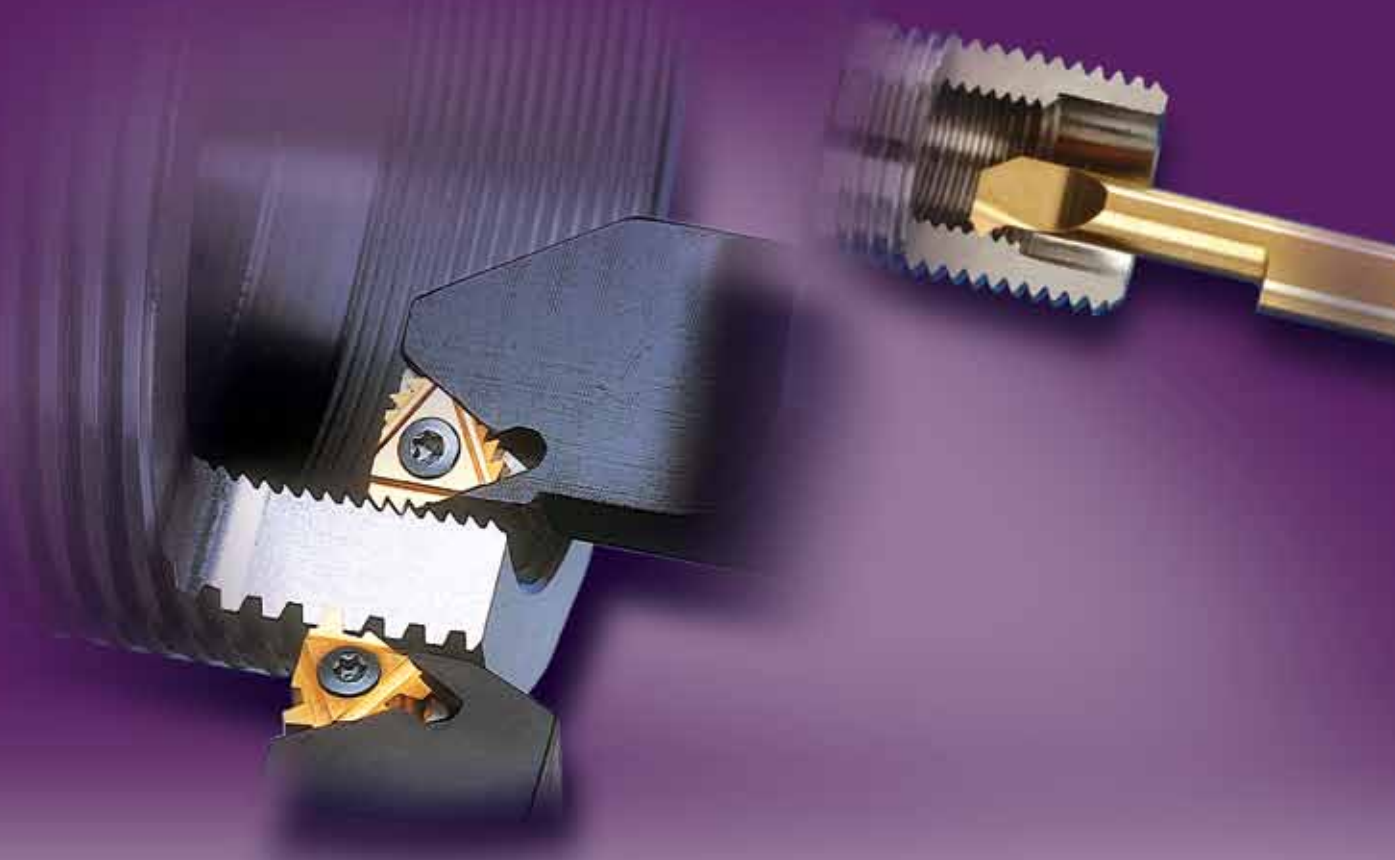
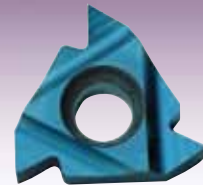


# Thread Turning Inserts



## BLU Grade

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



## HBA Grade

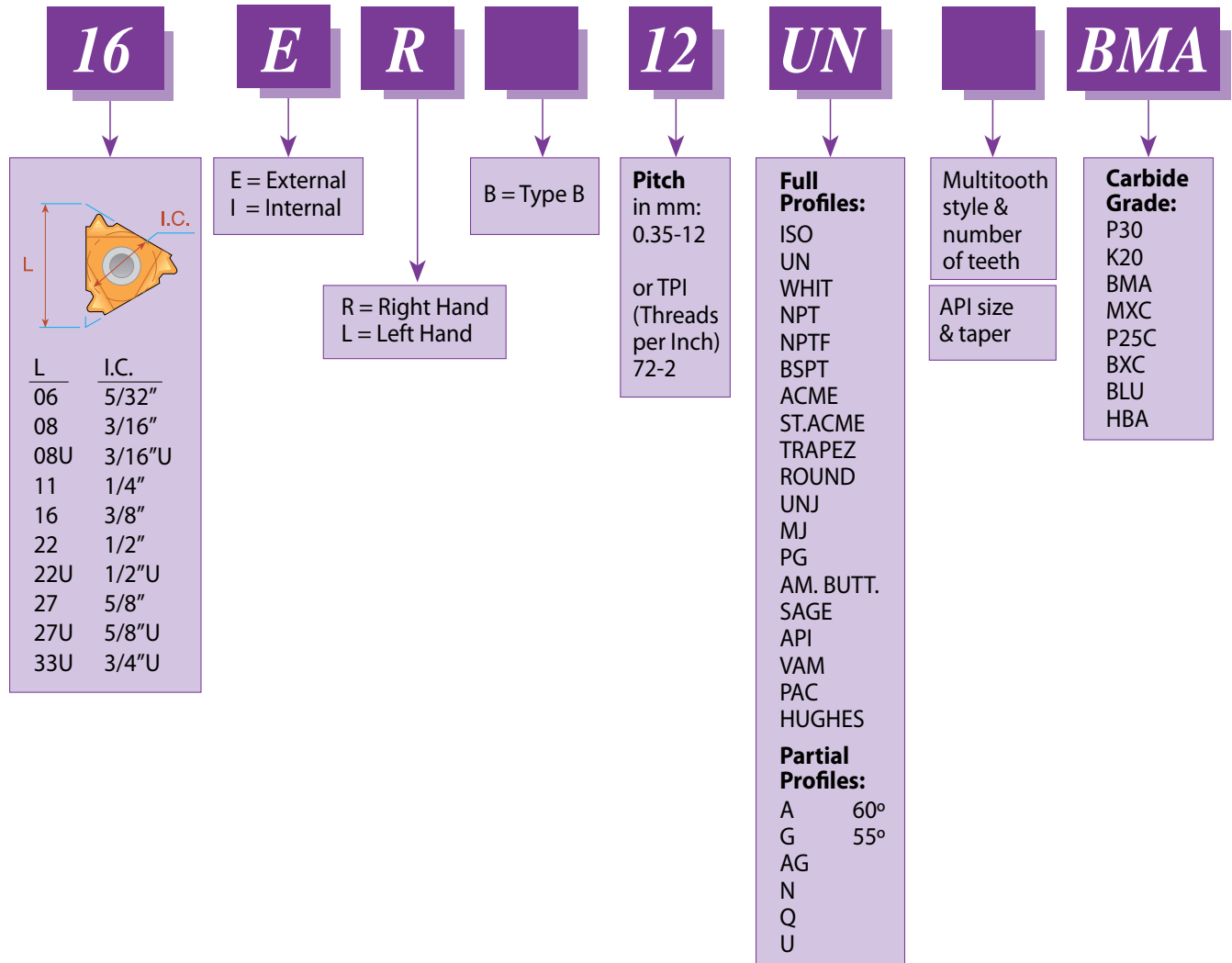
An extra-fine sub-micron grade with high toughness, for optimized performance on Hardened Steels and Cast Iron up to 62HRc, Titanium Alloys and Super Alloys (Hastelloy, Inconel, and Nickel based alloys).



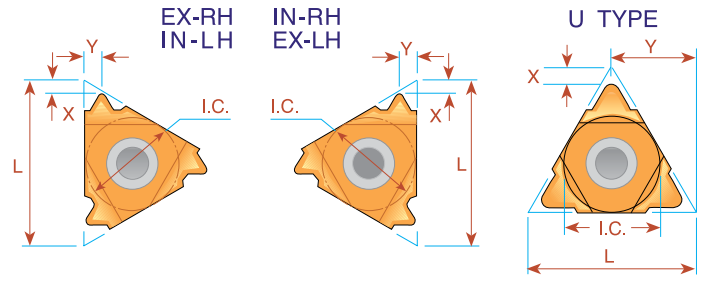
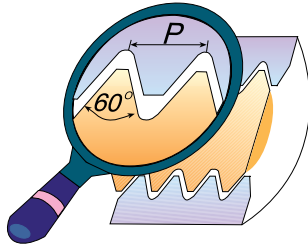
Contents:	Page:	Contents:	Page:
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## Product Identification

### Thread Turning Inserts Ordering Codes



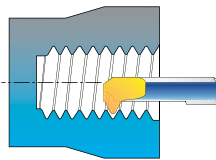
## Partial Profile 60°



L mm	I.C.	Pitch Range		<b>EXTERNAL</b> Ordering Code		<b>INTERNAL</b> Ordering Code		X	Y
		mm	TPI	Right Hand	Left Hand	Right Hand	Left Hand		
6	5/32	0.5 -1.25	48-20	ULTRA MINIATURE →		*06 IR A60	*06 IL A60	.02	.02
8	3/16	0.5 -1.5	48-16	MINIATURE →		*08 IR A60	*08 IL A60	.02	.03
8U	3/16U	1.75-2.0	14-11	"U" MINIATURE →		*08U IR/L U60		.03	.16
11	1/4	0.5 -1.5	48-16	11 ER A60	11 EL A60	11 IR A60	11 IL A60	.03	.04
16	3/8	0.5 -1.5	48-16	16 ER A60	16 EL A60	16 IR A60	16 IL A60	.03	.04
16	3/8	1.75-3.0	14- 8	16 ER G60	16 EL G60	16 IR G60	16 IL G60	.05	.07
16	3/8	0.5 -3.0	48- 8	16 ER AG60	16 EL AG60	16 IR AG60	16 IL AG60	.05	.07
22	1/2	3.5 -5.0	7- 5	22 ER N60	22 EL N60	22 IR N60	22 IL N60	.07	.10
22U	1/2U	5.5 -8.0	4.5- 3.25	22U E/R/L U60				.02	.43
27	5/8	5.5 -6.0	4.5- 4	27 ER Q60	27 EL Q60	27 IR Q60	27 IL Q60	.08	.12
27U	5/8U	6.5 -9.0	4- 2.75	27U E/R/L U60				.04	.54

Order example: 16 ER G60 MXC

For small bore threading see page 88  
\* Available only in BXC and BMA grade



## Type B Ground Profile with Sintered Chip-breaker

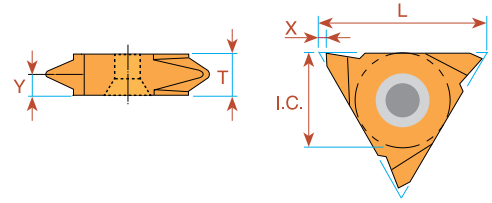


L mm	I.C.	Pitch Range		<b>EXTERNAL</b> Ordering Code	<b>INTERNAL</b> Ordering Code	X	Y
		mm	TPI	Right Hand	Right Hand		
16	3/8	0.5 -1.5	48-16	16 ER B A60	16 IR B A60	.03	.04
16	3/8	1.75-3.0	14- 8	16 ER B G60	16 IR B G60	.05	.07
16	3/8	0.5 -3.0	48- 8	16 ER B AG60	16 IR B AG60	.05	.07

Order example: 16 ER B G60 BMA

For Carbide Grade and Cutting Speed see page 66-67

## Partial Profile 60° Vertical

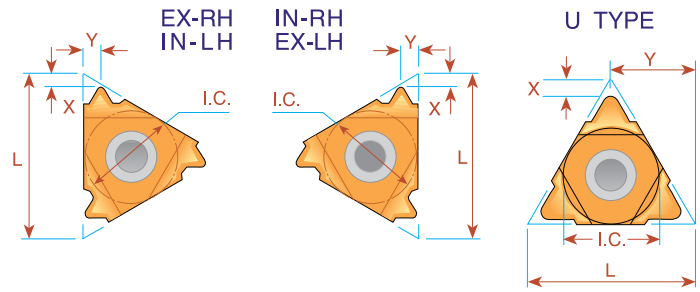
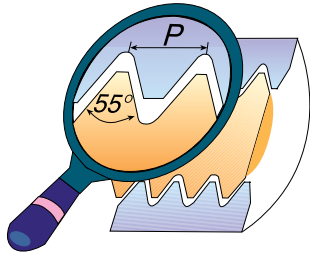


L mm	I.C.	Pitch Range		<b>EXTERNAL</b> Ordering Code		<b>INTERNAL</b> Ordering Code		X	Y	T
		mm	TPI	Right Hand	Left Hand	Right Hand	Left Hand			
16	3/8	0.5 - 1.5	48-16	<b>16V ER A60</b>	<b>16V EL A60</b>			.04	.04	.14
16	3/8	1.75- 3.0	14- 8	<b>16V ER G60</b>	<b>16V EL G60</b>			.04	.07	.14
16	3/8	0.5 - 3.0	48- 8	<b>16V ER AG60</b>	<b>16V EL AG60</b>			.04	.07	.14
22	1/2	1.75- 3.0	14- 8	<b>22V ER G60</b>	<b>22V EL G60</b>			.05	.07	.16
22	1/2	0.5 - 5.0	7- 5	<b>22V ER N60</b>	<b>22V EL N60</b>			.05	.10	.19
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>	.07	.20	.41

