

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.

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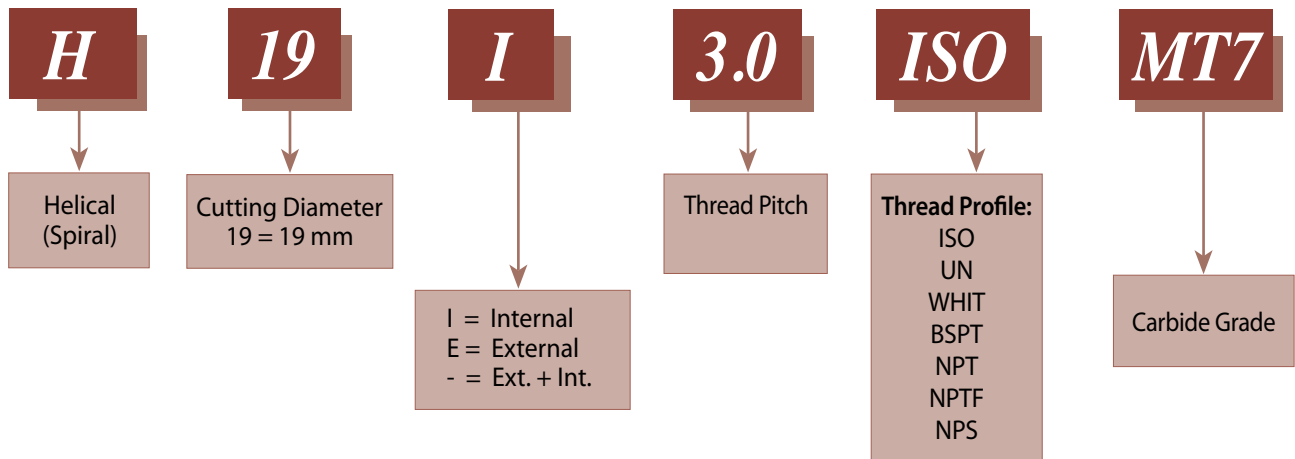
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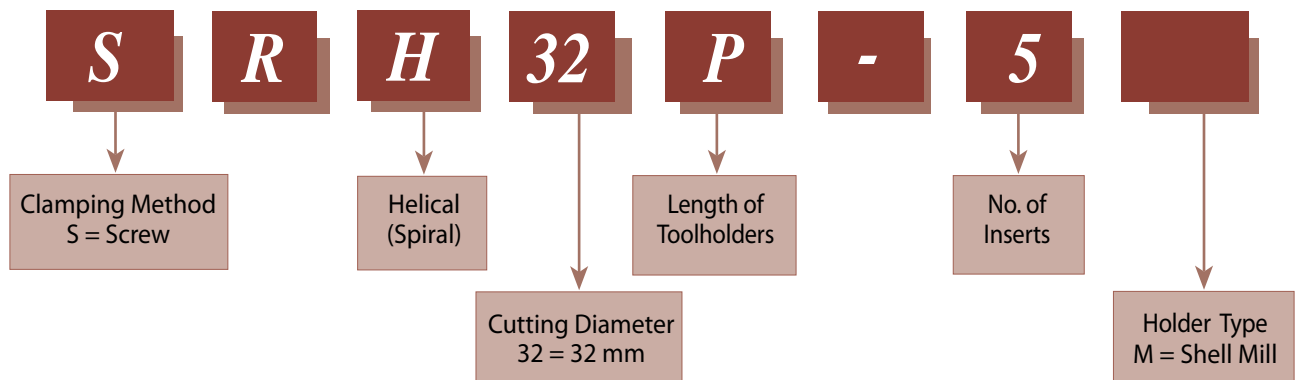
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## Product Identification - Ordering Codes

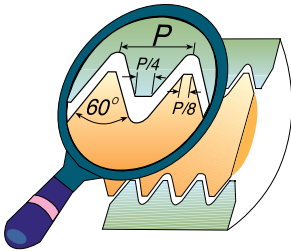
### Spiral Mill - Thread Inserts



## Spiral Mill - Thread Toolholders

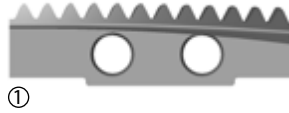
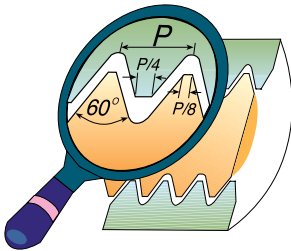


