO**	
H19	1	1.5	Int.		≥ 22	**H19 I 1.5 ISO**	SR0750H19...
		2.0	Int.		≥ 23	**H19 I 2.0 ISO**	
		3.0	Int.	M24, M27	≥ 25	**H19 I 3.0 ISO**	
H21	1	3.0	Int.	M27	≥ 25	**H21 I 3.0 ISO**	SR083H21...
H23	2	1.0	Ext.			**H23 E 1.0 ISO**	SR091H23...
		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**	
		3.5	Int.	M30, M33	≥ 30	**H23 I 3.5 ISO**	
		4.0	Int.	M36	≥ 31	**H23 I 4.0 ISO**	
H27	2	3.0	Int.		≥ 32	**H27 I 3.0 ISO**	SR106H27...
		4.0	Int.	M36, M39	≥ 40	**H27 I 4.0 ISO**	
H28	2	4.0	Int.	M36, M39	≥ 40	**H28 I 4.0 ISO**	SR110H28...
H32	2	1.0	Int.		≥ 34	**H32 I 1.0 ISO**	SR126H32...
		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**	
		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**	
H45	2	1.5	Ext.			**H45 E 1.5 ISO**	SR177H45...
		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**	

Spiral Mill - Thread Inserts

UN

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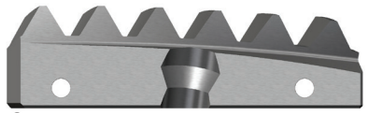
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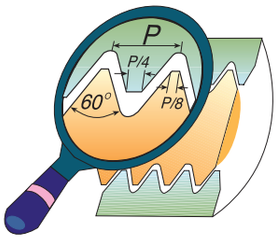
Insert Size	Fig.	Pitch TPI	Ext./ Int.	UN	UNC	UNF	UNS	Ordering code	Toolholder
H13	1	16	Int.	5/8, 11/16				H13 I 16 UN	SR0510H13...
		14	Int.				5/8	H13 I 14 UN	
		12	Int.	11/16				H13 I 12 UN	
H15	1	16	Int.			3/4		H15 I 16 UN	SR0590H15...
		14	Int.				3/4	H15 I 14 UN	
		12	Int.	3/4, 13/16				H15 I 12 UN	
		10	Int.		3/4		7/8 , 1	H15 I 10 UN	
H17	1	20	Int	1 1/16, 1 1/8		*13/16 - 1		H17 I 20 UN	SR0670H17...
		16	Int.	13/16 - 1				H17 I 16 UN	
		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	
H21	1	8	Int.	1 1/16, 1 1/8	1			H21 I 8 UN	SR083H21…
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	
H27	2	12	Int.	1 5/16, 1 7/16		1 1/4, 1 3/8		H27 I 12 UN	SR106H27…
		8	Int.	1 5/16, 1 3/8, 1 7/16				H27 I 8 UN	
		7	Int.		1 1/4			H27 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 7/16, 1 9/16	1 3/8, 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	

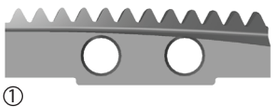
*Only UNEF

Spiral Mill - Thread Inserts

Carmex Precision Tools Ltd.

UN

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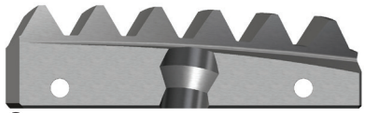
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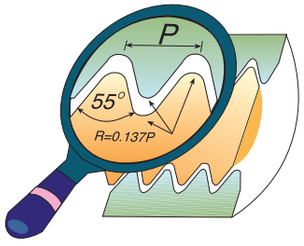
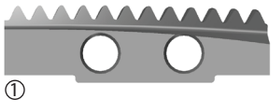
Insert Size	Fig.	Pitch TPI	Ext./ Int.	UN	UNC	UNF	UNS	Ordering code	Toolholder
H45	2	16	Int.	1 15/16 - 2 1/2			2 1/16 - 2	**H45 I 16 UN**	SR177H45...
		12	Int.	1 15/16 - 2 5/8				**H45 I 12 UN**	
		8	Int.	2 1/8- 2 5/8				**H45 I 8 UN**	
		6	Int.	2 1/8- 2 3/4				**H45 I 6 UN**	
		4.5	Int.		2 1/4			**H45 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