Order example: 16V ER G60 BMA

For Carbide Grade and Cutting Speed see page 66-67

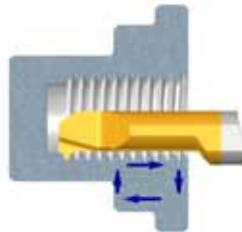
## Partial Profile 55°



L mm	I.C.	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	ULTRA MINIATURE →		*06 IR A55	*06 IL A55	.02	.02
8	3/16	0.5 -1.5	48-16	MINIATURE →		*08 IR A55	*08 IL A55	.02	.03
8U	3/16U	1.75-2.0	14-11	"U" MINIATURE →		*08U IR/L U55		.03	.16
11	1/4	0.5 -1.5	48-16	11 ER A55	11 EL A55	11 IR A55	11 IL A55	.03	.04
16	3/8	0.5 -1.5	48-16	16 ER A55	16 EL A55	16 IR A55	16 IL A55	.03	.04
16	3/8	1.75-3.0	14- 8	16 ER G55	16 EL G55	16 IR G55	16 IL G55	.05	.07
16	3/8	0.5 -3.0	48- 8	16 ER AG55	16 EL AG55	16 IR AG55	16 IL AG55	.05	.07
22	1/2	3.5 -5.0	7- 5	22 ER N55	22 EL N55	22 IR N55	22 IL N55	.07	.10
22U	1/2U	5.5 -8.0	4.5- 3.25	22U E/R/L U55				.04	.43
27	5/8	5.5 -6.0	4.5- 4	27 ER Q55	27 EL Q55	27 IR Q55	27 IL Q55	.08	.11
27U	5/8U	6.5 -9.0	4 - 2.75	27U E/R/L U55				.05	.54

Order example: 16 ER G55 MXC

For small bore threading see page 88  
 \* Available only in BXC and BMA grades



## Type B Ground Profile with Sintered Chip-breaker

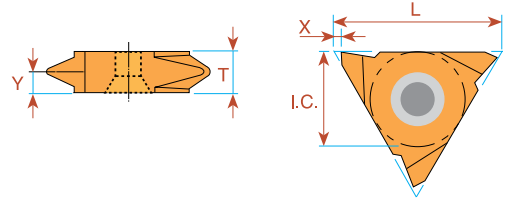


L mm	I.C.	Pitch Range		<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
		mm	TPI	Ordering Code Right Hand	Ordering Code Right Hand	Ordering Code Right Hand			
16	3/8	1.75-3.0	14-8	16 ER B G55		16 IR B G55		.05	.07
16	3/8	0.5-3.0	48-8	16 ER B AG55		16 IR B AG55		.05	.07

Order example: 16 ER B G55 BMA

For Carbide Grade and Cutting Speed see page 66-67

## Partial Profile 55° Vertical

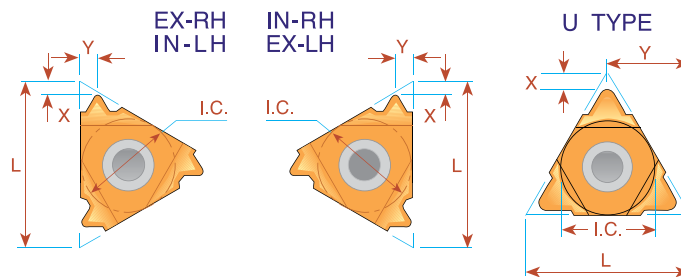
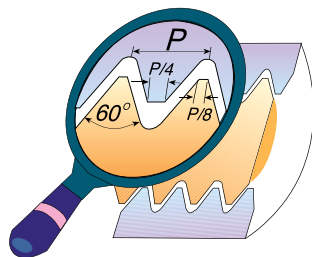


L mm	I.C.	Pitch Range		<b>EXTERNAL</b> Ordering Code		<b>INTERNAL</b> Ordering Code		X	Y	T
		mm	TPI	Right Hand	Left Hand	Right Hand	Left Hand			
16	3/8	0.5 - 1.5	48-16	<b>16V ER A55</b>	<b>16V EL A55</b>			.04	.04	.14
16	3/8	1.75- 3.0	14- 8	<b>16V ER G55</b>	<b>16V EL G55</b>			.04	.07	.14
16	3/8	0.5 - 3.0	48- 8	<b>16V ER AG55</b>	<b>16V EL AG55</b>			.04	.07	.14
22	1/2	3.5 - 5.0	7- 5	<b>22V ER N55</b>	<b>22V EL N55</b>			.05	.10	.19
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>	.07	.20	.41

Order example: 22V ER N55 BMA

For Carbide Grade and Cutting Speed see page 66-67

## ISO - metric

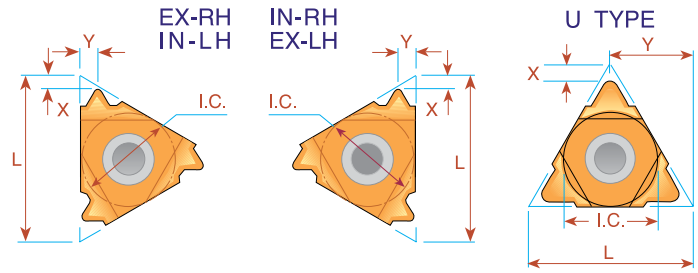
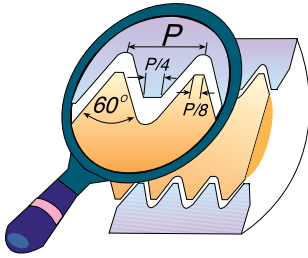


Pitch mm	L mm	I.C.	<b>EXTERNAL</b>		X	Y	<b>INTERNAL</b>		X	Y
			Ordering Code Right Hand	Ordering Code Left Hand			Ordering Code Right Hand	Ordering Code Left Hand		
0.5	6	5/32					<b>*06 IR 0.5 ISO</b>	<b>*06 IL 0.5 ISO</b>	.04	.02
0.75	6	5/32	<i>ULTRA MINIATURE</i> →				<b>*06 IR 0.75 ISO</b>	<b>*06 IL 0.75 ISO</b>	.03	.02
1.0	6	5/32					<b>*06 IR 1.0 ISO</b>	<b>*06 IL 1.0 ISO</b>	.03	.02
1.25	6	5/32					<b>*06 IR 1.25 ISO</b>	<b>*06 IL 1.25 ISO</b>	.02	.02
0.5	8	3/16					<b>*08 IR 0.5 ISO</b>	<b>*08 IL 0.5 ISO</b>	.02	.02
0.75	8	3/16					<b>*08 IR 0.75 ISO</b>	<b>*08 IL 0.75 ISO</b>	.02	.02
1.0	8	3/16	<i>MINIATURE</i> →				<b>*08 IR 1.0 ISO</b>	<b>*08 IL 1.0 ISO</b>	.02	.02
1.25	8	3/16					<b>*08 IR 1.25 ISO</b>	<b>*08 IL 1.25 ISO</b>	.02	.03
1.5	8	3/16					<b>*08 IR 1.5 ISO</b>	<b>*08 IL 1.5 ISO</b>	.02	.03
1.75	8	3/16					<b>*08 IR 1.75 ISO</b>	<b>*08 IL 1.75 ISO</b>	.02	.03
2.0	8U	3/16U	<i>"U" MINIATURE</i> →				<b>*08U IR/L 2.0 ISO</b>		.04	.16
0.35	11	1/4	<b>11 ER 0.35 ISO</b>	<b>11 EL 0.35 ISO</b>	.03	.02	<b>11 IR 0.35 ISO</b>	<b>11 IL 0.35 ISO</b>	.03	.01
0.4	11	1/4	<b>11 ER 0.4 ISO</b>	<b>11 EL 0.4 ISO</b>	.03	.02	<b>11 IR 0.4 ISO</b>	<b>11 IL 0.4 ISO</b>	.03	.02
0.45	11	1/4	<b>11 ER 0.45 ISO</b>	<b>11 EL 0.45 ISO</b>	.03	.02	<b>11 IR 0.45 ISO</b>	<b>11 IL 0.45 ISO</b>	.03	.02
0.5	11	1/4	<b>11 ER 0.5 ISO</b>	<b>11 EL 0.5 ISO</b>	.02	.02	<b>11 IR 0.5 ISO</b>	<b>11 IL 0.5 ISO</b>	.02	.02
0.6	11	1/4	<b>11 ER 0.6 ISO</b>	<b>11 EL 0.6 ISO</b>	.02	.02	<b>11 IR 0.6 ISO</b>	<b>11 IL 0.6 ISO</b>	.02	.02
0.7	11	1/4	<b>11 ER 0.7 ISO</b>	<b>11 EL 0.7 ISO</b>	.02	.02	<b>11 IR 0.7 ISO</b>	<b>11 IL 0.7 ISO</b>	.02	.02
0.75	11	1/4	<b>11 ER 0.75 ISO</b>	<b>11 EL 0.75 ISO</b>	.02	.02	<b>11 IR 0.75 ISO</b>	<b>11 IL 0.75 ISO</b>	.02	.02
0.8	11	1/4	<b>11 ER 0.8 ISO</b>	<b>11 EL 0.8 ISO</b>	.02	.02	<b>11 IR 0.8 ISO</b>	<b>11 IL 0.8 ISO</b>	.02	.02
1.0	11	1/4	<b>11 ER 1.0 ISO</b>	<b>11 EL 1.0 ISO</b>	.03	.03	<b>11 IR 1.0 ISO</b>	<b>11 IL 1.0 ISO</b>	.02	.03
1.25	11	1/4	<b>11 ER 1.25 ISO</b>	<b>11 EL 1.25 ISO</b>	.03	.04	<b>11 IR 1.25 ISO</b>	<b>11 IL 1.25 ISO</b>	.03	.03
1.5	11	1/4	<b>11 ER 1.5 ISO</b>	<b>11 EL 1.5 ISO</b>	.03	.04	<b>11 IR 1.5 ISO</b>	<b>11 IL 1.5 ISO</b>	.03	.04
1.75	11	1/4	<b>11 ER 1.75 ISO</b>	<b>11 EL 1.75 ISO</b>	.03	.04	<b>11 IR 1.75 ISO</b>	<b>11 IL 1.75 ISO</b>	.03	.04
2.0	11	1/4	<b>11 ER 2.0 ISO</b>	<b>11 EL 2.0 ISO</b>	.03	.04	<b>11 IR 2.0 ISO</b>	<b>11 IL 2.0 ISO</b>	.03	.04
2.5	11	1/4					<b>11 IR 2.5 ISO</b>	<b>11 IL 2.5 ISO</b>	.03	.05
0.35	16	3/8	<b>16 ER 0.35 ISO</b>	<b>16 EL 0.35 ISO</b>	.03	.02	<b>16 IR 0.35 ISO</b>	<b>16 IL 0.35 ISO</b>	.03	.01
0.4	16	3/8	<b>16 ER 0.4 ISO</b>	<b>16 EL 0.4 ISO</b>	.03	.02	<b>16 IR 0.4 ISO</b>	<b>16 IL 0.4 ISO</b>	.03	.02
0.45	16	3/8	<b>16 ER 0.45 ISO</b>	<b>16 EL 0.45 ISO</b>	.03	.02	<b>16 IR 0.45 ISO</b>	<b>16 IL 0.45 ISO</b>	.03	.02
0.5	16	3/8	<b>16 ER 0.5 ISO</b>	<b>16 EL 0.5 ISO</b>	.02	.02	<b>16 IR 0.5 ISO</b>	<b>16 IL 0.5 ISO</b>	.02	.02
0.6	16	3/8	<b>16 ER 0.6 ISO</b>	<b>16 EL 0.6 ISO</b>	.02	.02	<b>16 IR 0.6 ISO</b>	<b>16 IL 0.6 ISO</b>	.02	.02
0.7	16	3/8	<b>16 ER 0.7 ISO</b>	<b>16 EL 0.7 ISO</b>	.02	.02	<b>16 IR 0.7 ISO</b>	<b>16 IL 0.7 ISO</b>	.02	.02
0.75	16	3/8	<b>16 ER 0.75 ISO</b>	<b>16 EL 0.75 ISO</b>	.02	.02	<b>16 IR 0.75 ISO</b>	<b>16 IL 0.75 ISO</b>	.02	.02
0.8	16	3/8	<b>16 ER 0.8 ISO</b>	<b>16 EL 0.8 ISO</b>	.02	.02	<b>16 IR 0.8 ISO</b>	<b>16 IL 0.8 ISO</b>	.02	.02
1.0	16	3/8	<b>16 ER 1.0 ISO</b>	<b>16 EL 1.0 ISO</b>	.03	.03	<b>16 IR 1.0 ISO</b>	<b>16 IL 1.0 ISO</b>	.02	.03
1.25	16	3/8	<b>16 ER 1.25 ISO</b>	<b>16 EL 1.25 ISO</b>	.03	.04	<b>16 IR 1.25 ISO</b>	<b>16 IL 1.25 ISO</b>	.03	.03
1.5	16	3/8	<b>16 ER 1.5 ISO</b>	<b>16 EL 1.5 ISO</b>	.03	.04	<b>16 IR 1.5 ISO</b>	<b>16 IL 1.5 ISO</b>	.03	.04
1.75	16	3/8	<b>16 ER 1.75 ISO</b>	<b>16 EL 1.75 ISO</b>	.04	.05	<b>16 IR 1.75 ISO</b>	<b>16 IL 1.75 ISO</b>	.04	.05
2.0	16	3/8	<b>16 ER 2.0 ISO</b>	<b>16 EL 2.0 ISO</b>	.04	.05	<b>16 IR 2.0 ISO</b>	<b>16 IL 2.0 ISO</b>	.04	.05
2.5	16	3/8	<b>16 ER 2.5 ISO</b>	<b>16 EL 2.5 ISO</b>	.04	.06	<b>16 IR 2.5 ISO</b>	<b>16 IL 2.5 ISO</b>	.04	.06
3.0	16	3/8	<b>16 ER 3.0 ISO</b>	<b>16 EL 3.0 ISO</b>	.05	.06	<b>16 IR 3.0 ISO</b>	<b>16 IL 3.0 ISO</b>	.04	.06
3.5	16	3/8	<b>16 ER 3.5 ISO</b>	<b>16 EL 3.5 ISO</b>	.05	.06	<b>16 IR 3.5 ISO</b>	<b>16 IL 3.5 ISO</b>	.05	.07

\* Available only in BXC and BMA grades



## ISO - metric

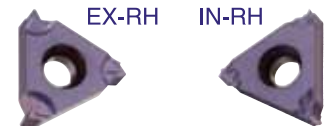
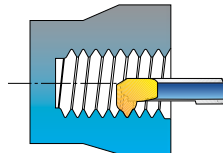