## ISO



Insert Size	Fig.	Pitch mm	Ext./ Int.	M coarse	M fine	Ordering code	Toolholder
H13	1	1.0	Int.		≥ 15	<b>H13 I 1.0 ISO</b>	SRH13...
		1.5	Int.		≥ 16	<b>H13 I 1.5 ISO</b>	
		2.0	Int.	M16	≥ 17	<b>H13 I 2.0 ISO</b>	
H15	1	1.0	Int.		≥ 17	<b>H15 I 1.0 ISO</b>	SRH15...
		1.5	Int.		≥ 18	<b>H15 I 1.5 ISO</b>	
		2.0	Int.		≥ 19	<b>H15 I 2.0 ISO</b>	
		2.5	Int.	M18	≥ 20	<b>H15 I 2.5 ISO</b>	
H17	1	1.0	Int.		≥ 19	<b>H17 I 1.0 ISO</b>	SRH17...
		1.5	Int.		≥ 20	<b>H17 I 1.5 ISO</b>	
		2.0	Int.		≥ 21	<b>H17 I 2.0 ISO</b>	
		2.5	Int.	M20, M22	≥ 22	<b>H17 I 2.5 ISO</b>	
H19	1	1.5	Int.		≥ 22	<b>H19 I 1.5 ISO</b>	SRH19...
		2.0	Int.		≥ 23	<b>H19 I 2.0 ISO</b>	
		3.0	Int.	M24, M27	≥ 25	<b>H19 I 3.0 ISO</b>	
H23	2	1.0	Ext.		≥ 25	<b>H23 E 1.0 ISO</b>	SRH23...
		1.0	Int.		≥ 25	<b>H23 I 1.0 ISO</b>	
		1.5	Ext.		≥ 26	<b>H23 E 1.5 ISO</b>	
		1.5	Int.		≥ 26	<b>H23 I 1.5 ISO</b>	
		2.0	Ext.		≥ 27	<b>H23 E 2.0 ISO</b>	
		2.0	Int.		≥ 27	<b>H23 I 2.0 ISO</b>	
		3.0	Ext.		≥ 29	<b>H23 E 3.0 ISO</b>	
		3.0	Int.		≥ 29	<b>H23 I 3.0 ISO</b>	
3.5	Int.	M30, M33	≥ 30	<b>H23 I 3.5 ISO</b>			
4.0	Int.	M36	≥ 31	<b>H23 I 4.0 ISO</b>			
H28	2	4.0	Int.	M36, M39	≥ 40	<b>H28 I 4.0 ISO</b>	SRH28...
H32	2	1.0	Int.		≥ 34	<b>H32 I 1.0 ISO</b>	SRH32...
		1.5	Ext.		≥ 35	<b>H32 E 1.5 ISO</b>	
		1.5	Int.		≥ 35	<b>H32 I 1.5 ISO</b>	
		2.0	Ext.		≥ 36	<b>H32 E 2.0 ISO</b>	
		2.0	Int.		≥ 36	<b>H32 I 2.0 ISO</b>	
		3.0	Ext.		≥ 38	<b>H32 E 3.0 ISO</b>	
		3.0	Int.		≥ 38	<b>H32 I 3.0 ISO</b>	
		3.5	Int.		≥ 39	<b>H32 I 3.5 ISO</b>	
		4.0	Ext.		≥ 40	<b>H32 E 4.0 ISO</b>	
		4.0	Int.	M39	≥ 40	<b>H32 I 4.0 ISO</b>	
4.5	Int.	M42, M45	≥ 41	<b>H32 I 4.5 ISO</b>			
5.0	Int.	M48	≥ 42	<b>H32 I 5.0 ISO</b>			
H45	2	1.5	Ext.		≥ 48	<b>H45 E 1.5 ISO</b>	SRH45...
		1.5	Int.		≥ 48	<b>H45 I 1.5 ISO</b>	
		2.0	Ext.		≥ 49	<b>H45 E 2.0 ISO</b>	
		2.0	Int.		≥ 49	<b>H45 I 2.0 ISO</b>	
		3.0	Int.		≥ 51	<b>H45 I 3.0 ISO</b>	
		3.5	Int.		≥ 52	<b>H45 I 3.5 ISO</b>	
		4.0	Int.		≥ 53	<b>H45 I 4.0 ISO</b>	
		4.5	Int.		≥ 54	<b>H45 I 4.5 ISO</b>	
		5.0	Int.	M52	≥ 55	<b>H45 I 5.0 ISO</b>	
5.5	Int.	M56, M60	≥ 56	<b>H45 I 5.5 ISO</b>			
6.0	Int.	M64, M68	≥ 57	<b>H45 I 6.0 ISO</b>			
H63	2	1.5	Int.		≥ 66	<b>H63 I 1.5 ISO</b>	SRH63...
		2.0	Int.		≥ 67	<b>H63 I 2.0 ISO</b>	
		3.0	Int.		≥ 69	<b>H63 I 3.0 ISO</b>	
		4.0	Int.		≥ 71	<b>H63 I 4.0 ISO</b>	
		6.0	Int.		≥ 75	<b>H63 I 6.0 ISO</b>	