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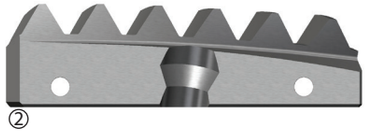
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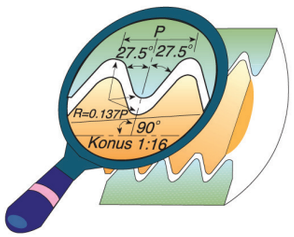
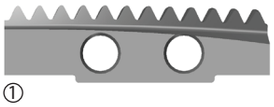
Insert Size	Fig.	Pitch TPI	Ordering code	Thread Size	Toolholder
H13	1	19	**H13-19 W**	G 3/8	SR0510H13...
H15	1	14	**H15-14 W**	G 1/2	SR0590H15...
H17	1	14	**H17-14 W**	G 1/2 - 5/8	SR0670H17...
		11	**H17-11 W**	G ≥ 1"	
H19	1	14	**H19-14 W**	G 3/4 - 7/8	SR0750H19...
		11	**H19-11 W**	G ≥ 1"	
H23	2	14	**H23-14 W**	Int. G 7/8" Ext. ≥ G 1/2"	SR091H23...
		11	**H23-11 W**	≥ G1"	
H27	2	11	**H27- 11 W**	≥ G1"	SR106H27…
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...

Spiral Mill - Thread Inserts

BSPT

Same insert for internal and external thread

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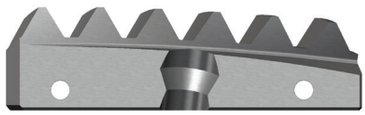
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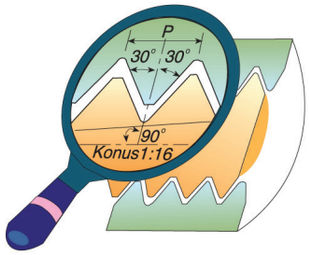
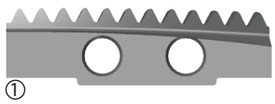
Insert Size	Fig.	Pitch TPI	Ordering code	Thread Size	Toolholder
H13	1	19	**H13-19 BSPT**	3/8	SR0510H13...
H15	1	14	**H15-14 BSPT**	1/2 - 3/4	SR0590H15...
H17	1	14	**H17-14 BSPT**	1/2 - 3/4	SR0670H17...
H23	2	11	**H23-11 BSPT**	≥ 1"	SR091H23...
H32	2	11	**H32-11 BSPT**	Int. ≥ 1 1/8" Ext. ≥ 1"	SR126H32...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

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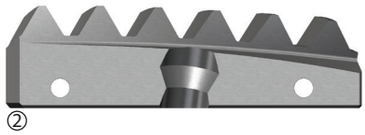

②

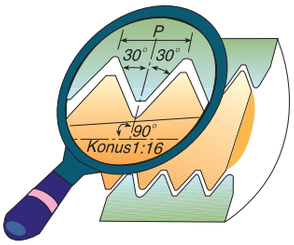
Insert Size	Fig.	Pitch TPI	Ordering code	Thread Size	Toolholder
H13	1	18	**H13-18 NPT**	3/8	SR0510H13...
H15	1	14	**H15-14 NPT**	1/2 - 3/4	SR0590H15...
H17	1	14	**H17-14 NPT**	1/2 - 3/4	SR0670H17...
H23	2	11.5	**H23-11.5 NPT**	1"-2"	SR091H23...
H27	2	11.5	**H27- 11.5 NPT**	1" - 2"	SR106H27…
H32	2	14	**H32-14 NPT**	Ext. 1/2" - 3/4"	SR126H32...
		11.5	**H32-11.5 NPT**	Int. 1 1/4"-2" Ext. 1"- 2"	
H45	2	11.5	**H45-11.5 NPT**	Int. ≥ 2" 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"	

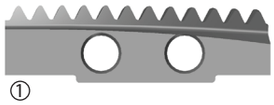
Spiral Mill - Thread Inserts

Carmex Precision Tools Ltd.