Pitch mm	L mm	I.C.	<b>EXTERNAL</b>		X	Y	<b>INTERNAL</b>		X	Y
			Ordering Code Right Hand	Ordering Code Left Hand			Ordering Code Right Hand	Ordering Code Left Hand		
3.5	22	1/2	<b>22 ER 3.5 ISO</b>	<b>22 EL 3.5 ISO</b>	.06	.09	<b>22 IR 3.5 ISO</b>	<b>22 IL 3.5 ISO</b>	.06	.09
4.0	22	1/2	<b>22 ER 4.0 ISO</b>	<b>22 EL 4.0 ISO</b>	.06	.09	<b>22 IR 4.0 ISO</b>	<b>22 IL 4.0 ISO</b>	.06	.09
4.5	22	1/2	<b>22 ER 4.5 ISO</b>	<b>22 EL 4.5 ISO</b>	.07	.09	<b>22 IR 4.5 ISO</b>	<b>22 IL 4.5 ISO</b>	.06	.09
5.0	22	1/2	<b>22 ER 5.0 ISO</b>	<b>22 EL 5.0 ISO</b>	.07	.10	<b>22 IR 5.0 ISO</b>	<b>22 IL 5.0 ISO</b>	.06	.09
5.5	22	1/2	<b>22 ER 5.5 ISO</b>	<b>22 EL 5.5 ISO</b>	.07	.10	<b>22 IR 5.5 ISO</b>	<b>22 IL 5.5 ISO</b>	.06	.09
6.0	22	1/2	<b>*22 ER 6.0 ISO</b>	<b>*22 EL 6.0 ISO</b>	.07	.11	<b>22 IR 6.0 ISO</b>	<b>22 IL 6.0 ISO</b>	.06	.09
5.5	22U	1/2U	<b>22U ER/L 5.5 ISO</b>		.09	.43	<b>22U IR/L 5.5 ISO</b>		.09	.43
6.0	22U	1/2U	<b>22U ER/L 6.0 ISO</b>		.10	.43	<b>22U IR/L 6.0 ISO</b>		.08	.43
5.5	27	5/8	<b>27 ER 5.5 ISO</b>	<b>27 EL 5.5 ISO</b>	.07	.11	<b>27 IR 5.5 ISO</b>	<b>27 IL 5.5 ISO</b>	.06	.09
6.0	27	5/8	<b>27 ER 6.0 ISO</b>	<b>27 EL 6.0 ISO</b>	.08	.11	<b>27 IR 6.0 ISO</b>	<b>27 IL 6.0 ISO</b>	.07	.10
8.0	27U	5/8U	<b>27U ER/L 8.0 ISO</b>		.09	.54	<b>27U IR/L 8.0 ISO</b>		.09	.54
12.0	33U	3/4U	<b>33U ER/L 12.0 ISO</b>		.10	.65	<b>33U IR/L 12.0 ISO</b>		.14	.67

Order example: 22 IR 3.5 ISO BMA

\* Special holder required

For small bore threading see page 89



## Type B

### Ground Profile with Sintered Chip-breaker

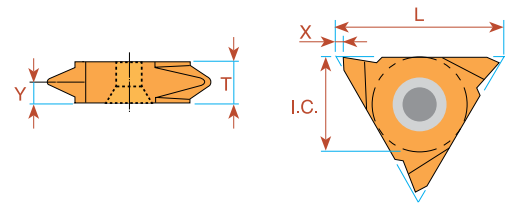
Pitch mm	L	I.C. in	<b>EXTERNAL</b>		X	Y	<b>INTERNAL</b>		X	Y
			Ordering Code Right Hand				Ordering Code Right Hand			
0.5	11	1/4					<b>11 IR B 0.5 ISO</b>		.02	.02
0.75	11	1/4					<b>11 IR B 0.75 ISO</b>		.02	.02
0.8	11	1/4					<b>11 IR B 0.8 ISO</b>		.02	.02
1.0	11	1/4					<b>11 IR B 1.0 ISO</b>		.02	.02
1.25	11	1/4					<b>11 IR B 1.25 ISO</b>		.03	.04
1.5	11	1/4					<b>11 IR B 1.5 ISO</b>		.03	.04
1.75	11	1/4					<b>11 IR B 1.75 ISO</b>		.03	.04
2.0	11	1/4					<b>11 IR B 2.0 ISO</b>		.03	.04
0.8	16	3/8	<b>16 ER B 0.8 ISO</b>		.02	.02				
1.0	16	3/8	<b>16 ER B 1.0 ISO</b>		.03	.03	<b>16 IR B 1.0 ISO</b>		.02	.03
1.25	16	3/8	<b>16 ER B 1.25 ISO</b>		.03	.04	<b>16 IR B 1.25 ISO</b>		.03	.03
1.5	16	3/8	<b>16 ER B 1.5 ISO</b>		.03	.04	<b>16 IR B 1.5 ISO</b>		.03	.04
1.75	16	3/8	<b>16 ER B 1.75 ISO</b>		.04	.05	<b>16 IR B 1.75 ISO</b>		.04	.05
2.0	16	3/8	<b>16 ER B 2.0 ISO</b>		.04	.05	<b>16 IR B 2.0 ISO</b>		.04	.05
2.5	16	3/8	<b>16 ER B 2.5 ISO</b>		.04	.06	<b>16 IR B 2.5 ISO</b>		.04	.06
3.0	16	3/8	<b>16 ER B 3.0 ISO</b>		.05	.06	<b>16 IR B 3.0 ISO</b>		.04	.06

Order example: 16 IR B 1.5 ISO BMA

For Carbide Grade and Cutting Speed see page 66-67



## ISO - metric Vertical



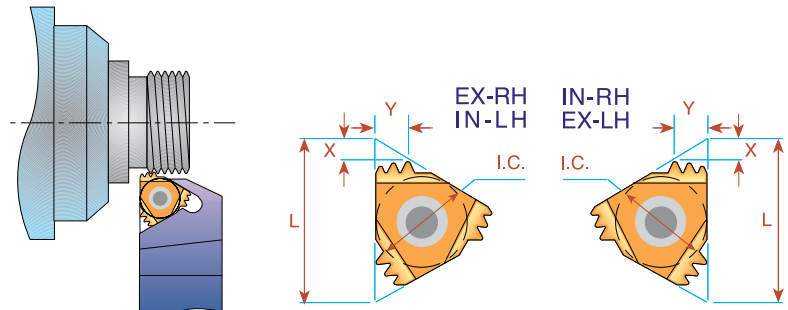
Pitch mm	L mm	I.C.	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y	T
			Right Hand	Left Hand	Right Hand	Left Hand			
0.5	16	3/8	<b>16V ER 0.5 ISO</b>	<b>16V EL 0.5 ISO</b>			.04	.02	.14
0.75	16	3/8	<b>16V ER 0.75 ISO</b>	<b>16V EL 0.75 ISO</b>			.04	.02	.14
0.8	16	3/8	<b>16V ER 0.8 ISO</b>	<b>16V EL 0.8 ISO</b>			.04	.02	.14
1.0	16	3/8	<b>16V ER 1.0 ISO</b>	<b>16V EL 1.0 ISO</b>			.04	.03	.14
1.25	16	3/8	<b>16V ER 1.25 ISO</b>	<b>16V EL 1.25 ISO</b>			.04	.04	.14
1.5	16	3/8	<b>16V ER 1.5 ISO</b>	<b>16V EL 1.5 ISO</b>			.04	.04	.14
1.75	16	3/8	<b>16V ER 1.75 ISO</b>	<b>16V EL 1.75 ISO</b>			.04	.05	.14
2.0	16	3/8	<b>16V ER 2.0 ISO</b>	<b>16V EL 2.0 ISO</b>			.04	.05	.14
2.5	16	3/8	<b>16V ER 2.5 ISO</b>	<b>16V EL 2.5 ISO</b>			.04	.06	.14
3.0	16	3/8	<b>16V ER 3.0 ISO</b>	<b>16V EL 3.0 ISO</b>			.04	.07	.14
* 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>	.07	.20	.41
** 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>	.07	.20	.41

Order example: 16V ER 1.5 ISO BMA

\* Minimum bore: 2.36"

\*\* Minimum bore: 2.83"

## Multitooth



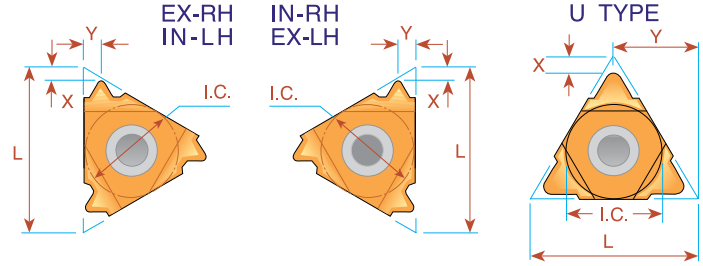
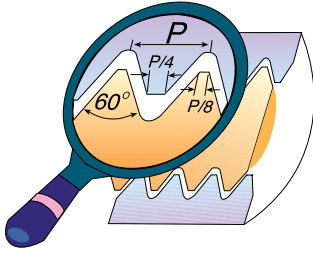
Pitch mm	L mm	I.C.	Number of Teeth	<b>EXTERNAL</b>	Anvil	<b>INTERNAL</b>	Anvil	X	Y
				Ordering Code		Ordering Code			
1.0	16	3/8	3	<b>16 ER 1.0 ISO 3M</b>	AE16M	<b>16 IR 1.0 ISO 3M</b>	AI16M	.07	.10
1.5	16	3/8	2	<b>16 ER 1.5 ISO 2M</b>	AE16M	<b>16 IR 1.5 ISO 2M</b>	AI16M	.06	.09
1.5	22	1/2	3	<b>22 ER 1.5 ISO 3M</b>	AE22M	<b>22 IR 1.5 ISO 3M</b>	AI22M	.09	.15
2.0	22	1/2	2	<b>22 ER 2.0 ISO 2M</b>	AE22M	<b>22 IR 2.0 ISO 2M</b>	AI22M	.08	.12
2.0	22	1/2	3	<b>22 ER 2.0 ISO 3M</b>	AE22M	<b>22 IR 2.0 ISO 3M</b>	AI22M	.12	.20
3.0	27	5/8	2	<b>27 ER 3.0 ISO 2M</b>	AE27M	<b>27 IR 3.0 ISO 2M</b>	AI27M	.11	.18

Order example: 22 IR B 2.0 ISO 2M BMA

For recommended number of passes see page 68

For Carbide Grade and Cutting Speed see page 66-67

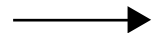
## UN - Unified UNC, UNF, UNEF, UNS



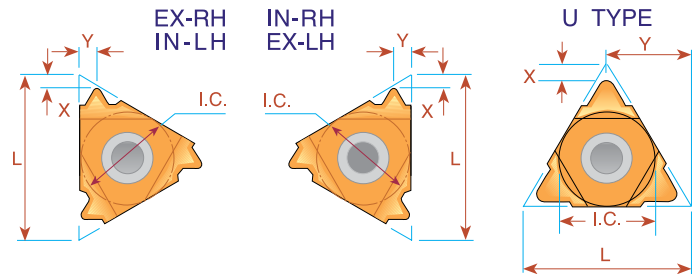
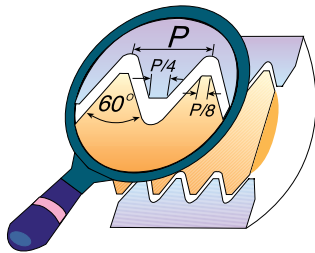
Pitch TPI	L mm	I.C.	EXTERNAL				INTERNAL				
			Ordering Code		X	Y	Ordering Code		X	Y	
Right Hand	Left Hand	Right Hand	Left Hand	Right Hand			Left Hand				
32	6	5/32	ULTRA MINIATURE					*06 IR 32 UN	*06 IL 32 UN	.03	.02
28	6	5/32						*06 IR 28 UN	*06 IL 28 UN	.03	.02
24	6	5/32						*06 IR 24 UN	*06 IL 24 UN	.03	.02
20	6	5/32						*06 IR 20 UN	*06 IL 20 UN	.02	.02
18	6	5/32						*06 IR 18 UN	*06 IL 18 UN	.02	.03
32	8	3/16	MINIATURE					*08 IR 32 UN	*08 IL 32 UN	.02	.02
28	8	3/16						*08 IR 28 UN	*08 IL 28 UN	.02	.02
24	8	3/16						*08 IR 24 UN	*08 IL 24 UN	.02	.02
20	8	3/16						*08 IR 20 UN	*08 IL 20 UN	.02	.03
18	8	3/16						*08 IR 18 UN	*08 IL 18 UN	.02	.03
16	8	3/16						*08 IR 16 UN	*08 IL 16 UN	.02	.03
14	8	3/16						*08 IR 14 UN	*08 IL 14 UN	.02	.03
13	8	3/16					**08 IR 13 UN		.03	.04	
13	8U	3/16U	"U" MINIATURE					*08U IR/L 13 UN		.04	.16
12	8U	3/16U						*08U IR/L 12 UN		.04	.16
11	8U	3/16U						*08U IR/L 11 UN		.04	.16
72	11	1/4	11 ER 72 UN	11 EL 72 UN	.03	.02	11 IR 72 UN	11 IL 72 UN	.03	.01	
64	11	1/4	11 ER 64 UN	11 EL 64 UN	.03	.02	11 IR 64 UN	11 IL 64 UN	.03	.02	
56	11	1/4	11 ER 56 UN	11 EL 56 UN	.03	.02	11 IR 56 UN	11 IL 56 UN	.03	.02	
48	11	1/4	11 ER 48 UN	11 EL 48 UN	.02	.02	11 IR 48 UN	11 IL 48 UN	.02	.02	
44	11	1/4	11 ER 44 UN	11 EL 44 UN	.02	.02	11 IR 44 UN	11 IL 44 UN	.02	.02	
40	11	1/4	11 ER 40 UN	11 EL 40 UN	.02	.02	11 IR 40 UN	11 IL 40 UN	.02	.02	
36	11	1/4	11 ER 36 UN	11 EL 36 UN	.02	.02	11 IR 36 UN	11 IL 36 UN	.02	.02	
32	11	1/4	11 ER 32 UN	11 EL 32 UN	.02	.02	11 IR 32 UN	11 IL 32 UN	.02	.02	
28	11	1/4	11 ER 28 UN	11 EL 28 UN	.02	.03	11 IR 28 UN	11 IL 28 UN	.02	.03	
27	11	1/4	11 ER 27 UN	11 EL 27 UN	.03	.03	11 IR 27 UN	11 IL 27 UN	.03	.03	
24	11	1/4	11 ER 24 UN	11 EL 24 UN	.03	.03	11 IR 24 UN	11 IL 24 UN	.03	.03	
20	11	1/4	11 ER 20 UN	11 EL 20 UN	.03	.04	11 IR 20 UN	11 IL 20 UN	.03	.04	
18	11	1/4	11 ER 18 UN	11 EL 18 UN	.03	.04	11 IR 18 UN	11 IL 18 UN	.03	.04	
16	11	1/4	11 ER 16 UN	11 EL 16 UN	.04	.04	11 IR 16 UN	11 IL 16 UN	.04	.04	
14	11	1/4	11 ER 14 UN	11 EL 14 UN	.04	.04	11 IR 14 UN	11 IL 14 UN	.04	.04	
13	11	1/4					11 IR 13 UN	11 IL 13 UN	.03	.04	
12	11	1/4					11 IR 12 UN	11 IL 12 UN	.04	.04	
11	11	1/4					11 IR 11 UN	11 IL 11 UN	.03	.04	
72	16	3/8	16 ER 72 UN	16 EL 72 UN	.03	.02	16 IR 72 UN	16 IL 72 UN	.03	.01	
64	16	3/8	16 ER 64 UN	16 EL 64 UN	.03	.02	16 IR 64 UN	16 IL 64 UN	.03	.02	
56	16	3/8	16 ER 56 UN	16 EL 56 UN	.03	.02	16 IR 56 UN	16 IL 56 UN	.03	.02	
48	16	3/8	16 ER 48 UN	16 EL 48 UN	.02	.02	16 IR 48 UN	16 IL 48 UN	.02	.02	
44	16	3/8	16 ER 44 UN	16 EL 44 UN	.02	.02	16 IR 44 UN	16 IL 44 UN	.02	.02	
40	16	3/8	16 ER 40 UN	16 EL 40 UN	.02	.02	16 IR 40 UN	16 IL 40 UN	.02	.02	
36	16	3/8	16 ER 36 UN	16 EL 36 UN	.02	.02	16 IR 36 UN	16 IL 36 UN	.02	.02	

