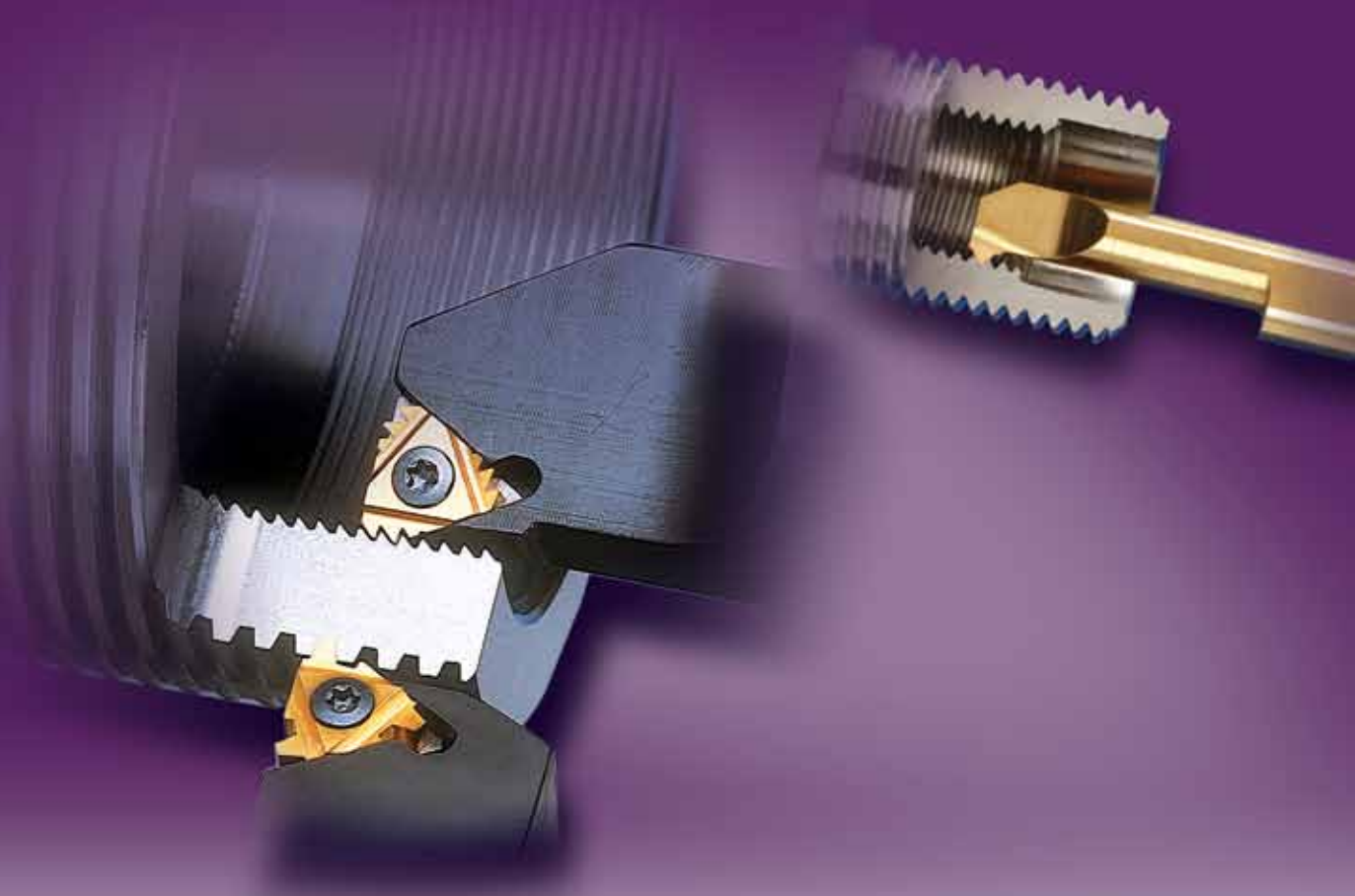
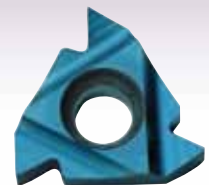


# Thread Turning Inserts



## BLU Grade

Carmex presents a new sub-micrograin grade with PVD triple layer coating. The BLU grade provides a combination of very high strength with high wear resistance.



## HBA Grade

a new extra-fine sub-micron grade with high toughness, for optimized performance on Hardened steels and Cast Iron up to 62HRC, Titanium Alloys and super alloys (Hastelloy, Inconel, and Nickel base alloys).



### Contents:

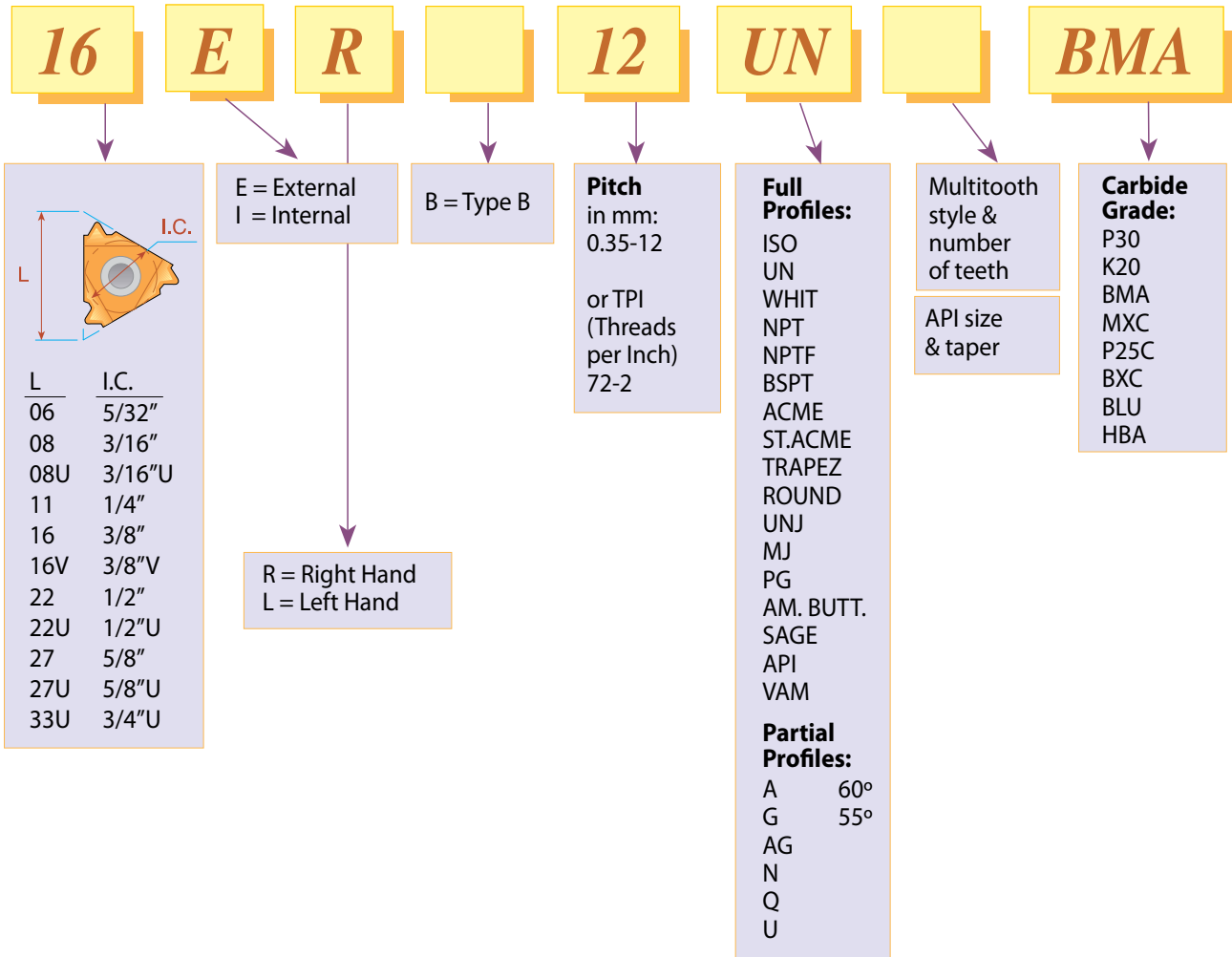
Page:

### Contents:

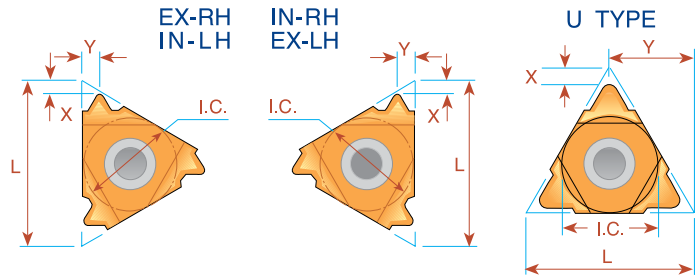
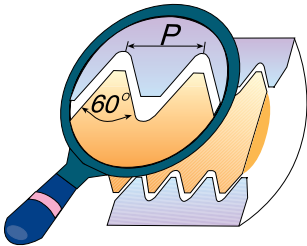
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## Product Identification Thread Turning Inserts Ordering Codes



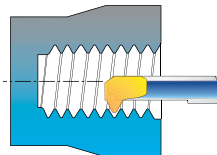
## Partial Profile 60°



L	I.C. in	Pitch Range		<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
		mm	TPI	Ordering Code Right Hand	Ordering Code Left Hand	Ordering Code Right Hand	Ordering Code Left Hand		
6	5/32	0.5 -1.25	48-20	<i>ULTRA MINIATURE</i> →		<b>*06 IR A60</b>	<b>*06 IL A60</b>	0.6	0.6
8	3/16	0.5 -1.5	48-16	<i>MINIATURE</i> →		<b>*08 IR A60</b>	<b>*08 IL A60</b>	0.6	0.7
8U	3/16U	1.75-2.0	14-11	<i>"U" MINIATURE</i> →		<b>*08U IR/L U60</b>		0.8	4.0
11	1/4	0.5 -1.5	48-16	<b>11 ER A60</b>	<b>11 EL A60</b>	<b>11 IR A60</b>	<b>11 IL A60</b>	0.8	0.9
16	3/8	0.5 -1.5	48-16	<b>16 ER A60</b>	<b>16 EL A60</b>	<b>16 IR A60</b>	<b>16 IL A60</b>	0.8	0.9
16	3/8	1.75-3.0	14- 8	<b>16 ER G60</b>	<b>16 EL G60</b>	<b>16 IR G60</b>	<b>16 IL G60</b>	1.2	1.7
16	3/8	0.5 -3.0	48- 8	<b>16 ER AG60</b>	<b>16 EL AG60</b>	<b>16 IR AG60</b>	<b>16 IL AG60</b>	1.2	1.7
22	1/2	3.5 -5.0	7- 5	<b>22 ER N60</b>	<b>22 EL N60</b>	<b>22 IR N60</b>	<b>22 IL N60</b>	1.7	2.5
22U	1/2U	5.5 -8.0	4.5- 3.25	<b>22U E/R/L U60</b>				0.6	11.0
27	5/8	5.5 -6.0	4.5- 4	<b>27 ER Q60</b>	<b>27 EL Q60</b>	<b>27 IR Q60</b>	<b>27 IL Q60</b>	2.1	3.1
27U	5/8U	6.5 -9.0	4- 2.75	<b>27U E/R/L U60</b>				1.0	13.7

Order example: 16 ER G60 MXC

For small bore threading see page 82  
\* Available only in BXC grade



## Type B Ground Profile with Sintered Chip-breaker

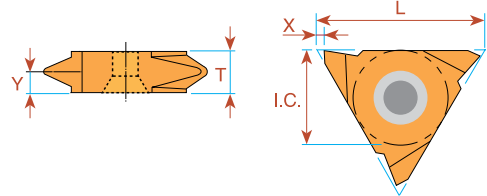


L	I.C. in	Pitch Range		<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
		mm	TPI	Ordering Code Right Hand	Ordering Code Left Hand	Ordering Code Right Hand	Ordering Code Left Hand		
16	3/8	0.5 -1.5	48-16	<b>16 ER B A60</b>		<b>16 IR B A60</b>		0.8	0.9
16	3/8	1.75-3.0	14- 8	<b>16 ER B G60</b>		<b>16 IR B G60</b>		1.2	1.7
16	3/8	0.5 -3.0	48- 8	<b>16 ER B AG60</b>		<b>16 IR B AG60</b>		1.2	1.7

Order example: 16 ER B G60 BMA

For Carbide Grade and Cutting Speed see page 60-61

## Partial Profile 60° Vertical

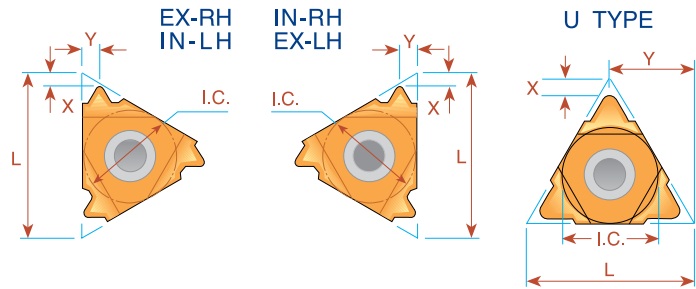
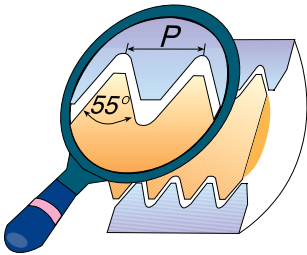


L	I.C. in	Pitch Range		<b>EXTERNAL</b> Ordering Code		<b>INTERNAL</b> Ordering Code		X	Y	T
		mm	TPI	Right Hand	Left Hand	Right Hand	Left Hand			
16	3/8	0.5 - 1.5	48-16	<b>16V ER A60</b>	<b>16V EL A60</b>			1.0	0.9	3.6
16	3/8	1.75- 3.0	14- 8	<b>16V ER G60</b>	<b>16V EL G60</b>			1.0	1.8	3.6
16	3/8	0.5 - 3.0	48- 8	<b>16V ER AG60</b>	<b>16V EL AG60</b>			1.0	1.8	3.6
22	1/2	1.75- 3.0	14- 8	<b>22V ER G60</b>	<b>22V EL G60</b>			1.2	1.7	4.0
22	1/2	0.5 - 5.0	7- 5	<b>22V ER N60</b>	<b>22V EL N60</b>			1.2	2.5	4.8
27	5/8	6.0 -10.0	4- 2.5	<b>27V ER V60</b>	<b>27V EL V60</b>	<b>27V IR V60</b>	<b>27V IL V60</b>	1.8	5.2	10.4

Order example: 16V ER G60 BMA

For Carbide Grade and Cutting Speed see page 60-61

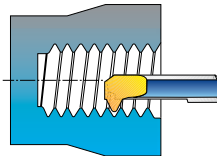
## Partial Profile 55°



L	I.C. in	Pitch Range mm TPI	<b>EXTERNAL</b> Ordering Code		<b>INTERNAL</b> Ordering Code		X	Y
			Right Hand	Left Hand	Right Hand	Left Hand		
6	5/32	0.5 -1.25 48-20	<i>ULTRA MINIATURE</i> →		<b>*06 IR A55</b>	<b>*06 IL A55</b>	0.5	0.6
8	3/16	0.5 -1.5 48-16	<i>MINIATURE</i> →		<b>*08 IR A55</b>	<b>*08 IL A55</b>	0.6	0.7
8U	3/16U	1.75-2.0 14-11	<i>"U" MINIATURE</i> →		<b>*08U IR/L U55</b>		0.9	4.0
11	1/4	0.5 -1.5 48-16	<b>11 ER A55</b>	<b>11 EL A55</b>	<b>11 IR A55</b>	<b>11 IL A55</b>	0.8	0.9
16	3/8	0.5 -1.5 48-16	<b>16 ER A55</b>	<b>16 EL A55</b>	<b>16 IR A55</b>	<b>16 IL A55</b>	0.8	0.9
16	3/8	1.75-3.0 14- 8	<b>16 ER G55</b>	<b>16 EL G55</b>	<b>16 IR G55</b>	<b>16 IL G55</b>	1.2	1.7
16	3/8	0.5 -3.0 48- 8	<b>16 ER AG55</b>	<b>16 EL AG55</b>	<b>16 IR AG55</b>	<b>16 IL AG55</b>	1.2	1.7
22	1/2	3.5 -5.0 7- 5	<b>22 ER N55</b>	<b>22 EL N55</b>	<b>22 IR N55</b>	<b>22 IL N55</b>	1.7	2.5
22U	1/2U	5.5 -8.0 4.5- 3.25	<b>22U E/R/L U55</b>				0.9	11.0
27	5/8	5.5 -6.0 4.5- 4	<b>27 ER Q55</b>	<b>27 EL Q55</b>	<b>27 IR Q55</b>	<b>27 IL Q55</b>	2.0	2.9
27U	5/8U	6.5 -9.0 4 - 2.75	<b>27U E/R/L U55</b>				1.2	13.7

Order example: 16 ER G55 MXC

For small bore threading see page 82  
 \* Available only in BXC and BMA grades



## Type B Ground Profile with Sintered Chip-breaker

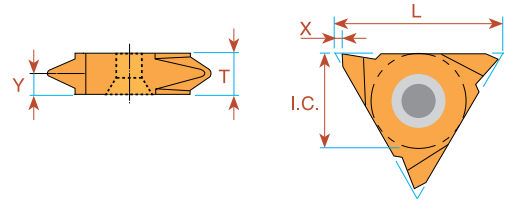


L	I.C. in	Pitch Range mm TPI	<b>EXTERNAL</b> Ordering Code		<b>INTERNAL</b> Ordering Code		X	Y
			Right Hand	Right Hand	Right Hand	Right Hand		
16	3/8	1.75-3.0 14-8	<b>16 ER B G55</b>	<b>16 IR B G55</b>	<b>16 IR B G55</b>	<b>16 IR B G55</b>	1.2	1.7
16	3/8	0.5-3.0 48-8	<b>16 ER B AG55</b>	<b>16 IR B AG55</b>	<b>16 IR B AG55</b>	<b>16 IR B AG55</b>	1.2	1.7

Order example: 16 ER B G55 BMA

For Carbide Grade and Cutting Speed see page 60-61

## Partial Profile 55° Vertical



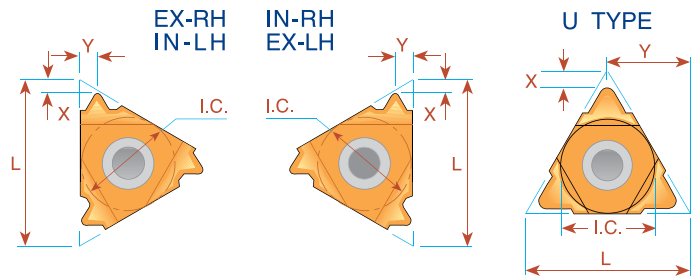
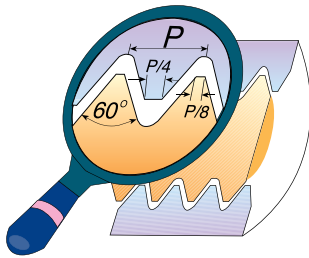
L	I.C. in	Pitch Range		<b>EXTERNAL</b> Ordering Code		<b>INTERNAL</b> Ordering Code		X	Y	T
		mm	TPI	Right Hand	Left Hand	Right Hand	Left Hand			
16	3/8	0.5 - 1.5	48-16	<b>16V ER A55</b>	<b>16V EL A55</b>			1.0	0.9	3.6
16	3/8	1.75- 3.0	14- 8	<b>16V ER G55</b>	<b>16V EL G55</b>			1.0	1.7	3.6
16	3/8	0.5 - 3.0	48- 8	<b>16V ER AG55</b>	<b>16V EL AG55</b>			1.0	1.8	3.6
22	1/2	3.5 - 5.0	7- 5	<b>22V ER N55</b>	<b>22V EL N55</b>			1.2	2.5	4.8
27	5/8	6.0-10.0	4- 2.5	<b>27V ER V55</b>	<b>27V EL V55</b>	<b>27V IR V55</b>	<b>27V IL V55</b>	1.8	5.2	10.4

Order example: 22V ER N55 BMA

For Carbide Grade and Cutting Speed see page 60-61

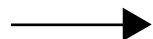
# Thread Turning Inserts

## ISO - metric



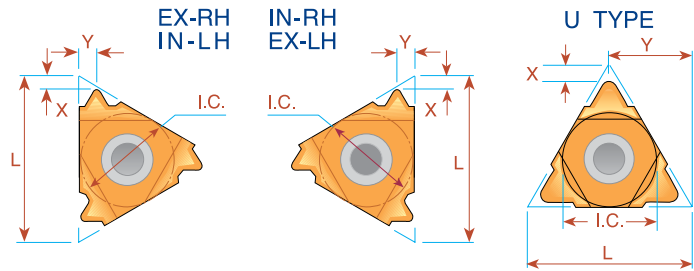
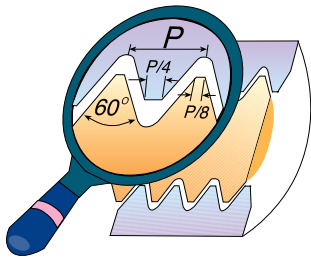
Pitch mm	L	I.C. in	EXTERNAL				INTERNAL			
			Ordering Code		X	Y	Ordering Code		X	Y
Right Hand	Left Hand	Right Hand	Left Hand	Right Hand			Left Hand			
0.5	6	5/32	<i>ULTRA MINIATURE</i> →				*06 IR 0.5 ISO	*06 IL 0.5 ISO	0.9	0.5
0.75	6	5/32					*06 IR 0.75 ISO	*06 IL 0.75 ISO	0.8	0.5
1.0	6	5/32					*06 IR 1.0 ISO	*06 IL 1.0 ISO	0.7	0.6
1.25	6	5/32					*06 IR 1.25 ISO	*06 IL 1.25 ISO	0.6	0.6
0.5	8	3/16	<i>MINIATURE</i> →				*08 IR 0.5 ISO	*08 IL 0.5 ISO	0.6	0.5
0.75	8	3/16					*08 IR 0.75 ISO	*08 IL 0.75 ISO	0.6	0.5
1.0	8	3/16					*08 IR 1.0 ISO	*08 IL 1.0 ISO	0.6	0.6
1.25	8	3/16					*08 IR 1.25 ISO	*08 IL 1.25 ISO	0.6	0.7
1.5	8	3/16					*08 IR 1.5 ISO	*08 IL 1.5 ISO	0.6	0.7
1.75	8	3/16					*08 IR 1.75 ISO	*08 IL 1.75 ISO	0.6	0.8
2.0	8U	3/16U	<i>"U" MINIATURE</i> →				*08U IR/L 2.0 ISO		0.9	4.0
0.35	11	1/4	11 ER 0.35 ISO	11 EL 0.35 ISO	.03	.02	11 IR 0.35 ISO	11 IL 0.35 ISO	0.8	0.3
0.4	11	1/4	11 ER 0.4 ISO	11 EL 0.4 ISO	.03	.02	11 IR 0.4 ISO	11 IL 0.4 ISO	0.8	0.4
0.45	11	1/4	11 ER 0.45 ISO	11 EL 0.45 ISO	.03	.02	11 IR 0.45 ISO	11 IL 0.45 ISO	0.8	0.4
0.5	11	1/4	11 ER 0.5 ISO	11 EL 0.5 ISO	.02	.02	11 IR 0.5 ISO	11 IL 0.5 ISO	0.6	0.6
0.6	11	1/4	11 ER 0.6 ISO	11 EL 0.6 ISO	.02	.02	11 IR 0.6 ISO	11 IL 0.6 ISO	0.6	0.6
0.7	11	1/4	11 ER 0.7 ISO	11 EL 0.7 ISO	.02	.02	11 IR 0.7 ISO	11 IL 0.7 ISO	0.6	0.6
0.75	11	1/4	11 ER 0.75 ISO	11 EL 0.75 ISO	.02	.02	11 IR 0.75 ISO	11 IL 0.75 ISO	0.6	0.6
0.8	11	1/4	11 ER 0.8 ISO	11 EL 0.8 ISO	.02	.02	11 IR 0.8 ISO	11 IL 0.8 ISO	0.6	0.6
1.0	11	1/4	11 ER 1.0 ISO	11 EL 1.0 ISO	.03	.03	11 IR 1.0 ISO	11 IL 1.0 ISO	0.6	0.7
1.25	11	1/4	11 ER 1.25 ISO	11 EL 1.25 ISO	.03	.04	11 IR 1.25 ISO	11 IL 1.25 ISO	0.8	0.8
1.5	11	1/4	11 ER 1.5 ISO	11 EL 1.5 ISO	.03	.04	11 IR 1.5 ISO	11 IL 1.5 ISO	0.8	1.0
1.75	11	1/4	11 ER 1.75 ISO	11 EL 1.75 ISO	.03	.04	11 IR 1.75 ISO	11 IL 1.75 ISO	0.8	1.1
2.0	11	1/4					11 IR 2.0 ISO	11 IL 2.0 ISO	0.8	0.9
2.5	11	1/4					11 IR 2.5 ISO	11 IL 2.5 ISO	0.8	1.2
0.35	16	3/8	16 ER 0.35 ISO	16 EL 0.35 ISO	.03	.02	16 IR 0.35 ISO	16 IL 0.35 ISO	0.8	0.3
0.4	16	3/8	16 ER 0.4 ISO	16 EL 0.4 ISO	.03	.02	16 IR 0.4 ISO	16 IL 0.4 ISO	0.8	0.4
0.45	16	3/8	16 ER 0.45 ISO	16 EL 0.45 ISO	.03	.02	16 IR 0.45 ISO	16 IL 0.45 ISO	0.8	0.4
0.5	16	3/8	16 ER 0.5 ISO	16 EL 0.5 ISO	.02	.02	16 IR 0.5 ISO	16 IL 0.5 ISO	0.6	0.6
0.6	16	3/8	16 ER 0.6 ISO	16 EL 0.6 ISO	.02	.02	16 IR 0.6 ISO	16 IL 0.6 ISO	0.6	0.6
0.7	16	3/8	16 ER 0.7 ISO	16 EL 0.7 ISO	.02	.02	16 IR 0.7 ISO	16 IL 0.7 ISO	0.6	0.6
0.75	16	3/8	16 ER 0.75 ISO	16 EL 0.75 ISO	.02	.02	16 IR 0.75 ISO	16 IL 0.75 ISO	0.6	0.6
0.8	16	3/8	16 ER 0.8 ISO	16 EL 0.8 ISO	.02	.02	16 IR 0.8 ISO	16 IL 0.8 ISO	0.6	0.6
1.0	16	3/8	16 ER 1.0 ISO	16 EL 1.0 ISO	.03	.03	16 IR 1.0 ISO	16 IL 1.0 ISO	0.6	0.7
1.25	16	3/8	16 ER 1.25 ISO	16 EL 1.25 ISO	.03	.04	16 IR 1.25 ISO	16 IL 1.25 ISO	0.8	0.9
1.5	16	3/8	16 ER 1.5 ISO	16 EL 1.5 ISO	.03	.04	16 IR 1.5 ISO	16 IL 1.5 ISO	0.8	1.0
1.75	16	3/8	16 ER 1.75 ISO	16 EL 1.75 ISO	.04	.05	16 IR 1.75 ISO	16 IL 1.75 ISO	0.9	1.2
2.0	16	3/8	16 ER 2.0 ISO	16 EL 2.0 ISO	.04	.05	16 IR 2.0 ISO	16 IL 2.0 ISO	1.0	1.3
2.5	16	3/8	16 ER 2.5 ISO	16 EL 2.5 ISO	.04	.06	16 IR 2.5 ISO	16 IL 2.5 ISO	1.1	1.5
3.0	16	3/8	16 ER 3.0 ISO	16 EL 3.0 ISO	.05	.06	16 IR 3.0 ISO	16 IL 3.0 ISO	1.1	1.5
3.5	16	3/8	16 ER 3.5 ISO	16 EL 3.5 ISO	.05	.06	16 IR 3.5 ISO	16 IL 3.5 ISO	1.2	1.7

\* Available only in BXC and BMA grades





## ISO - metric

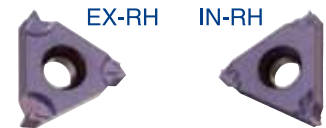
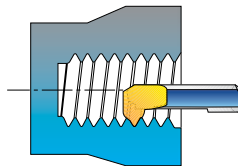