## UN

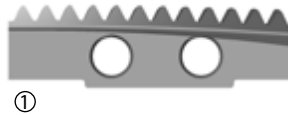
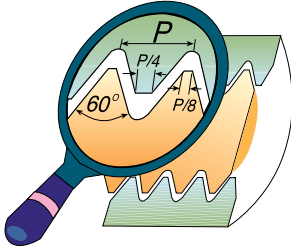


Insert Size	Fig.	Pitch TPI	Ext./ Int.	UN	UNC	UNF	UNS	Ordering code	Toolholder	
H13	1	16	Int.	5/8, 11/16				<b>H13 I 16 UN</b>	SRH13...	
		14	Int.				5/8	<b>H13 I 14 UN</b>		
		12	Int.	11/16				<b>H13 I 12 UN</b>		
H15	1	16	Int.			3/4		<b>H15 I 16 UN</b>	SRH15...	
		14	Int.				3/4	<b>H15 I 14 UN</b>	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

\*Only UNEF



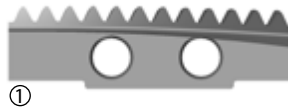
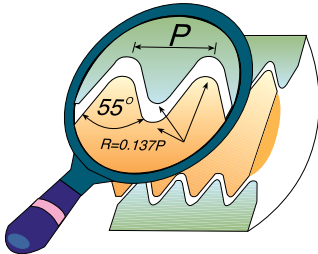
## UN



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	<b>H45 I 16 UN</b>	SRH45...
		12	Int.	1 15/16 - 2 5/8				<b>H45 I 12 UN</b>	
		8	Int.	2 1/8 - 2 5/8				<b>H45 I 8 UN</b>	
		6	Int.	2 1/8 - 2 3/4				<b>H45 I 6 UN</b>	
		4.5	Int.			2 1/4		<b>H45 I 4.5 UN</b>	
		4	Int.			2 1/2 - 2 3/4		<b>H45 I 4 UN</b>	
H63	2	16	Int.	≥ 2 5/8				<b>H63 I 16 UN</b>	SRH63...
		12	Int.	≥ 2 3/4				<b>H63 I 12 UN</b>	
		8	Int.	≥ 2 3/4				<b>H63 I 8 UN</b>	
		6	Int.	≥ 2 7/8				<b>H63 I 6 UN</b>	
		4	Int.			≥ 3		<b>H63 I 4 UN</b>	

## Whitworth

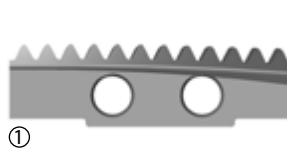
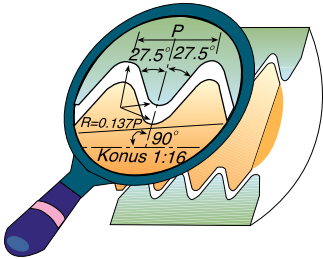
Same insert for internal and external thread



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

## BSPT

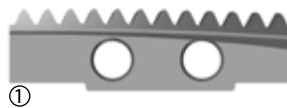
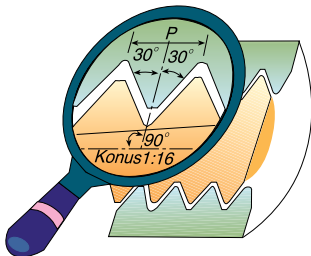
Same insert for internal and external thread



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

## NPT

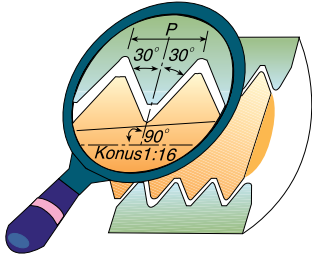
Same insert for internal and external thread