\* Available only in BXC and BMA grades

\*\* To be used with Holder SIR 0354 K08 on page 52



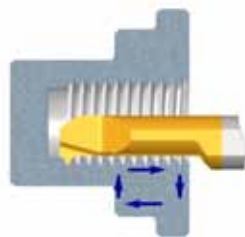
## UN - Unified **UNC, UNF, UNEF, UNS**



Pitch TPI	L mm	I.C.	<b>EXTERNAL</b>		X	Y	<b>INTERNAL</b>		X	Y
			Right Hand	Left Hand			Right Hand	Left Hand		
32	16	3/8	<b>16 ER 32 UN</b>	<b>16 EL 32 UN</b>	.02	.02	<b>16 IR 32 UN</b>	<b>16 IL 32 UN</b>	.02	.02
28	16	3/8	<b>16 ER 28 UN</b>	<b>16 EL 28 UN</b>	.02	.03	<b>16 IR 28 UN</b>	<b>16 IL 28 UN</b>	.02	.03
27	16	3/8	<b>16 ER 27 UN</b>	<b>16 EL 27 UN</b>	.03	.03	<b>16 IR 27 UN</b>	<b>16 IL 27 UN</b>	.03	.03
24	16	3/8	<b>16 ER 24 UN</b>	<b>16 EL 24 UN</b>	.03	.03	<b>16 IR 24 UN</b>	<b>16 IL 24 UN</b>	.03	.03
20	16	3/8	<b>16 ER 20 UN</b>	<b>16 EL 20 UN</b>	.03	.04	<b>16 IR 20 UN</b>	<b>16 IL 20 UN</b>	.03	.04
18	16	3/8	<b>16 ER 18 UN</b>	<b>16 EL 18 UN</b>	.03	.04	<b>16 IR 18 UN</b>	<b>16 IL 18 UN</b>	.03	.04
16	16	3/8	<b>16 ER 16 UN</b>	<b>16 EL 16 UN</b>	.04	.04	<b>16 IR 16 UN</b>	<b>16 IL 16 UN</b>	.04	.04
14	16	3/8	<b>16 ER 14 UN</b>	<b>16 EL 14 UN</b>	.04	.05	<b>16 IR 14 UN</b>	<b>16 IL 14 UN</b>	.04	.05
13	16	3/8	<b>16 ER 13 UN</b>	<b>16 EL 13 UN</b>	.04	.05	<b>16 IR 13 UN</b>	<b>16 IL 13 UN</b>	.04	.05
12	16	3/8	<b>16 ER 12 UN</b>	<b>16 EL 12 UN</b>	.04	.06	<b>16 IR 12 UN</b>	<b>16 IL 12 UN</b>	.04	.06
11.5	16	3/8	<b>16 ER 11.5 UN</b>	<b>16 EL 11.5 UN</b>	.04	.06	<b>16 IR 11.5 UN</b>	<b>16 IL 11.5 UN</b>	.04	.06
11	16	3/8	<b>16 ER 11 UN</b>	<b>16 EL 11 UN</b>	.04	.06	<b>16 IR 11 UN</b>	<b>16 IL 11 UN</b>	.04	.06
10	16	3/8	<b>16 ER 10 UN</b>	<b>16 EL 10 UN</b>	.04	.06	<b>16 IR 10 UN</b>	<b>16 IL 10 UN</b>	.04	.06
9	16	3/8	<b>16 ER 9 UN</b>	<b>16 EL 9 UN</b>	.05	.07	<b>16 IR 9 UN</b>	<b>16 IL 9 UN</b>	.05	.07
8	16	3/8	<b>16 ER 8 UN</b>	<b>16 EL 8 UN</b>	.05	.06	<b>16 IR 8 UN</b>	<b>16 IL 8 UN</b>	.04	.06
7	22	1/2	<b>22 ER 7 UN</b>	<b>22 EL 7 UN</b>	.06	.09	<b>22 IR 7 UN</b>	<b>22 IL 7 UN</b>	.06	.09
6	22	1/2	<b>22 ER 6 UN</b>	<b>22 EL 6 UN</b>	.06	.09	<b>22 IR 6 UN</b>	<b>22 IL 6 UN</b>	.06	.09
5	22	1/2	<b>22 ER 5 UN</b>	<b>22 EL 5 UN</b>	.07	.10	<b>22 IR 5 UN</b>	<b>22 IL 5 UN</b>	.06	.09
4.5	22U	1/2U	<b>22U ER/L 4.5 UN</b>		.08	.43	<b>22U IR/L 4.5 UN</b>		.09	.43
4	22U	1/2U	<b>22U ER/L 4 UN</b>		.08	.43	<b>22U IR/L 4 UN</b>		.09	.43
4.5	27	5/8	<b>27 ER 4.5 UN</b>	<b>27 EL 4.5 UN</b>	.07	.11	<b>27 IR 4.5 UN</b>	<b>27 IL 4.5 UN</b>	.07	.09
4	27	5/8	<b>27 ER 4 UN</b>	<b>27 EL 4 UN</b>	.08	.12	<b>27 IR 4 UN</b>	<b>27 IL 4 UN</b>	.07	.11
3	27U	5/8U	<b>27U ER/L 3 UN</b>		.10	.54	<b>27U IR/L 3 UN</b>		.11	.54
2	33U	3/4U	<b>33U ER/L 2 UN</b>		.11	.65	<b>33U IR/L 2 UN</b>		.14	.67

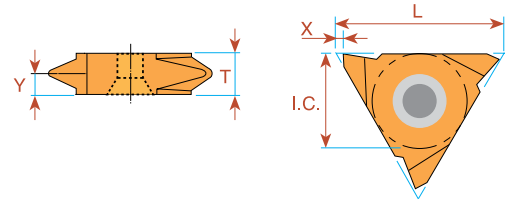
Order example: 22ER 7 UN BMA

For small bore threading see page 89



For Carbide Grade and Cutting Speed see page 66-67

## UN - Unified Vertical

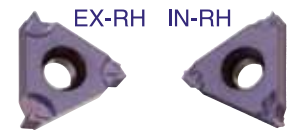


Pitch TPI	L mm	I.C.	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y	T
			Ordering Code		Ordering Code				
			Right Hand	Left Hand	Right Hand	Left Hand			
32	16	3/8	16V ER 32 UN	16V EL 32 UN			.04	.02	.14
28	16	3/8	16V ER 28 UN	16V EL 28 UN			.04	.03	.14
24	16	3/8	16V ER 24 UN	16V EL 24 UN			.04	.03	.14
20	16	3/8	16V ER 20 UN	16V EL 20 UN			.04	.03	.14
18	16	3/8	16V ER 18 UN	16V EL 18 UN			.04	.04	.14
16	16	3/8	16V ER 16 UN	16V EL 16 UN			.04	.04	.14
14	16	3/8	16V ER 14 UN	16V EL 14 UN			.04	.05	.14
12	16	3/8	16V ER 12 UN	16V EL 12 UN			.04	.05	.14
10	16	3/8	16V ER 10 UN	16V EL 10 UN			.04	.06	.14
8	16	3/8	16V ER 8 UN	16V EL 8 UN			.04	.06	.14
7	22	1/2	22V ER 7 UN	22V EL 7 UN			.05	.09	.19
* 3	27	5/8	27V ER 3 UN	27V EL 3 UN	27V IR 3 UN	27 IL 3 UN	.07	.20	.41

Order example: 22V ER 7UN MXC

\* Minimum bore: Ø2.56"

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

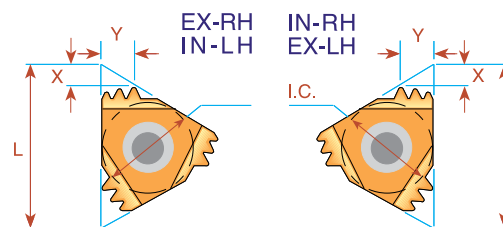
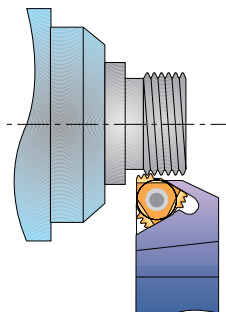


### Ground Profile with Sintered Chip-breaker

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		.02	.02
28	11	1/4					11 IR B 28 UN		.02	.02
24	11	1/4					11 IR B 24 UN		.02	.02
20	11	1/4					11 IR B 20 UN		.03	.04
18	11	1/4					11 IR B 18 UN		.03	.04
16	11	1/4					11 IR B 16 UN		.03	.04
14	11	1/4					11 IR B 14 UN		.03	.04
12	11	1/4					11 IR B 12 UN		.03	.04
24	16	3/8	16 ER B 24 UN		.03	.03	16 IR B 24 UN		.03	.03
20	16	3/8	16 ER B 20 UN		.03	.04	16 IR B 20 UN		.03	.03
18	16	3/8	16 ER B 18 UN		.03	.04	16 IR B 18 UN		.03	.03
16	16	3/8	16 ER B 16 UN		.04	.04	16 IR B 16 UN		.04	.04
14	16	3/8	16 ER B 14 UN		.04	.05	16 IR B 14 UN		.04	.05
13	16	3/8	16 ER B 13 UN		.04	.05				
12	16	3/8	16 ER B 12 UN		.04	.06	16 IR B 12 UN		.04	.06
11	16	3/8	16 ER B 11 UN		.04	.06				
10	16	3/8	16 ER B 10 UN		.04	.06	16 IR B 10 UN		.04	.06
9	16	3/8	16 ER B 9 UN		.05	.07				
8	16	3/8	16 ER B 8 UN		.05	.06	16 IR B 8 UN		.04	.06

Order example: 16 IR B 12 UN BMA

## Multitooth



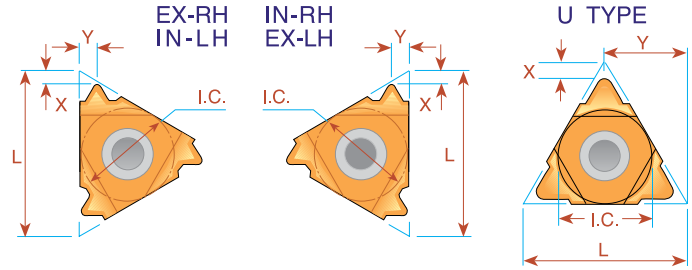
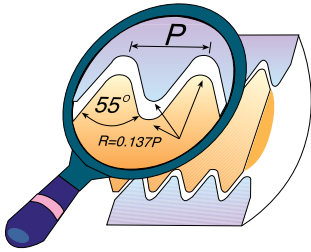
Pitch TPI	L	I.C. in	Number of Teeth	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
				Ordering Code	Anvil	Ordering Code	Anvil		
24	16	3/8	2	<b>16 ER 24 UN 2M</b>	AE16M	<b>16 IR 24 UN 2M</b>	AI16M	.04	.07
20	16	3/8	2	<b>16 ER 20 UN 2M</b>	AE16M	<b>16 IR 20 UN 2M</b>	AI16M	.06	.08
18	16	3/8	2	<b>16 ER 18 UN 2M</b>	AE16M	<b>16 IR 18 UN 2M</b>	AI16M	.06	.09
16	16	3/8	2	<b>16 ER 16 UN 2M</b>	AE16M	<b>16 IR 16 UN 2M</b>	AI16M	.06	.09
14	16	3/8	2	<b>16 ER 14 UN 2M</b>	AE16M	<b>16 IR 14 UN 2M</b>	AI16M	.07	.11
12	16	3/8	2	<b>16 ER 12 UN 2M</b>	AE16M	<b>16 IR 12 UN 2M</b>	AI16M	.08	.12
16	22	1/2	3	<b>22 ER 16 UN 3M</b>	AE22M	<b>22 IR 16 UN 3M</b>	AI22M	.10	.16
13	22	1/2	3	<b>22 ER 13 UN 3M</b>	AE22M	-	AI22M	.12	.19
12	22	1/2	2	<b>22 ER 12 UN 2M</b>	AE22M	<b>22 IR 12 UN 2M</b>	AI22M	.09	.13
12	22	1/2	3	<b>22 ER 12 UN 3M</b>	AE22M	<b>22 IR 12 UN 3M</b>	AI22M	.13	.21
8	27	5/8	2	<b>27 ER 8 UN 2M</b>	AE27M	<b>27 IR 8 UN 2M</b>	AI27M	.12	.19