Pitch mm	L	I.C. in	<b>EXTERNAL</b>		X	Y	<b>INTERNAL</b>		X	Y
			Ordering Code Right Hand	Ordering Code Left Hand			Ordering Code Right Hand	Ordering Code Left Hand		
3.5	22	1/2	<b>22 ER 3.5 ISO</b>	<b>22 EL 3.5 ISO</b>	1.6	2.3	<b>22 IR 3.5 ISO</b>	<b>22 IL 3.5 ISO</b>	1.6	2.3
4.0	22	1/2	<b>22 ER 4.0 ISO</b>	<b>22 EL 4.0 ISO</b>	1.6	2.3	<b>22 IR 4.0 ISO</b>	<b>22 IL 4.0 ISO</b>	1.6	2.3
4.5	22	1/2	<b>22 ER 4.5 ISO</b>	<b>22 EL 4.5 ISO</b>	1.7	2.4	<b>22 IR 4.5 ISO</b>	<b>22 IL 4.5 ISO</b>	1.6	2.4
5.0	22	1/2	<b>22 ER 5.0 ISO</b>	<b>22 EL 5.0 ISO</b>	1.7	2.5	<b>22 IR 5.0 ISO</b>	<b>22 IL 5.0 ISO</b>	1.6	2.3
5.5	22	1/2	<b>22 ER 5.5 ISO</b>	<b>22 EL 5.5 ISO</b>	1.7	2.6	<b>22 IR 5.5 ISO</b>	<b>22 IL 5.5 ISO</b>	1.6	2.3
6.0	22	1/2	<b>**22 ER 6.0 ISO</b>	<b>**22 EL 6.0 ISO</b>	1.9	2.7	<b>22 IR 6.0 ISO</b>	<b>22 IL 6.0 ISO</b>	1.6	2.4
5.5	22U	1/2U	<b>22U ER/L 5.5 ISO</b>		2.3	11.0	<b>22U IR/L 5.5 ISO</b>		2.4	11.0
6.0	22U	1/2U	<b>22U ER/L 6.0 ISO</b>		2.6	11.0	<b>22U IR/L 6.0 ISO</b>		2.1	11.0
5.5	27	5/8	<b>27 ER 5.5 ISO</b>	<b>27 EL 5.5 ISO</b>	1.9	2.7	<b>27 IR 5.5 ISO</b>	<b>27 IL 5.5 ISO</b>	1.6	2.3
6.0	27	5/8	<b>27 ER 6.0 ISO</b>	<b>27 EL 6.0 ISO</b>	2.0	2.9	<b>27 IR 6.0 ISO</b>	<b>27 IL 6.0 ISO</b>	1.8	2.5
8.0	27U	5/8U	<b>27U ER/L 8.0 ISO</b>		2.4	13.7	<b>27U IR/L 8.0 ISO</b>		2.4	13.7
12.0	33U	3/4U	<b>33U ER/L 12.0 ISO</b>		2.5	16.5	<b>33U IR/L 12.0 ISO</b>		3.5	16.9

Order example: 22 IR 3.5 ISO BMA

For small bore threading see page 83

\*\* Special holder required



## Type B

### Ground Profile with Sintered Chip-breaker

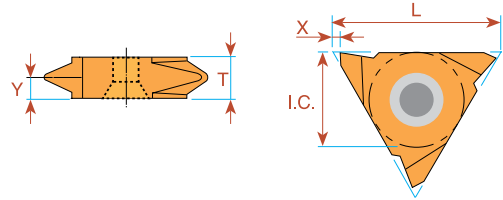
Pitch mm	L	I.C. in	<b>EXTERNAL</b>		X	Y	<b>INTERNAL</b>		X	Y
			Ordering Code Right Hand	Ordering Code Left Hand			Ordering Code Right Hand	Ordering Code Left Hand		
0.5	11	1/4					<b>11 IR B 0.5 ISO</b>		0.6	0.6
0.75	11	1/4					<b>11 IR B 0.75 ISO</b>		0.6	0.6
0.8	11	1/4					<b>11 IR B 0.8 ISO</b>		0.6	0.6
1.0	11	1/4					<b>11 IR B 1.0 ISO</b>		0.6	0.6
1.25	11	1/4					<b>11 IR B 1.25 ISO</b>		0.8	0.9
1.5	11	1/4					<b>11 IR B 1.5 ISO</b>		0.8	0.9
1.75	11	1/4					<b>11 IR B 1.75 ISO</b>		0.8	0.9
2.0	11	1/4					<b>11 IR B 2.0 ISO</b>		0.8	0.9
0.8	16	3/8	<b>16 ER B 0.8 ISO</b>		0.6	0.6				
1.0	16	3/8	<b>16 ER B 1.0 ISO</b>		0.7	0.7	<b>16 IR B 1.0 ISO</b>		0.6	0.7
1.25	16	3/8	<b>16 ER B 1.25 ISO</b>		0.8	0.9	<b>16 IR B 1.25 ISO</b>		0.8	0.9
1.5	16	3/8	<b>16 ER B 1.5 ISO</b>		0.8	1.0	<b>16 IR B 1.5 ISO</b>		0.8	1.0
1.75	16	3/8	<b>16 ER B 1.75 ISO</b>		0.9	1.2	<b>16 IR B 1.75 ISO</b>		0.9	1.2
2.0	16	3/8	<b>16 ER B 2.0 ISO</b>		1.0	1.3	<b>16 IR B 2.0 ISO</b>		1.0	1.3
2.5	16	3/8	<b>16 ER B 2.5 ISO</b>		1.1	1.5	<b>16 IR B 2.5 ISO</b>		1.1	1.5
3.0	16	3/8	<b>16 ER B 3.0 ISO</b>		1.2	1.6	<b>16 IR B 3.0 ISO</b>		1.1	1.5

Order example: 16 IR B 1.5 ISO BMA

For Carbide Grade and Cutting Speed see page 60-61



## ISO - metric Vertical

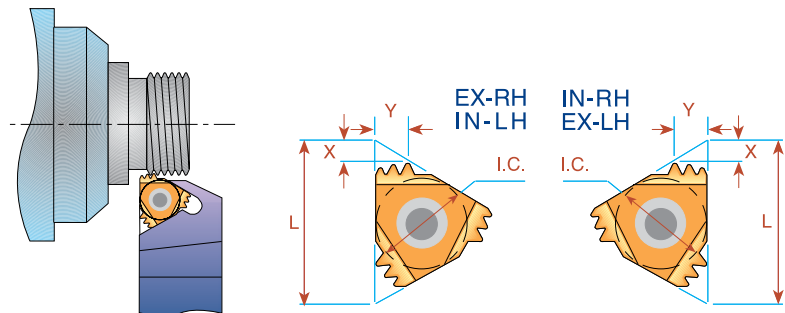


Pitch mm	L	I.C. in	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y	T
			Right Hand	Left Hand	Right Hand	Left Hand			
0.5	16	3/8	<b>16V ER 0.5 ISO</b>	<b>16V EL 0.5 ISO</b>			1.0	0.6	3.6
0.75	16	3/8	<b>16V ER 0.75 ISO</b>	<b>16V EL 0.75 ISO</b>			1.0	0.6	3.6
0.8	16	3/8	<b>16V ER 0.8 ISO</b>	<b>16V EL 0.8 ISO</b>			1.0	0.6	3.6
1.0	16	3/8	<b>16V ER 1.0 ISO</b>	<b>16V EL 1.0 ISO</b>			1.0	0.7	3.6
1.25	16	3/8	<b>16V ER 1.25 ISO</b>	<b>16V EL 1.25 ISO</b>			1.0	0.9	3.6
1.5	16	3/8	<b>16V ER 1.5 ISO</b>	<b>16V EL 1.5 ISO</b>			1.0	0.9	3.6
1.75	16	3/8	<b>16V ER 1.75 ISO</b>	<b>16V EL 1.75 ISO</b>			1.0	1.2	3.6
2.0	16	3/8	<b>16V ER 2.0 ISO</b>	<b>16V EL 2.0 ISO</b>			1.0	1.3	3.6
2.5	16	3/8	<b>16V ER 2.5 ISO</b>	<b>16V EL 2.5 ISO</b>			1.0	1.5	3.6
3.0	16	3/8	<b>16V ER 3.0 ISO</b>	<b>16V EL 3.0 ISO</b>			1.0	1.7	3.6
* 8.0	27	5/8	<b>27V ER 8.0 ISO</b>	<b>27V EL 8.0 ISO</b>	<b>27V IR 8.0 ISO</b>	<b>27 IL 8.0 ISO</b>	1.8	5.2	10.4
** 10.0	27	5/8	<b>27V ER 10.0 ISO</b>	<b>27V EL 10.0 ISO</b>	<b>27V IR 10.0 ISO</b>	<b>27 IL 10.0 ISO</b>	1.8	5.2	10.4

Order example: 16V ER 1.5 ISO BMA

- \* Minimum bore: 60 mm
- \*\* Minimum bore: 72 mm

## Multitooth



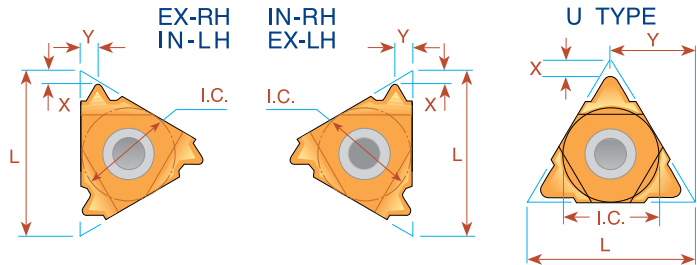
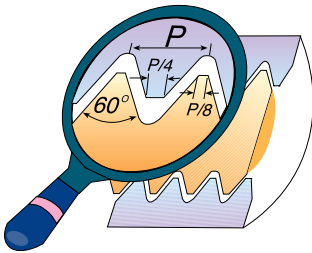
Pitch mm	L	I.C. in	Number of Teeth	<b>EXTERNAL</b>	Anvil	<b>INTERNAL</b>	Anvil	X	Y
				Ordering Code		Ordering Code			
1.0	16	3/8	3	<b>16 ER 1.0 ISO 3M</b>	AE16M	<b>16 IR 1.0 ISO 3M</b>	AI16M	1.7	2.5
1.5	16	3/8	2	<b>16 ER 1.5 ISO 2M</b>	AE16M	<b>16 IR 1.5 ISO 2M</b>	AI16M	1.5	2.3
1.5	22	1/2	3	<b>22 ER 1.5 ISO 3M</b>	AE22M	<b>22 IR 1.5 ISO 3M</b>	AI22M	2.3	3.7
2.0	22	1/2	2	<b>22 ER 2.0 ISO 2M</b>	AE22M	<b>22 IR 2.0 ISO 2M</b>	AI22M	2.0	3.0
2.0	22	1/2	3	<b>22 ER 2.0 ISO 3M</b>	AE22M	<b>22 IR 2.0 ISO 3M</b>	AI22M	3.1	5.0
3.0	27	5/8	2	<b>27 ER 3.0 ISO 2M</b>	AE27M	<b>27 IR 3.0 ISO 2M</b>	AI27M	2.9	4.6

Order example: 22 IR B 2.0 ISO 2M BMA

For recommended number of passes see page 62

For Carbide Grade and Cutting Speed see page 60-61

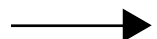
## UN - Unified UNC, UNF, UNEF, UNS



Pitch TPI	L	I.C. in	EXTERNAL				INTERNAL			
			Ordering Code		X	Y	Ordering Code		X	Y
Right Hand	Left Hand	Right Hand	Left Hand	Right Hand			Left Hand			
32	6	5/32	<i>ULTRA MINIATURE</i> →				*06 IR 32 UN	*06 IL 32 UN	0.8	0.5
28	6	5/32					*06 IR 28 UN	*06 IL 28 UN	0.8	0.6
24	6	5/32					*06 IR 24 UN	*06 IL 24 UN	0.7	0.6
20	6	5/32					*06 IR 20 UN	*06 IL 20 UN	0.6	0.6
18	6	5/32					*06 IR 18 UN	*06 IL 18 UN	0.6	0.7
32	8	3/16	<i>MINIATURE</i> →				*08 IR 32 UN	*08 IL 32 UN	0.6	0.5
28	8	3/16					*08 IR 28 UN	*08 IL 28 UN	0.6	0.6
24	8	3/16					*08 IR 24 UN	*08 IL 24 UN	0.6	0.6
20	8	3/16					*08 IR 20 UN	*08 IL 20 UN	0.6	0.7
18	8	3/16					*08 IR 18 UN	*08 IL 18 UN	0.6	0.7
16	8	3/16	*08 IR 16 UN	*08 IL 16 UN	0.6	0.7				
14	8	3/16	*08 IR 14 UN	*08 IL 14 UN	0.6	0.8				
13	8	3/16	*08 IR 13 UN	*08 IL 13 UN	0.8	0.9				
13	8U	3/16U	<i>"U" MINIATURE</i> →				*08U IR/L 13 UN		1.0	4.0
12	8U	3/16U					*08U IR/L 12 UN		0.9	4.0
11	8U	3/16U					*08U IR/L 11 UN		0.9	4.0
72	11	1/4	11 ER 72 UN	11 EL 72 UN	.03	.02	11 IR 72 UN	11 IL 72 UN	0.8	0.3
64	11	1/4	11 ER 64 UN	11 EL 64 UN	.03	.02	11 IR 64 UN	11 IL 64 UN	0.8	4.0
56	11	1/4	11 ER 56 UN	11 EL 56 UN	.03	.02	11 IR 56 UN	11 IL 56 UN	0.7	4.0
48	11	1/4	11 ER 48 UN	11 EL 48 UN	.02	.02	11 IR 48 UN	11 IL 48 UN	0.6	0.6
44	11	1/4	11 ER 44 UN	11 EL 44 UN	.02	.02	11 IR 44 UN	11 IL 44 UN	0.6	0.6
40	11	1/4	11 ER 40 UN	11 EL 40 UN	.02	.02	11 IR 40 UN	11 IL 40 UN	0.6	0.6
36	11	1/4	11 ER 36 UN	11 EL 36 UN	.02	.02	11 IR 36 UN	11 IL 36 UN	0.6	0.6
32	11	1/4	11 ER 32 UN	11 EL 32 UN	.02	.02	11 IR 32 UN	11 IL 32 UN	0.6	0.6
28	11	1/4	11 ER 28 UN	11 EL 28 UN	.02	.03	11 IR 28 UN	11 IL 28 UN	0.6	0.7
27	11	1/4	11 ER 27 UN	11 EL 27 UN	.03	.03	11 IR 27 UN	11 IL 27 UN	0.7	0.8
24	11	1/4	11 ER 24 UN	11 EL 24 UN	.03	.03	11 IR 24 UN	11 IL 24 UN	0.7	0.8
20	11	1/4	11 ER 20 UN	11 EL 20 UN	.03	.04	11 IR 20 UN	11 IL 20 UN	0.8	0.9
18	11	1/4	11 ER 18 UN	11 EL 18 UN	.03	.04	11 IR 18 UN	11 IL 18 UN	0.8	1.0
16	11	1/4	11 ER 16 UN	11 EL 16 UN	.04	.04	11 IR 16 UN	11 IL 16 UN	0.9	1.1
14	11	1/4	11 ER 14 UN	11 EL 14 UN	.04	.04	11 IR 14 UN	11 IL 14 UN	0.9	1.1
13	11	1/4					11 IR 13 UN	11 IL 13 UN	0.8	1.0
12	11	1/4					11 IR 12 UN	11 IL 12 UN	0.9	1.1
11	11	1/4					11 IR 11 UN	11 IL 11 UN	0.8	1.1
72	16	3/8	16 ER 72 UN	16 EL 72 UN	.03	.02	16 IR 72 UN	16 IL 72 UN	0.8	0.3
64	16	3/8	16 ER 64 UN	16 EL 64 UN	.03	.02	16 IR 64 UN	16 IL 64 UN	0.8	0.4
56	16	3/8	16 ER 56 UN	16 EL 56 UN	.03	.02	16 IR 56 UN	16 IL 56 UN	0.7	0.4
48	16	3/8	16 ER 48 UN	16 EL 48 UN	.02	.02	16 IR 48 UN	16 IL 48 UN	0.6	0.6
44	16	3/8	16 ER 44 UN	16 EL 44 UN	.02	.02	16 IR 44 UN	16 IL 44 UN	0.6	0.6
40	16	3/8	16 ER 40 UN	16 EL 40 UN	.02	.02	16 IR 40 UN	16 IL 40 UN	0.6	0.6
36	16	3/8	16 ER 36 UN	16 EL 36 UN	.02	.02	16 IR 36 UN	16 IL 36 UN	0.6	0.6

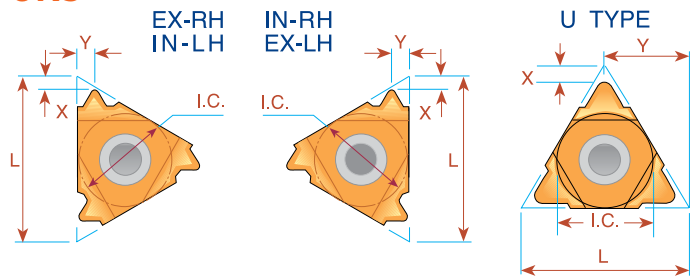
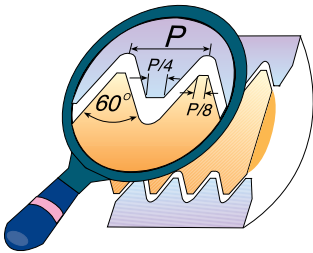
\* Available only in BXC and BMA grades

\*\* To be used with Holders SIR 0009 K08 on page 47



# Thread Turning Inserts

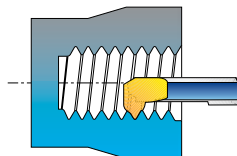
## UN - Unified UNC, UNF, UNEF, UNS



Pitch TPI	L	I.C. in	EXTERNAL				INTERNAL			
			Ordering Code		X	Y	Ordering Code		X	Y
			Right Hand	Left Hand			Right Hand	Left Hand		
32	16	3/8	16 ER 32 UN	16 EL 32 UN	0.6	0.6	16 IR 32 UN	16 IL 32 UN	0.6	0.6
28	16	3/8	16 ER 28 UN	16 EL 28 UN	0.6	0.7	16 IR 28 UN	16 IL 28 UN	0.6	0.7
27	16	3/8	16 ER 27 UN	16 EL 27 UN	0.7	0.8	16 IR 27 UN	16 IL 27 UN	0.7	0.8
24	16	3/8	16 ER 24 UN	16 EL 24 UN	0.7	0.8	16 IR 24 UN	16 IL 24 UN	0.7	0.8
20	16	3/8	16 ER 20 UN	16 EL 20 UN	0.8	0.9	16 IR 20 UN	16 IL 20 UN	0.8	0.9
18	16	3/8	16 ER 18 UN	16 EL 18 UN	0.8	1.0	16 IR 18 UN	16 IL 18 UN	0.8	1.0
16	16	3/8	16 ER 16 UN	16 EL 16 UN	0.9	1.1	16 IR 16 UN	16 IL 16 UN	0.9	1.1
14	16	3/8	16 ER 14 UN	16 EL 14 UN	1.0	1.2	16 IR 14 UN	16 IL 14 UN	0.9	1.2
13	16	3/8	16 ER 13 UN	16 EL 13 UN	1.0	1.3	16 IR 13 UN	16 IL 13 UN	1.0	1.3
12	16	3/8	16 ER 12 UN	16 EL 12 UN	1.1	1.4	16 IR 12 UN	16 IL 12 UN	1.1	1.4
11.5	16	3/8	16 ER 11.5 UN	16 EL 11.5 UN	1.1	1.5	16 IR 11.5 UN	16 IL 11.5 UN	1.1	1.5
11	16	3/8	16 ER 11 UN	16 EL 11 UN	1.1	1.5	16 IR 11 UN	16 IL 11 UN	1.1	1.5
10	16	3/8	16 ER 10 UN	16 EL 10 UN	1.1	1.5	16 IR 10 UN	16 IL 10 UN	1.1	1.5
9	16	3/8	16 ER 9 UN	16 EL 9 UN	1.2	1.7	16 IR 9 UN	16 IL 9 UN	1.2	1.7
8	16	3/8	16 ER 8 UN	16 EL 8 UN	1.2	1.6	16 IR 8 UN	16 IL 8 UN	1.1	1.5
7	22	1/2	22 ER 7 UN	22 EL 7 UN	1.6	2.3	22 IR 7 UN	22 IL 7 UN	1.6	2.3
6	22	1/2	22 ER 6 UN	22 EL 6 UN	1.6	2.3	22 IR 6 UN	22 IL 6 UN	1.6	2.3
5	22	1/2	22 ER 5 UN	22 EL 5 UN	1.7	2.5	22 IR 5 UN	22 IL 5 UN	1.6	2.3
4.5	22U	1/2U	22U ER/L 4.5 UN		2.0	11.0	22U IR/L 4.5 UN		2.4	11.0
4	22U	1/2U	22U ER/L 4 UN		2.0	11.0	22U IR/L 4 UN		2.4	11.0
4.5	27	5/8	27 ER 4.5 UN	27 EL 4.5 UN	1.9	2.7	27 IR 4.5 UN	27 IL 4.5 UN	1.7	2.4
4	27	5/8	27 ER 4 UN	27 EL 4 UN	2.1	3.0	27 IR 4 UN	27 IL 4 UN	1.8	2.7
3	27U	5/8U	27U ER/L 3 UN		2.5	13.7	27U IR/L 3 UN		2.7	13.7
2	33U	3/4U	33U ER/L 2 UN		2.8	16.5	27U IR/L 2 UN		3.6	16.9

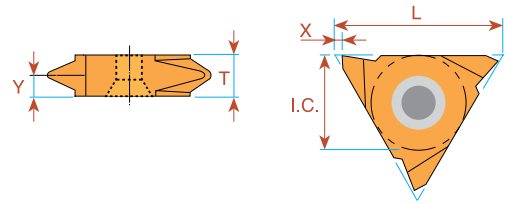
Order example: 22ER 7 UN BMA

For small bore threading see page 83



For Carbide Grade and Cutting Speed see page 60-61

## UN - Unified Vertical

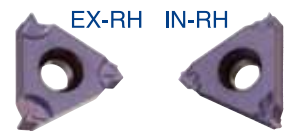


Pitch TPI	L	I.C. in	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y	T
			Ordering Code Right Hand	Ordering Code Left Hand	Ordering Code Right Hand	Ordering Code Left Hand			
32	16	3/8	16V ER 32 UN	16V EL 32 UN			1.0	0.6	3.6
28	16	3/8	16V ER 28 UN	16V EL 28 UN			1.0	0.7	3.6
24	16	3/8	16V ER 24 UN	16V EL 24 UN			1.0	0.8	3.6
20	16	3/8	16V ER 20 UN	16V EL 20 UN			1.0	0.9	3.6
18	16	3/8	16V ER 18 UN	16V EL 18 UN			1.0	1.0	3.6
16	16	3/8	16V ER 16 UN	16V EL 16 UN			1.0	1.1	3.6
14	16	3/8	16V ER 14 UN	16V EL 14 UN			1.0	1.2	3.6
12	16	3/8	16V ER 12 UN	16V EL 12 UN			1.0	1.4	3.6
10	16	3/8	16V ER 10 UN	16V EL 10 UN			1.0	1.5	3.6
8	16	3/8	16V ER 8 UN	16V EL 8 UN			1.0	1.6	3.6
7	22	1/2	22V ER 7 UN	22V EL 7 UN			1.2	2.3	4.8
* 3	27	5/8	27V ER 3 UN	27V EL 3 UN	27V IR 3 UN	27 IL 3 UN	1.8	5.2	10.4

Order example: 22V ER 7UN MXC

\* Minimum bore: Ø65 mm

## UN - Unified Type B UNC, UNF, UNEF, UNS

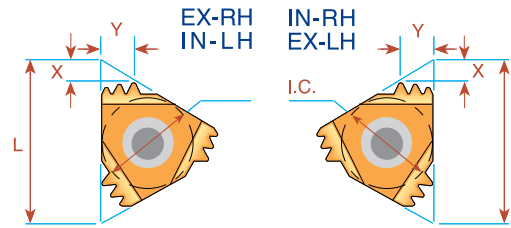
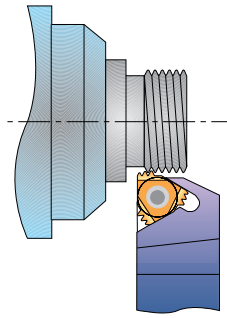


### Ground Profile with Sintered Chip-breaker

Pitch TPI	L	I.C. in	<b>EXTERNAL</b>		X	Y	<b>INTERNAL</b>		X	Y
			Ordering Code Right Hand				Ordering Code Right Hand			
32	11	1/4					11 IR B 32 UN	0.6	0.6	
28	11	1/4					11 IR B 28 UN	0.6	0.6	
24	11	1/4					11 IR B 24 UN	0.6	0.6	
20	11	1/4					11 IR B 20 UN	0.8	0.9	
18	11	1/4					11 IR B 18 UN	0.8	0.9	
16	11	1/4					11 IR B 16 UN	0.8	0.9	
14	11	1/4					11 IR B 14 UN	0.8	0.9	
12	11	1/4					11 IR B 12 UN	0.8	0.9	
24	16	3/8	16 ER B 24 UN		0.7	0.8	16 IR B 24 UN	0.7	0.8	
20	16	3/8	16 ER B 20 UN		0.8	0.9	16 IR B 20 UN	0.8	0.9	
18	16	3/8	16 ER B 18 UN		0.8	1.0	16 IR B 18 UN	0.8	1.0	
16	16	3/8	16 ER B 16 UN		0.9	1.1	16 IR B 16 UN	0.9	1.1	
14	16	3/8	16 ER B 14 UN		1.0	1.2	16 IR B 14 UN	0.9	1.2	
13	16	3/8	16 ER B 13 UN		1.0	1.3				
12	16	3/8	16 ER B 12 UN		1.1	1.4	16 IR B 12 UN	1.1	1.4	
11	16	3/8	16 ER B 11 UN		1.1	1.5				
10	16	3/8	16 ER B 10 UN		1.1	1.5	16 IR B 10 UN	1.1	1.5	
9	16	3/8	16 ER B 9 UN		1.2	1.7				
8	16	3/8	16 ER B 8 UN		1.2	1.6	16 IR B 8 UN	1.1	1.1	

Order example: 16 IR B 12 UN BMA

## Multitooth



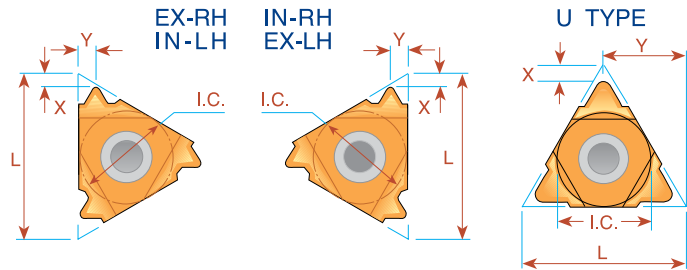
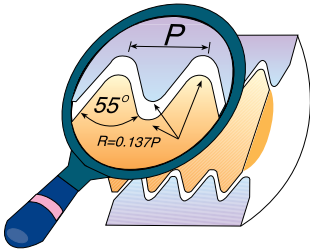
Pitch TPI	L	I.C. in	Number of Teeth	<b>EXTERNAL</b> Ordering Code	Anvil	<b>INTERNAL</b> Ordering Code	Anvil	X	Y
24	16	3/8	2	<b>16 ER 24 UN 2M</b>	AE16M	<b>16 IR 24 UN 2M</b>	AI16M	1.1	1.7
20	16	3/8	2	<b>16 ER 20 UN 2M</b>	AE16M	<b>16 IR 20 UN 2M</b>	AI16M	1.4	2.0
18	16	3/8	2	<b>16 ER 18 UN 2M</b>	AE16M	<b>16 IR 18 UN 2M</b>	AI16M	1.5	2.2
16	16	3/8	2	<b>16 ER 16 UN 2M</b>	AE16M	<b>16 IR 16 UN 2M</b>	AI16M	1.5	2.3
14	16	3/8	2	<b>16 ER 14 UN 2M</b>	AE16M	<b>16 IR 14 UN 2M</b>	AI16M	1.7	2.7
12	16	3/8	2	<b>16 ER 12 UN 2M</b>	AE16M	<b>16 IR 12 UN 2M</b>	AI16M	2.0	3.1
16	22	1/2	3	<b>22 ER 16 UN 3M</b>	AE22M	<b>22 IR 16 UN 3M</b>	AI22M	2.5	4.0
13	22	1/2	3	<b>22 ER 13 UN 3M</b>	AE22M	-		3.0	4.9
12	22	1/2	2	<b>22 ER 12 UN 2M</b>	AE22M	<b>22 IR 12 UN 2M</b>	AI22M	2.2	3.4
12	22	1/2	3	<b>22 ER 12 UN 3M</b>	AE22M	<b>22 IR 12 UN 3M</b>	AI22M	3.3	5.3
8	27	5/8	2	<b>27 ER 8 UN 2M</b>	AE27M	<b>27 IR 8 UN 2M</b>	AI27M	3.1	4.9