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

## NPTF

Same insert for internal and external thread



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

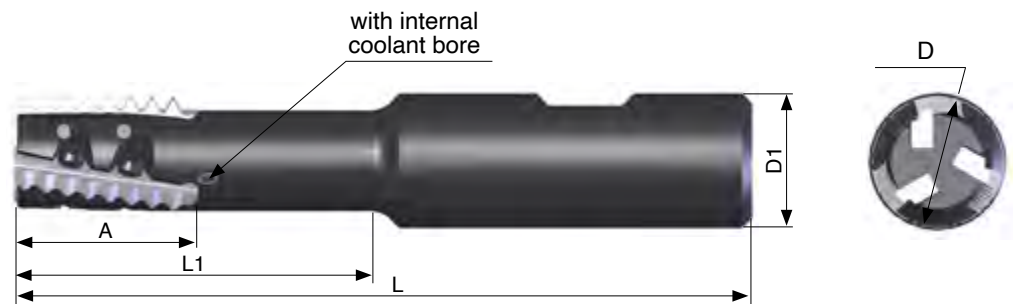
## Spiral Finishing Inserts



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

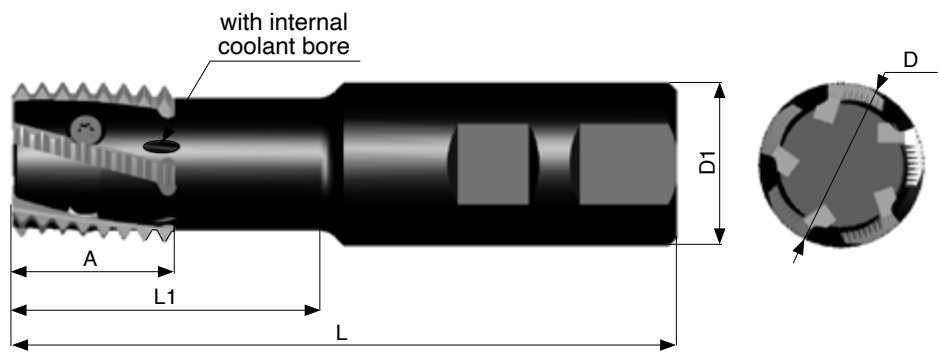


## Toolholders

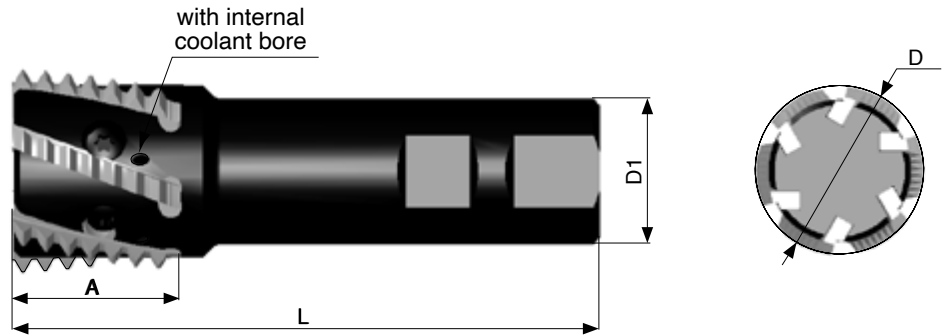


Ordering Code	Insert Type	Insert size A	D	D1	L	L1	No. of Inserts	Screw	Key
<b>SRH13S-1</b>	H13	27	13	20	80	26	1	S13	K11
<b>SRH13-1</b>	H13	27	13	20	90	35	1	S13	K11
<b>SRH15-1</b>	H15	27	15	20	95	40	1	S15	K11
* <b>SRH17-2</b>	H17	27	17	20	85	30	2	S17	K11
* <b>SRH17J-2</b>	H17	27	17	20	100	45	2	S17	K11
<b>SRH19-2</b>	H19	27	19	20	85	30	2	S19	K11
<b>SRH19J-2</b>	H19	27	19	20	110	55	2	S19	K11
<b>SRH19-3</b>	H19	27	19	20	85	30	3	S19	K11
<b>SRH19J-3</b>	H19	27	19	20	110	55	3	S19	K11

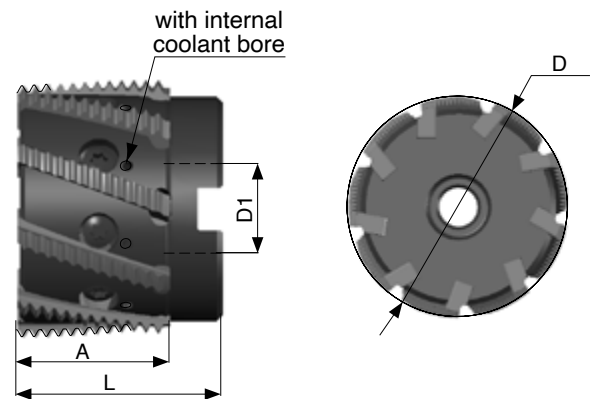
\* When using NPT, NPTF, BSPT inserts the cutting diameter D = 18 mm



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



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



Ordering Code	Insert Type	Insert size A	D	D1	L	No. of Inserts	Screw	Key
<b>SRH32-5M</b>	H32	32	32	16	52	5	S32S	K22
<b>SRH45-6M</b>	H45	37	45	22	60	6	S45S	K40
<b>SRH63-9</b>	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)