Order example: 22 IR 16 UN 3M BMA

For recommended number of passes see page 68

For Carbide Grade and Cutting Speed see page 66-67

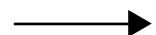
## Whitworth - 55° BSW, BSF, BSP, BSB



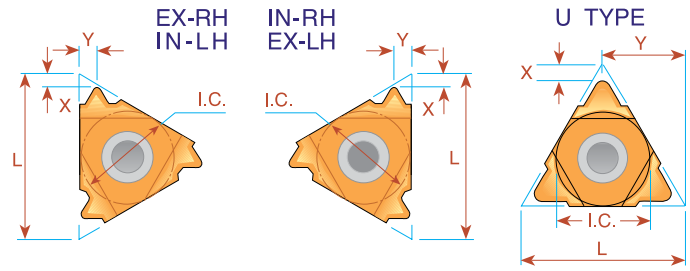
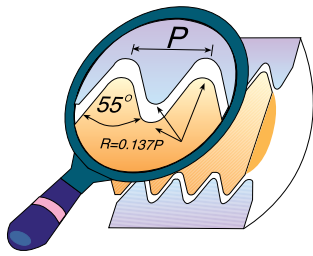
Pitch TPI	L mm	I.C.	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
			Ordering Code Right Hand	Ordering Code Left Hand	Ordering Code Right Hand	Ordering Code Left Hand		
26	6	5/32	<i>ULTRA MINIATURE</i> →		*06 IR 26 W	*06 IL 26 W	.03	.02
22	6	5/32			*06 IR 22 W	*06 IL 22 W	.02	.02
20	6	5/32			*06 IR 20 W	*06 IL 20 W	.02	.03
18	6	5/32			*06 IR 18 W	*06 IL 18 W	.02	.03
28	8	3/16	<i>MINIATURE</i> →		*08 IR 28 W	*08 IL 28 W	.02	.02
24	8	3/16			*08 IR 24 W	*08 IL 24 W	.02	.02
20	8	3/16			*08 IR 20 W	*08 IL 20 W	.02	.03
19	8	3/16			*08 IR 19 W	*08 IL 19 W	.02	.03
18	8	3/16			*08 IR 18 W	*08 IL 18 W	.02	.03
16	8	3/16			*08 IR 16 W	*08 IL 16 W	.02	.03
14	8U	3/16U	<i>"U" MINIATURE</i> →		*08U IR/L 14 W		.04	.16
12	8U	3/16U			*08U IR/L 12 W		.04	.16
11	8U	3/16U			*08U IR/L 11 W		.04	.16
72	11	1/4	11 ER 72 W	11 EL 72 W	11 IR 72 W	11 IL 72 W	.03	.02
60	11	1/4	11 ER 60 W	11 EL 60 W	11 IR 60 W	11 IL 60 W	.03	.02
56	11	1/4	11 ER 56 W	11 EL 56 W	11 IR 56 W	11 IL 56 W	.03	.02
48	11	1/4	11 ER 48 W	11 EL 48 W	11 IR 48 W	11 IL 48 W	.02	.02
40	11	1/4	11 ER 40 W	11 EL 40 W	11 IR 40 W	11 IL 40 W	.02	.02
36	11	1/4	11 ER 36 W	11 EL 36 W	11 IR 36 W	11 IL 36 W	.02	.02
32	11	1/4	11 ER 32 W	11 EL 32 W	11 IR 32 W	11 IL 32 W	.02	.02
28	11	1/4	11 ER 28 W	11 EL 28 W	11 IR 28 W	11 IL 28 W	.02	.03
26	11	1/4	11 ER 26 W	11 EL 26 W	11 IR 26 W	11 IL 26 W	.03	.03
24	11	1/4	11 ER 24 W	11 EL 24 W	11 IR 24 W	11 IL 24 W	.03	.03
22	11	1/4	11 ER 22 W	11 EL 22 W	11 IR 22 W	11 IL 22 W	.03	.04
20	11	1/4	11 ER 20 W	11 EL 20 W	11 IR 20 W	11 IL 20 W	.03	.04
19	11	1/4	11 ER 19 W	11 EL 19 W	11 IR 19 W	11 IL 19 W	.03	.04
18	11	1/4	11 ER 18 W	11 EL 18 W	11 IR 18 W	11 IL 18 W	.03	.04
16	11	1/4	11 ER 16 W	11 EL 16 W	11 IR 16 W	11 IL 16 W	.04	.04
14	11	1/4	11 ER 14 W	11 EL 14 W	11 IR 14 W	11 IL 14 W	.04	.04
12	11	1/4			11 IR 12 W	11 IL 12 W	.04	.04
11	11	1/4			(1) 11 IR 11 W	(1) 11 IL 11 W	.04	.05
72	16	3/8	16 ER 72 W	16 EL 72 W	16 IR 72 W	16 IL 72 W	.03	.02
60	16	3/8	16 ER 60 W	16 EL 60 W	16 IR 60 W	16 IL 60 W	.03	.02
56	16	3/8	16 ER 56 W	16 EL 56 W	16 IR 56 W	16 IL 56 W	.03	.02
48	16	3/8	16 ER 48 W	16 EL 48 W	16 IR 48 W	16 IL 48 W	.02	.02
40	16	3/8	16 ER 40 W	16 EL 40 W	16 IR 40 W	16 IL 40 W	.02	.02
36	16	3/8	16 ER 36 W	16 EL 36 W	16 IR 36 W	16 IL 36 W	.02	.02
32	16	3/8	16 ER 32 W	16 EL 32 W	16 IR 32 W	16 IL 32 W	.02	.02
28	16	3/8	16 ER 28 W	16 EL 28 W	16 IR 28 W	16 IL 28 W	.02	.03
26	16	3/8	16 ER 26 W	16 EL 26 W	16 IR 26 W	16 IL 26 W	.03	.03
24	16	3/8	16 ER 24 W	16 EL 24 W	16 IR 24 W	16 IL 24 W	.03	.03

\* 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 mm	I.C.	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
			Right Hand	Left Hand	Right Hand	Left Hand		
22	16	3/8	<b>16 ER 22 W</b>	<b>16 EL 22 W</b>	<b>16 IR 22 W</b>	<b>16 IL 22 W</b>	.03	.04
20	16	3/8	<b>16 ER 20 W</b>	<b>16 EL 20 W</b>	<b>16 IR 20 W</b>	<b>16 IL 20 W</b>	.03	.04
19	16	3/8	<b>16 ER 19 W</b>	<b>16 EL 19 W</b>	<b>16 IR 19 W</b>	<b>16 IL 19 W</b>	.03	.04
18	16	3/8	<b>16 ER 18 W</b>	<b>16 EL 18 W</b>	<b>16 IR 18 W</b>	<b>16 IL 18 W</b>	.03	.04
16	16	3/8	<b>16 ER 16 W</b>	<b>16 EL 16 W</b>	<b>16 IR 16 W</b>	<b>16 IL 16 W</b>	.04	.04
14	16	3/8	<b>16 ER 14 W</b>	<b>16 EL 14 W</b>	<b>16 IR 14 W</b>	<b>16 IL 14 W</b>	.04	.05
12	16	3/8	<b>16 ER 12 W</b>	<b>16 EL 12 W</b>	<b>16 IR 12 W</b>	<b>16 IL 12 W</b>	.04	.06
11	16	3/8	<b>16 ER 11 W</b>	<b>16 EL 11 W</b>	<b>16 IR 11 W</b>	<b>16 IL 11 W</b>	.04	.06
10	16	3/8	<b>16 ER 10 W</b>	<b>16 EL 10 W</b>	<b>16 IR 10 W</b>	<b>16 IL 10 W</b>	.04	.06
9	16	3/8	<b>16 ER 9 W</b>	<b>16 EL 9 W</b>	<b>16 IR 9 W</b>	<b>16 IL 9 W</b>	.05	.07
8	16	3/8	<b>16 ER 8 W</b>	<b>16 EL 8 W</b>	<b>16 IR 8 W</b>	<b>16 IL 8 W</b>	.05	.06
7	22	1/2	<b>22 ER 7 W</b>	<b>22 EL 7 W</b>	<b>22 IR 7 W</b>	<b>22 IL 7 W</b>	.06	.09
6	22	1/2	<b>22 ER 6 W</b>	<b>22 EL 6 W</b>	<b>22 IR 6 W</b>	<b>22 IL 6 W</b>	.06	.09
5	22	1/2	<b>22 ER 5 W</b>	<b>22 EL 5 W</b>	<b>22 IR 5 W</b>	<b>22 IL 5 W</b>	.07	.09
4.5	22U	1/2U	<b>22U E/R/L 4.5 W</b>				.09	.43
4	22U	1/2U	<b>22U E/R/L 4 W</b>				.07	.43
4.5	27	5/8	<b>27 ER 4.5 W</b>	<b>27 EL 4.5 W</b>	<b>27 IR 4.5 W</b>	<b>27 IL 4.5 W</b>	.07	.10
4	27	5/8	<b>27 ER 4 W</b>	<b>27 EL 4 W</b>	<b>27 IR 4 W</b>	<b>27 IL 4 W</b>	.08	.11
3.5	27U	5/8U	<b>27U E/R/L 3.5 W</b>				.08	.54
3.25	27U	5/8U	<b>27U E/R/L 3.25 W</b>				.08	.54
3	27U	5/8U	<b>27U E/R/L 3 W</b>				.09	.54
2.75	27U	5/8U	<b>27U E/R/L 2.75 W</b>				.09	.54

Order example: 16 IR 18 W BMA

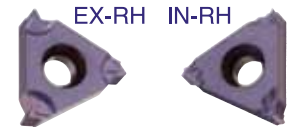
For Carbide Grade and Cutting Speed see page 66-67



## Whitworth - 55° BSW, BSF, BSP, BSB

### Type B

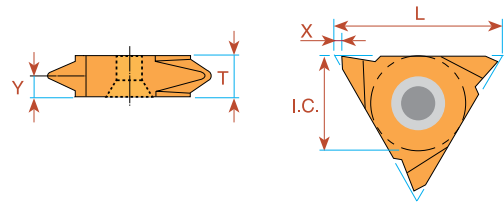
Ground Profile with Sintered Chip-breaker



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>	.02	.02
24	11	1/4		<b>11 IR B 24 W</b>	.02	.02
20	11	1/4		<b>11 IR B 20 W</b>	.03	.04
19	11	1/4		<b>11 IR B 19 W</b>	.03	.04
18	11	1/4		<b>11 IR B 18 W</b>	.03	.04
16	11	1/4		<b>11 IR B 16 W</b>	.03	.04
14	11	1/4		<b>11 IR B 14 W</b>	.03	.04
19	16	3/8	<b>16 ER B 19 W</b>	<b>16 IR B 19 W</b>	.03	.04
16	16	3/8	<b>16 ER B 16 W</b>	<b>16 IR B 16 W</b>	.04	.04
14	16	3/8	<b>16 ER B 14 W</b>	<b>16 IR B 14 W</b>	.04	.05
11	16	3/8	<b>16 ER B 11 W</b>	<b>16 IR B 11 W</b>	.04	.06
10	16	3/8	<b>16 ER B 10 W</b>	<b>16 IR B 10 W</b>	.04	.06

Order example: 16 IR B 10 W BMA

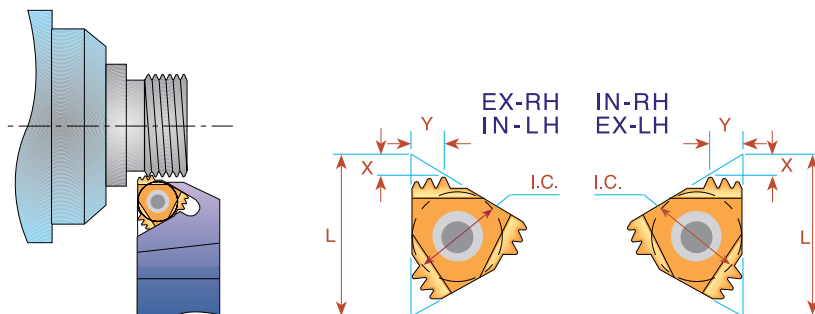
## Vertical



Pitch TPI	L mm	I.C.	<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>	.04	.04	.14
19	16	3/8	<b>16V ER 19 W</b>	<b>16V EL 19 W</b>	.04	.04	.14
18	16	3/8	<b>16V ER 18 W</b>	<b>16V EL 18 W</b>	.04	.04	.14
16	16	3/8	<b>16V ER 16 W</b>	<b>16V EL 16 W</b>	.04	.04	.14
14	16	3/8	<b>16V ER 14 W</b>	<b>16V EL 14 W</b>	.04	.05	.14
12	16	3/8	<b>16V ER 12 W</b>	<b>16V EL 12 W</b>	.04	.05	.14
11	16	3/8	<b>16V ER 11 W</b>	<b>16V EL 11 W</b>	.04	.06	.14

Order example: 16V ER 14 W MXC

## Multitooth



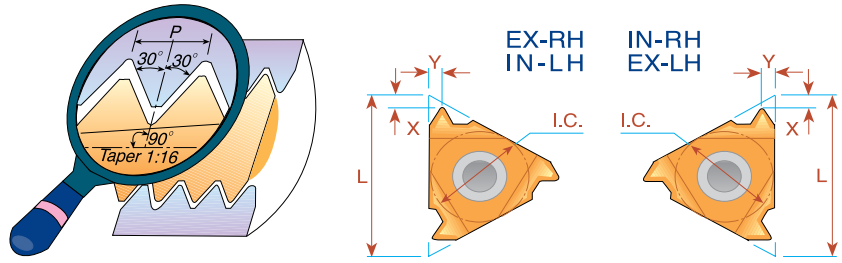
Pitch TPI	L mm	I.C.	Number of Teeth	<b>EXTERNAL</b> Ordering Code	Anvil	<b>INTERNAL</b> Ordering Code	Anvil	X	Y
14	16	3/8	2	<b>16 ER 14 W 2M</b>	AE16M	<b>16 IR 14 W 2M</b>	AI16M	.07	.11
14	22	1/2	3	<b>22 ER 14 W 3M</b>	AE22M	<b>22 IR 14 W 3M</b>	AI22M	.11	.18
11	22	1/2	2	<b>22 ER 11 W 2M</b>	AE22M	<b>22 IR 11 W 2M</b>	AI22M	.09	.13