Order example: 22 IR 16 UN 3M BMA

For recommended number of passes see page 62

For Carbide Grade and Cutting Speed see page 60-61

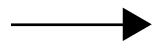
## Whitworth - 55° BSW, BSF, BSP, BSB



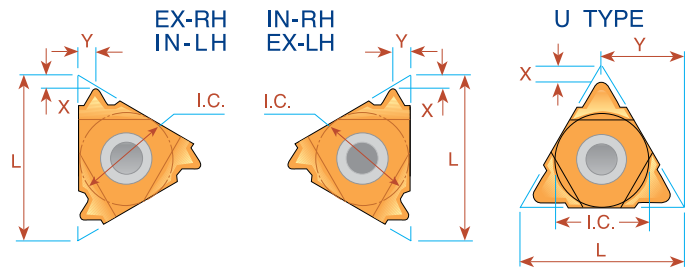
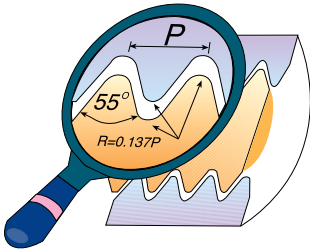
Pitch TPI	L	I.C. in	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
			Ordering Code Right Hand	Ordering Code Left Hand	Ordering Code Right Hand	Ordering Code Left Hand		
26	6	5/32	<i>ULTRA MINIATURE</i> →		*06 IR 26 W	*06 IL 26 W	0.7	0.6
22	6	5/32			*06 IR 22 W	*06 IL 22 W	0.6	0.6
20	6	5/32			*06 IR 20 W	*06 IL 20 W	0.6	0.7
18	6	5/32			*06 IR 18 W	*06 IL 18 W	0.6	0.7
28	8	3/16	<i>MINIATURE</i> →		*08 IR 28 W	*08 IL 28 W	0.6	0.6
24	8	3/16			*08 IR 24 W	*08 IL 24 W	0.6	0.6
20	8	3/16			*08 IR 20 W	*08 IL 20 W	0.6	0.7
19	8	3/16			*08 IR 19 W	*08 IL 19 W	0.6	0.7
18	8	3/16			*08 IR 18 W	*08 IL 18 W	0.6	0.7
16	8	3/16			*08 IR 16 W	*08 IL 16 W	0.6	0.7
14	8U	3/16U	<i>"U" MINIATURE</i> →		*08U IR/L 14 W		1.0	4.0
12	8U	3/16U			*08U IR/L 12 W		0.9	4.0
11	8U	3/16U			*08U IR/L 11 W		0.9	4.0
72	11	1/4	11 ER 72 W	11 EL 72 W	11 IR 72 W	11 IL 72 W	0.7	0.4
60	11	1/4	11 ER 60 W	11 EL 60 W	11 IR 60 W	11 IL 60 W	0.7	0.4
56	11	1/4	11 ER 56 W	11 EL 56 W	11 IR 56 W	11 IL 56 W	0.7	0.4
48	11	1/4	11 ER 48 W	11 EL 48 W	11 IR 48 W	11 IL 48 W	0.6	0.6
40	11	1/4	11 ER 40 W	11 EL 40 W	11 IR 40 W	11 IL 40 W	0.6	0.6
36	11	1/4	11 ER 36 W	11 EL 36 W	11 IR 36 W	11 IL 36 W	0.6	0.6
32	11	1/4	11 ER 32 W	11 EL 32 W	11 IR 32 W	11 IL 32 W	0.6	0.6
28	11	1/4	11 ER 28 W	11 EL 28 W	11 IR 28 W	11 IL 28 W	0.6	0.7
26	11	1/4	11 ER 26 W	11 EL 26 W	11 IR 26 W	11 IL 26 W	0.7	0.7
24	11	1/4	11 ER 24 W	11 EL 24 W	11 IR 24 W	11 IL 24 W	0.7	0.8
22	11	1/4	11 ER 22 W	11 EL 22 W	11 IR 22 W	11 IL 22 W	0.8	0.9
20	11	1/4	11 ER 20 W	11 EL 20 W	11 IR 20 W	11 IL 20 W	0.8	0.9
19	11	1/4	11 ER 19 W	11 EL 19 W	11 IR 19 W	11 IL 19 W	0.8	1.0
18	11	1/4	11 ER 18 W	11 EL 18 W	11 IR 18 W	11 IL 18 W	0.8	1.0
16	11	1/4	11 ER 16 W	11 EL 16 W	11 IR 16 W	11 IL 16 W	0.9	1.1
14	11	1/4	11 ER 14 W	11 EL 14 W	11 IR 14 W	11 IL 14 W	0.9	1.1
12	11	1/4			11 IR 12 W	11 IL 12 W	0.1	1.1
11	11	1/4			<sup>(1)</sup> 11 IR 11 W	<sup>(1)</sup> 11 IL 11 W	0.9	1.2
72	16	3/8	16 ER 72 W	16 EL 72 W	16 IR 72 W	16 IL 72 W	0.7	0.4
60	16	3/8	16 ER 60 W	16 EL 60 W	16 IR 60 W	16 IL 60 W	0.7	0.4
56	16	3/8	16 ER 56 W	16 EL 56 W	16 IR 56 W	16 IL 56 W	0.7	0.4
48	16	3/8	16 ER 48 W	16 EL 48 W	16 IR 48 W	16 IL 48 W	0.6	0.6
40	16	3/8	16 ER 40 W	16 EL 40 W	16 IR 40 W	16 IL 40 W	0.6	0.6
36	16	3/8	16 ER 36 W	16 EL 36 W	16 IR 36 W	16 IL 36 W	0.6	0.6
32	16	3/8	16 ER 32 W	16 EL 32 W	16 IR 32 W	16 IL 32 W	0.6	0.6
28	16	3/8	16 ER 28 W	16 EL 28 W	16 IR 28 W	16 IL 28 W	0.6	0.7
26	16	3/8	16 ER 26 W	16 EL 26 W	16 IR 26 W	16 IL 26 W	0.7	0.7
24	16	3/8	16 ER 24 W	16 EL 24 W	16 IR 24 W	16 IL 24 W	0.7	0.8

\* Available only in BXC and BMA grades

(1) Special holder is required or standard holder can be amended by customer.



## Whitworth - 55° BSW, BSF, BSP, BSB



Pitch TPI	L	I.C. in	EXTERNAL		INTERNAL		X	Y
			Right Hand	Left Hand	Right Hand	Left Hand		
22	16	3/8	16 ER 22 W	16 EL 22 W	16 IR 22 W	16 IL 22 W	0.8	0.9
20	16	3/8	16 ER 20 W	16 EL 20 W	16 IR 20 W	16 IL 20 W	0.8	0.9
19	16	3/8	16 ER 19 W	16 EL 19 W	16 IR 19 W	16 IL 19 W	0.8	1.0
18	16	3/8	16 ER 18 W	16 EL 18 W	16 IR 18 W	16 IL 18 W	0.8	1.0
16	16	3/8	16 ER 16 W	16 EL 16 W	16 IR 16 W	16 IL 16 W	0.9	1.1
14	16	3/8	16 ER 14 W	16 EL 14 W	16 IR 14 W	16 IL 14 W	1.0	1.2
12	16	3/8	16 ER 12 W	16 EL 12 W	16 IR 12 W	16 IL 12 W	1.1	1.4
11	16	3/8	16 ER 11 W	16 EL 11 W	16 IR 11 W	16 IL 11 W	1.1	1.5
10	16	3/8	16 ER 10 W	16 EL 10 W	16 IR 10 W	16 IL 10 W	1.1	1.5
9	16	3/8	16 ER 9 W	16 EL 9 W	16 IR 9 W	16 IL 9 W	1.2	1.7
8	16	3/8	16 ER 8 W	16 EL 8 W	16 IR 8 W	16 IL 8 W	1.2	1.5
7	22	1/2	22 ER 7 W	22 EL 7 W	22 IR 7 W	22 IL 7 W	1.6	2.3
6	22	1/2	22 ER 6 W	22 EL 6 W	22 IR 6 W	22 IL 6 W	1.6	2.3
5	22	1/2	22 ER 5 W	22 EL 5 W	22 IR 5 W	22 IL 5 W	1.7	2.4
4.5	22U	1/2U	22U E/R/L 4.5 W				2.3	11.0
4	22U	1/2U	22U E/R/L 4 W				2.8	11.0
4.5	27	5/8	27 ER 4.5 W	27 EL 4.5 W	27 IR 4.5 W	27 IL 4.5 W	1.8	2.6
4	27	5/8	27 ER 4 W	27 EL 4 W	27 IR 4 W	27 IL 4 W	2.0	2.9
3.5	27U	5/8U	27U E/R/L 3.5 W				2.1	13.7
3.25	27U	5/8U	27U E/R/L 3.25 W				2.0	13.7
3	27U	5/8U	27U E/R/L 3 W				2.3	13.7
2.75	27U	5/8U	27U E/R/L 2.75 W				2.4	13.7

Order example: 16 IR 18 W BMA

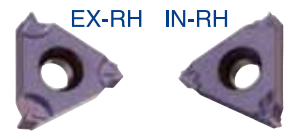
For Carbide Grade and Cutting Speed see page 60-61



## Whitworth - 55° BSW, BSF, BSP, BSB

### Type B

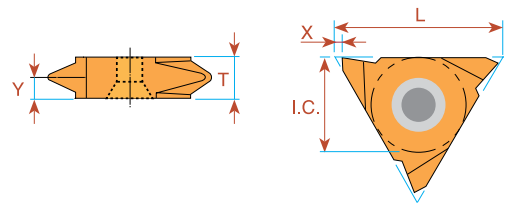
Ground Profile with Sintered Chip-breaker



Pitch TPI	L	I.C. in	<b>EXTERNAL</b>	<b>INTERNAL</b>	X	Y
			Ordering Code Right Hand	Ordering Code Right Hand		
28	11	1/4		<b>11 IR B 28 W</b>	0.6	0.6
24	11	1/4		<b>11 IR B 24 W</b>	0.6	0.6
20	11	1/4		<b>11 IR B 20 W</b>	0.8	0.9
19	11	1/4		<b>11 IR B 19 W</b>	0.8	0.9
18	11	1/4		<b>11 IR B 18 W</b>	0.8	0.9
16	11	1/4		<b>11 IR B 16 W</b>	0.8	0.9
14	11	1/4		<b>11 IR B 14 W</b>	0.8	0.9
19	16	3/8	<b>16 ER B 19 W</b>	<b>16 IR B 19 W</b>	0.8	1.0
16	16	3/8	<b>16 ER B 16 W</b>	<b>16 IR B 16 W</b>	0.9	1.1
14	16	3/8	<b>16 ER B 14 W</b>	<b>16 IR B 14 W</b>	1.0	1.2
11	16	3/8	<b>16 ER B 11 W</b>	<b>16 IR B 11 W</b>	1.1	1.5
10	16	3/8	<b>16 ER B 10 W</b>	<b>16 IR B 10 W</b>	1.1	1.5

Order example: 16 IR B 10 W BMA

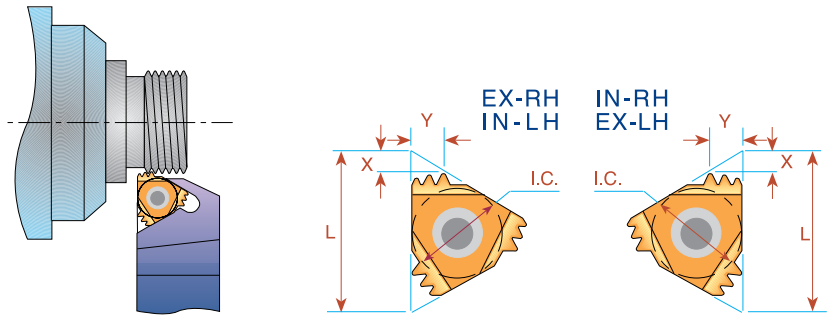
### Vertical



Pitch TPI	L	I.C. in	<b>EXTERNAL</b>	<b>EXTERNAL</b>	X	Y	T
			Ordering Code Right Hand	Ordering Code Left Hand			
20	16	3/8	<b>16V ER 20 W</b>	<b>16V EL 20 W</b>	1.0	0.9	3.6
19	16	3/8	<b>16V ER 19 W</b>	<b>16V EL 19 W</b>	1.0	0.9	3.6
18	16	3/8	<b>16V ER 18 W</b>	<b>16V EL 18 W</b>	1.0	1.0	3.6
16	16	3/8	<b>16V ER 16 W</b>	<b>16V EL 16 W</b>	1.0	1.0	3.6
14	16	3/8	<b>16V ER 14 W</b>	<b>16V EL 14 W</b>	1.0	1.2	3.6
12	16	3/8	<b>16V ER 12 W</b>	<b>16V EL 12 W</b>	1.0	1.4	3.6
11	16	3/8	<b>16V ER 11 W</b>	<b>16V EL 11 W</b>	1.0	1.5	3.6

Order example: 16V ER 14 W MXC

## Multitooth



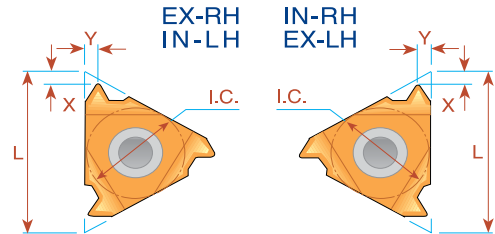
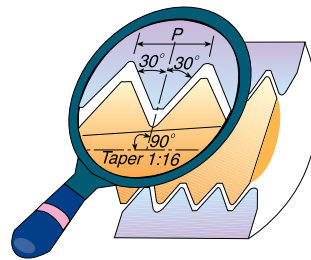
Pitch TPI	L	I.C. in	Number of Teeth	<b>EXTERNAL</b> Ordering Code	Anvil	<b>INTERNAL</b> Ordering Code	Anvil	X	Y
14	16	3/8	2	<b>16 ER 14 W 2M</b>	AE16M	<b>16 IR 14 W 2M</b>	AI16M	1.7	2.7
14	22	1/2	3	<b>22 ER 14 W 3M</b>	AE22M	<b>22 IR 14 W 3M</b>	AI22M	2.8	4.5
11	22	1/2	2	<b>22 ER 11 W 2M</b>	AE22M	<b>22 IR 11 W 2M</b>	AI22M	2.3	3.4

Order example: 16 ER 14 W 2M MXC

For recommended number of passes see page 62

For Carbide Grade and Cutting Speed see page 60-61

## NPT



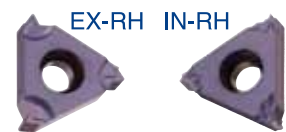
Pitch TPI	L	I.C. in	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
			Ordering Code Right Hand	Ordering Code Left Hand	Ordering Code Right Hand	Ordering Code Left Hand		
27	6	5/32	ULTRA MINIATURE →		*06 IR 27 NPT	*06 IL 27 NPT	0.6	0.6
27	8	3/16			*08 IR 27 NPT	*08 IL 27 NPT	0.6	0.6
18	8	3/16	MINIATURE →		*08 IR 18 NPT	*08 IL 18 NPT	0.6	0.6
27	11	1/4	11 ER 27 NPT	11 EL 27 NPT	11 IR 27 NPT	11 IL 27 NPT	0.7	0.8
18	11	1/4	11 ER 18 NPT	11 EL 18 NPT	11 IR 18 NPT	11 IL 18 NPT	0.8	1.0
14	11	1/4	11 ER 14 NPT	11 EL 14 NPT	11 IR 14 NPT	11 IL 14 NPT	0.8	1.0
27	16	3/8	16 ER 27 NPT	16 EL 27 NPT	16 IR 27 NPT	16 IL 27 NPT	0.7	0.8
18	16	3/8	16 ER 18 NPT	16 EL 18 NPT	16 IR 18 NPT	16 IL 18 NPT	0.8	1.0
14	16	3/8	16 ER 14 NPT	16 EL 14 NPT	16 IR 14 NPT	16 IL 14 NPT	0.9	1.2
11.5	16	3/8	16 ER 11.5 NPT	16 EL 11.5 NPT	16 IR 11.5 NPT	16 IL 11.5 NPT	1.1	1.5
8	16	3/8	16 ER 8 NPT	16 EL 8 NPT	16 IR 8 NPT	16 IL 8 NPT	1.3	1.8

Order example: 16 ER 14 NPT MXC

\* Available only in BXC and BMA grades

## Type B

### Ground Profile with Sintered Chip-breaker

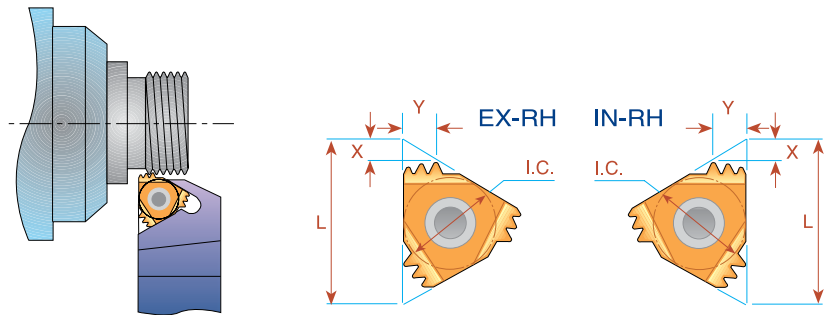


Pitch TPI	L	I.C. in	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
			Ordering Code Right Hand	Ordering Code Right Hand	Ordering Code Right Hand	Ordering Code Right Hand		
18	11	1/4			11 IR B 18 NPT		0.8	0.9
18	16	3/8	16 ER B 18 NPT		16 IR B 18 NPT		0.8	1.0
14	16	3/8	16 ER B 14 NPT		16 IR B 14 NPT		0.9	1.2
11.5	16	3/8	16 ER B 11.5 NPT		16 IR B 11.5 NPT		1.1	1.5
8	16	3/8	16 ER B 8 NPT		16 IR B 8 NPT		1.3	1.8

Order example: 16 IR B 11.5 NPT BMA

For Carbide Grade and Cutting Speed see page 60-61

## NPT Multitooth

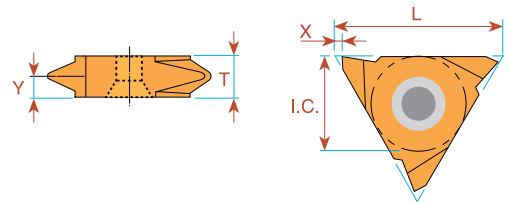


Pitch TPI	L	I.C. in	Number of Teeth	<b>EXTERNAL</b> Ordering Code	Anvil	<b>INTERNAL</b> Ordering Code	Anvil	X	Y
14	16	3/8	2	<b>16 ER 14 NPT 2M</b>	AE16M	<b>16 IR 14 NPT 2M</b>	AI16M	1.7	2.8
11.5	22	1/2	2	<b>22 ER 11.5 NPT 2M</b>	AE22M	<b>22 IR 11.5 NPT 2M</b>	AI22M	2.3	3.5
11.5	27	5/8	3	<b>27 ER 11.5 NPT 3M</b>	AE27M	<b>27 IR 11.5 NPT 3M</b>	AI27M	3.3	5.5
8	27	5/8	2	<b>27 ER 8 NPT 2M</b>	AE27M	<b>27 IR 8 NPT 2M</b>	AI27M	3.1	5.0

Order example: 22 ER 11.5 NPT 2M MXC

For recommended number of passes see page 62

## NPT Vertical

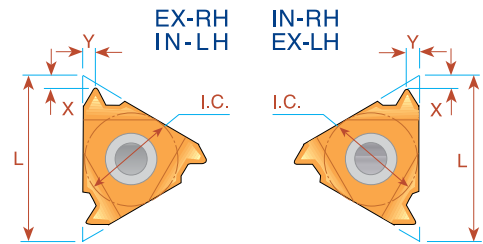
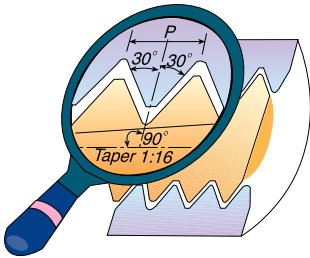


Pitch TPI	L	I.C. in	<b>EXTERNAL</b> Ordering Code Right Hand	<b>EXTERNAL</b> Ordering Code Left Hand	X	Y	T
27	16	3/8	<b>16V ER 27 NPT</b>	<b>16V EL 27 NPT</b>	1.0	0.8	3.6
18	16	3/8	<b>16V ER 18 NPT</b>	<b>16V EL 18 NPT</b>	1.0	1.0	3.6
14	16	3/8	<b>16V ER 14 NPT</b>	<b>16V EL 14 NPT</b>	1.0	1.2	3.6
11.5	16	3/8	<b>16V ER 11.5 NPT</b>	<b>16V EL 11.5 NPT</b>	1.0	1.5	3.6

Order example: 16V ER 14 NPT BMA

For Carbide Grade and Cutting Speed see page 60-61

## NPTF - Dryseal



Pitch TPI	L	I.C. in	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
			Ordering Code Right Hand	Ordering Code Left Hand	Ordering Code Right Hand	Ordering Code Left Hand		
27	6	5/32	<i>ULTRA MINIATURE</i> →		*06 IR 27 NPTF	*06 IL 27 NPTF	0.7	0.6
27	8	3/16			*08 IR 27 NPTF	*08 IL 27 NPTF	0.6	0.6
18	8	3/16	<i>MINIATURE</i> →		*08 IR 18 NPTF	*08 IL 18 NPTF	0.6	0.6
27	11	1/4	11 ER 27 NPTF	11 EL 27 NPTF	11 IR 27 NPTF	11 IL 27 NPTF	0.7	0.7
18	11	1/4	11 ER 18 NPTF	11 EL 18 NPTF	11 IR 18 NPTF	11 IL 18 NPTF	0.8	1.0
14	11	1/4	11 ER 14 NPTF	11 EL 14 NPTF	11 IR 14 NPTF	11 IL 14 NPTF	0.8	1.0
27	16	3/8	16 ER 27 NPTF	16 EL 27 NPTF	16 IR 27 NPTF	16 IL 27 NPTF	0.7	0.7
18	16	3/8	16 ER 18 NPTF	16 EL 18 NPTF	16 IR 18 NPTF	16 IL 18 NPTF	0.8	1.0
14	16	3/8	16 ER 14 NPTF	16 EL 14 NPTF	16 IR 14 NPTF	16 IL 14 NPTF	0.9	1.2
11.5	16	3/8	16 ER 11.5 NPTF	16 EL 11.5 NPTF	16 IR 11.5 NPTF	16 IL 11.5 NPTF	1.1	1.5
8	16	3/8	16 ER 8 NPTF	16 EL 8 NPTF	16 IR 8 NPTF	16 IL 8 NPTF	1.3	1.8

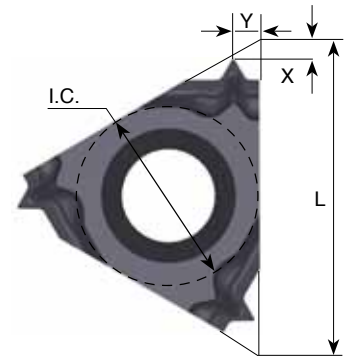
Order example: 11 ER 27 NPTF MXC

\* Available only in BXC and BMA grades

## Type B

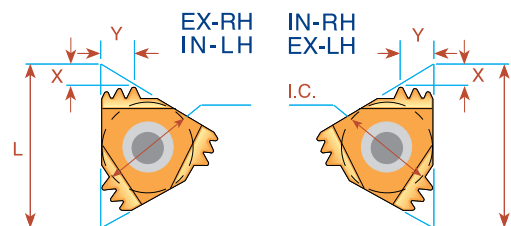
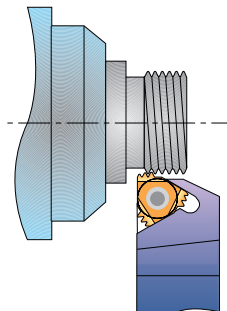
Ground Profile with Sintered Chip-breaker

Pitch TPI	L	I.C. in	<b>INTERNAL</b> Ordering Code Right Hand	X	Y
18	11	1/4	11 IR B 18 NPTF	0.8	0.9



For Carbide Grade and Cutting Speed see page 60-61

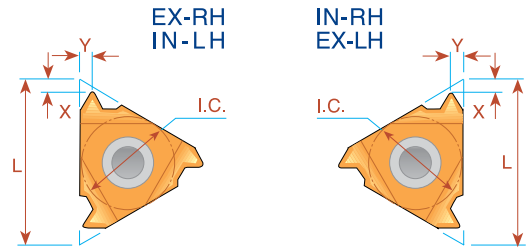
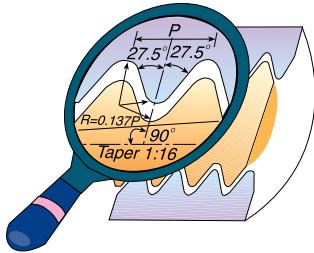
## Multitooth



Pitch TPI	L	I.C. in	Number of Teeth	<b>EXTERNAL</b> Ordering Code	Anvil	<b>INTERNAL</b> Ordering Code	Anvil	X	Y
11.5	22	1/2	2	22 ER 11.5 NPTF 2M	AE22M	22 IR 11.5 NPTF 2M	AI22M	2.3	3.5

For recommended number of passes see page 62

## BSPT



Pitch TPI	L	I.C. in	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
			Ordering Code Right Hand	Ordering Code Left Hand	Ordering Code Right Hand	Ordering Code Left Hand		
28	6	5/32	<i>ULTRA MINIATURE</i> →		*06 IR 28 BSPT	*06 IL 28 BSPT	0.7	0.6
28	8	3/16			*08 IR 28 BSPT	*08 IL 28 BSPT	0.6	0.6
19	8	3/16	<i>MINIATURE</i> →		*08 IR 19 BSPT	*08 IL 19 BSPT	0.6	0.6
28	11	1/4			11 IR 28 BSPT	11 IL 28 BSPT	0.6	0.6
19	11	1/4			11 IR 19 BSPT	11 IL 19 BSPT	0.8	0.9
14	11	1/4			11 IR 14 BSPT	11 IL 14 BSPT	0.9	1.0
11	11	1/4			<sup>(1)</sup> 11 IR 11 BSPT	<sup>(1)</sup> 11 IL 11 BSPT	0.9	1.2
28	16	3/8	16 ER 28 BSPT	16 EL 28 BSPT	16 IR 28 BSPT	16 IL 28 BSPT	0.6	0.6
19	16	3/8	16 ER 19 BSPT	16 EL 19 BSPT	16 IR 19 BSPT	16 IL 19 BSPT	0.8	0.9
14	16	3/8	16 ER 14 BSPT	16 EL 14 BSPT	16 IR 14 BSPT	16 IL 14 BSPT	1.0	1.2
11	16	3/8	16 ER 11 BSPT	16 EL 11 BSPT	16 IR 11 BSPT	16 IL 11 BSPT	1.1	1.5

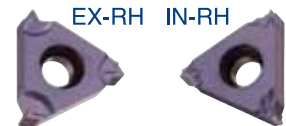
Order example: 11 IR 14 BSPT BMA

\* Available only in BXC and BMA grades

(1) Special holder is required or standard holder can be amended by customer.