NPTF

Same insert for internal and external thread

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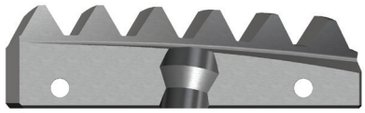
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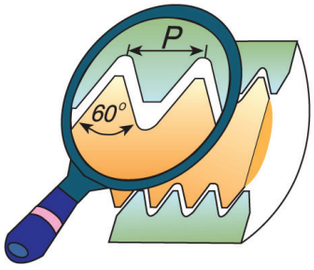
Insert Size	Fig.	Pitch TPI	Ordering code	Thread Size	Toolholder
H13	1	18	**H13-18 NPTF**	3/8	SR0510H13...
H15	1	14	**H15-14 NPTF**	1/2 - 3/4	SR0590H15...
H17	1	14	**H17-14 NPTF**	1/2 - 3/4	SR0670H17...
H23	2	11.5	**H23-11.5 NPTF**	1"-2"	SR091H23...
H32	2	11.5	**H32-11.5 NPTF**	Int. 1 1/4"-2" Ext. 1"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

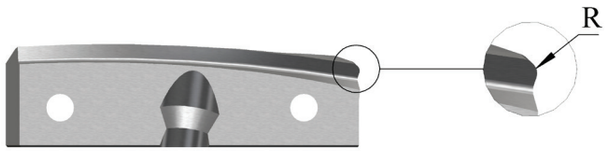
NPS

Same insert for internal and external thread



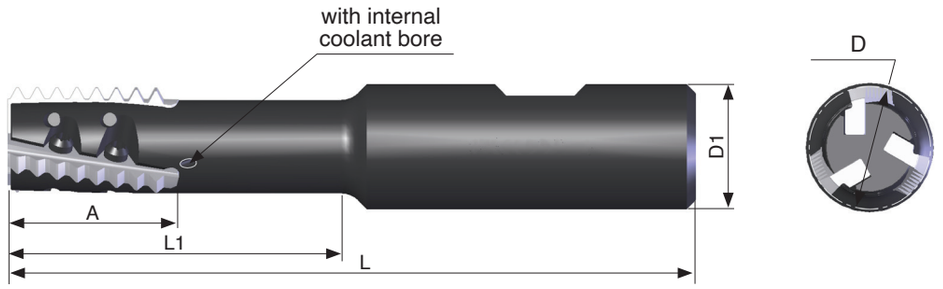
Insert Size	Pitch TPI	Thread	Ordering code	Toolholder
H13	18	3/8	**H13-18 NPS**	SR0510H13...
H15	14	1/2 - 3/4	**H15-14 NPS**	SR0590H15...
H17	14	1/2 - 3/4	**H17-14 NPS**	SR0670H17...

Spiral Finishing Inserts



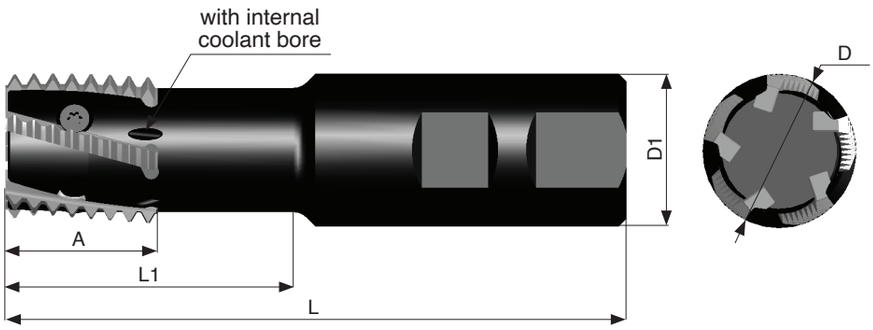
Insert Size	R	Ordering code	Toolholder
H23	0.2	**H23 F R 0.2**	SR091H23...
	0.5	**H23 F R 0.5**	
	1.0	**H23 F R 1.0**	
H32	0.2	**H32 F R 0.2**	SR126H32...
	0.5	**H32 F R 0.5**	
	1.0	**H32 F R 1.0**	
H45	0.2	**H45 F R 0.2**	SR177H45...
	0.5	**H45 F R 0.5**	
	1.0	**H45 F R 1.0**	
	1.5	**H45 F R 1.5**	
	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
SR0510H13S-1	H13	1.06	.51	.75	3.15	1.04	1	S13	K16
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
** **SR0670H17-NPT**	H17	1.06	.67	1.0	3.35	.77	2	S17	K16
SR0750H19 -2	H19	1.06	.75	.75	3.35	1.18	2	S19	K16
SR0750H19J-2	H19	1.06	.75	.75	4.33	2.16	2	S19	K16
SR083H21-3	H21	1.06	.83	.75	4.33	2.15	3	S19	K16