Order example: 16 ER 14 W 2M MXC

For recommended number of passes see page 68

For Carbide Grade and Cutting Speed see page 66-67

## NPT



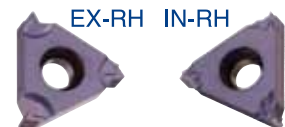
Pitch TPI	L mm	I.C.	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
			Ordering Code		Ordering Code			
			Right Hand	Left Hand	Right Hand	Left Hand		
27	6	5/32	ULTRA MINIATURE →		*06 IR 27 NPT	*06 IL 27 NPT	.02	.02
27	8	3/16			*08 IR 27 NPT	*08 IL 27 NPT	.02	.02
18	8	3/16	MINIATURE →		*08 IR 18 NPT	*08 IL 18 NPT	.02	.02
27	11	1/4	11 ER 27 NPT	11 EL 27 NPT	11 IR 27 NPT	11 IL 27 NPT	.03	.03
18	11	1/4	11 ER 18 NPT	11 EL 18 NPT	11 IR 18 NPT	11 IL 18 NPT	.03	.04
14	11	1/4	11 ER 14 NPT	11 EL 14 NPT	11 IR 14 NPT	11 IL 14 NPT	.03	.04
27	16	3/8	16 ER 27 NPT	16 EL 27 NPT	16 IR 27 NPT	16 IL 27 NPT	.03	.03
18	16	3/8	16 ER 18 NPT	16 EL 18 NPT	16 IR 18 NPT	16 IL 18 NPT	.03	.04
14	16	3/8	16 ER 14 NPT	16 EL 14 NPT	16 IR 14 NPT	16 IL 14 NPT	.04	.05
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	.04	.06
8	16	3/8	16 ER 8 NPT	16 EL 8 NPT	16 IR 8 NPT	16 IL 8 NPT	.05	.07

Order example: 16 ER 14 NPT MXC

\* Available only in BXC and BMA grades

## Type B

Ground Profile with Sintered Chip-breaker

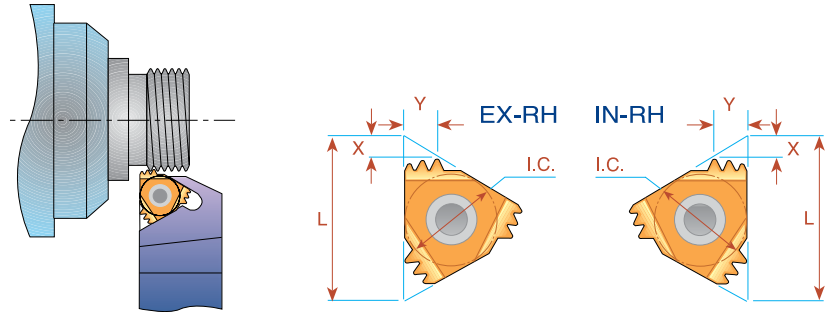


Pitch TPI	L	I.C. in	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
			Ordering Code Right Hand		Ordering Code Right Hand			
18	11	1/4			11 IR B 18 NPT		.03	.04
18	16	3/8	16 ER B 18 NPT		16 IR B 18 NPT		.03	.04
14	16	3/8	16 ER B 14 NPT		16 IR B 14 NPT		.04	.05
11.5	16	3/8	16 ER B 11.5 NPT		16 IR B 11.5 NPT		.04	.06
8	16	3/8	16 ER B 8 NPT		16 IR B 8 NPT		.05	.07

Order example: 16 IR B 11.5 NPT BMA

For Carbide Grade and Cutting Speed see page 66-67

## NPT Multitooth

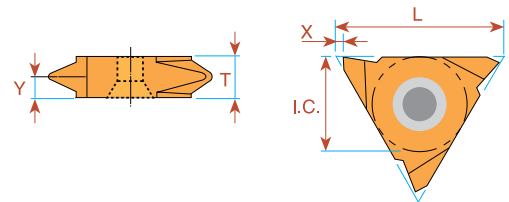


Pitch TPI	L mm	I.C.	Number of Teeth	<b>EXTERNAL</b> Ordering Code	Anvil	<b>INTERNAL</b> Ordering Code	Anvil	X	Y
14	16	3/8	2	<b>16 ER 14 NPT 2M</b>	AE16M	<b>16 IR 14 NPT 2M</b>	AI16M	.07	.11
11.5	22	1/2	2	<b>22 ER 11.5 NPT 2M</b>	AE22M	<b>22 IR 11.5 NPT 2M</b>	AI22M	.09	.14
11.5	27	5/8	3	<b>27 ER 11.5 NPT 3M</b>	AE27M	<b>27 IR 11.5 NPT 3M</b>	AI27M	.13	.22
8	27	5/8	2	<b>27 ER 8 NPT 2M</b>	AE27M	<b>27 IR 8 NPT 2M</b>	AI27M	.12	.20

Order example: 22 ER 11.5 NPT 2M MXC

For recommended number of passes see page 68

## NPT Vertical

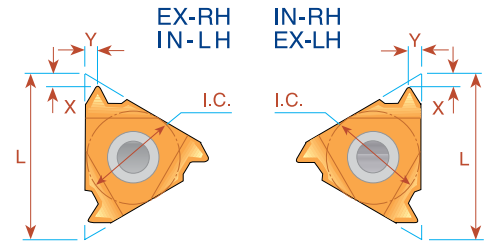
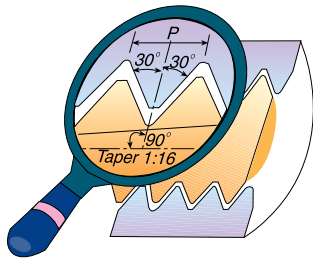


Pitch TPI	L mm	I.C.	<b>EXTERNAL</b> Ordering Code Right Hand	<b>EXTERNAL</b> Ordering Code Left Hand	X	Y	T
27	16	3/8	<b>16V ER 27 NPT</b>	<b>16V EL 27 NPT</b>	.04	.03	.14
18	16	3/8	<b>16V ER 18 NPT</b>	<b>16V EL 18 NPT</b>	.04	.04	.14
14	16	3/8	<b>16V ER 14 NPT</b>	<b>16V EL 14 NPT</b>	.04	.05	.14
11.5	16	3/8	<b>16V ER 11.5 NPT</b>	<b>16V EL 11.5 NPT</b>	.04	.06	.14

Order example: 16V ER 14 NPT BMA

For Carbide Grade and Cutting Speed see page 66-67

## NPTF - Dryseal



Pitch TPI	L mm	I.C.	<b>EXTERNAL</b>			<b>INTERNAL</b>			X	Y
			Ordering Code			Ordering Code				
			Right Hand	Left Hand		Right Hand	Left Hand			
27	6	5/32	ULTRA MINIATURE →			*06 IR 27 NPTF	*06 IL 27 NPTF	.03	.02	
27	8	3/16				*08 IR 27 NPTF	*08 IL 27 NPTF	.02	.02	
18	8	3/16	MINIATURE →			*08 IR 18 NPTF	*08 IL 18 NPTF	.02	.02	
27	11	1/4	11 ER 27 NPTF	11 EL 27 NPTF		11 IR 27 NPTF	11 IL 27 NPTF	.03	.03	
18	11	1/4	11 ER 18 NPTF	11 EL 18 NPTF		11 IR 18 NPTF	11 IL 18 NPTF	.03	.04	
14	11	1/4	11 ER 14 NPTF	11 EL 14 NPTF		11 IR 14 NPTF	11 IL 14 NPTF	.03	.04	
27	16	3/8	16 ER 27 NPTF	16 EL 27 NPTF		16 IR 27 NPTF	16 IL 27 NPTF	.03	.03	
18	16	3/8	16 ER 18 NPTF	16 EL 18 NPTF		16 IR 18 NPTF	16 IL 18 NPTF	.03	.04	
14	16	3/8	16 ER 14 NPTF	16 EL 14 NPTF		16 IR 14 NPTF	16 IL 14 NPTF	.04	.05	
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	.04	.06	
8	16	3/8	16 ER 8 NPTF	16 EL 8 NPTF		16 IR 8 NPTF	16 IL 8 NPTF	.05	.07	

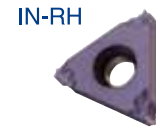
Order example: 11 ER 27 NPTF MXC

\* Available only in BXC and BMA grades

## Type B

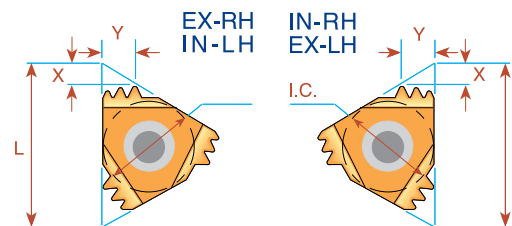
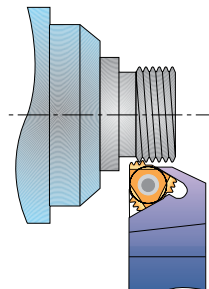
### Ground Profile with Sintered Chip-breaker

Pitch TPI	L	I.C. in	<b>INTERNAL</b> Ordering Code Right Hand	X	Y
18	11	1/4	11 IR B 18 NPTF	.03	.04



For Carbide Grade and Cutting Speed see page 66-67

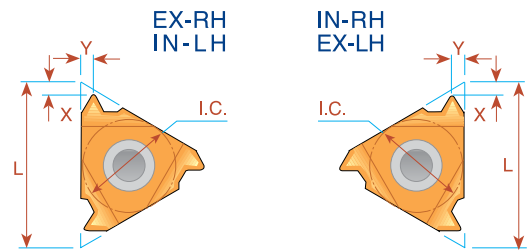
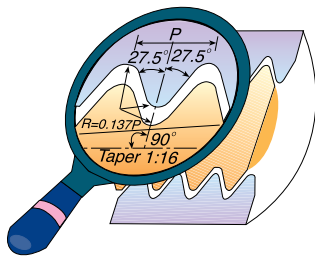
## Multitooth



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	.09	0.14

For Carbide Grade and Cutting Speed see page 66-67

## BSPT



Pitch TPI	L mm	I.C.	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
			Ordering Code		Ordering Code			
			Right Hand	Left Hand	Right Hand	Left Hand		
28	6	5/32	ULTRA MINIATURE →		*06 IR 28 BSPT	*06 IL 28 BSPT	.03	.02
28	8	3/16			*08 IR 28 BSPT	*08 IL 28 BSPT	.02	.02
19	8	3/16	MINIATURE →		*08 IR 19 BSPT	*08 IL 19 BSPT	.02	.02
28	11	1/4			11 IR 28 BSPT	11 IL 28 BSPT	.02	.02
19	11	1/4			11 IR 19 BSPT	11 IL 19 BSPT	.03	.04
14	11	1/4			11 IR 14 BSPT	11 IL 14 BSPT	.04	.04
11	11	1/4			<sup>(1)</sup> 11 IR 11 BSPT	<sup>(1)</sup> 11 IL 11 BSPT	.04	.05
28	16	3/8	16 ER 28 BSPT	16 EL 28 BSPT	16 IR 28 BSPT	16 IL 28 BSPT	.02	.03
19	16	3/8	16 ER 19 BSPT	16 EL 19 BSPT	16 IR 19 BSPT	16 IL 19 BSPT	.03	.04
14	16	3/8	16 ER 14 BSPT	16 EL 14 BSPT	16 IR 14 BSPT	16 IL 14 BSPT	.04	.05
11	16	3/8	16 ER 11 BSPT	16 EL 11 BSPT	16 IR 11 BSPT	16 IL 11 BSPT	.04	.06

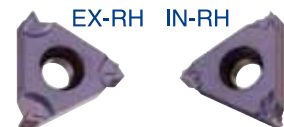
Order example: 11 IR 14 BSPT BMA

\* 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

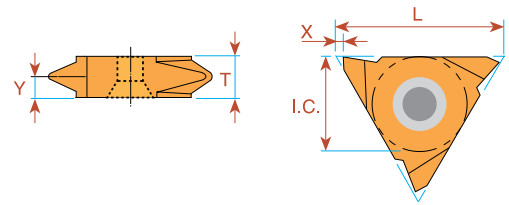


Pitch TPI	L mm	I.C.	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
			Ordering Code		Ordering Code			
			Right Hand		Right Hand			
19	11	1/4			11 IR B 19 BSPT		.03	.04
19	16	3/8	16 ER B 19 BSPT				.04	.04
14	16	3/8	16 ER B 14 BSPT		16 IR B 14 BSPT		.05	.04
11	16	3/8	16 ER B 11 BSPT		16 IR B 11 BSPT		.06	.04

Order example: 16 ER B 11BSPT BMA

For Carbide Grade and Cutting Speed see page 66-67

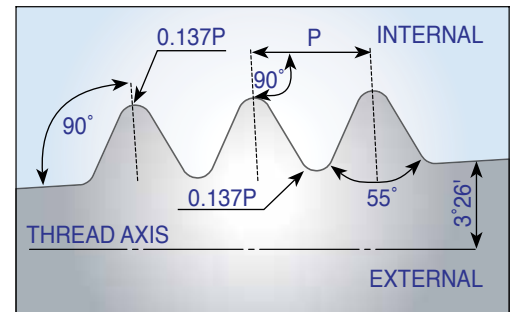
## BSPT Vertical



Pitch TPI	L mm	I.C.	<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 28 BSPT</b>	.04	.02	.14
19	16	3/8	<b>16V ER 19 BSPT</b>	<b>16V EL 19 BSPT</b>	.04	.04	.14
14	16	3/8	<b>16V ER 14 BSPT</b>	<b>16V EL 14 BSPT</b>	.04	.05	.14
11	16	3/8	<b>16V ER 11 BSPT</b>	<b>16V EL 11 BSPT</b>	.04	.06	.14

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>		.04	.05	W19.8x1/14 keg(Ext.)
14	11	1/4	3/25		<b>*11 IR 14 DIN477</b>	.04	.04	W19.8x1/14 keg(Int.)
14	16	3/8	3/25	<b>16 ER 14 DIN477</b>	<b>**16 IR 14 DIN477</b>	.04	.05	W28.8x1/14 keg
14	16	3/8	3/25	<b>16 ER 14 DIN477</b>	<b>***16 IR 14 DIN477</b>	.04	.05	W31.3x1/14 keg

\* Holder to use: SIR0375H11/SIR0375K11

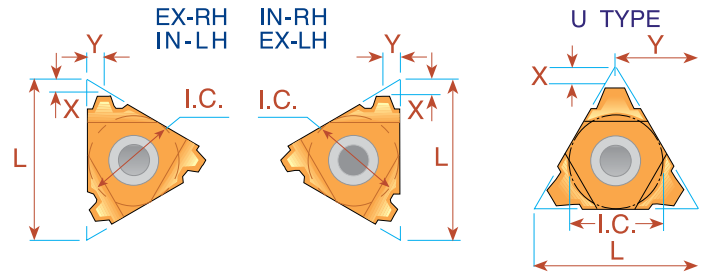
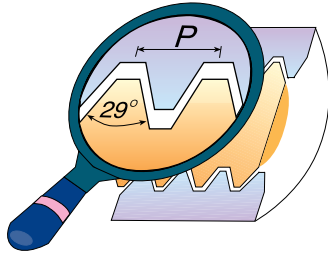
\*\* Holder to use: SIR0625H16