## Type B

### Ground Profile with Sintered Chip-breaker

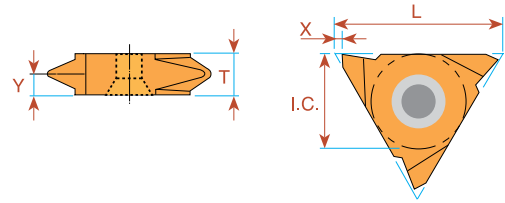


Pitch TPI	L	I.C. in	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
			Ordering Code Right Hand	Ordering Code Right Hand	Ordering Code Right Hand	Ordering Code Right Hand		
19	11	1/4			11 IR B 19 BSPT		0.8	0.9
19	16	3/8	16 ER B 19 BSPT				1.0	1.1
14	16	3/8	16 ER B 14 BSPT		16 IR B 14 BSPT		1.2	1.0
11	16	3/8	16 ER B 11 BSPT		16 IR B 11 BSPT		1.5	1.1

Order example: 16 ER B 11BSPT BMA

For Carbide Grade and Cutting Speed see page 60-61

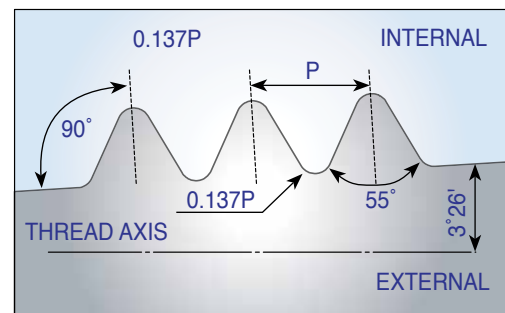
## BSPT Vertical



Pitch TPI	L	I.C. in	<b>EXTERNAL</b>	<b>EXTERNAL</b>	X	Y	T
			Ordering Code Right Hand	Ordering Code Left Hand			
28	16	3/8	<b>16V ER 28 BSPT</b>	<b>16V EL 27 BSPT</b>	1.0	0.6	3.6
19	16	3/8	<b>16V ER 19 BSPT</b>	<b>16V EL 19 BSPT</b>	1.0	0.9	3.6
14	16	3/8	<b>16V ER 14 BSPT</b>	<b>16V EL 14 BSPT</b>	1.0	1.2	3.6
11	16	3/8	<b>16V ER 11 BSPT</b>	<b>16V EL 11 BSPT</b>	1.0	1.5	3.6

Order example: 16V ER 19 BSPT BMA

## DIN 477



Pitch TPI	L	I.C. in	Taper Ratio	<b>EXTERNAL</b>	<b>INTERNAL</b>	X	Y	Thread Designation
				Ordering Code Right Hand	Ordering Code Right Hand			
14	16	3/8	3/25	<b>16 ER 14 DIN477</b>		1.0	1.2	W19.8x1/14 keg(Ext.)
14	11	1/4	3/25		<b>*11 IR 14 DIN477</b>	0.9	1.0	W19.8x1/14 keg(Int.)
14	16	3/8	3/25	<b>16 ER 14 DIN477</b>	<b>**16 IR 14 DIN477</b>	1.0	1.2	W28.8x1/14 keg
14	16	3/8	3/25	<b>16 ER 14 DIN477</b>	<b>***16 IR 14 DIN477</b>	1.0	1.2	W31.3x1/14 keg

\* Holder to use: SIR0013L11

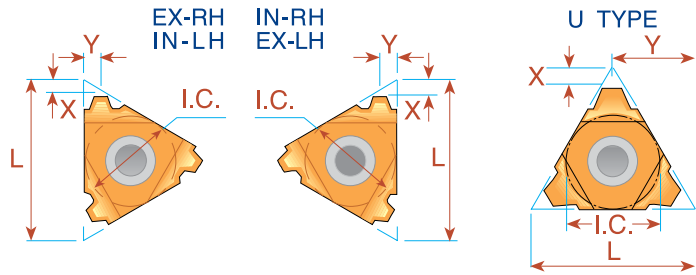
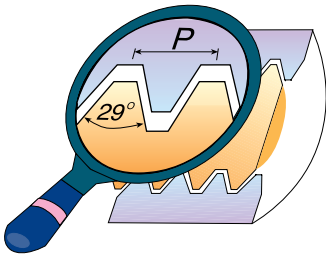
\*\* Holder to use: SIR0016P16

\*\*\* Holder to use: SIR0020P16

For Carbide Grade and Cutting Speed see page 60-61



## Acme



Pitch TPI	L	I.C. in	EXTERNAL		INTERNAL		X	Y
			Right Hand	Left Hand	Right Hand	Left Hand		
16	8	3/16	Ordering Code		Ordering Code			
			Right Hand	Left Hand	Right Hand	Left Hand		
			MINIATURE		**08 IR 16 ACME	**08 IL 16 ACME	0.6	0.6
14	8U	3/16U	"U" MINIATURE		*08U IR/L 14 ACME		0.8	4.0
12	8U	3/16U			*08U IR/L 12 ACME		0.8	4.0
10	8U	3/16U			*08U IR/L 10 ACME		0.8	4.0
16	11	1/4	11 ER 16 ACME	11 EL 16 ACME	11 IR 16 ACME	11 IL 16 ACME	0.9	1.0
16	16	3/8	16 ER 16 ACME	16 EL 16 ACME	16 IR 16 ACME	16 IL 16 ACME	0.9	1.0
14	16	3/8	16 ER 14 ACME	16 EL 14 ACME	16 IR 14 ACME	16 IL 14 ACME	1.0	1.2
12	16	3/8	16 ER 12 ACME	16 EL 12 ACME	16 IR 12 ACME	16 IL 12 ACME	1.1	1.2
10	16	3/8	16 ER 10 ACME	16 EL 10 ACME	16 IR 10 ACME	16 IL 10 ACME	1.3	1.3
8	16	3/8	16 ER 8 ACME	16 EL 8 ACME	16 IR 8 ACME	16 IL 8 ACME	1.5	1.5
6	16	3/8	(1) 16 ER 6 ACME	(1) 16 EL 6 ACME	(1) 16 IR 6 ACME	(1) 16 IL 6 ACME	1.7	1.8
6	22	1/2	22 ER 6 ACME	22 EL 6 ACME	22 IR 6 ACME	22 IL 6 ACME	1.8	2.1
5	22	1/2	22 ER 5 ACME	22 EL 5 ACME	22 IR 5 ACME	22 IL 5 ACME	2.0	2.3
4	22	1/2	(1) 22 ER 4 ACME	(1) 22 EL 4 ACME	(1) 22 IR 4 ACME	(1) 22 IL 4 ACME	2.1	2.2
4	22U	1/2U	22U ER/L 4 ACME		22U IR/L 4 ACME		2.3	11.0
4	27	5/8	27 ER 4 ACME	27 EL 4 ACME	27 IR 4 ACME	27 IL 4 ACME	2.3	2.7
3	27U	5/8U	27U ER/L 3 ACME		27U IR/L 3 ACME		2.8	13.7
2	33U	3/4U	33U ER/L 2 ACME		33U IR/L 2 ACME		4.3	16.9

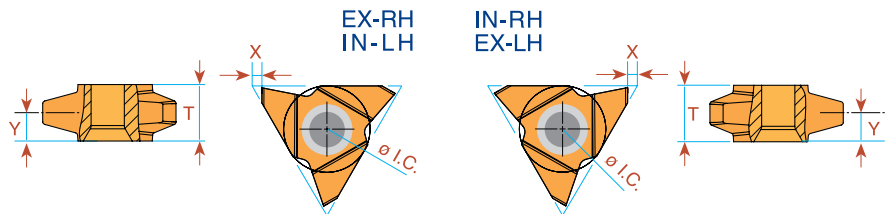
Order example: 16 ER 16 ACME MXC

\* Available only in BXC and BMA grades

\*\* One cutting edge

(1) Special holder is required or standard holder can be amended by customer.

## Acme Vertical



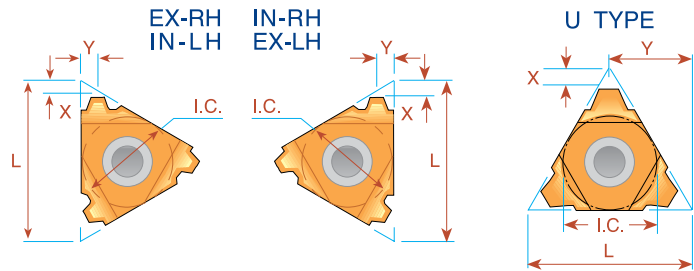
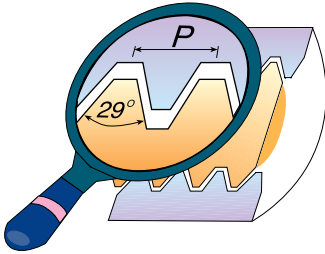
Pitch TPI	L	I.C. in	EXTERNAL		X	Y	T	INTERNAL		X	Y	T
			Right Hand	Left Hand				Right Hand	Left Hand			
* 3.5	27	5/8	27V ER 3.5 ACME	_____	1.8	5.0	10.4	27V IR 3.5 ACME	_____	1.8	4.0	10.4
** 3	27	5/8	27V ER 3 ACME	_____	1.8	5.0	10.4	27V IR 3 ACME	_____	1.8	4.6	10.4
*** 2	27	5/8	27V ER 2 ACME	27V EL 2 ACME	1.8	5.0	10.4	27V IR 2 ACME	27V IL 2 ACME	1.8	5.0	10.4

Order example: 27V ER 2 ACME BMA

\* Minimum bore: Ø55 mm \*\* Minimum bore: Ø55 mm \*\*\* Minimum bore: Ø76 mm

For Carbide Grade and Cutting Speed see page 60-61

## Stub Acme



Pitch TPI	L	I.C. in	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
			Ordering Code Right Hand	Ordering Code Left Hand	Ordering Code Right Hand	Ordering Code Left Hand		
16	8	3/16	<i>MINIATURE</i> →		<b>**08 IR 16 STACME</b>	<b>**08 IL 16 STACME</b>	0.6	0.6
14	8U	3/16U	<i>"U" MINIATURE</i> →		<b>*08U IR/L 14 STACME</b>		0.8	4.0
12	8U	3/16U			<b>*08U IR/L 12 STACME</b>		0.9	4.0
10	8U	3/16U			<b>*08U IR/L 10 STACME</b>		1.0	4.0
16	11	1/4	<b>11 ER 16 STACME</b>	<b>11 EL 16 STACME</b>			1.0	1.0
16	16	3/8	<b>16 ER 16 STACME</b>	<b>16 EL 16 STACME</b>	<b>16 IR 16 STACME</b>	<b>16 IL 16 STACME</b>	1.0	1.0
14	16	3/8	<b>16 ER 14 STACME</b>	<b>16 EL 14 STACME</b>	<b>16 IR 14 STACME</b>	<b>16 IL 14 STACME</b>	1.1	1.1
12	16	3/8	<b>16 ER 12 STACME</b>	<b>16 EL 12 STACME</b>	<b>16 IR 12 STACME</b>	<b>16 IL 12 STACME</b>	1.2	1.2
10	16	3/8	<b>16 ER 10 STACME</b>	<b>16 EL 10 STACME</b>	<b>16 IR 10 STACME</b>	<b>16 IL 10 STACME</b>	1.3	1.3
8	16	3/8	<b>16 ER 8 STACME</b>	<b>16 EL 8 STACME</b>	<b>16 IR 8 STACME</b>	<b>16 IL 8 STACME</b>	1.5	1.5
6	16	3/8	<b>16 ER 6 STACME</b>	<b>16 EL 6 STACME</b>	<b>16 IR 6 STACME</b>	<b>16 IL 6 STACME</b>	1.8	1.8
5	22	1/2	<b>22 ER 5 STACME</b>	<b>22 EL 5 STACME</b>	<b>22 IR 5 STACME</b>	<b>22 IL 5 STACME</b>	2.0	2.3
4	22	1/2	<b>22 ER 4 STACME</b>	<b>22 EL 4 STACME</b>	<b>22 IR 4 STACME</b>	<b>22 IL 4 STACME</b>	2.3	2.4
4	22U	1/2U	<b>22U ER/L 4 STACME</b>		<b>22U IR/L 4 STACME</b>		2.5	11.0
3	22U	1/2U	<b>22U ER/L 3 STACME</b>		<b>22U IR/L 3 STACME</b>		3.3	11.0
4	27	5/8	<b>27 ER 4 STACME</b>	<b>27 EL 4 STACME</b>	<b>27 IR 4 STACME</b>	<b>27 IL 4 STACME</b>	2.3	2.4
3	27	5/8	<b>27 ER 3 STACME</b>	<b>27 EL 3 STACME</b>	<b>27 IR 3 STACME</b>	<b>27 IL 3 STACME</b>	2.8	2.9
2	33U	3/4U	<b>33U ER/L 2 STACME</b>		<b>33U IR/L 2 STACME</b>		5.0	16.9

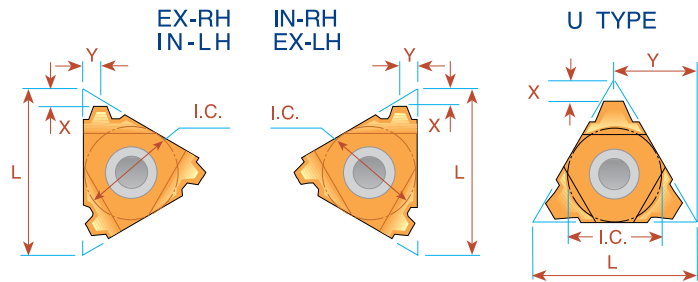
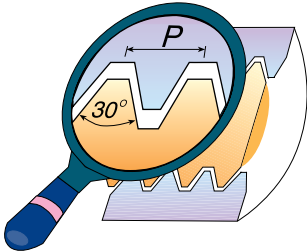
Order example: 22 IR 5 STACME MXC

\* Available only in BXC and BMA grades

\*\* One cutting edge

For Carbide Grade and Cutting Speed see page 60-61

## Trapez - DIN 103



Pitch mm	L	I.C. in	EXTERNAL Ordering Code		INTERNAL Ordering Code		X	Y
			Right Hand	Left Hand	Right Hand	Left Hand		
1.5	8	3/16	MINIATURE		**08 IR 1.5 TR	**08 IL 1.5 TR	0.6	0.6
2.0	8U	3/16U	"U" MINIATURE		*08U IR/L 2 TR		0.9	4.0
1.5	16	3/8	16 ER 1.5 TR	16 EL 1.5 TR			1.0	1.1
2.0	16	3/8	16 ER 2 TR	16 EL 2 TR	16 IR 2 TR	16 IL 2 TR	1.0	1.3
3.0	16	3/8	16 ER 3 TR	16 EL 3 TR	16 IR 3 TR	16 IL 3 TR	1.3	1.5
4.0	16	3/8	(1) 16 ER 4 TR	(1) 16 EL 4 TR	(2) 16 IR 4 TR	(2) 16 IL 4 TR	1.3	1.5
4.0	22	1/2	22 ER 4 TR	22 EL 4 TR	22 IR 4 TR	22 IL 4 TR	1.8	1.9
5.0	22	1/2	22 ER 5 TR	22 EL 5 TR	22 IR 5 TR	22 IL 5 TR	2.0	2.4
6.0	22	1/2	(1) 22 ER 6 TR	(1) 22 EL 6 TR	(1) 22 IR 6 TR	(1) 22 IL 6 TR	2.0	2.4
6.0	22U	1/2U	22U ER/L 6 TR		22U IR/L 6 TR		2.0	11.0
7.0	22U	1/2U	22U ER/L 7 TR		22U IR/L 7 TR		2.3	11.0
(3) 7.0	22U	1/2U			(3) 22U IR/L 7 TR40		2.6	11.0
8.0	22U	1/2U	22U ER/L 8 TR		22U IR/L 8 TR		2.5	11.0
6.0	27	5/8	27 ER 6 TR	27 EL 6 TR	27 IR 6 TR	27 IL 6 TR	2.3	2.7
7.0	27	5/8	27 ER 7 TR	27 EL 7 TR	27 IR 7 TR	27 IL 7 TR	2.2	2.6
8.0	27U	5/8U	27U ER/L 8 TR		27U IR/L 8 TR		2.5	13.7
9.0	27U	5/8U	27U ER/L 9 TR		27U IR/L 9 TR		3.0	13.7
10.0	27U	5/8U	**27U ER/L 10 TR		**27U IR/L 10 TR		3.2	13.7
12.0	33U	3/4U	33U ER/L 12 TR		33U IR/L 12 TR		3.9	16.9

Order example: 22 IR 5 TR MXC

\* Available only in BXC and BMA grades

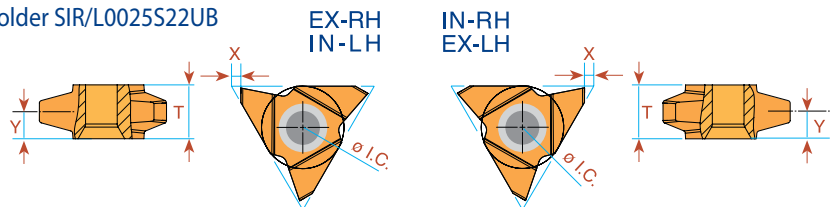
\*\* One cutting edge

(1) Special holder is required or standard holder can be amended by customer.

(2) Special holder is required or standard holder can be amended by customer or to used with holders: SIR/L0012L16B; SIR/L0014L16B

(3) Only for Tr 40 x 7.0. To be used only with holder SIR/L0025S22UB

## Trapez - DIN 103 Vertical



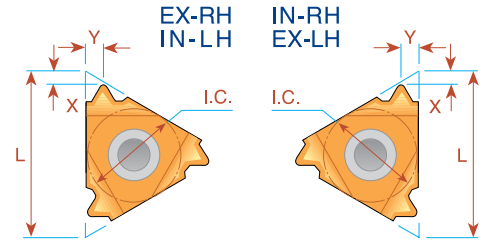
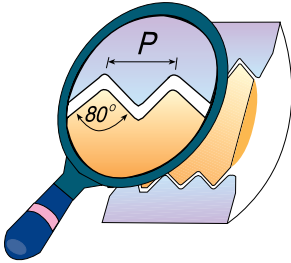
Pitch mm	L	I.C. in	EXTERNAL Ordering Code		INTERNAL Ordering Code		X	Y	T
			Right Hand	Left Hand	Right Hand	Left Hand			
* 9	27	5/8	27V ER 9 TR	27V EL 9 TR	27V IR 9 TR	27V IL 9 TR	1.8	5.2	10.4
** 10	27	5/8	27V ER 10 TR	27V EL 10 TR	27V IR 10 TR	27V IL 10 TR	1.8	5.2	10.4
*** 12	27	5/8	27V ER 12 TR	27V EL 12 TR	27V IR 12 TR	27V IL 12 TR	1.8	5.2	10.4

Order example: 27V ER 10 TR BMA

\* Minimum bore: Ø65 mm \*\* Minimum bore: Ø65 mm \*\*\* Minimum bore: Ø73 mm

For Carbide Grade and Cutting Speed see page 60-61

## PG - DIN 40430

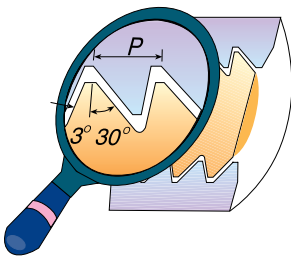


Pitch TPI	L	I.C. in	EXTERNAL		INTERNAL		X	Y
			Right Hand	Standard	Right Hand	Standard		
20	8	3/16	MINIATURE →		*08 IR 20 PG	(PG 7)	0.6	0.7
18	11	1/4			11 IR 18 PG	(PG 9)	0.8	0.9
20	16	3/8	16 ER 20 PG	(PG 7)	16 IR 18 PG	(PG 11, 13.5, 16)	0.7	0.8
18	16	3/8	16 ER 18 PG	(PG 9, 11, 13.5, 16)	16 IR 18 PG	(PG 11, 13.5, 16)	0.8	0.9
16	16	3/8	16 ER 16 PG	(PG 21, 29, 36, 42, 48)	16 IR 16 PG	(PG 21, 29, 36, 42, 48)	0.8	1.0

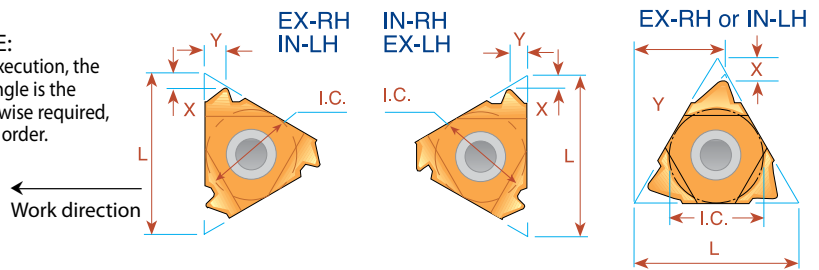
Order example: 16 ER 16 PG BMA

\* Available only in BXC and BMA grades

## Sagengewinde- DIN 513



**IMPORTANT NOTE:**  
In Carmex standard execution, the flank with the large angle is the leading edge. If otherwise required, please specify in your order.



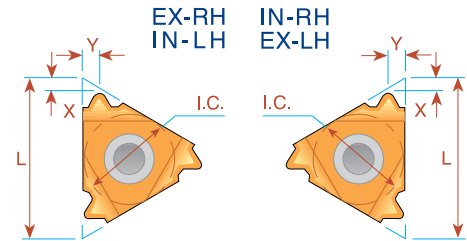
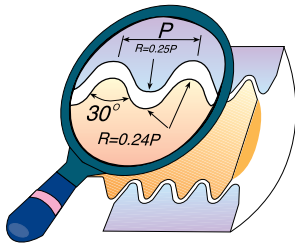
Pitch TPI	L	I.C. in	EXTERNAL		X	Y	INTERNAL		X	Y
			Right Hand	Left Hand			Right Hand	Left Hand		
2.0	16	3/8	16 ER 2 SAGE	16 EL 2 SAGE	1.1	1.6	16 IR 2 SAGE	16 IL 2 SAGE	1.2	1.7
3.0	22	1/2	22 ER 3 SAGE	22 EL 3 SAGE	1.5	2.4	22 IR 3 SAGE	22 IL 3 SAGE	1.9	2.9
4.0	22	1/2	22 ER 4 SAGE	22 EL 4 SAGE	1.9	3.1	22 IR 4 SAGE	22 IL 4 SAGE	2.3	3.5
*5.0	22U	1/2U	22U ER 5 SAGE	22U EL 5 SAGE	1.2	11.6	22U IR 5 SAGE	22U IL 5 SAGE	1.9	11.7
*6.0	22U	1/2U	22U ER 6 SAGE	22U EL 6 SAGE	1.2	11.7	22U IR 6 SAGE	22U IL 6 SAGE	2.1	11.9

Order example: 22 IR 4 SAGE BMA

\* Requires a special anvil AER 22U-1.5 SAGE 5/6, AEL 22U-1.5 SAGE 5/6, AIR 22U-1.5 SAGE 5/6, AIL 22U-1.5 SAGE 5/6.

For Carbide Grade and Cutting Speed see page 60-61

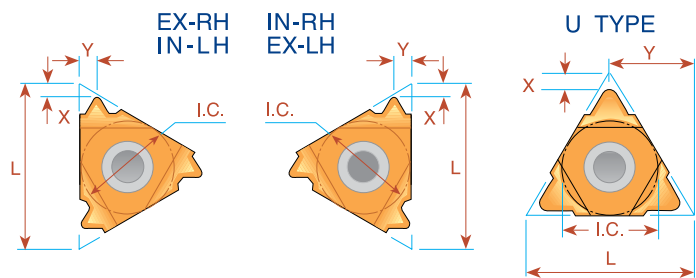
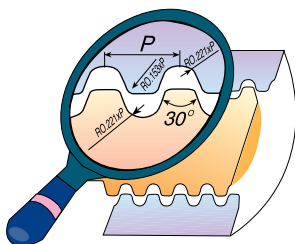
## Round - DIN 405



Pitch TPI	L	I.C. in	<b>EXTERNAL</b>		X	Y	<b>INTERNAL</b>		X	Y
			Right Hand	Left Hand			Right Hand	Left Hand		
10	16	3/8	16 ER 10 RD	16 EL 10 RD	1.1	1.2	16 IR 10 RD	16 IL 10 RD	1.1	1.2
8	16	3/8	16 ER 8 RD	16 EL 8 RD	1.4	1.3	16 IR 8 RD	16 IL 8 RD	1.4	1.4
6	16	3/8	16 ER 6 RD	16 EL 6 RD	1.5	1.7	16 IR 6 RD	16 IL 6 RD	1.4	1.5
6	22	1/2	22 ER 6 RD	22 EL 6 RD	1.5	1.7	22 IR 6 RD	22 IL 6 RD	1.5	1.7
4	22	1/2	22 ER 4 RD	22 EL 4 RD	2.2	2.3	22 IR 4 RD	22 IL 4 RD	2.2	2.3
4	27	5/8	27 ER 4 RD	27 EL 4 RD	2.2	2.3	27 IR 4 RD	27 IL 4 RD	2.2	2.3

Order example: 27 IL 4 RD BMA

## Round - DIN 20400



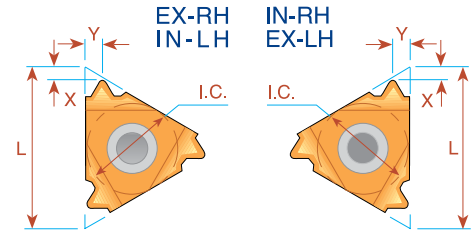
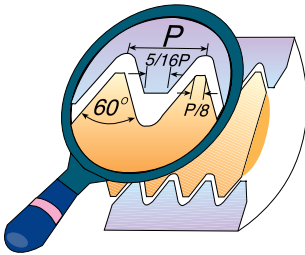
Pitch mm	L	I.C. in	<b>EXTERNAL</b>	<b>INTERNAL</b>	X	Y
			Ordering Code Right Hand	Ordering Code Right Hand		
4.0	22	1/2	22 ER 4.0 RD 20400	22 IR 4.0 RD 20400	1.4	1.4
5.0	22	1/2	22 ER 5.0 RD 20400	22 IR 5.0 RD 20400	1.7	1.8
6.0	22	1/2	22 ER 6.0 RD 20400	22 IR 6.0 RD 20400	1.7	2.0
8.0	27U	5/8U	*27U - 8.0 RD 20400		3.0	13.7
10.0	27U	5/8U	*27U - 10.0 RD 20400		3.4	13.7

Order example: 22 ER 4.0 RD 20400 MXC

\* Same insert for Internal and External Right Hand Thread

For Carbide Grade and Cutting Speed see page 60-61

## UNJ UNJC, UNJF, UNJEF, UNJS



Pitch TPI	L	I.C. in	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
			Ordering Code		Ordering Code			
			Right Hand	Left Hand	Right Hand	Left Hand		
48	11	1/4	11 ER 48 UNJ	11 EL 48 UNJ	11 IR 48 UNJ	11 IL 48 UNJ	0.6	0.6
44	11	1/4	11 ER 44 UNJ	11 EL 44 UNJ	11 IR 44 UNJ	11 IL 44 UNJ	0.6	0.6
40	11	1/4	11 ER 40 UNJ	11 EL 40 UNJ	11 IR 40 UNJ	11 IL 40 UNJ	0.6	0.6
36	11	1/4	11 ER 36 UNJ	11 EL 36 UNJ	11 IR 36 UNJ	11 IL 36 UNJ	0.6	0.6
32	11	1/4	11 ER 32 UNJ	11 EL 32 UNJ	11 IR 32 UNJ	11 IL 32 UNJ	0.6	0.6
28	11	1/4	11 ER 28 UNJ	11 EL 28 UNJ	11 IR 28 UNJ	11 IL 28 UNJ	0.6	0.6
24	11	1/4	11 ER 24 UNJ	11 EL 24 UNJ	11 IR 24 UNJ	11 IL 24 UNJ	0.7	0.8
20	11	1/4	11 ER 20 UNJ	11 EL 20 UNJ	11 IR 20 UNJ	11 IL 20 UNJ	0.8	0.9
18	11	1/4	11 ER 18 UNJ	11 EL 18 UNJ	11 IR 18 UNJ	11 IL 18 UNJ	0.8	1.0
16	11	1/4	11 ER 16 UNJ	11 EL 16 UNJ	11 IR 16 UNJ	11 IL 16 UNJ	0.8	1.0
14	11	1/4	11 ER 14 UNJ	11 EL 14 UNJ	11 IR 14 UNJ	11 IL 14 UNJ	0.9	1.0
48	16	3/8	16 ER 48 UNJ	16 EL 48 UNJ	16 IR 48 UNJ	16 IL 48 UNJ	0.6	0.6
44	16	3/8	16 ER 44 UNJ	16 EL 44 UNJ	16 IR 44 UNJ	16 IL 44 UNJ	0.6	0.6
40	16	3/8	16 ER 40 UNJ	16 EL 40 UNJ	16 IR 40 UNJ	16 IL 40 UNJ	0.6	0.6
36	16	3/8	16 ER 36 UNJ	16 EL 36 UNJ	16 IR 36 UNJ	16 IL 36 UNJ	0.6	0.6
32	16	3/8	16 ER 32 UNJ	16 EL 32 UNJ	16 IR 32 UNJ	16 IL 32 UNJ	0.6	0.6
28	16	3/8	16 ER 28 UNJ	16 EL 28 UNJ	16 IR 28 UNJ	16 IL 28 UNJ	0.6	0.6
24	16	3/8	16 ER 24 UNJ	16 EL 24 UNJ	16 IR 24 UNJ	16 IL 24 UNJ	0.7	0.8
20	16	3/8	16 ER 20 UNJ	16 EL 20 UNJ	16 IR 20 UNJ	16 IL 20 UNJ	0.8	0.9
18	16	3/8	16 ER 18 UNJ	16 EL 18 UNJ	16 IR 18 UNJ	16 IL 18 UNJ	0.8	1.0
16	16	3/8	16 ER 16 UNJ	16 EL 16 UNJ	16 IR 16 UNJ	16 IL 16 UNJ	0.8	1.0
14	16	3/8	16 ER 14 UNJ	16 EL 14 UNJ	16 IR 14 UNJ	16 IL 14 UNJ	1.0	1.2
13	16	3/8	16 ER 13 UNJ	16 EL 13 UNJ	16 IR 13 UNJ	16 IL 13 UNJ	1.0	1.3
12	16	3/8	16 ER 12 UNJ	16 EL 12 UNJ	16 IR 12 UNJ	16 IL 12 UNJ	1.1	1.4
11	16	3/8	16 ER 11 UNJ	16 EL 11 UNJ	16 IR 11 UNJ	16 IL 11 UNJ	1.1	1.5
10	16	3/8	16 ER 10 UNJ	16 EL 10 UNJ	16 IR 10 UNJ	16 IL 10 UNJ	1.1	1.5
9	16	3/8	16 ER 9 UNJ	16 EL 9 UNJ	16 IR 9 UNJ	16 IL 9 UNJ	1.2	1.6
8	16	3/8	16 ER 8 UNJ	16 EL 8 UNJ	16 IR 8 UNJ	16 IL 8 UNJ	1.2	1.6