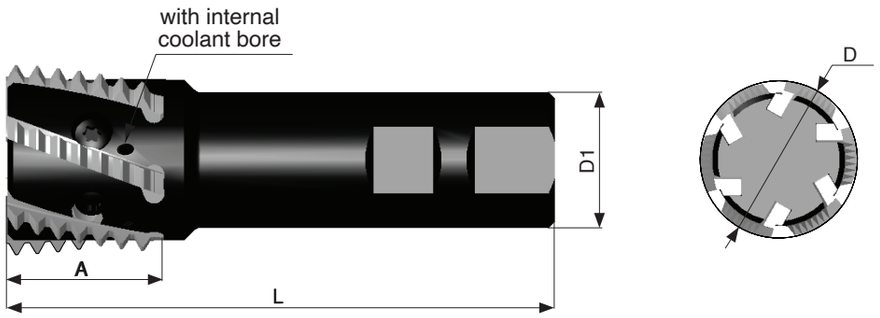
* When using NPT, NPTF, BSPT inserts the cutting diameter D = .71"
** Holder to be used only with H17-14 NPT inserts for 1/2 & 3/4 NPT threads



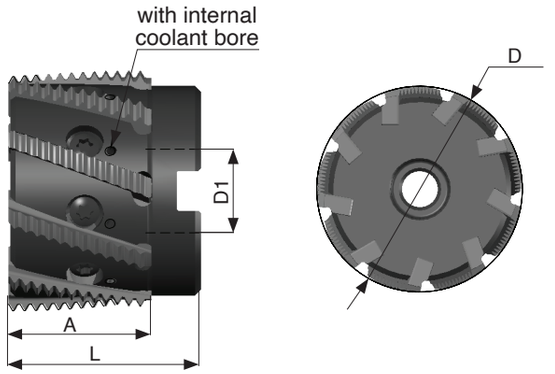
Ordering Code	Insert Type	Insert size A	D	D1	L	L1	No. of Inserts	Screw	Key
SR091H23 -2	H23	1.06	0.91	1.0	4.5	2.00	2	S23	K21
SR091H23M-2	H23	1.06	0.91	1.0	6.0	3.07	2	S23	K21
* **SR106H27-4**	H27	1.06	1.06	1.0	5.0	2.36	4	S23	K21
SR110H28 -3	H28	1.26	1.10	1.25	6.0	3.0	3	S32S	K22
SR126H32 -5	H32	1.26	1.26	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

* When using H27 I 7 UN insert the cutting diameter D = 1.04

Spiral Mill-Thread Toolholders



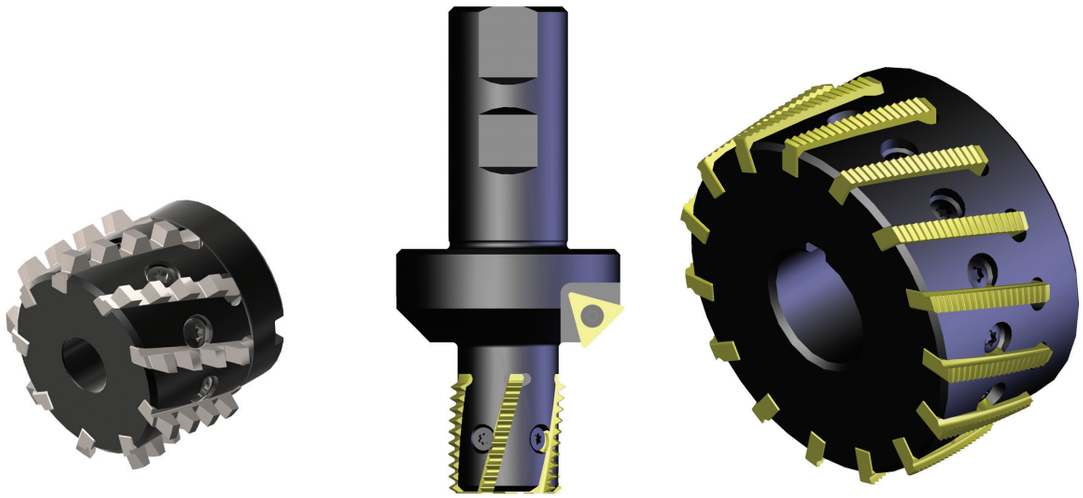
Ordering Code	Insert Type	Insert size A	D	D1	L	No. of Inserts	Screw	Key
SR157H40-4	H40	1.46	1.57	1.25	7.5	4	S45S	K40
SR177H45-6	H45	1.46	1.77	1.25	5.0	6	S45	K40



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	S45S	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)