\*\*\* Holder to use: SIR0750P16

For Carbide Grade and Cutting Speed see page 66-67



## Acme



Pitch TPI	L mm	I.C.	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
			Right Hand	Left Hand	Right Hand	Left Hand		
16	8	3/16	<i>MINIATURE</i> →		<b>**08 IR 16 ACME</b>	<b>**08 IL 16 ACME</b>	.02	.02
14	8U	3/16U	<i>"U" MINIATURE</i> →		<b>*08U IR/L 14 ACME</b>		.03	.16
12	8U	3/16U			<b>*08U IR/L 12 ACME</b>		.03	.16
10	8U	3/16U			<b>*08U IR/L 10 ACME</b>		.03	.16
16	11	1/4	<b>11 ER 16 ACME</b>	<b>11 EL 16 ACME</b>	<b>11 IR 16 ACME</b>	<b>11 IL 16 ACME</b>	.04	.04
16	16	3/8	<b>16 ER 16 ACME</b>	<b>16 EL 16 ACME</b>	<b>16 IR 16 ACME</b>	<b>16 IL 16 ACME</b>	.04	.04
14	16	3/8	<b>16 ER 14 ACME</b>	<b>16 EL 14 ACME</b>	<b>16 IR 14 ACME</b>	<b>16 IL 14 ACME</b>	.04	.05
12	16	3/8	<b>16 ER 12 ACME</b>	<b>16 EL 12 ACME</b>	<b>16 IR 12 ACME</b>	<b>16 IL 12 ACME</b>	.04	.05
10	16	3/8	<b>16 ER 10 ACME</b>	<b>16 EL 10 ACME</b>	<b>16 IR 10 ACME</b>	<b>16 IL 10 ACME</b>	.05	.05
8	16	3/8	<b>16 ER 8 ACME</b>	<b>16 EL 8 ACME</b>	<b>16 IR 8 ACME</b>	<b>16 IL 8 ACME</b>	.06	.05
6	16	3/8	<sup>(1)</sup> <b>16 ER 6 ACME</b>	<sup>(1)</sup> <b>16 EL 6 ACME</b>	<sup>(1)</sup> <b>16 IR 6 ACME</b>	<sup>(1)</sup> <b>16 IL 6 ACME</b>	.07	.07
6	22	1/2	<b>22 ER 6 ACME</b>	<b>22 EL 6 ACME</b>	<b>22 IR 6 ACME</b>	<b>22 IL 6 ACME</b>	.07	.08
5	22	1/2	<b>22 ER 5 ACME</b>	<b>22 EL 5 ACME</b>	<b>22 IR 5 ACME</b>	<b>22 IL 5 ACME</b>	.08	.09
4	22	1/2	<sup>(1)</sup> <b>22 ER 4 ACME</b>	<sup>(1)</sup> <b>22 EL 4 ACME</b>	<sup>(1)</sup> <b>22 IR 4 ACME</b>	<sup>(1)</sup> <b>22 IL 4 ACME</b>	.08	.09
4	22U	1/2U	<b>22U ER/L 4 ACME</b>		<b>22U IR/L 4 ACME</b>		.09	.43
4	27	5/8	<b>27 ER 4 ACME</b>	<b>27 EL 4 ACME</b>	<b>27 IR 4 ACME</b>	<b>27 IL 4 ACME</b>	.09	.11
3	27U	5/8U	<b>27U ER/L 3 ACME</b>		<b>27U IR/L 3 ACME</b>		.11	.54
2	33U	3/4U	<b>33U ER/L 2 ACME</b>		<b>33U IR/L 2 ACME</b>		.17	.67

Order example: 16 ER 16 ACME MXC

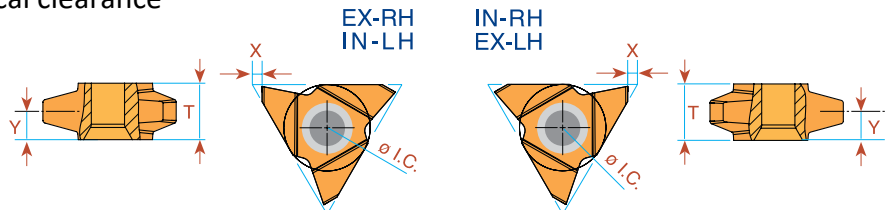
\* Available only in BXC and BMA grades

\*\* One cutting edge

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

33U inserts have 2.6 degrees helical clearance

## Acme Vertical



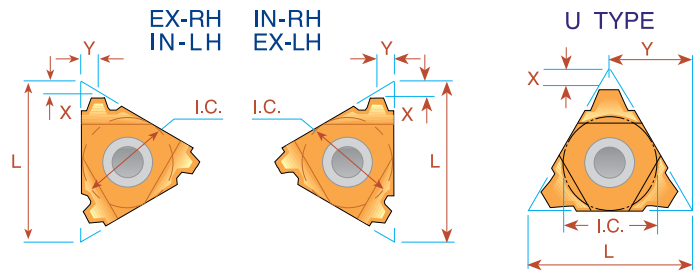
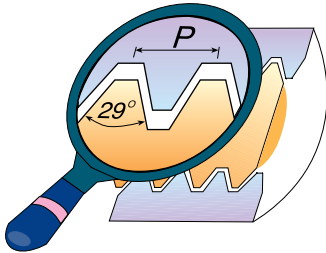
Pitch TPI	L mm	I.C.	<b>EXTERNAL</b>		X	Y	T	<b>INTERNAL</b>		X	Y	T
			Right Hand	Left Hand				Right Hand	Left Hand			
* 3.5	27	5/8	<b>27V ER 3.5 ACME</b>	—	.07	.20	.41	<b>27V IR 3.5 ACME</b>	—	.07	.16	.41
** 3	27	5/8	<b>27V ER 3 ACME</b>	—	.07	.20	.41	<b>27V IR 3 ACME</b>	—	.07	.18	.41
*** 2	27	5/8	<b>27V ER 2 ACME</b>	<b>27V EL 2 ACME</b>	.07	.20	.41	<b>27V IR 2 ACME</b>	<b>27V IL 2 ACME</b>	.07	.20	.41

Order example: 27V ER 2 ACME BMA

\* Minimum bore: Ø2.17"    \*\* Minimum bore: Ø2.17"    \*\*\* Minimum bore: Ø3"

For Carbide Grade and Cutting Speed see page 66-67

## Stub Acme



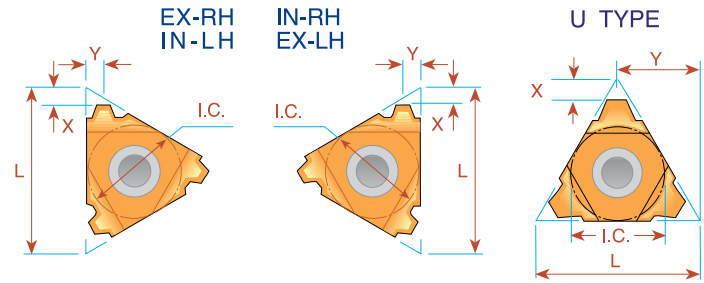
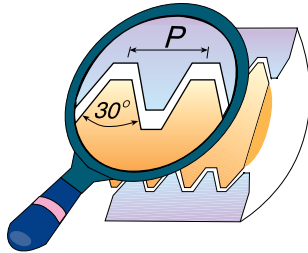
Pitch TPI	L mm	I.C.	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
			Ordering Code		Ordering Code			
			Right Hand	Left Hand	Right Hand	Left Hand		
16	8	3/16	<i>MINIATURE</i> →		<b>**08 IR 16 STACME</b>	<b>**08 IL 16 STACME</b>	.02	.02
14	8U	3/16U	<i>"U" MINIATURE</i> →		<b>*08U IR/L 14 STACME</b>		.03	.16
12	8U	3/16U			<b>*08U IR/L 12 STACME</b>		.04	.16
10	8U	3/16U			<b>*08U IR/L 10 STACME</b>		.04	.16
16	11	1/4	<b>11 ER 16 STACME</b>	<b>11 EL 16 STACME</b>			.04	.04
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>	.04	.04
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>	.04	.04
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>	.05	.05
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>	.05	.05
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>	.06	.06
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>	.07	.07
5	22	1/2	<b>22 ER 6 STACME</b>	<b>22 EL 6 STACME</b>	<b>22 IR 6 STACME</b>	<b>22 IL 6 STACME</b>	.07	.07
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>	.08	.09
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>	.09	.09
4	22U	1/2U	<b>22U ER/L 4 STACME</b>		<b>22U IR/L 4 STACME</b>		.10	.43
3	22U	1/2U	<b>22U ER/L 3 STACME</b>		<b>22U IR/L 3 STACME</b>		.13	.43
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>	.09	.09
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>	.11	.11
2	33U	3/4U	<b>33U ER/L 2 STACME</b>		<b>33U IR/L 2 STACME</b>		.20	.67

Order example: 22 IR 5 STACME MXC

\* Available only in BXC and BMA grades

\*\* One cutting edge

## Trapez - DIN 103



Pitch mm	L mm	I.C.	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	.02	.02
2.0	8U	3/16U	"U" MINIATURE →		*08U IR/L 2 TR		.04	.16
1.5	16	3/8	16 ER 1.5 TR	16 EL 1.5 TR			.04	.04
2.0	16	3/8	16 ER 2 TR	16 EL 2 TR	16 IR 2 TR	16 IL 2 TR	.04	.05
3.0	16	3/8	16 ER 3 TR	16 EL 3 TR	16 IR 3 TR	16 IL 3 TR	.05	.06
4.0	16	3/8	(1)16 ER 4 TR	(1)16 EL 4 TR	(1)16 IR 4 TR	(1)16 IL 4 TR	.05	.06
4.0	22	1/2	22 ER 4 TR	22 EL 4 TR	22 IR 4 TR	22 IL 4 TR	.07	.07
5.0	22	1/2	22 ER 5 TR	22 EL 5 TR	22 IR 5 TR	22 IL 5 TR	.08	.09
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	.08	.09
6.0	22U	1/2U	22U ER/L 6 TR		22U IR/L 6 TR		.08	.43
7.0	22U	1/2U	22U ER/L 7 TR		22U IR/L 7 TR		.09	.43
8.0	22U	1/2U	22U ER/L 8 TR		22U IR/L 8 TR		.10	.43
6.0	27	5/8	27 ER 6 TR	27 EL 6 TR	27 IR 6 TR	27 IL 6 TR	.09	.11
7.0	27	5/8	27 ER 7 TR	27 EL 7 TR	27 IR 7 TR	27 IL 7 TR	.09	.10
8.0	27U	5/8U	27U ER/L 8 TR		27U IR/L 8 TR		.10	.54
9.0	27U	5/8U	27U ER/L 9 TR		27U IR/L 9 TR		.12	.54
10.0	27U	5/8U	**27U ER/L 10 TR		**27U IR/L 10 TR		.13	.54
12.0	33U	3/4U	33U ER/L 12 TR		33U IR/L 12 TR		.15	.67

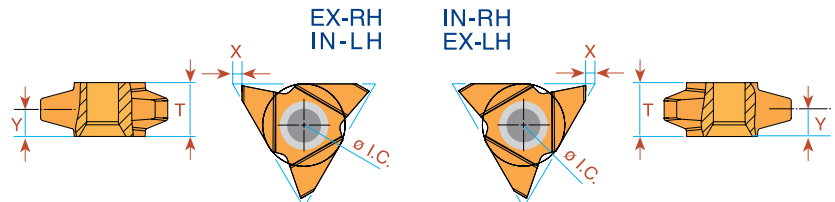
Order example: 22 IR 5 TR MXC

\* Available only in BXC and BMA grades

\*\* One cutting edge

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

## Trapez - DIN 103 Vertical



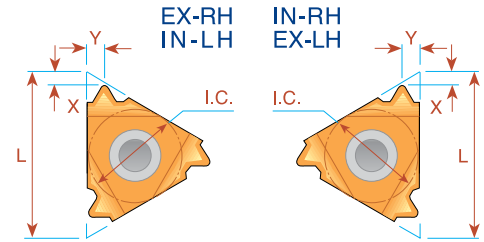
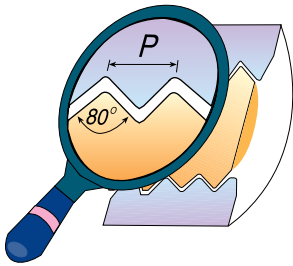
Pitch mm	L mm	I.C.	EXTERNAL Ordering Code		INTERNAL Ordering Code		X	Y	T
			Right Hand	Left Hand	Right Hand	Left Hand			
* 9	27	5/8	27V ER 9 TR	27V EL 9 TR	27V IR 9 TR	27V IL 9 TR	.07	.21	.41
** 10	27	5/8	27V ER 10 TR	27V EL 10 TR	27V IR 10 TR	27V IL 10 TR	.07	.21	.41
*** 12	27	5/8	27V ER 12 TR	27V EL 12 TR	27V IR 12 TR	27V IL 12 TR	.07	.21	.41

Order example: 27V ER 10 TR BMA

\* Minimum bore: Ø2.56"    \*\* Minimum bore: Ø2.56"    \*\*\* Minimum bore: Ø2.87"

For Carbide Grade and Cutting Speed see page 66-67

## PG - DIN 40430

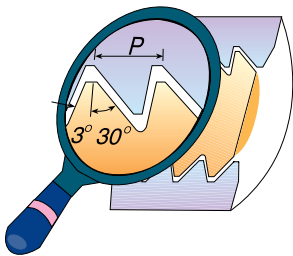


Pitch TPI	L mm	I.C.	EXTERNAL		INTERNAL		X	Y
			Right Hand	Standard	Right Hand	Standard		
20	8	3/16	MINIATURE →		*08 IR 20 PG	(PG 7)	.02	.03
18	11	1/4			11 IR 18 PG	(PG 9)	.03	.04
20	16	3/8	16 ER 20 PG	(PG 7)	16 IR 18 PG	(PG 11, 13.5, 16)	.03	.03
18	16	3/8	16 ER 18 PG	(PG 9, 11, 13.5, 16)	16 IR 18 PG	(PG 11, 13.5, 16)	.03	.04
16	16	3/8	16 ER 16 PG	(PG 21, 29, 36, 42, 48)	16 IR 16 PG	(PG 21, 29, 36, 42, 48)	.03	.04