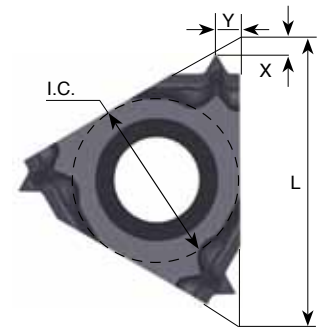
Order example: 16 IR 16 UNJ MXC

For Carbide Grade and Cutting Speed see page 60-61

## UNJ UNJC, UNJF, UNJEF, UNJS

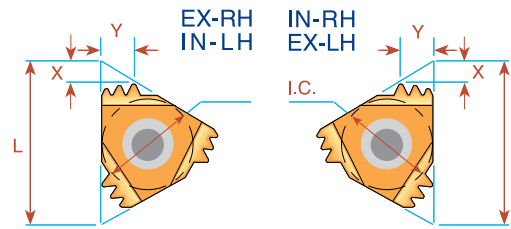
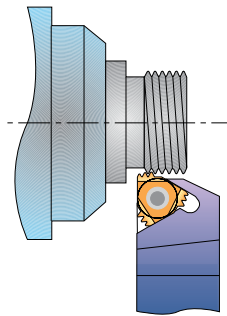
### Type B

#### Ground Profile with Sintered Chip-breaker



Pitch TPI	L	I.C. in	<b>INTERNAL</b> Ordering Code Right Hand	X	Y
32	11	1/4	<b>11 IR B 32 UNJ</b>	0.6	0.6
28	11	1/4	<b>11 IR B 28 UNJ</b>	0.6	0.6
24	11	1/4	<b>11 IR B 24 UNJ</b>	0.6	0.6
20	11	1/4	<b>11 IR B 20 UNJ</b>	0.8	0.9
18	11	1/4	<b>11 IR B 18 UNJ</b>	0.8	0.9
16	11	1/4	<b>11 IR B 16 UNJ</b>	0.8	0.9
14	11	1/4	<b>11 IR B 14 UNJ</b>	0.8	0.9

## Multitooth



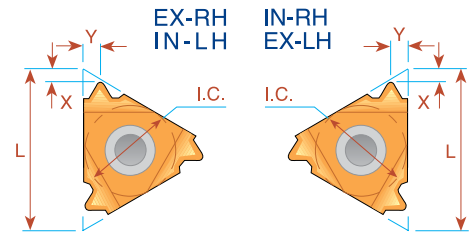
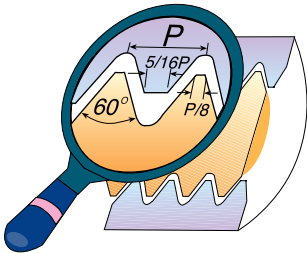
Pitch TPI	L	I.C. in	Number of Teeth	<b>EXTERNAL</b> Ordering Code	Anvil	<b>INTERNAL</b> Ordering Code	Anvil	X	Y
16	16	3/8	2	<b>16 ER 16 UNJ 2M</b>	AE16M	-	-	1.6	2.4
16	22	1/2	3	<b>22 ER 16 UNJ 2M</b>	AE22M	-	-	2.3	3.8

Order example: 22 ER 16 UNJ 2M BMA  
 For recommended number of passes see page 62

For Carbide Grade and Cutting Speed see page 60-61



## MJ - ISO 5855



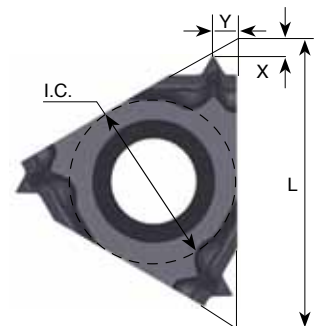
Pitch mm	L	I.C. in	<b>EXTERNAL</b>	<b>INTERNAL</b>	X	Y
			Ordering Code Right Hand	Ordering Code Right Hand		
1.0	11	1/4		<b>11 IR 1.0 MJ</b>	0.7	0.8
1.25	11	1/4		<b>11 IR 1.25 MJ</b>	0.8	0.9
1.5	11	1/4		<b>11 IR 1.5 MJ</b>	0.8	1.0
2.0	11	1/4		<b>11 IR 2.0 MJ</b>	0.9	1.0
1.0	16	3/8	<b>16 ER 1.0 MJ</b>	<b>16 IR 1.0 MJ</b>	0.7	0.8
1.25	16	3/8	<b>16 ER 1.25 MJ</b>	<b>16 IR 1.25 MJ</b>	0.8	0.9
1.5	16	3/8	<b>16 ER 1.5 MJ</b>	<b>16 IR 1.5 MJ</b>	0.8	1.0
2.0	16	3/8	<b>16 ER 2.0 MJ</b>	<b>16 IR 2.0 MJ</b>	1.0	1.3

Order example: 16 ER 1.5 MJ BMA

## Type B

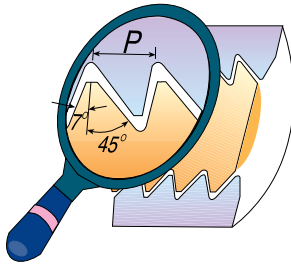
### Ground Profile with Sintered Chip-breaker

Pitch mm	L	I.C. in	<b>INTERNAL</b>	X	Y
			Ordering Code Right Hand		
1.0	11	1/4	<b>11 IR B 1.0 MJ</b>	0.6	0.6
1.5			<b>11 IR B 1.5 MJ</b>	0.8	0.9

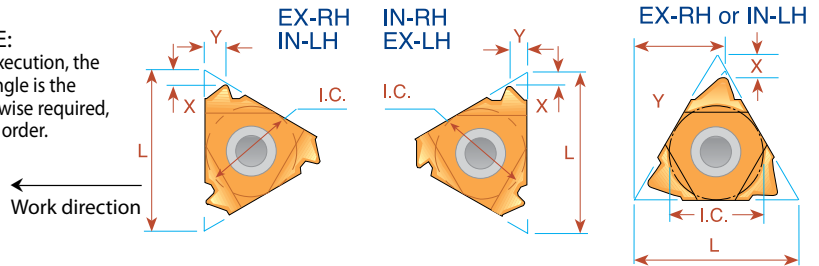


For Carbide Grade and Cutting Speed see page 60-61

## American Buttress



**IMPORTANT NOTE:**  
In Carmex standard execution, the flank with the large angle is the leading edge. If otherwise required, please specify in your order.

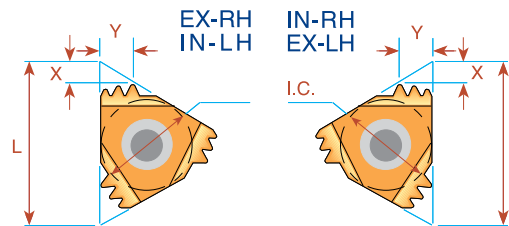
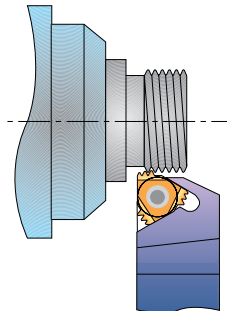


Pitch TPI	L	I.C. in	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
			Ordering Code Right Hand	Ordering Code Left Hand	Ordering Code Right Hand	Ordering Code Left Hand		
20	11	1/4	<b>11 ER 20 ABUT</b>	<b>11 EL 20 ABUT</b>	<b>11 IR 20 ABUT</b>	<b>11 IL 20 ABUT</b>	1.0	1.3
16	11	1/4	<b>11 ER 16 ABUT</b>	<b>11 EL 16 ABUT</b>	<b>11 IR 16 ABUT</b>	<b>11 IL 16 ABUT</b>	1.0	1.5
20	16	3/8	<b>16 ER 20 ABUT</b>	<b>16 EL 20 ABUT</b>	<b>16 IR 20 ABUT</b>	<b>16 IL 20 ABUT</b>	1.0	1.3
16	16	3/8	<b>16 ER 16 ABUT</b>	<b>16 EL 16 ABUT</b>	<b>16 IR 16 ABUT</b>	<b>16 IL 16 ABUT</b>	1.0	1.5
12	16	3/8	<b>16 ER 12 ABUT</b>	<b>16 EL 12 ABUT</b>	<b>16 IR 12 ABUT</b>	<b>16 IL 12 ABUT</b>	1.4	2.0
10	16	3/8	<b>16 ER 10 ABUT</b>	<b>16 EL 10 ABUT</b>	<b>16 IR 10 ABUT</b>	<b>16 IL 10 ABUT</b>	1.5	2.3
8	22	1/2	<b>22 ER 8 ABUT</b>	<b>22 EL 8 ABUT</b>	<b>22 IR 8 ABUT</b>	<b>22 IL 8 ABUT</b>	2.1	3.3
6	22	1/2	<b>22 ER 6 ABUT</b>	<b>22 EL 6 ABUT</b>	<b>22 IR 6 ABUT</b>	<b>22 IL 6 ABUT</b>	2.1	3.4
4	22U	1/2U	<b>22U ER 4 ABUT</b>	<b>22U EL 4 ABUT</b>	<b>22U IR 4 ABUT</b>	<b>22U IL 4 ABUT</b>	2.3	9.5
3	27U	5/8U	<b>27U ER 3 ABUT</b>	<b>27U EL 3 ABUT</b>	<b>27U IR 3 ABUT</b>	<b>27U IL 3 ABUT</b>	3.1	11.7

Order example: 16 IL 12 ABUT MXC

Most applications requires anvil change in toolholder see page 65

## Multitooth



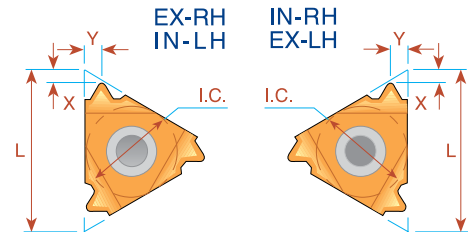
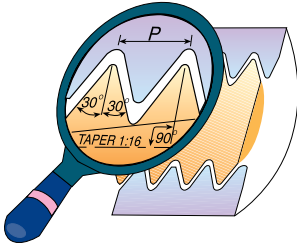
Pitch TPI	L	I.C. in	Number of Teeth	<b>EXTERNAL</b> Ordering Code	Anvil	<b>INTERNAL</b> Ordering Code	Anvil	X	Y
12	22	1/2	2	<b>22 ER 12 ABUT 2M</b>	AE22M	<b>22 IR 16 ABUT 2M</b>	AI22M	2.5	4.0

Order example: 22 IR 16 ABUT 2M BMA

For recommended number of passes see page 62

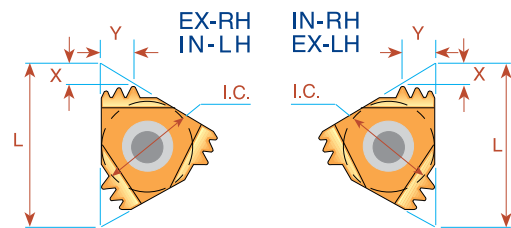
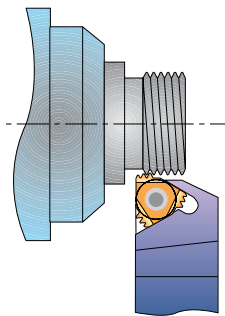
For Carbide Grade and Cutting Speed see page 60-61

## OIL Threads API Round



Pitch TPI	L	I.C. in	Taper IPF	<b>EXTERNAL</b> Ordering Code Right Hand	<b>INTERNAL</b> Ordering Code Right Hand	X	Y
10	16	3/8	0.75	<b>16 ER 10 API RD</b>	<b>16 IR 10 API RD</b>	1.5	1.4
8	16	3/8	0.75	<b>16 ER 8 API RD</b>	<b>16 IR 8 API RD</b>	1.3	1.6

## Multitooth

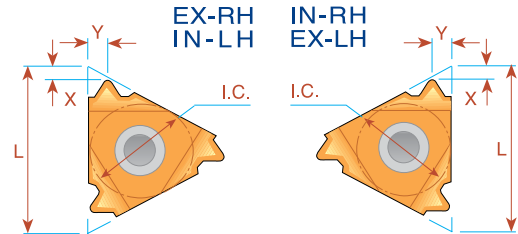
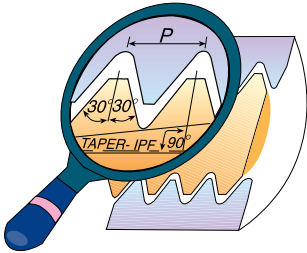


Pitch TPI	L	I.C. in	Number of Teeth	<b>EXTERNAL</b> Ordering Code	Anvil	<b>INTERNAL</b> Ordering Code	Anvil	X	Y
10	22	1/2	2	<b>22 ER 10API RD 2M</b>	AE22M	<b>22 IR 10API RD 2M</b>	AI22M	2.4	3.7
10	27	5/8	3	<b>27 ER 10API RD 3M</b>	AE27M	<b>27 IR 10API RD 3M</b>	AI27M	3.8	6.2
8	27	5/8	2	<b>27 ER 8API RD 2M</b>	AE27M	<b>27 IR 8API RD 2M</b>	AI27M	3.0	4.5

Order example: 27 IR 10 API RD 3M MXC  
For recommended number of passes see page 62

For Carbide Grade and Cutting Speed see page 60-61

## OIL Threads



### V-0.040

Pitch TPI	L	I.C. in	Taper IPF	<b>EXTERNAL</b> Ordering Code Right Hand	<b>INTERNAL</b> Ordering Code Right Hand	X	Y	Connection No. or Size
5	22	1/2	3	<b>22 ER 5 API 403</b>	<b>22 IR 5 API 403</b>	1.8	2.5	23/8-4 1/2 REG

### V-0.038R

Pitch TPI	L	I.C. in	Taper IPF	<b>EXTERNAL</b> Ordering Code Right Hand	<b>INTERNAL</b> Ordering Code Right Hand	X	Y	Connection No. or Size
4	27	5/8	2	<b>27 ER 4 API 382</b>	<b>27 IR 4 API 382</b>	2.1	2.8	NC23-NC50
4	27	5/8	3	<b>27 ER 4 API 383</b>	<b>27 IR 4 API 383</b>	2.1	2.8	NC56-NC77

### V-0.050

Pitch TPI	L	I.C. in	Taper IPF	<b>EXTERNAL</b> Ordering Code Right Hand	<b>INTERNAL</b> Ordering Code Right Hand	X	Y	Connection No. or Size
4	27	5/8	2	<b>27 ER 4 API 502</b>	<b>27 IR 4 API 502</b>	2.0	3.0	65/8 REG
4	27	5/8	3	<b>27 ER 4 API 503</b>	<b>27 IR 4 API 503</b>	2.0	3.0	5 1/2, 75/8, 85/8 REG

### V-0.055

**Macaroni Tubing (MT)**  
**American Macaroni Tubing (AMT)**  
**American Mining Macaroni Tubing (AMMT)**

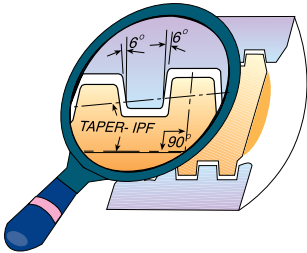
Pitch TPI	L	I.C. in	Taper IPF	<b>EXTERNAL</b> Ordering Code Right Hand	<b>INTERNAL</b> Ordering Code Right Hand	X	Y	Connection No. or Size
6	22	1/2	1.5	<b>22 ER 6 API 551.5</b>	-	2.0	1.7	NC10,NC12,NC13,NC16
6	16	3/8	1.5	-	<b>16 IR 6 API 551.5</b>	2.0	1.7	NC10,NC12,NC13 *
6	22	1/2	1.5	-	<b>22 IR 6 API 551.5</b>	2.0	1.7	NC16 **

\* For NC10,NC12 use holder SIR0016P16CB  
 For NC13 use holders SIR0020P16/SIR0020P16B/SIR0020S16CB

\*\* For NC16 use holder SIR0025R16

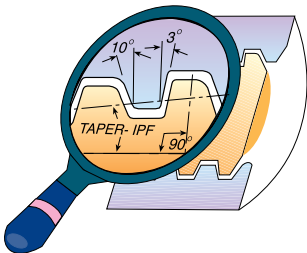
For Carbide Grade and Cutting Speed see page 60-61

## OIL Threads Extreme - Line Casing



Pitch TPI	L	I.C. in	Taper IPF	<b>EXTERNAL</b>	<b>INTERNAL</b>	X	Y	Connection No. or Size
				Ordering Code Right Hand	Ordering Code Right Hand			
6	22	1/2	1.50	<b>22 ER 6 EL 1.5</b>	<b>22 IR 6 EL 1.5</b>	1.9	1.9	5-7 5/8
5	22	1/2	1.25	<b>22 ER 5 EL 1.25</b>	<b>22 IR 5 EL 1.25</b>	2.4	2.3	8 5/8-10 3/4

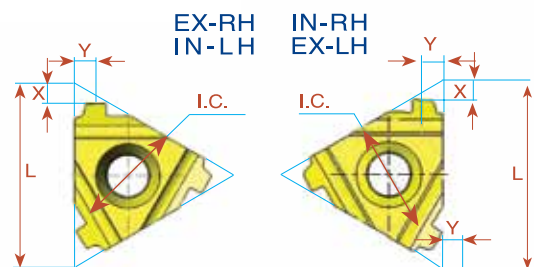
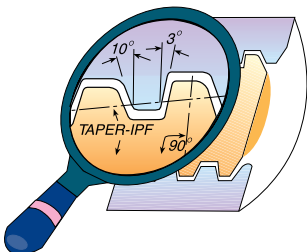
## Buttress Casing



Pitch TPI	L	I.C. in	Taper IPF	<b>EXTERNAL</b>	<b>INTERNAL</b>	X	Y	Connection No. or Size
				Ordering Code Right Hand	Ordering Code Right Hand			
5	22	1/2	0.75	<b>22 ER 5 BUT 0.75</b>	<b>22 IR 5 BUT 0.75</b>	2.2	2.4	4 1/2-13 3/8
5	22	1/2	1.00	<b>22 ER 5 BUT 1.0</b>	<b>22 IR 5 BUT 1.0</b>	2.3	2.4	16-20

Order example: 22 ER 5 BUT 0.75 MXC

## VAM



Pitch TPI	L	I.C. in	Taper IPF	<b>EXTERNAL</b>	X	Y	<b>INTERNAL</b>	X	Y	Connection No. or Size
				Ordering Code Right Hand			Ordering Code Right Hand			
8	16	3/8	0.75	<b>16 ER 8 VAM</b>	1.7	1.8	<b>16 IR 8 VAM</b>	1.7	1.8	2 3/8" - 2 7/8"
6	22	1/2	0.75	<b>22 ER 6 VAM</b>	2.4	2.4	<b>22 IR 6 VAM</b>	2.5	2.5	3 1/2" - 4 1/2"
5	22	1/2	0.75	<b>22 ER 5 VAM</b>	2.4	2.7	<b>22 IR 5 VAM</b>	2.4	2.5	5" - 13 3/8"

Order example: 16 ER 8 VAM BMA

For Carbide Grade and Cutting Speed see page 60-61

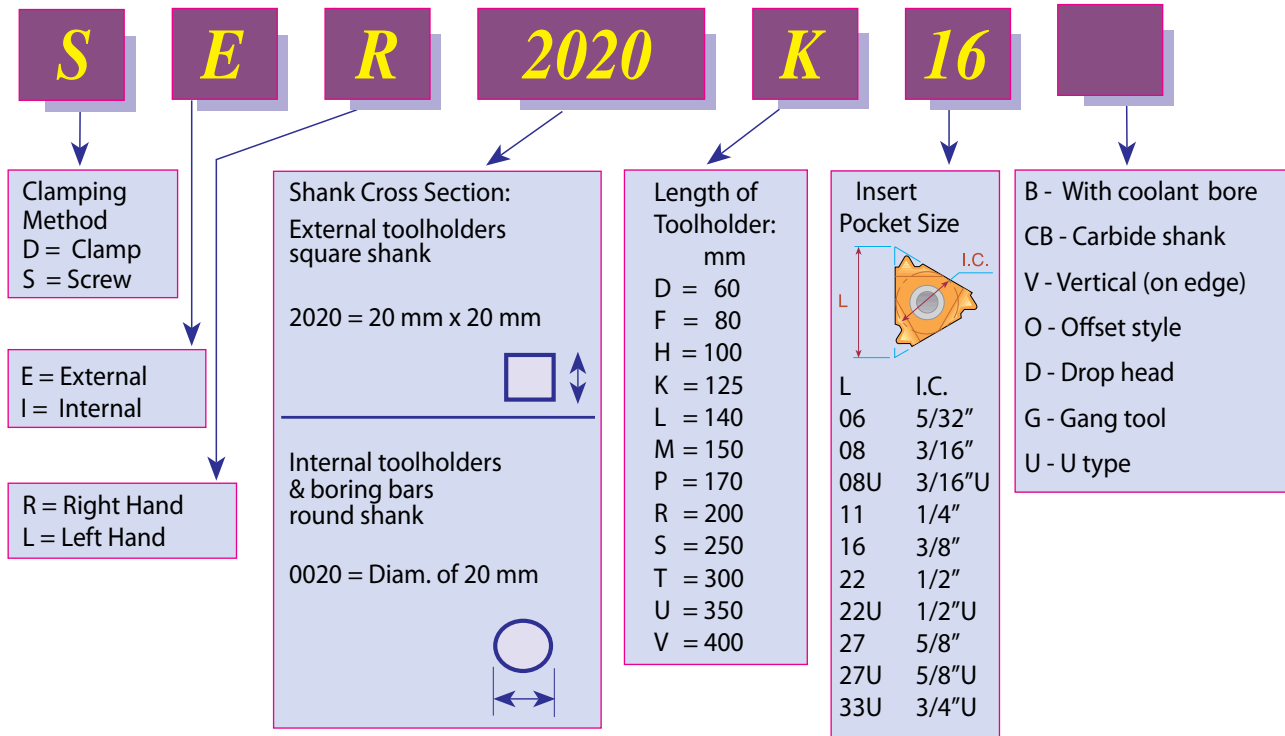
# Thread Turning Toolholders and Kits



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External Toolholders with Top Clamp	40	External Toolholders	45
Vertical Toolholders	40	Internal Toolholders	46
Slim Throat Toolholders	40	Special Thread Turning Application	47
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Drophead Toolholders	43		
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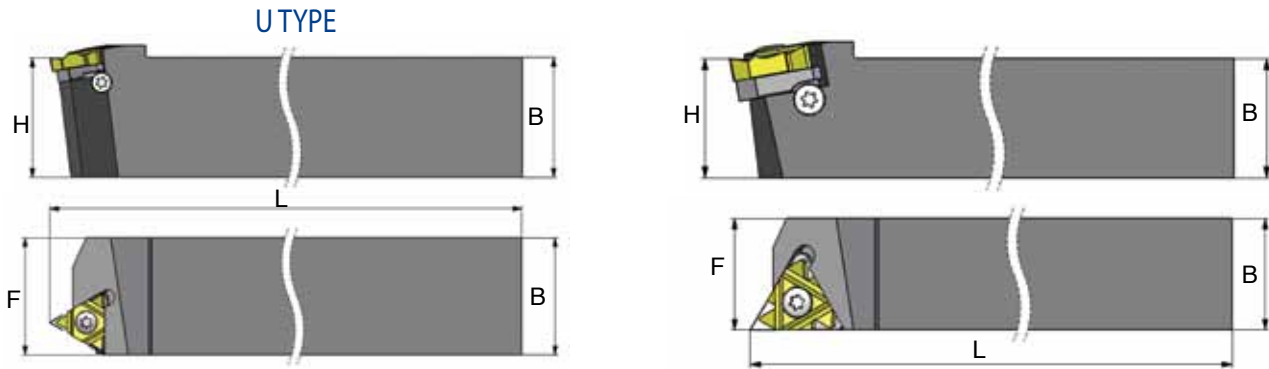
## Product Identification

### Threading Toolholders Ordering Codes





## External Toolholders



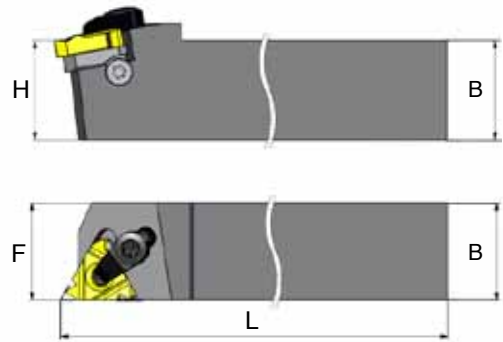
Ordering Code Right Hand	 L	B=H	L	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
*SER 8 8 H11	11	8	100	11	S11	-	K11	-	-
*SER 10 10 H11	11	10	100	11	S11	-	K11	-	-
SER 12 12 F16	16	12	80	16	S16	A16	K16	AE16	AI16
SER 16 16 H16	16	16	100	16	S16	A16	K16	AE16	AI16
SER 20 20 K16	16	20	125	20	S16	A16	K16	AE16	AI16
SER 25 25 M16	16	25	150	25	S16	A16	K16	AE16	AI16
SER 32 32 P16	16	32	170	32	S16	A16	K16	AE16	AI16
SER 25 25 M22	22	25	150	25	S22	A22	K22	AE22	AI22
SER 32 32 P22	22	32	170	32	S22	A22	K22	AE22	AI22
SER 40 40 R22	22	40	200	40	S22	A22	K22	AE22	AI22
SER 25 25 M22U	22U	25	150	28	S22	A22	K22	AE22U	AI22U
SER 32 32 P22U	22U	32	170	32	S22	A22	K22	AE22U	AI22U
SER 40 40 R22U	22U	40	200	40	S22	A22	K22	AE22U	AI22U
SER 25 25 M27	27	25	150	32	S27	A27	K27	AE27	AI27
SER 32 32 P27	27	32	170	32	S27	A27	K27	AE27	AI27
SER 40 40 R27	27	40	200	40	S27	A27	K27	AE27	AI27
SER 25 25 M27U	27U	25	150	32	S27	A27	K27	AE27U	AI27U
SER 32 32 P27U	27U	32	170	32	S27	A27	K27	AE27U	AI27U
SER 40 40 R27U	27U	40	200	40	S27	A27	K27	AE27U	AI27U
SER 25 25 M33U	33U	25	150	32	S33	-	K33	-	-
SER 32 32 P33U	33U	32	170	32	S33	-	K33	-	-

\*Toolholders with no anvil

For **LEFT HAND** toolholders specify **SEL** instead of **SER**

Toolholders are made with a **1.5° Helix Angle**. For other Helix Angles please consult helix angle chart (page 60) in the technical section of this catalogue.

## External toolholders with top clamp



Ordering Code Right Hand	 L	B=H	L	F	Insert Screw	Clamp	Anvil Screw	Torx Key	RH Anvil	LH Anvil
<b>DER 2020 K16</b>	16	20	125	20	S16	C16	A16S	K16	AE16	AI16
<b>DER 2525 M16</b>	16	25	150	25	S16	C16	A16S	K16	AE16	AI16
<b>*DER 2525 M22</b>	22	25	150	25	S22	C22	A22	K22	AE22	AI22

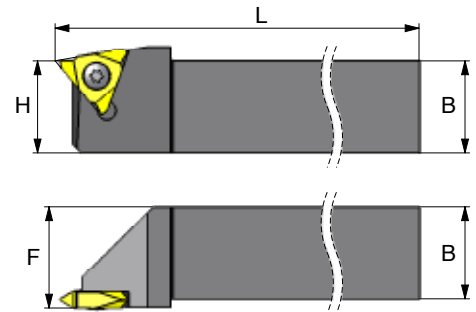
For **LEFT HAND** toolholders specify **DEL** instead of **DER**


Toolholders are made with a **1.5° Helix Angle**. For other Helix Angles please consult helix angle chart in the technical section of this catalogue.

Two clamping methods can be used: screw or top clamp.

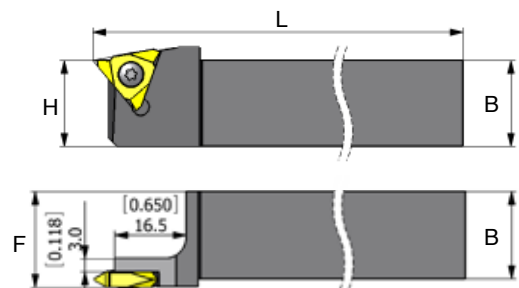
\*Use K21 torx key for C22 clamp


## Vertical toolholders



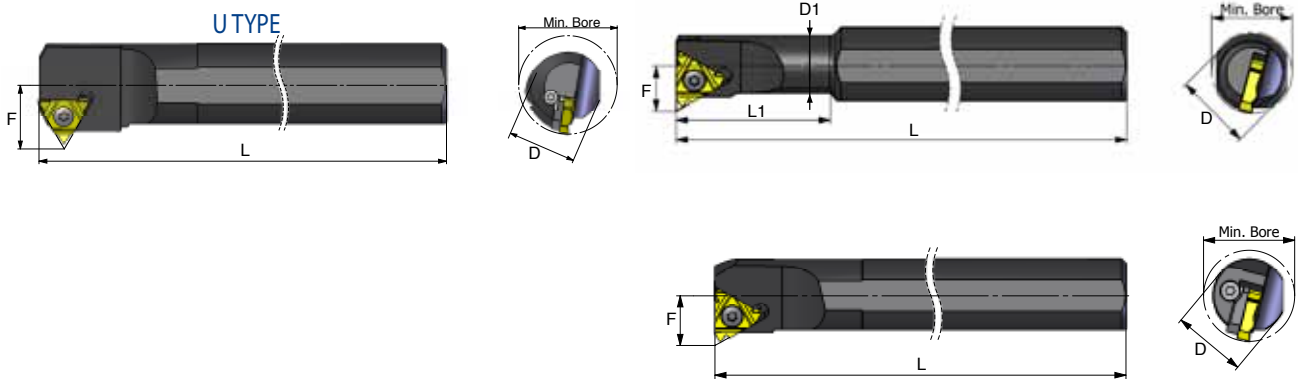
Ordering Code Right Hand		B=H	L	F	Insert Screw	Torx Key
<b>SER 2020 K16V</b>	16	20	125	22	S16S	K16
<b>SER 2525 M16V</b>	16	25	150	27	S16S	K16
<b>SER 2525 M22V</b>	22	25	150	27.5	S22S	K22
<b>SER 3232 P27V-T10</b>	27	32	170	36	S27	K27


## Slim Throat toolholders



Ordering Code Right Hand		B=H	L	F	Insert Screw	Torx Key
<b>SER 1616 H16VS</b>	16	16	100	18	S16S	K16
<b>SER 2020 K16VS</b>	16	20	125	22	S16S	K16
<b>SER 2525 M16VS</b>	16	25	150	27	S16S	K16

## Internal Toolholders



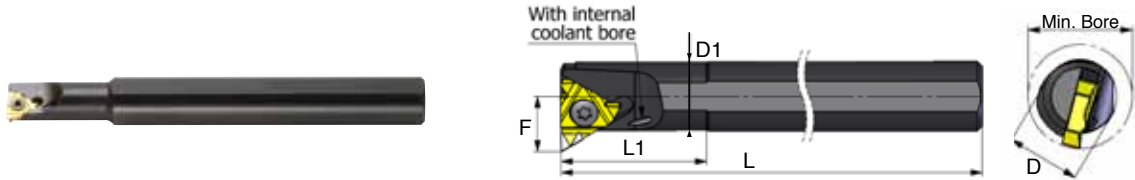
Ordering Code Right Hand	 L	D	D1	Min Bore Diam.	L	L1	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
*SIR 0005 H06	6	12	5.1	6.0	100	12	4.3	S06	-	K06	-	-
*SIR 0007 K08	8	16	6.6	7.8	125	18	5.3	S08	-	K08	-	-
*SIR 0008 K08U	8U	16	7.3	9.0	125	21	6.6	S08	-	K08	-	-
*SIR 0010 H11	11	10	10	12	100	-	7.4	S11	-	K11	-	-
*SIR 0010 K11	11	16	10	12	125	25	7.4	S11	-	K11	-	-
*SIR 0013 L11	11	16	13	15	140	32	8.9	S11	-	K11	-	-
*SIR 0013 M16	16	16	13	16	150	32	10.2	S16S	-	K16	-	-
*SIR 0016 P16	16	20	16	19	170	40	11.7	S16S	-	K16	-	-
SIR 0020 P16	16	20	20	24	170	-	13.7	S16	A16	K16	AI16	AE16
SIR 0025 R16	16	25	25	29	200	-	16.2	S16	A16	K16	AI16	AE16
SIR 0032 S16	16	32	32	36	250	-	19.7	S16	A16	K16	AI16	AE16
SIR 0040 T16	16	40	40	44	300	-	23.7	S16	A16	K16	AI16	AE16
*SIR 0020 P22	22	20	20	24	170	-	15.6	S22S	-	K22	-	-
SIR 0025 R22	22	25	25	29	200	-	18.1	S22	A22	K22	AI22	AE22
SIR 0032 S22	22	32	32	38	250	-	21.6	S22	A22	K22	AI22	AE22
SIR 0040 T22	22	40	40	46	300	-	25.6	S22	A22	K22	AI22	AE22
SIR 0032 S22U	22U	32	32	38	250	-	24.4	S22	A22	K22	AI22U	AE22U
SIR 0040 T22U	22U	40	40	46	300	-	28.1	S22	A22	K22	AI22U	AE22U
SIR 0032 S27	27	32	32	40	250	-	22.6	S27	A27	K27	AI27	AE27
SIR 0040 T27	27	40	40	48	300	-	26.6	S27	A27	K27	AI27	AE27
SIR 0050 U27	27	50	50	58	350	-	31.6	S27	A27	K27	AI27	AE27
SIR 0060 V27	27	60	60	68	400	-	36.6	S27	A27	K27	AI27	AE27
SIR 0032 S27U	27U	32	32	40	250	-	25.8	S27	A27	K27	AI27U	AE27U
SIR 0040 T27U	27U	40	40	48	300	-	29.4	S27	A27	K27	AI27U	AE27U
SIR 0050 U27U	27U	50	50	58	350	-	34.4	S27	A27	K27	AI27U	AE27U
SIR 0060 V27U	27U	60	60	68	400	-	39.7	S27	A27	K27	AI27U	AE27U
*SIR 0050 U33U	33U	50	50	62	350	-	37.5	S33	-	K33	-	-


\*Toolholders with no anvil

For **LEFT HAND** toolholders specify **SIL** instead of **SIR**

Toolholders are made with a **1.5° Helix Angle**. For other Helix Angles please consult helix angle chart (page 60) in the technical section of this catalogue.

## Internal toolholders with coolant bore



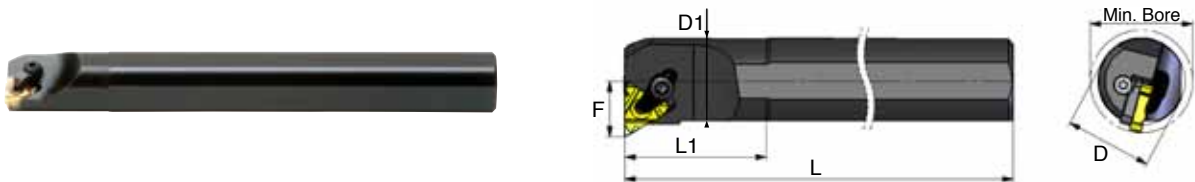
Ordering Code Right Hand	 L	D	D1	Min Bore Diam.	L	L1	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
*SIR 0010 K11B	11	16	10	12	125	25	7.4	S11	-	K11	-	-
*SIR 0013 M16B	16	16	13	16	150	32	10.2	S16S	-	K16	-	-
*SIR 0016 P16B	16	20	16	19	170	40	11.7	S16S	-	K16	-	-
SIR 0020 P16B	16	20	20	24	170	-	13.7	S16	A16	K16	AI16	AE16
SIR 0025 R16B	16	25	25	29	200	-	16.2	S16	A16	K16	AI16	AE16
SIR 0025 R22B	22	25	25	29	200	-	18.1	S22	A22	K22	AI22	AE22


\*Toolholders with no anvil

For **LEFT HAND** toolholders specify **SIL** instead of **SIR**

Toolholders are made with a **1.5° Helix Angle**. For other Helix Angles please consult helix angle chart (page 60) in the technical section of this catalogue.

## Internal toolholders with top clamp




Ordering Code Right Hand	 L	D	D1	Min Bore Diam.	L	L1	F	Insert Screw	Clamp	Anvil Screw	Torx Key	RH Anvil	LH Anvil
DIR 0020 P16	16	20	20	24	170	-	13.7	S16	C16	A16S	K16	AI16	AE16
DIR 0025 R16	16	25	25	29	200	-	16.2	S16	C16	A16S	K16	AI16	AE16
DIR 0032 S16	16	32	32	36	250	-	19.7	S16	C16	A16S	K16	AI16	AE16
* DIR 0025 R22	22	25	25	29	200	-	18.1	S22	C22	A22	K22	AI22	AE22

For **LEFT HAND** toolholders specify **DIL** instead of **DIR**

Two clamping methods can be used: screw or top clamp.

\*Use K21 torx key for C22 clamp

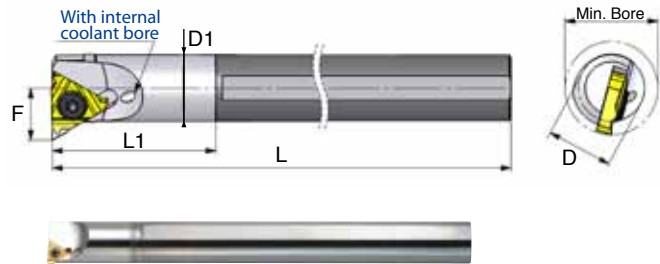
## Toolholders with 3.5° Helix Angle

Ordering Code Right Hand	 L	D	D1	Min Bore Diam. mm	L	L1	F	Insert Screw	Torx Key
SIR 0016 P16B-3.5	16	20	16	19	170	40	13.7	S16S	K16
SIR 0020 P22B-3.5	22	20	20	24	170	-	15.6	S22S	K22

For **LEFT HAND** toolholders specify **SIL** instead of **SIR**

## Carbide Shank Threading Bars With coolant bore

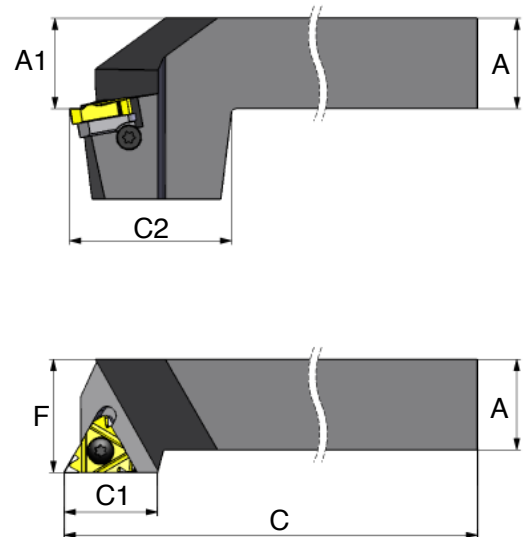
Carbide Shank Threading Bars are used when Chatter and deflection are expected due to long overhang in deep small bores.



Ordering Code Right Hand	L	D	D1	Min Bore Diam.	L	L1	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
SIR 0005 H06CB	6	6	5.1	6.0	100	26	4.3	S06	-	K06	-	-
SIR 0007 K08CB	8	8	6.6	7.8	125	31	5.3	S08	-	K08	-	-
SIR 0008K08UCB	8U	8	7.3	90	125	35	6.6	S08	-	K08	-	-
SIR 0010 M11CB	11	10	10	12	150	-	7.4	S11	-	K11	-	-
SIR 0012 P11CB	11	12	12	15	170	-	8.4	S11	-	K11	-	-
SIR 0016 R16CB	16	16	16	19	200	-	11.7	S16S	-	K16	-	-
*SIR 0020 S16CB	16	20	20	23	250	-	13.7	S16	A16	K16	AI16	AE16
*SIR 0025 S16CB	16	25	25	28	250	-	16.2	S16	A16	K16	AI16	AE16

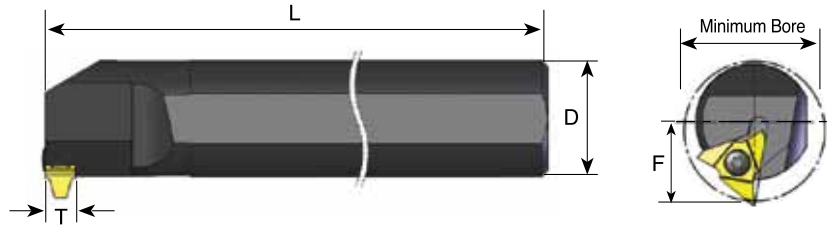
\*Carbide shank Threading bars with anvil  
For **LEFT HAND** toolholders specify **SIL** instead of **SIR**


## Drophead Toolholders



Ordering Code Right Hand	L	A	A1	C	C1	F	C2	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
SER 2020 K16D	16	20	20	125	21.0	25	38	S16	A16	K16	AE16	AI16
SER 2525 M16D	16	25	25	150	21.0	32	38	S16	A16	K16	AE16	AI16
SER 2525 M22D	22	25	25	150	21.0	32	38	S22	A22	K22	AE22	AI22

## Vertical Toolholders



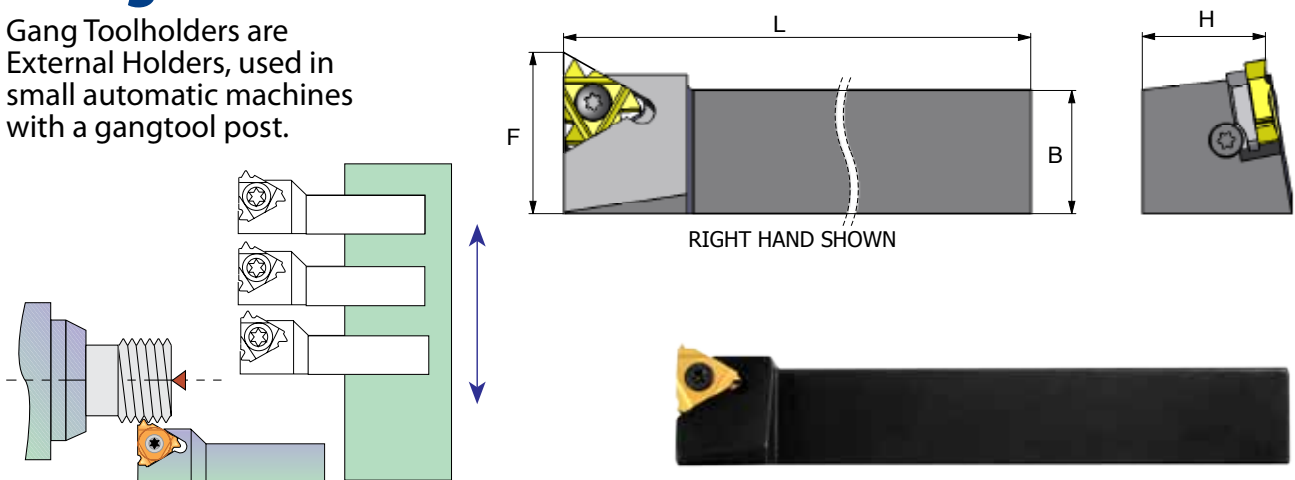
Ordering Code Right Hand	 L	D	* Min Bore Diam.	L	F	Insert Screw	Torx Key
<b>SIR 0040 T27V T10</b>	27	40	48	300	29	S27	K27
<b>SIR 0050 T27V T10</b>	27	50	58	350	34	S27	K27


For **LEFT HAND** toolholders specify **SIL** instead of **SIR**

\* To be compare with given minimum bore profile.

## Gang Toolholders

Gang Toolholders are External Holders, used in small automatic machines with a gangtool post.



Ordering Code Right Hand	 L	B=H	L	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
<b>*SER 8 8 H11G</b>	11	8	100	12.0	S11	-	K11	-	-
<b>*SER 10 10 H11G</b>	11	10	100	14.0	S11	-	K11	-	-
<b>SER 16 16 K16G</b>	16	16	125	21.7	S16	A16	K16	AE16	AI16
<b>SER 20 20 K16G</b>	16	20	125	26.2	S16	A16	K16	AE16	AI16

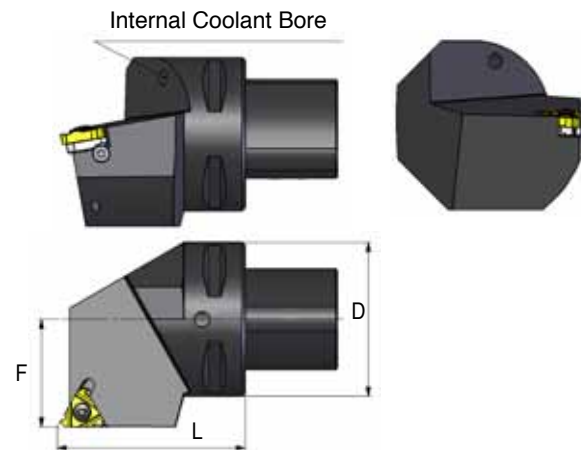
\*Toolholders with no anvil


For **LEFT HAND** toolholders specify **SEL** instead of **SER**

## Quick Change Polygon Threading Toolholders

- Polygon shank
- ISO standard (26623) compliant for toolholding systems
- Polygon taper ensures automatic radial centering and even pressure around the coupling
- Enable quick tool changes ISO standard coupling system with a 1.4-degree tapered polygon shank design
- Interchangeable with leading manufacturers

### External Toolholders

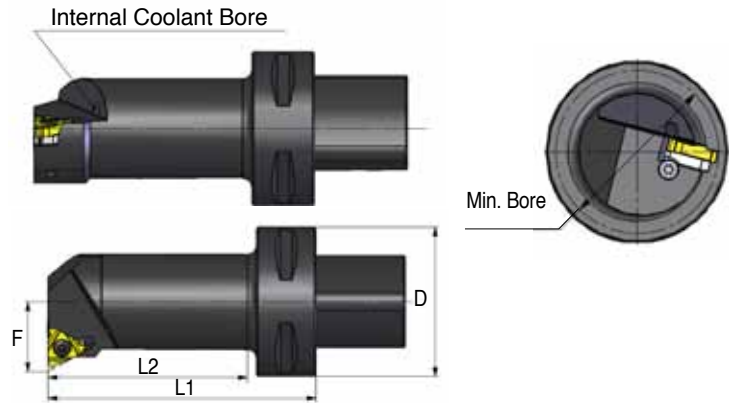



Ordering Code		D	F	L	Insert Screw	Anvil Screw	Torx key	RH Anvil	LH Anvil
<b>P40-SER 27050-16</b>	16	40	27	50	S16	A16	K16	AE16	AI16
<b>P50-SER 35060-16</b>	16	50	35	60	S16	A16	K16	AE16	AI16
<b>P63-SER 45065-16</b>	16	63	45	65	S16	A16	K16	AE16	AI16
<b>P40-SER 27050-22</b>	22	40	27	50	S22	A22	K22	AE22	AI22
<b>P50-SER 35060-22</b>	22	50	35	60	S22	A22	K22	AE22	AI22
<b>P63-SER 45065-22</b>	22	63	45	65	S22	A22	K22	AE22	AI22
<b>P80-SER 55080-22</b>	22	80	55	80	S22	A22	K22	AE22	AI22

For **LEFT HAND** toolholders specify **SEL** instead of **SER**



## Internal Toolholders

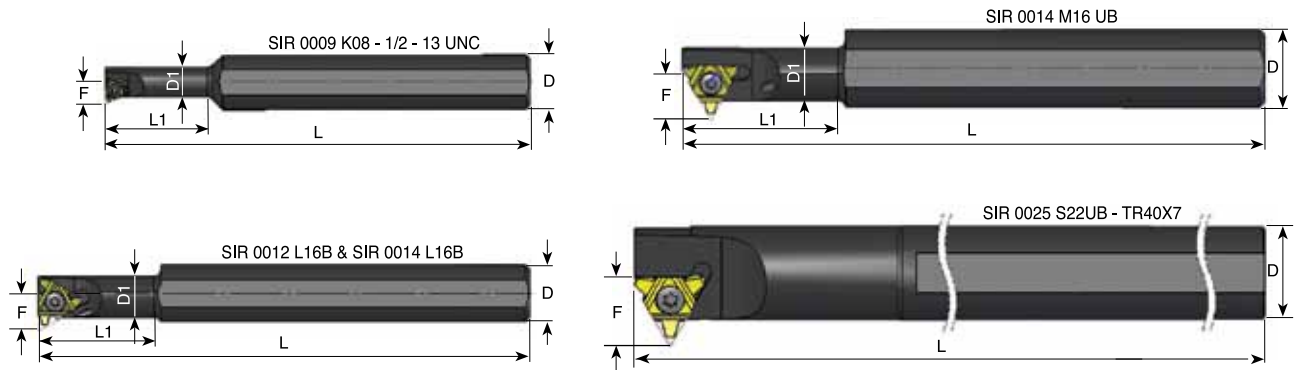


Ordering Code		D	F	Min. Bore Dia.	L1	L2	Insert Screw	Anvil Screw	Torx key	RH Anvil	LH Anvil
* P40-SIR 12060-16	16	40	12	20	60	37	S16	-	K16	-	-
P40-SIR 14060-16	16	40	14	25	60	38	S16	A16	K16	AI16	AE16
P40-SIR 17070-16	16	40	17	32	70	48	S16	A16	K16	AI16	AE16
P40-SIR 22090-16	16	40	22	40	90	69	S16	A16	K16	AI16	AE16
P40-SIR 27080-16	16	40	27	50	80	60	S16	A16	K16	AI16	AE16
* P50-SIR 12060-16	16	50	12	20	60	35	S16	-	K16	-	-
P50-SIR 14060-16	16	50	14	25	60	36	S16	A16	K16	AI16	AE16
P50-SIR 17070-16	16	50	17	32	70	47	S16	A16	K16	AI16	AE16
P50-SIR 22090-16	16	50	22	40	90	68	S16	A16	K16	AI16	AE16
P50-SIR 27105-16	16	50	27	50	105	84	S16	A16	K16	AI16	AE16
P63-SIR 14070-16	16	63	14	25	70	42	S16	A16	K16	AI16	AE16
P63-SIR 17075-16	16	63	17	32	75	48	S16	A16	K16	AI16	AE16
P63-SIR 22090-16	16	63	22	40	90	64	S16	A16	K16	AI16	AE16
P63-SIR 27105-16	16	63	27	50	105	80	S16	A16	K16	AI16	AE16
* P40-SIR 15065-22	22	40	15	25	65	42	S22	-	K22	-	-
P40-SIR 19070-22	22	40	19	32	70	48	S22	A22	K22	AI22	AE22
P40-SIR 22090-22	22	40	22	40	90	69	S22	A22	K22	AI22	AE22
P40-SIR 27080-22	22	40	27	50	80	60	S22	A22	K22	AI22	AE22
* P50-SIR 15065-22	22	50	15	25	65	41	S22	-	K22	-	-
P50-SIR 19070-22	22	50	19	32	70	47	S22	A22	K22	AI22	AE22
P50-SIR 22090-22	22	50	22	40	90	68	S22	A22	K22	AI22	AE22
P50-SIR 27105-22	22	50	27	50	105	84	S22	A22	K22	AI22	AE22
P63-SIR 19075-22	22	63	19	32	75	48	S22	A22	K22	AI22	AE22
P63-SIR 22090-22	22	63	22	40	90	64	S22	A22	K22	AI22	AE22
P63-SIR 27105-22	22	63	27	50	105	80	S22	A22	K22	AI22	AE22

For **LEFT HAND** toolholders specify **SIL** instead of **SIR**

\* Holders without anvil

## Special Thread Turning Applications



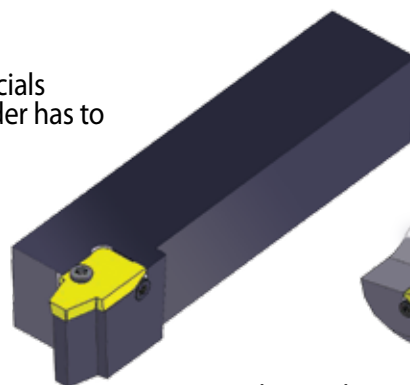
Ordering Code Right Hand		D	D1	L	L1	F	Thread	Insert Screw	Torx Key
<b>*SIR 0009 K08</b>	8	16	8.7	125	30	6.5	<b>1/2 - 13UNC</b>	S08	K08
<b>SIR 0012 L16B</b>	16	20	11.5	140	33	10.5	<b>TR18x4</b>	S16S	K16
<b>SIR 0014 L16B</b>	16	20	12.5	140	36	21.1	<b>TR20x4</b>	S16S	K16
<b>SIR 0014 M16UB</b>	16	20	13.5	150	40	13.2	<b>TR22x5</b>	S16S	K16
<b>SIR 0025 S22UB</b>	22	25	-	250	-	19.5	<b>TR40x7</b>	S22S	K22

For LH holders call Carmex  
\* Only right hand available

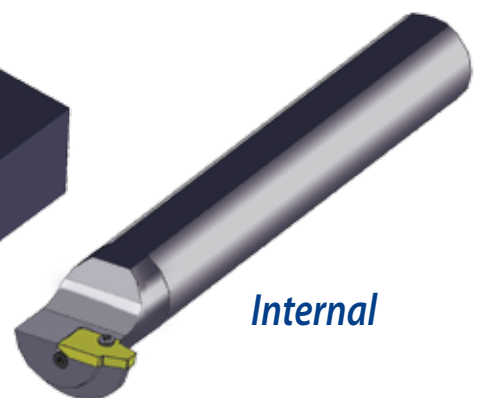
## Large Profile Range

- Pitch Range: 14mm up to 24 mm.
- Tools and inserts are offered as specials (non catalogue), because each holder has to be modified to fit the profile shape.
- Rigid Clamping

*External*



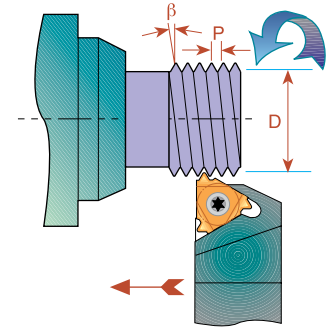
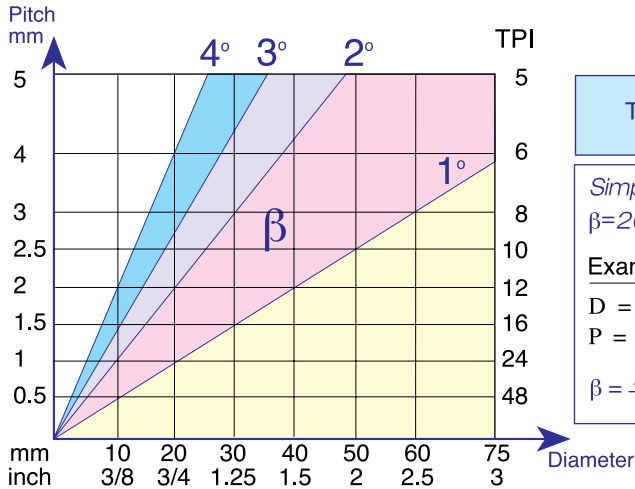
*Internal*



- Tailor made profiles according to customer's request

Available Profile	<b>Round (DIN 20400)</b>	<b>Trapez (DIN 103)</b>	<b>Acme, Stub Acme</b>	<b>American Buttress</b>
Pitch	16 mm	14-24 mm	1.0 - 1.5 TPI	1.5 - 2.0 TPI

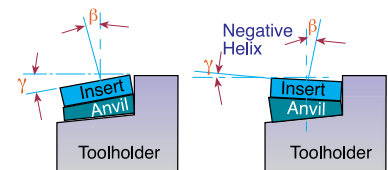
## Thread Helix Angle



## Standard and Slanted Anvils

CARMEX Toolholder Pockets have a built in 1.5° helix angle. This angle may be adjusted to better match the thread helix angle by simply changing the anvil.

Negative helix is usually used when threading RH thread with LH Holder or LH thread with RH Holder.



L	IC	Pocket Angle $\gamma$	4.5°	3.5°	2.5°	1.5° Standard	0.5°	-0.5°	-1.5°
16	3/8	EX-RH OR IN-LH	AE16+4.5	AE16+3.5	AE16+2.5	<b>AE16</b>	AE16+0.5	AE16-0.5	AE16-1.5
16	3/8	EX-LH OR IN-RH	AI 16+4.5	AI 16+3.5	AI 16+2.5	<b>AI 16</b>	AI 16+0.5	AI 16-0.5	AI 16-1.5
22	1/2	EX-RH OR IN-LH	AE22+4.5	AE22+3.5	AE22+2.5	<b>AE22</b>	AE22+0.5	AE22-0.5	AE22-1.5
22	1/2	EX-LH OR IN-RH	AI 22+4.5	AI 22+3.5	AI 22+2.5	<b>AI 22</b>	AI 22+0.5	AI 22-0.5	AI 22-1.5
22U	1/2U	EX-RH OR IN-LH	AE22U+4.5	AE22U+3.5	AE22U+2.5	<b>AE22U</b>	AE22U+0.5	AE22U-0.5	AE22U-1.5
22U	1/2U	EX-LH OR IN-RH	AI 22U+4.5	AI 22U+3.5	AI 22U+2.5	<b>AI 22U</b>	AI 22U+0.5	AI 22U-0.5	AI 22U-1.5
27	5/8	EX-RH OR IN-LH	AE27+4.5	AE27+3.5	AE27+2.5	<b>AE27</b>	AE27+0.5	AE27-0.5	AE27-1.5
27	5/8	EX-LH OR IN-RH	AI 27+4.5	AI 27+3.5	AI 27+2.5	<b>AI 27</b>	AI 27+0.5	AI 27-0.5	AI 27-1.5
27U	5/8U	EX-RH OR IN-LH	AE27U+4.5	AE27U+3.5	AE27U+2.5	<b>AE27U</b>	AE27U+0.5	AE27U-0.5	AE27U-1.5
27U	5/8U	EX-LH OR IN-RH	AI 27U+4.5	AI 27U+3.5	AI 27U+2.5	<b>AI 27U</b>	AI 27U+0.5	AI 27U-0.5	AI 27U-1.5

## Anvil Kits

5 AE and 5 AI anvils with various helix angles



AE (FOR EX.RH. & IN.LH.)



AI (FOR IN.RH. & EX.LH.)



Ordering Code	Contents				
<b>KA16</b>	AE16+4.5	AE16+3.5	AE16+2.5	AE16+0.5	AE16-1.5
	AI 16+4.5	AI 16+3.5	AI 16+2.5	AI 16+0.5	AI 16-1.5
<b>KA22</b>	AE22+4.5	AE22+3.5	AE22+2.5	AE22+0.5	AE22-1.5
	AI 22+4.5	AI 22+3.5	AI 22+2.5	AI 22+0.5	AI 22-1.5
<b>KA22U</b>	AE22U+4.5	AE22U+3.5	AE22U+2.5	AE22U+0.5	AE22U-1.5
	AI 22U+4.5	AI 22U+3.5	AI 22U+2.5	AI 22U+0.5	AI 22U-1.5
<b>KA27</b>	AE27+4.5		AE27+2.5		AE27-1.5
	AI 27+4.5		AI 27+2.5		AI 27-1.5
<b>KA27U</b>	AE27U+4.5		AE27U+2.5		AE27U-1.5
	AI 27U+4.5		AI 27U+2.5		AI 27U-1.5

## Standard Kits

Threading Kits are a versatile solution for users that cut a variety of thread types in limited quantity and do not want to sacrifice thread quality.

### External ISO Kit Ordering Code:KEG

#### INSERTS

16 ER A60 P25C  
 16 ER G60 P25C  
 16 ER 0.75 ISO P25C  
 16 ER 1.0 ISO P25C  
 16 ER 1.25 ISO P25C  
 16 ER 1.5 ISO P25C  
 16 ER 1.75 ISO P25C  
 16 ER 2.0 ISO P25C  
 16 ER 2.5 ISO P25C  
 16 ER 3.0 ISO P25C

#### TOOLHOLDERS

SER 2020 K16  
 KEY  
 K16  
 SCREW  
 S16

### Internal ISO Kit Ordering Code:KIG

#### INSERTS

16 IR A60 P25C  
 16 IR G60 P25C  
 16 IR 0.75 ISO P25C  
 16 IR 1.0 ISO P25C  
 16 IR 1.25 ISO P25C  
 16 IR 1.5 ISO P25C  
 16 IR 1.75 ISO P25C  
 16 IR 2.0 ISO P25C  
 16 IR 2.5 ISO P25C  
 16 IR 3.0 ISO P25C

#### TOOLHOLDERS

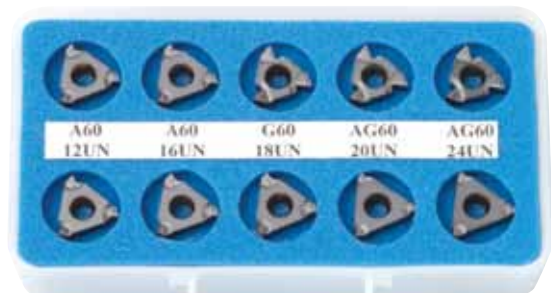
SIR 0020 K16  
 KEY  
 K16  
 SCREW  
 S16



If a larger toolholders with a 25 mm shank is required, add to the kit 25. For example: KIG - 25

## Type B Kits

Type B threading inserts. A combination of ground profile and sintered chip-breaker threading inserts. BMA Grade: Sub-Micron carbide grade with TiAlN multi-Layer Coating.



### EXTERNAL ISO KIT KEMB - BMA

16 ER B 1.0 ISO BMA-2 Pcs  
 16 ER B 1.25 ISO BMA-2 Pcs  
 16 ER B 1.5 ISO BMA-2 Pcs  
 16 ER B 1.75 ISO BMA-2 Pcs  
 16 ER B 2.0 ISO BMA-2 Pcs



EX-RH

### INTERNAL ISO KIT KIUB - BMA

16 IR B 1.0 ISO BMA-2 Pcs  
 16 IR B 1.25 ISO BMA-2 Pcs  
 16 IR B 1.5 ISO BMA-2 Pcs  
 16 IR B 1.75 ISO BMA-2 Pcs  
 16 IR B 2.0 ISO BMA-2 Pcs



IN-RH

## Miniature & Ultra-miniature Kits



Ordering Code	Type	No. of Inserts	Inserts	Contents Boring Bar	Key
<b>KU60M - BXC</b>	ULTRA	10	06 IR A60 BXC	SIR 0005 H06	K6
<b>KM60M - BXC</b>	MINI	10	08 IR A60 BXC	SIR 0007 K08	K8

## Threading & Boring Combination Kit

A practical and convenient combination kit for **Ultra Miniature** Threading and Boring. It enables Boring and Threading of mini bores as small as **6 mm diameter (1/4")** with just one deep reaching **CARBIDE** shank ultra mini Boring Bar.



Ordering Code	Threading Insert	Contents		Boring Bar	Key
		Turning Inserts			
<b>KC6TM</b>	06 IR A60 BXC 10Pcs	06 IR TURN BMA 10Pcs		SIR 0005 H06CB	K6

**BMA** - Coated carbide grade for medium to high cutting speeds

**BXC** - Coated carbide grade for low cutting speed - 40 to 90 m/min

**CB** - Carbide shank boring bar with coolant bore



# Double Sided Thread Turning Inserts



**Carmex presents a unique line of 2 sided inserts including 6 cutting edges, a cost saving tool.**

## Advantages of DSI-Thread Turning Inserts

- Increased productivity thanks to the six cutting edges.
- U Style inserts for a wide range of full or partial profile standard threads.
- Same insert for right hand or left hand thread.
- Saving on tooling costs.
- Unique anti-vibration anvil design for clamping the insert and supporting the cutting edge.
- Simple insert's mounting and cutting edge indexing.
- Heavy duty toolholders designed specially for this line.

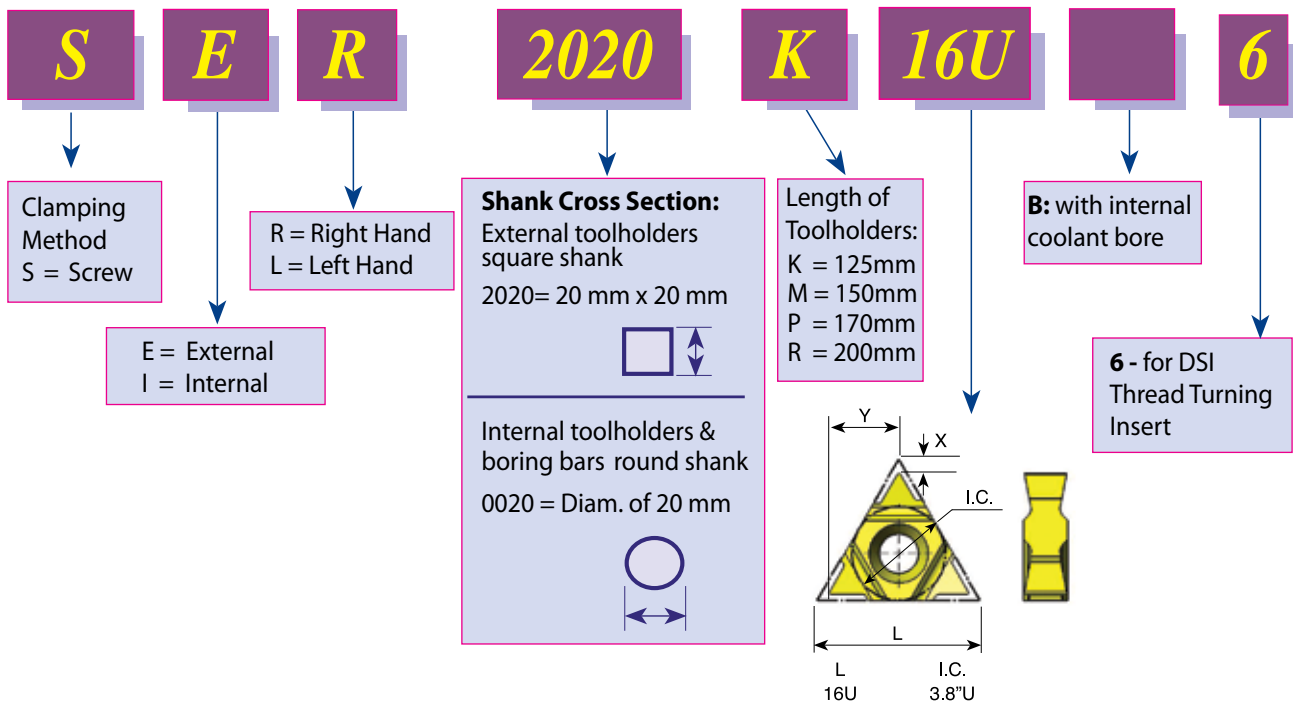
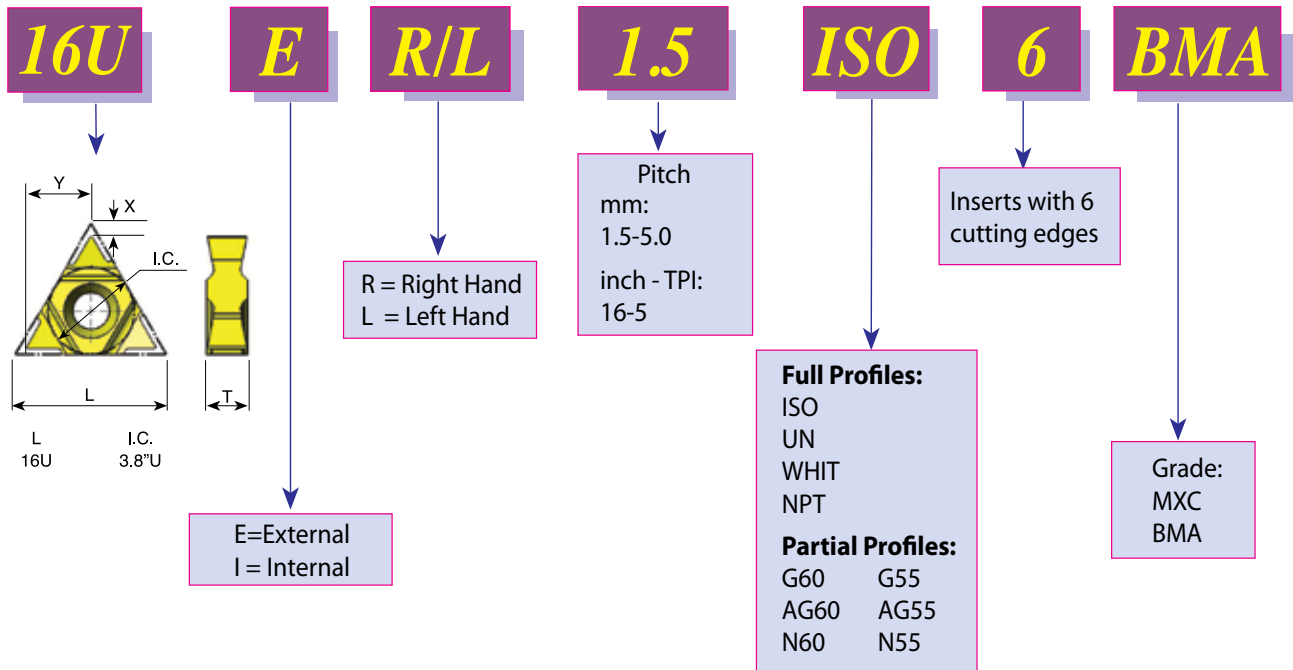
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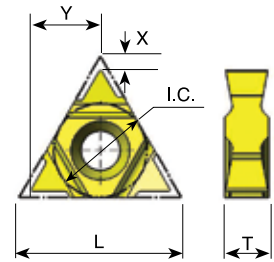
## Product Identification

### DSI Ordering Code





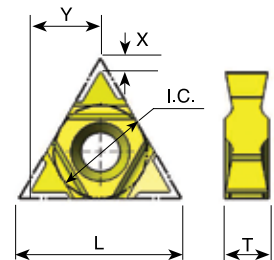
## Partial Profile 60°



Pitch Range mm	Pitch Range TPI	L	I.C. in	<b>EXTERNAL</b> Ordering Code	<b>INTERNAL</b> Ordering Code	X	Y	T
1.75 - 3.0	14-8	16U	3/8U	<b>16U ER/L G60-6</b>	<b>16U IR/L G60-6</b>	1.4	7.1	4.5
0.5 - 3.0	48-8	16U	3/8U	<b>16U ER/L AG60-6</b>	<b>16U IR/L AG60-6</b>	1.4	7.1	4.5
3.5 - 5.0	7-5	16U	3/8U	<b>16U ER/L N60-6</b>	<b>16U IR/L N60-6</b>	1.2	7.3	4.5

Available coating grades: BMA or MXC

## Partial Profile 55°

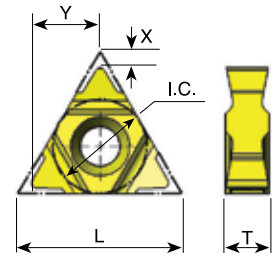


Pitch Range mm	Pitch Range TPI	L	I.C. in	<b>EXTERNAL</b> Ordering Code	<b>INTERNAL</b> Ordering Code	X	Y	T
1.75 - 3.0	14-8	16U	3/8U	<b>16U ER/L G55-6</b>	<b>16U IR/L G55-6</b>	1.4	7.1	4.5
0.5 - 3.0	48-8	16U	3/8U	<b>16U ER/L AG55-6</b>	<b>16U IR/L AG55-6</b>	1.4	7.1	4.5
3.5 - 5.0	7-5	16U	3/8U	<b>16U ER/L N55-6</b>	<b>16U IR/L N55-6</b>	1.2	7.3	4.5

Available coating grades: BMA or MXC

For Carbide Grade and Cutting Speed see page 60-61

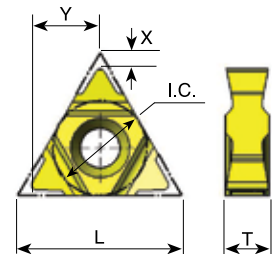
## ISO



Pitch mm	L	I.C. in	<b>EXTERNAL</b> Ordering Code	<b>INTERNAL</b> Ordering Code	X	Y	T
1.5	16U	3/8U	<b>16U ER/L 1.5 ISO-6</b>	<b>16U IR/L 1.5 ISO-6</b>	1.6	6.9	4.5
1.75	16U	3/8U	<b>16U ER/L 1.75 ISO-6</b>	<b>16U IR/L 1.75 ISO-6</b>	1.6	6.9	4.5
2.0	16U	3/8U	<b>16U ER/L 2.0 ISO-6</b>	<b>16U IR/L 2.0 ISO-6</b>	1.6	6.9	4.5
2.5	16U	3/8U	<b>16U ER/L 2.5 ISO-6</b>	<b>16U IR/L 2.5 ISO-6</b>	1.6	6.9	4.5
3.0	16U	3/8U	<b>16U ER/L 3.0 ISO-6</b>	<b>16U IR/L 3.0 ISO-6</b>	1.6	6.9	4.5
3.5	16U	3/8U	<b>16U ER/L 3.5 ISO-6</b>	<b>16U IR/L 3.5 ISO-6</b>	1.6	6.9	4.5
4.0	16U	3/8U	<b>16U ER/L 4.0 ISO-6</b>	<b>16U IR/L 4.0 ISO-6</b>	1.6	6.9	4.5
4.5	16U	3/8U	<b>16U ER/L 4.5 ISO-6</b>	<b>16U IR/L 4.5 ISO-6</b>	1.6	6.9	4.5
5.0	16U	3/8U	<b>16U ER/L 5.0 ISO-6</b>	<b>16U IR/L 5.0 ISO-6</b>	1.6	6.9	4.5

Available coating grades: BMA or MXC

## UN - Unified **UNC, UNF, UNEF, UNS**

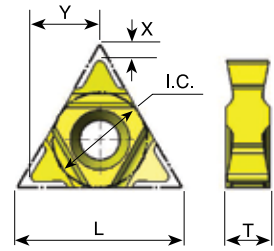


Pitch TPI	L	I.C. in	<b>EXTERNAL</b> Ordering Code	<b>INTERNAL</b> Ordering Code	X	Y	T
16	16U	3/8U	<b>16U ER/L 16 UN-6</b>	<b>16U IR/L 16 UN-6</b>	1.6	6.9	4.5
14	16U	3/8U	<b>16U ER/L 14 UN-6</b>	<b>16U IR/L 14 UN-6</b>	1.6	6.9	4.5
13	16U	3/8U	<b>16U ER/L 13 UN-6</b>	<b>16U IR/L 13 UN-6</b>	1.6	6.9	4.5
12	16U	3/8U	<b>16U ER/L 12 UN-6</b>	<b>16U IR/L 12 UN-6</b>	1.6	6.9	4.5
11.5	16U	3/8U	<b>16U ER/L 11.5 UN-6</b>	<b>16U IR/L 11.5 UN-6</b>	1.6	6.9	4.5
11	16U	3/8U	<b>16U ER/L 11 UN-6</b>	<b>16U IR/L 11 UN-6</b>	1.6	6.9	4.5
10	16U	3/8U	<b>16U ER/L 10 UN-6</b>	<b>16U IR/L 10 UN-6</b>	1.6	6.9	4.5
9	16U	3/8U	<b>16U ER/L 9 UN-6</b>	<b>16U IR/L 9 UN-6</b>	1.6	6.9	4.5
8	16U	3/8U	<b>16U ER/L 8 UN-6</b>	<b>16U IR/L 8 UN-6</b>	1.6	6.9	4.5
7	16U	3/8U	<b>16U ER/L 7 UN-6</b>	<b>16U IR/L 7 UN-6</b>	1.6	6.9	4.5
6	16U	3/8U	<b>16U ER/L 6 UN-6</b>	<b>16U IR/L 6 UN-6</b>	1.6	6.9	4.5
5	16U	3/8U	<b>16U ER/L 5 UN-6</b>	<b>16U IR/L 5 UN-6</b>	1.6	6.9	4.5

Available coating grades: BMA or MXC

For Carbide Grade and Cutting Speed see page 60-61

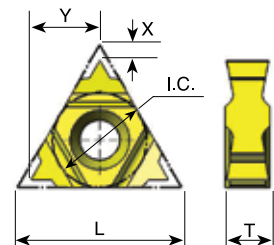
## Whitworth 55° BSW, BSF, BSP, BSB



Pitch TPI	L	I.C. in	<b>EXTERNAL</b> Ordering Code	<b>INTERNAL</b> Ordering Code	X	Y	T
16	16U	3/8U	<b>16U ER/L 16 W-6</b>	<b>16U IR/L 16 W-6</b>	1.6	6.9	4.5
14	16U	3/8U	<b>16U ER/L 14 W-6</b>	<b>16U IR/L 14 W-6</b>	1.6	6.9	4.5
12	16U	3/8U	<b>16U ER/L 12 W-6</b>	<b>16U IR/L 12 W-6</b>	1.6	6.9	4.5
11	16U	3/8U	<b>16U ER/L 11 W-6</b>	<b>16U IR/L 11 W-6</b>	1.6	6.9	4.5
10	16U	3/8U	<b>16U ER/L 10 W-6</b>	<b>16U IR/L 10 W-6</b>	1.6	6.9	4.5
9	16U	3/8U	<b>16U ER/L 9 W-6</b>	<b>16U IR/L 9 W-6</b>	1.6	6.9	4.5
8	16U	3/8U	<b>16U ER/L 8 W-6</b>	<b>16U IR/L 8 W-6</b>	1.6	6.9	4.5
7	16U	3/8U	<b>16U ER/L 7 W-6</b>	<b>16U IR/L 7 W-6</b>	1.6	6.9	4.5
6	16U	3/8U	<b>16U ER/L 6 W-6</b>	<b>16U IR/L 6 W-6</b>	1.6	6.9	4.5
5	16U	3/8U	<b>16U ER/L 5 W-6</b>	<b>16U IR/L 5 W-6</b>	1.4	7.2	4.5

Available coating grades: BMA or MXC

## NPT

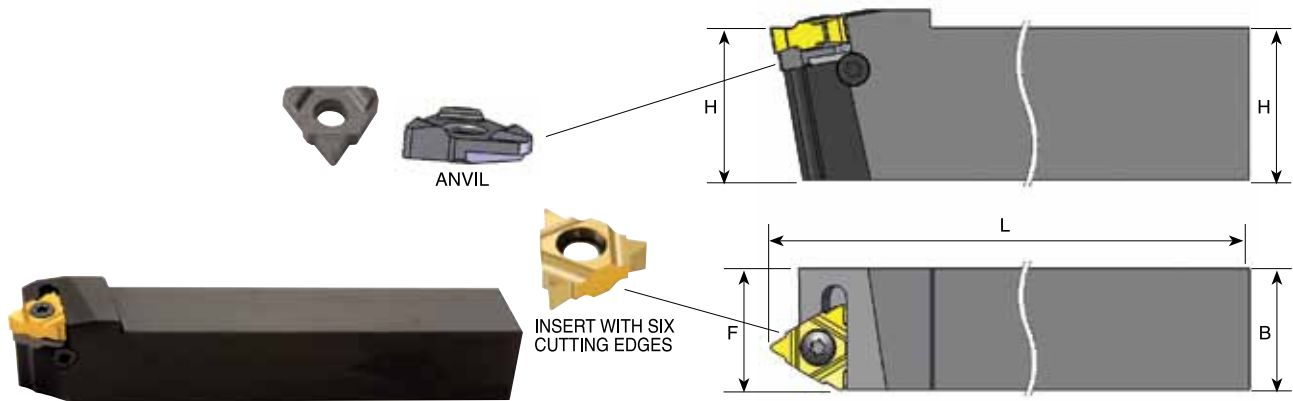


Pitch TPI	L	I.C. in	<b>EXTERNAL</b> Ordering Code	<b>INTERNAL</b> Ordering Code	X	Y	T
14	16U	3/8U	<b>16U ER/L 14 NPT-6</b>	<b>16U IR/L 14 NPT-6</b>	1.6	6.9	4.5
11.5	16U	3/8U	<b>16U ER/L 11.5 NPT-6</b>	<b>16U IR/L 11.5 NPT-6</b>	1.6	6.9	4.5
8	16U	3/8U	<b>16U ER/L 8 NPT-6</b>	<b>16U IR/L 8 NPT-6</b>	1.6	6.9	4.5

Available coating grades: BMA or MXC  
 For Carbide Grade and Cutting Speed see page 60-61

## Heavy Duty Thread Turning Toolholders

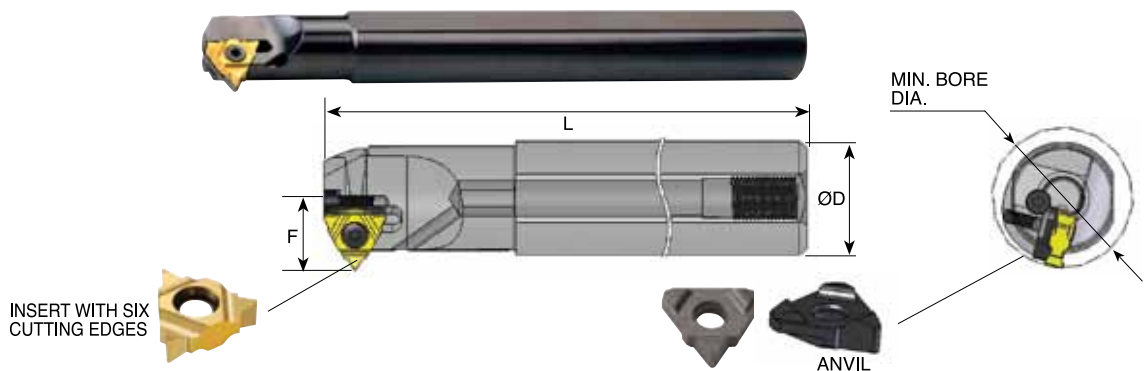
### External



Ordering Code Right Hand	H	B	L	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
SER 020 K16U-6	20	20	125	20	S16	A16	K16	AER 16U-6	AEL 16U-6
SER 2520 M16U-6	25	20	150	20	S16	A16	K16	AER 16U-6	AEL 16U-6

For **LEFT HAND** toolholders specify SEL instead of SER

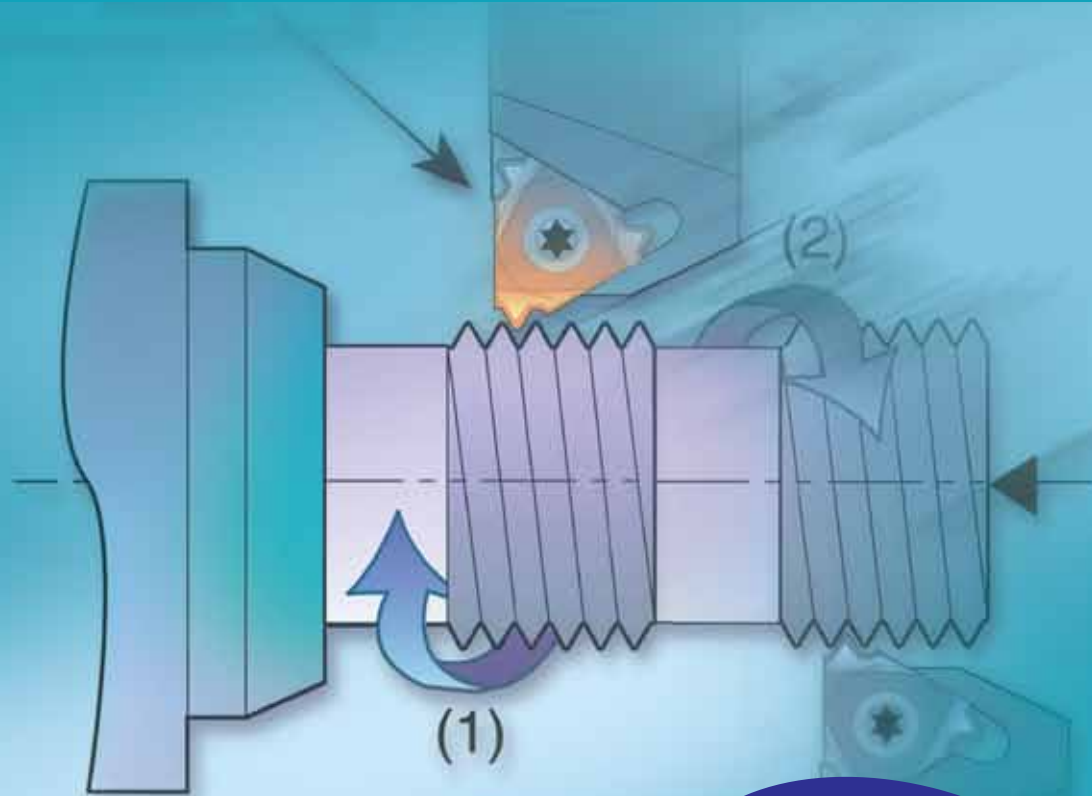
### Internal with Coolant Bore



Ordering Code Right Hand	ØD	Min. bore dia.	L	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
SIR 0020 P16UB-6	20	24	170	14.9	S16	A16	K16	AIR 16U-6	AIL 16U-6
SIR 0025 R16UB-6	25	29	200	17.4	S16	A16	K16	AIR 16U-6	AIL 16U-6

For **LEFT HAND** toolholders specify SIL instead of SIR

# Thread Turning Technical Section



Thread Turning  
Catalog and CNC  
Programming  
Software



## Contents:

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## Carbide Grade Selection

Choose the Carmex grade specifically formulated for your application from the following list:

### Coated Grades

**HBA**

Extra-fine sub-micron grade with high toughness, for optimized performance on Hardened steels and Cast Iron up to 62HRc, Titanium Alloys and super alloys (Hastelloy, Inconel, and Nickel base alloys).

**BLU**

(M10-M20)  
(K05-K20)  
(N10-N20)  
(S10-S20)

PVD triple layer coated sub-micron grade for stainless steels, cast iron, titanium, non ferrous metals and most of the high temperature alloys.

**BMA**

(P20-P40)  
(K20-K30)

PVD TiAlN coated sub-micrograin grade for stainless steels and exotic materials at medium to high cutting speeds.

**P25C**

(P15-P35)

PVD TiN coated grade for treated and hard alloy steels (25 HRc & up) at medium to low cutting speeds.

**MXC**

(K10-K20)  
(P10-P25)

PVD TiN coated micrograin for free cutting untreated alloy steels (below 30 HRc), for stainless steels and cast iron.

**BXC**

(P30-P50)  
(K25-K40)

PVD TiN coated grade for low cutting speed.  
Works well with wide range of stainless steels.

**Note:**

Due to our unique and specialized production techniques, Carmex coated inserts provide superior cutting performance and exceptionally long tool life.

### Uncoated Grades

**P30\***

(P20-P30)

Carbide grade for carbon and cast steels, works well at medium to low cutting speeds.

**K20\***

(K10-K30)

Carbide grade for non ferrous metals, aluminum and cast iron.

## Type B - Threading Inserts

A combination of ground profile, and sintered chip-breaker threading inserts. Unlike most other manufactures' inserts, this combination ensures a consistent high quality thread, with precise shape and dimensions.

Two different unique styles of chip-breaker were designed to suit the different specific requirements of Internal threads and External threads.

All of Carmex Type B inserts are made of BMA Sub-Micrograin grade.



## Recommended cutting speed (m/min) for thread turning inserts

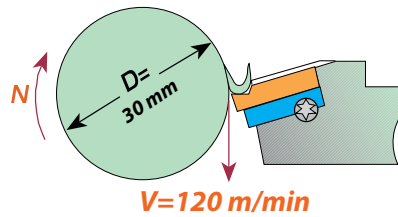
ISO Standard	Material		Condition							
				HBA	BLU	BMA	P25C	MXC	BXC	K20
<b>P</b>	Non-Alloy Steel and Cast Steel, Free Cutting Steel	<0.25%C	Annealed	110-210	120-180	100-180	100-180	70-150	50-130	
		≥0.25%C	Annealed							
		<0.55%C	Quenched & Tempered							
		≥0.55%C	Annealed							
	Low Alloy Steel and Cast Steel (less than 5% alloying elements)	Annealed		90-140	80-130	70-120	70-120	60-90	50-80	
		Quenched & Tempered								
High Alloy Steel, Cast Steel, and Tool Steel	Annealed		70-90	60-80	50-60	55-70	50-60	40-50		
	Quenched & Tempered									
<b>M</b>	Stainless Steel and Cast Steel		Ferritic / Martensitic	110-160	90-130	60-90	60-90	50-80	50-80	
			Martensitic							
			Austenitic							
<b>K</b>	Cast Iron Nodular (GGG)		Ferritic / Pearlitic	120-150	100-130	80-110	60-90	600-800	350-500	
			Pearlitic							
	Grey Cast Iron (GG)		Ferritic	140-150	120-130	90-100	65-85	200-550	110-300	
			Pearlitic							
Malleable Cast Iron		Ferritic	110-140	100-130	80-100	60-85	150-250	90-150		
		Pearlitic								
<b>N</b>	Aluminum-Wrought Alloy		Not Cureable	700-1000			600-800	450-600	600-800	350-500
			Cured							
	Aluminum-Cast, Alloyed	≤12% Si	Not Cureable	280-750			200-550	150-350	200-550	110-300
			Cured							
		>12% Si	High Temperature							
	Copper Alloys	>1% Pb	Free Cutting	190-350			150-250	110-180	150-250	90-150
			Brass							
Electrolytic Copper										
Non Metallic		Duroplastics, Fiber Plastics				200-300	150-210	100-200	110-150	
		Hard Rubber								
<b>S</b>	High Temp. Alloys, Super Alloys	Fe based	Annealed	20-80	30-65	25-60				
			Cured							
		Ni or Co based	Annealed							
			Cured							
	Titanium Alloys		Alpha +Beta Alloys Cured	30-60	40-50	35-45			35-45	
<b>H</b>	Hardened Steel		Hardened 45-50 HRc	30-60	40-50	35-45				
			Hardened 51-55 HRc							
			Hardened 56-62 HRc							
	Chilled Cast Iron		Cast	20-50	30-40	25-35				
Cast Iron		Hardened	20-40	20-30	15-25					

• Available for sizes 11, 16 and 22 mm inserts only  
 \* Upon request  
 \*\* For miniature and ultra miniature inserts



## Conversion of Cutting Speed to Rotational Speed

Conversion of a selected cutting speed to rotational speed is calculated by the following formula:



*Example*

$$N = \frac{V \times 1000}{\pi \times D} = \frac{120 \times 1000}{3.14 \times 30} = 1274 \text{ RPM}$$

## Number of passes and depth of cut per pass for multitooth insert

	Pitch mm	Insert Size		No. of Teeth	Ordering Code	No. of Passes	Depth of Cut per pass			
		L	I.C. (in)				1	2	3	4
ISO External	1.00	16	3/8	3	16 ER 1.0 ISO 3M	2	0.38	0.25		
	1.50	16	3/8	2	16 ER 1.5 ISO 2M	3	0.42	0.30	0.20	
	1.50	22	1/2	3	22 ER 1.5 ISO 3M	2	0.55	0.37		
	2.00	22	1/2	2	22 ER 2.0 ISO 2M	3	0.57	0.40	0.28	
	2.00	22	1/2	3	22 ER 2.0 ISO 3M	2	0.76	0.49		
ISO Internal	3.00	27	5/8	2	27 ER 3.0 ISO 2M	4	0.59	0.51	0.42	0.32
	1.00	16	3/8	3	16 IR 1.0 ISO 3M	2	0.33	0.25		
	1.50	16	3/8	2	16 IR 1.5 ISO 2M	3	0.38	0.29	0.20	
	1.50	22	1/2	3	22 IR 1.5 ISO 3M	2	0.50	0.37		
	2.00	22	1/2	2	22 IR 2.0 ISO 2M	3	0.52	0.37	0.26	
UN External	2.00	22	1/2	3	22 IR 2.0 ISO 3M	2	0.70	0.45		
	3.00	27	5/8	2	27 IR 3.0 ISO 2M	4	0.58	0.46	0.39	0.30
	16	16	3/8	2	16 ER 16 UN 2M	3	0.44	0.31	0.22	
	16	22	1/2	3	22 ER 16 UN 3M	2	0.58	0.39		
	12	22	1/2	2	22 ER 12 UN 2M	3	0.59	0.42	0.30	
UN Internal	12	22	1/2	3	22 ER 12 UN 3M	2	0.78	0.52		
	8	27	5/8	2	27 ER 8 UN 2M	4	0.62	0.54	0.45	0.35
	16	16	3/8	2	16 IR 16 UN 2M	3	0.42	0.28	0.22	
	16	22	1/2	3	22 IR 16 UN 3M	2	0.55	0.37		
	12	22	1/2	2	22 IR 12 UN 2M	3	0.53	0.38	0.31	
Whitworth 55° External	12	22	1/2	3	22 IR 12 UN 3M	2	0.74	0.48		
	8	27	5/8	2	27 IR 8 UN 2M	4	0.63	0.50	0.40	0.30
	14	16	3/8	2	16 ER 14 W 2M	3	0.52	0.37	0.27	
	14	22	1/2	3	22 ER 14 W 3M	2	0.70	0.46		
	11	22	1/2	2	22 ER 11 W 2M	3	0.67	0.47	0.34	
Whitworth 55° Internal	14	16	3/8	2	16 IR 14 W 2M	3	0.52	0.37	0.27	
	14	22	1/2	3	22 IR 14 W 3M	2	0.70	0.46		
	11	22	1/2	2	22 IR 11 W 2M	2	0.67	0.47	0.34	
NPT External	14	16	3/8	2	16 ER 14 NPT 2M	3				
	11.5	22	1/2	2	22 ER 11.5 NPT 2M	4	0.54	0.47	0.37	0.30
	11.5	27	5/8	3	27 ER 11.5 NPT 3M	4	0.76	0.54	0.38	
	8	27	5/8	2	27 ER 8 NPT 2M	4	0.81	0.60	0.55	0.45
NPT Internal	14	16	3/8	2	16 IR 14 NPT 2M	3				
	11.5	22	1/2	2	22 IR 11.5 NPT 2M	4	0.54	0.47	0.37	0.30
	11.5	27	5/8	3	27 IR 11.5 NPT 3M	4	0.76	0.54	0.38	
	8	27	5/8	2	27 IR 8 NPT 2M	4	0.81	0.60	0.55	0.45
API Round External	10	22	1/2	2	22 ER 10 APIRD 2M	3	0.60	0.50	0.31	
	10	27	5/8	3	27 ER 10 APIRD 3M	2	1.00	0.41		
	8	27	5/8	2	27 ER 8 APIRD 2M	3	0.80	0.60	0.41	
API Round Internal	10	22	1/2	2	22 IR 10 APIRD 2M	3	0.60	0.50	0.31	
	10	27	5/8	3	27 IR 10 APIRD 3M	2	1.00	0.41		
	8	27	5/8	2	27 IR 8 APIRD 2M	3	0.80	0.60	0.41	



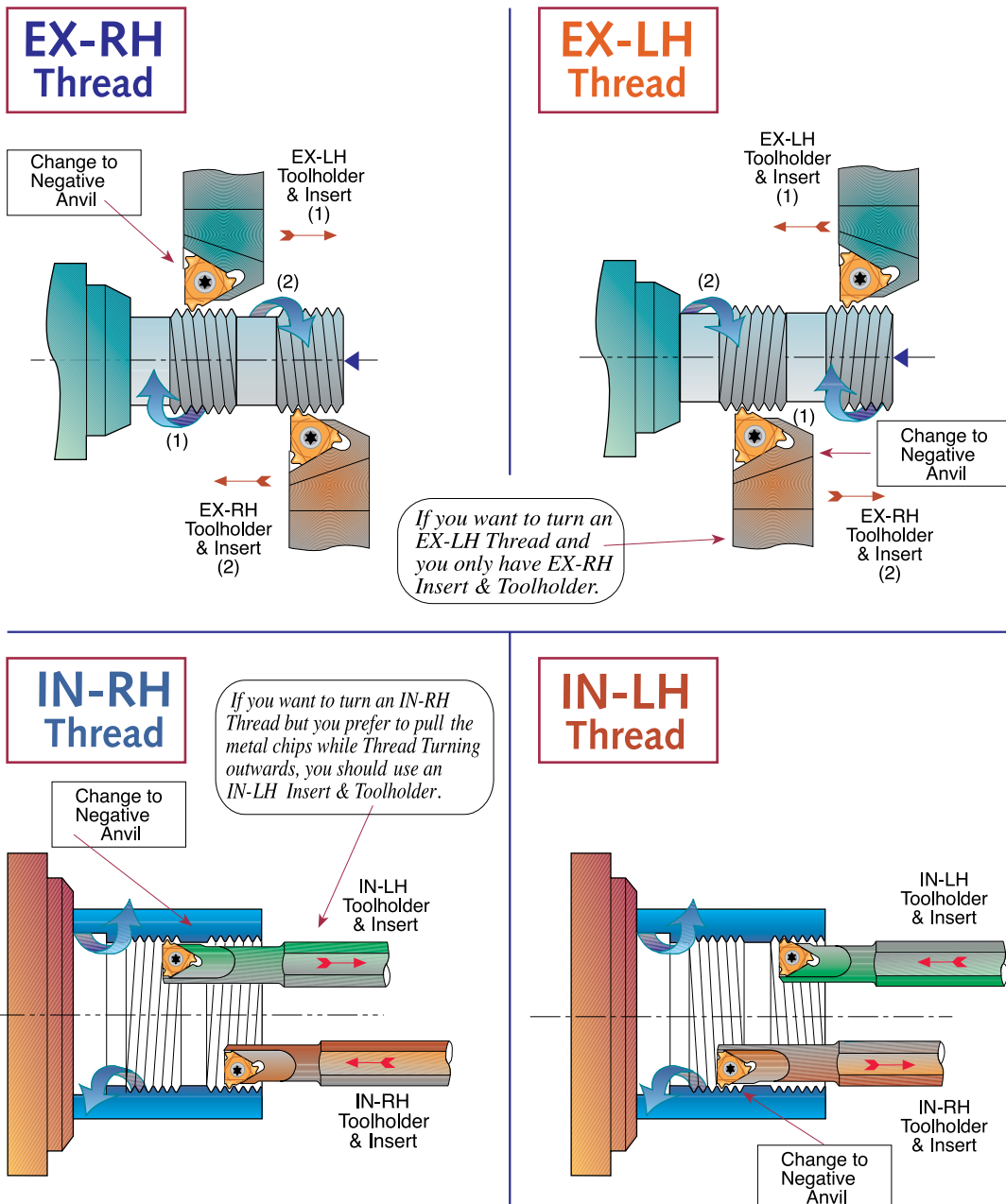
## Number of threading passes selection for single point inserts

Pitch:	mm TPI	0.5 48	0.8 32	1.0 24	1.25 20	1.5 16	1.75 14	2.0 12	2.5 10	3.0 8	4.0 6	6.0 4
Number of Passes		3-6	4-7	4-9	6-10	5-11	9-12	6-13	7-15	8-17	10-20	11-22

### NOTES:

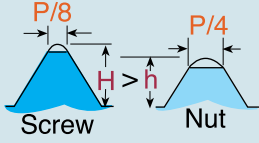
1. For most standard applications the middle of the range is a good starting point.
2. For most materials, the tougher the material, the higher the number of cutting passes you should select.
3. As a general rule of thumb, Fewer passes are better than more speed.

## Thread Turning Methods

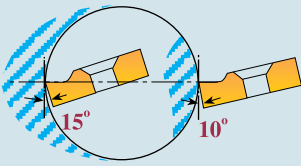


# Important Points about Carmex Threading Inserts

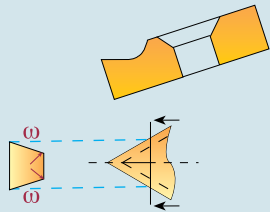
1. In most thread forms internal and external threads have different depth and radii, thus tools are not interchangeable



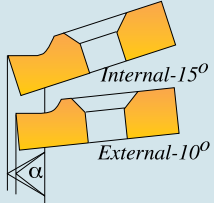
2. The Insert relief angle of a standard Carmex external toolholder is 10°; for an internal toolholder it is 15°. This 5° difference is to provide additional necessary radial clearance.




3. Our built-in relief angles ensure automatic insert flank angle clearance.



4. Profiles of Carmex internal & external threading inserts are precision ground to ensure accurate thread geometry when used in their corresponding toolholders. Using internal inserts with an external holder will result in distortion of angle and insert geometry.

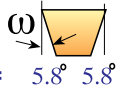
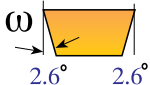
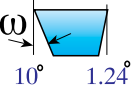
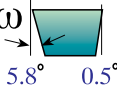


5. Insert and toolholder should always match. An IN-RH insert must be used with an IN-RH toolholder. No mismatch is allowed.

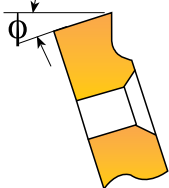


## Flank Clearance Angle ω

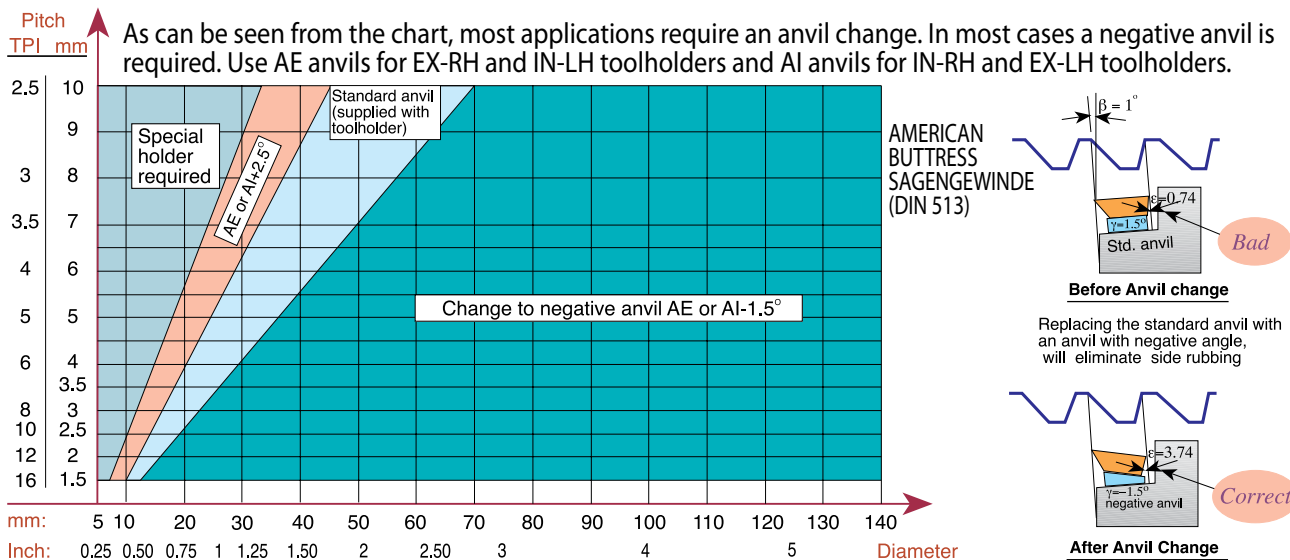
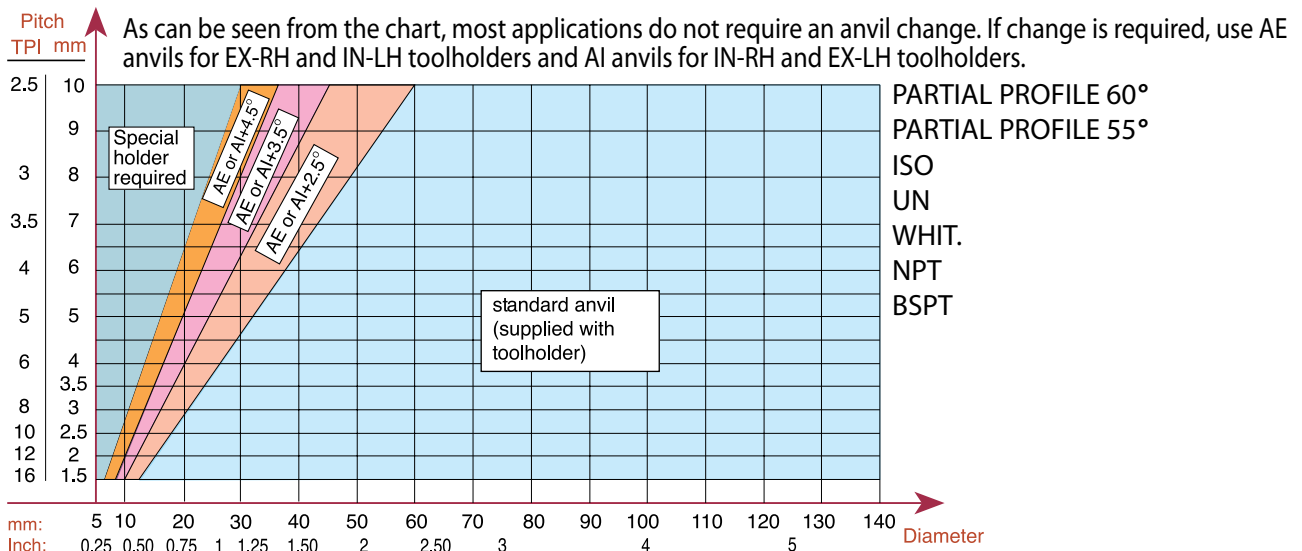
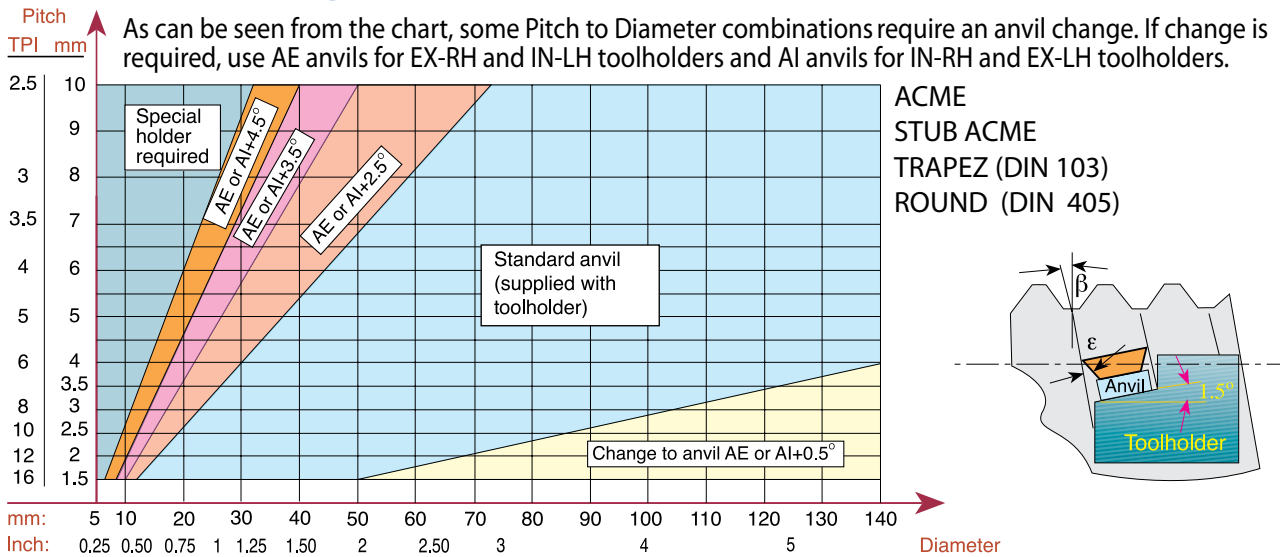
$$\omega = \text{ArcTan} (\text{Tan } \alpha \times \text{Tan } \phi)$$

$\omega = 5.8^\circ \quad 5.8^\circ$ 	$\omega = 2.6^\circ \quad 2.6^\circ$ 	$\omega = 10^\circ \quad 1.24^\circ$ 	$\omega = 5.8^\circ \quad 0.5^\circ$ 
$\omega = 8.8^\circ \quad 8.8^\circ$ $2\alpha = 60^\circ$ ISO, UN, PARTIAL 60, NPT		$\omega = 4^\circ \quad 4^\circ$ $2\alpha = 30^\circ$ $2\alpha = 29^\circ$ TRAPEZ, ACME, STACME	
		$\omega = 15^\circ \quad 1.9^\circ$ $\alpha = 45^\circ \quad \alpha = 7^\circ$ AMERICAN BUTTRESS	
		$\omega = 8.8^\circ \quad 0.8^\circ$ $\alpha = 30^\circ \quad \alpha = 3^\circ$ SAGE (DIN 513)	

$\phi = 10^\circ$  for External toolholders  
 $\phi = 15^\circ$  for Internal toolholders



## Anvil Change Recommendation



## Thread Turning - Step by Step

**Step 1 : Choose Thread Turning Method**

**Step 2 : Choose Insert**

**Step 3 : Choose Toolholder**

**Step 4 : Choose Insert Grade**

**Step 5 : Choose Thread Turning Speed**

**Step 6 : Choose Number of Threading Passes**

In most cases the above mentioned 6 steps would be the steps needed to ensure a good thread. When cutting more complicated threads such as TRAPEZ, ACME, BUTTRESS or SAGE, it is advisable to check the effect of the thread "HELIX ANGLE"  $\beta$  on the "RESULTANT FLANK CLEARANCE"  $\epsilon$ . If  $\epsilon$  is smaller than  $2^\circ$ , an anvil change is required.

**Step 7 : Find Thread Helix Angle**

**Step 8 : Choose Correct Anvil**

### EXAMPLES:

#### Example No. 1:

Step 1: Choose Thread Turning Method from page 58, we chose **EX - RH Insert & Toolholder**

Step 2: Choose Insert from page 9: **16 ER 1.5 ISO**

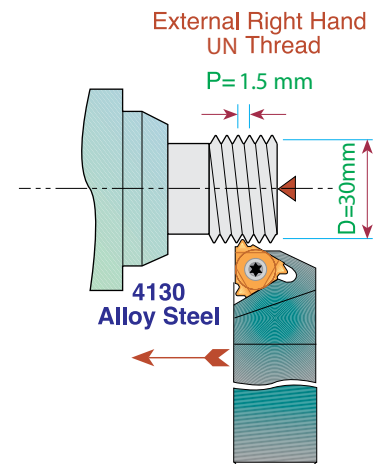
Step 3: Choose Toolholder from page 39: **SER 2020 K16**

Step 4: Choose Insert Grade from selection on page 56  
Our choice for Alloy Steel is Grade **P25C**

Step 5: Choose Thread Turning Speed from chart on page 56, we chose **100 m/min**

Rotational Speed calculation: 
$$N = \frac{100 \times 1000}{\pi \times 30} = 1065 \text{ rpm}$$

Step 6: Choose Number of Threading passes from table on page 57, we chose **8 passes**



#### Example No. 2:

Step 1: Choose Thread Turning Method from page 58  
Usually, an IN-RH Toolholder and Insert will be chosen, however, in this particular case we prefer to pull the metal chips while thread turning outward, thus we chose to work with **IN-LH Insert & Toolholder**

Step 2: Choose Insert from page 13: **16 IL 12 UN**

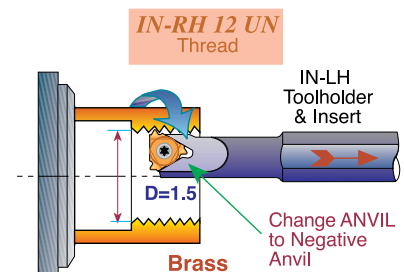
Step 3: Choose Toolholder from page 41: **SIL 0025 R16**  
Note: since we thread cut IN-RH thread outward with an IN-LH tool, do not forget to replace the standard anvil (supplied with the holder) with a negative anvil **AE16-1.5**

Step 4: Choose Insert Grade from selection on page 56  
Our choice for Brass is Grade **K20**

Step 5: Choose Thread Turning Speed from chart on page 56, we chose **150 m/min**

Rotational Speed calculation: 
$$N = \frac{150 \times 1000}{\pi \times 38.1} = 1254 \text{ RPM}$$

Step 6: Choose Number of Threading passes from table on page 57, we chose **9 passes**

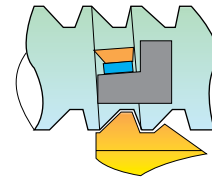


## Example No. 3:

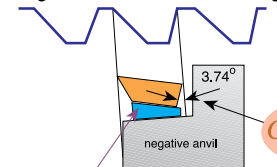
- Step 1: Choose Thread Turning Method from page 58  
We chose EX-RH Insert & Toolholder.
- Step 2: Choose Insert from page 32: **16 ER 12 ABUT**
- Step 3: Choose Toolholder from page 39: **SER 2525 M16**
- Step 4: Choose Insert Grade from selection on page 56  
Our choice for Stainless Steel is Grade **BMA**
- Step 5: Choose Thread Turning Speed from chart on page 57  
We chose 120 m/min.  
Rotational Speed calculation: 
$$N = \frac{120 \times 1000}{\pi \times 40} = 954 \text{ RPM}$$
- Step 6: Choose Number of Threading passes from table on page 56. We chose **13 passes**
- Step 7: Find Thread Helix Angle: on page 47 for Pitch of 12 TPI and 40 Diameter  
Helix Angle as shown in the chart is 1°
- Step 8: Choose correct Anvil: As can be seen from the chart on page 60, for AMERICAN BUTTRESS Thread, for 12 TPI and 40 Diameter a negative anvil **AE16-1.5** should replace the standard anvil supplied with the toolholder

EX-RH. AMERICAN BUTTRESS  
12 TPI on 40 mm diameter.

Stainless Steel 304



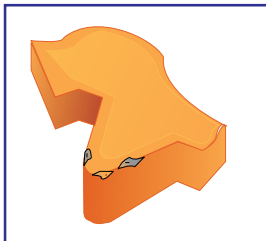
Replacing the standard anvil with an anvil with negative angle, will eliminate side rubbing



Anvil chosen:  
**AE16-1.5**

## Troubleshooting

### Chipping



1. Use a tougher carbide grade
2. Eliminate tool overhang
3. Check if insert is correctly clamped
4. Eliminate vibration

### Crater Wear



1. Reduce cutting speed
2. Apply coolant fluid
3. Use a harder carbide grade

### Build-up Edge



1. Increase cutting speed
2. Use a tougher carbide grade

### Thermal Cracking



1. Reduce cutting speed
2. Apply coolant fluid
3. Use a tougher carbide grade

### Deformation



1. Use a harder carbide grade
2. Reduce cutting speed
3. Reduce depth of cut
4. Apply coolant fluid

### Fracture



1. Use a tougher carbide grade
2. Reduce depth of cut
3. Index insert sooner
4. Check machine and tool stability