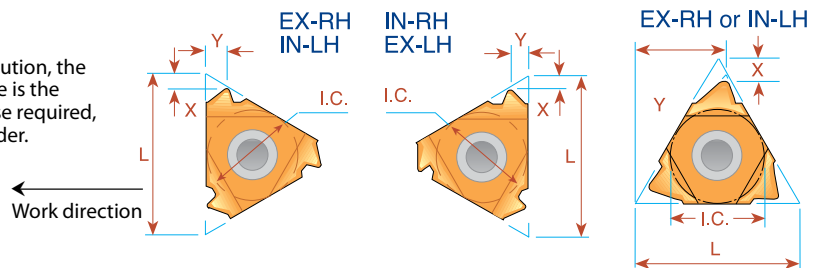
Order example: 16 ER 16 PG BMA

\* 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 mm	I.C.	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	.04	.06	16 IR 2 SAGE	16 IL 2 SAGE	.05	.07
(1) 3.0	22	1/2	22 ER 3 SAGE	22 EL 3 SAGE	.06	.09	22 IR 3 SAGE	22 IL 3 SAGE	.07	.11
(1) 4.0	22	1/2	22 ER 4 SAGE	22 EL 4 SAGE	.07	.12	22 IR 4 SAGE	22 IL 4 SAGE	.09	.14
*5.0	22U	1/2U	22U ER 5 SAGE	22U EL 5 SAGE	.05	.46	22U IR 5 SAGE	22U IL 5 SAGE	.07	.46
*6.0	22U	1/2U	22U ER 6 SAGE	22U EL 6 SAGE	.05	.46	22U IR 6 SAGE	22U IL 6 SAGE	.08	.47

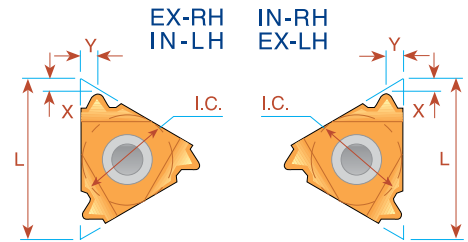
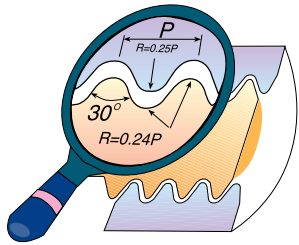
Order example: 22 IR 4 SAGE BMA

\* 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.

(1) Requires a special anvil AER 22-1.5 SAGE 3/4, AEL 22-1.5 SAGE 3/4  
AIR 22-1.5 SAGE 3/4, AIL 22-1.5 SAGE 3/4

For Carbide Grade and Cutting Speed see page 66-67

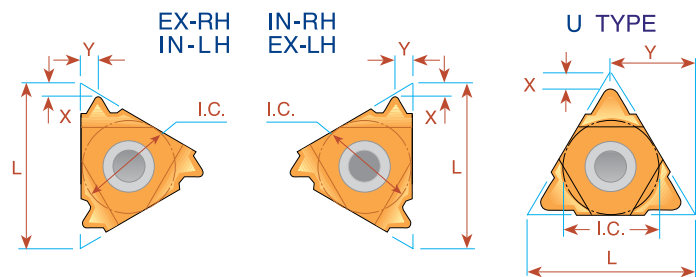
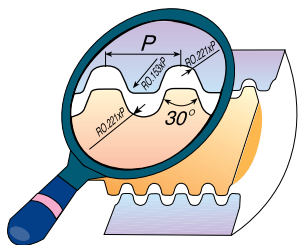
## Round - DIN 405



Pitch TPI	L mm	I.C.	<b>EXTERNAL</b>				<b>INTERNAL</b>			
			Ordering Code		X	Y	Ordering Code		X	Y
			Right Hand	Left Hand			Right Hand	Left Hand		
10	16	3/8	<b>16 ER 10 RD</b>	<b>16 EL 10 RD</b>	.04	.05	<b>16 IR 10 RD</b>	<b>16 IL 10 RD</b>	.04	.05
8	16	3/8	<b>16 ER 8 RD</b>	<b>16 EL 8 RD</b>	.06	.05	<b>16 IR 8 RD</b>	<b>16 IL 8 RD</b>	.06	.06
6	16	3/8	<b>16 ER 6 RD</b>	<b>16 EL 6 RD</b>	.06	.07	<b>16 IR 6 RD</b>	<b>16 IL 6 RD</b>	.06	.06
6	22	1/2	<b>22 ER 6 RD</b>	<b>22 EL 6 RD</b>	.06	.07	<b>22 IR 6 RD</b>	<b>22 IL 6 RD</b>	.06	.07
4	22	1/2	<b>22 ER 4 RD</b>	<b>22 EL 4 RD</b>	.09	.09	<b>22 IR 4 RD</b>	<b>22 IL 4 RD</b>	.09	.09
4	27	5/8	<b>27 ER 4 RD</b>	<b>27 EL 4 RD</b>	.09	.09	<b>27 IR 4 RD</b>	<b>27 IL 4 RD</b>	.09	.09

Order example: 27 IL 4 RD BMA

## Round - DIN 20400



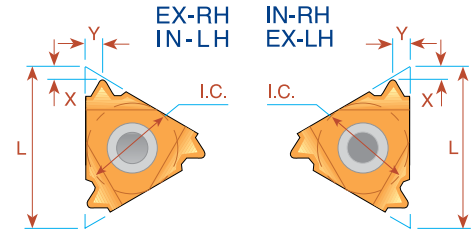
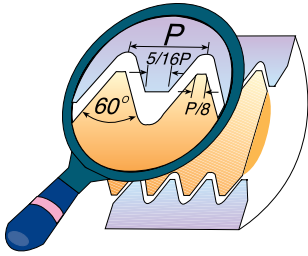
Pitch mm	L mm	I.C.	<b>EXTERNAL</b>	<b>INTERNAL</b>	X	Y
			Ordering Code Right Hand	Ordering Code Right Hand		
4.0	22	1/2	<b>22 ER 4.0 RD 20400</b>	<b>22 IR 4.0 RD 20400</b>	.06	.06
5.0	22	1/2	<b>22 ER 5.0 RD 20400</b>	<b>22 IR 5.0 RD 20400</b>	.07	.07
6.0	22	1/2	<b>22 ER 6.0 RD 20400</b>	<b>22 IR 6.0 RD 20400</b>	.07	.08
8.0	27U	5/8U	<b>*27U - 8.0 RD 20400</b>		.12	.54
10.0	27U	5/8U	<b>*27U - 10.0 RD 20400</b>		.13	.54

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 66-67

## UNJ UNJC, UNJF, UNJEF, UNJS



Pitch TPI	L mm	I.C.	<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	.02	.02
44	11	1/4	11 ER 44 UNJ	11 EL 44 UNJ	11 IR 44 UNJ	11 IL 44 UNJ	.02	.02
40	11	1/4	11 ER 40 UNJ	11 EL 40 UNJ	11 IR 40 UNJ	11 IL 40 UNJ	.02	.02
36	11	1/4	11 ER 36 UNJ	11 EL 36 UNJ	11 IR 36 UNJ	11 IL 36 UNJ	.02	.02
32	11	1/4	11 ER 32 UNJ	11 EL 32 UNJ	11 IR 32 UNJ	11 IL 32 UNJ	.02	.02
28	11	1/4	11 ER 28 UNJ	11 EL 28 UNJ	11 IR 28 UNJ	11 IL 28 UNJ	.02	.02
24	11	1/4	11 ER 24 UNJ	11 EL 24 UNJ	11 IR 24 UNJ	11 IL 24 UNJ	.03	.03
20	11	1/4	11 ER 20 UNJ	11 EL 20 UNJ	11 IR 20 UNJ	11 IL 20 UNJ	.03	.04
18	11	1/4	11 ER 18 UNJ	11 EL 18 UNJ	11 IR 18 UNJ	11 IL 18 UNJ	.03	.04
16	11	1/4	11 ER 16 UNJ	11 EL 16 UNJ	11 IR 16 UNJ	11 IL 16 UNJ	.03	.04
14	11	1/4	11 ER 14 UNJ	11 EL 14 UNJ	11 IR 14 UNJ	11 IL 14 UNJ	.04	.04
48	16	3/8	16 ER 48 UNJ	16 EL 48 UNJ	16 IR 48 UNJ	16 IL 48 UNJ	.02	.02
44	16	3/8	16 ER 44 UNJ	16 EL 44 UNJ	16 IR 44 UNJ	16 IL 44 UNJ	.02	.02
40	16	3/8	16 ER 40 UNJ	16 EL 40 UNJ	16 IR 40 UNJ	16 IL 40 UNJ	.02	.02
36	16	3/8	16 ER 36 UNJ	16 EL 36 UNJ	16 IR 36 UNJ	16 IL 36 UNJ	.02	.02
32	16	3/8	16 ER 32 UNJ	16 EL 32 UNJ	16 IR 32 UNJ	16 IL 32 UNJ	.02	.02
28	16	3/8	16 ER 28 UNJ	16 EL 28 UNJ	16 IR 28 UNJ	16 IL 28 UNJ	.02	.02
24	16	3/8	16 ER 24 UNJ	16 EL 24 UNJ	16 IR 24 UNJ	16 IL 24 UNJ	.03	.03
20	16	3/8	16 ER 20 UNJ	16 EL 20 UNJ	16 IR 20 UNJ	16 IL 20 UNJ	.03	.04
18	16	3/8	16 ER 18 UNJ	16 EL 18 UNJ	16 IR 18 UNJ	16 IL 18 UNJ	.03	.04
16	16	3/8	16 ER 16 UNJ	16 EL 16 UNJ	16 IR 16 UNJ	16 IL 16 UNJ	.03	.04
14	16	3/8	16 ER 14 UNJ	16 EL 14 UNJ	16 IR 14 UNJ	16 IL 14 UNJ	.04	.05
13	16	3/8	16 ER 13 UNJ	16 EL 13 UNJ	16 IR 13 UNJ	16 IL 13 UNJ	.04	.05
12	16	3/8	16 ER 12 UNJ	16 EL 12 UNJ	16 IR 12 UNJ	16 IL 12 UNJ	.04	.06
11	16	3/8	16 ER 11 UNJ	16 EL 11 UNJ	16 IR 11 UNJ	16 IL 11 UNJ	.04	.06
10	16	3/8	16 ER 10 UNJ	16 EL 10 UNJ	16 IR 10 UNJ	16 IL 10 UNJ	.04	.06
9	16	3/8	16 ER 9 UNJ	16 EL 9 UNJ	16 IR 9 UNJ	16 IL 9 UNJ	.05	.06
8	16	3/8	16 ER 8 UNJ	16 EL 8 UNJ	16 IR 8 UNJ	16 IL 8 UNJ	.05	.06

Order example: 16 IR 16 UNJ MXC

For Carbide Grade and Cutting Speed see page 66-67

## UNJ UNJC, UNJF, UNJEF, UNJS

### Type B

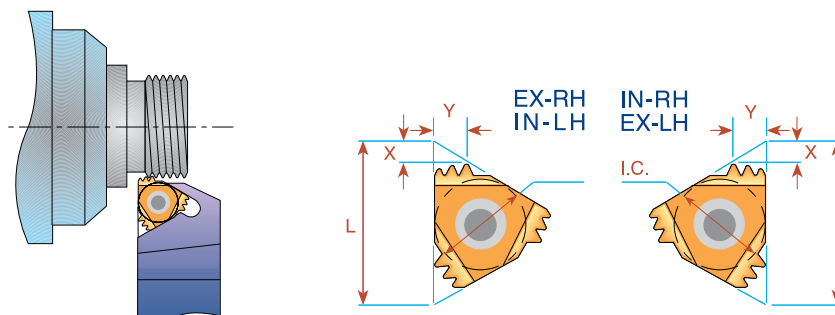
#### Ground Profile with Sintered Chip-breaker

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>	.02	.02
28	11	1/4	<b>11 IR B 28 UNJ</b>	.02	.02
24	11	1/4	<b>11 IR B 24 UNJ</b>	.02	.02
20	11	1/4	<b>11 IR B 20 UNJ</b>	.03	.04
18	11	1/4	<b>11 IR B 18 UNJ</b>	.03	.04
16	11	1/4	<b>11 IR B 16 UNJ</b>	.03	.04
14	11	1/4	<b>11 IR B 14 UNJ</b>	.03	.04



Order example: 11 IR B 20 UNJ BMA

### Multitooth

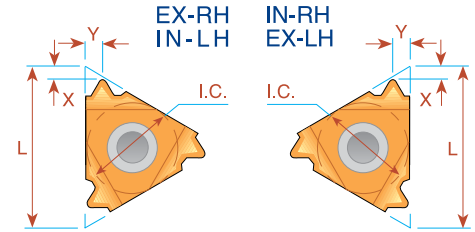
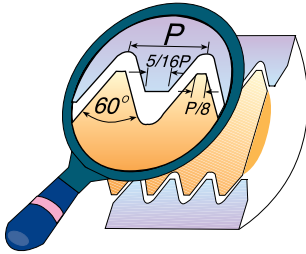


Pitch TPI	L	I.C. in	Number of Teeth	<b>EXTERNAL</b> Ordering Code	Anvil	<b>INTERNAL</b> Ordering Code	Anvil	X	Y
16	16	3/8	2	<b>16 ER 16 UNJ 2M</b>	AE16M	-	-	.06	.09
16	22	1/2	3	<b>22 ER 16 UNJ 2M</b>	AE22M	-	-	.09	.15

Order example: 22 ER 16 UNJ 2M BMA



## MJ - ISO 5855



Pitch mm	L mm	I.C.	<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>	.03	.03
1.25	11	1/4		<b>11 IR 1.25 MJ</b>	.03	.04
1.5	11	1/4		<b>11 IR 1.5 MJ</b>	.03	.04
2.0	11	1/4		<b>11 IR 2.0 MJ</b>	.04	.04
1.0	16	3/8	<b>16 ER 1.0 MJ</b>	<b>16 IR 1.0 MJ</b>	.03	.03
1.25	16	3/8	<b>16 ER 1.25 MJ</b>	<b>16 IR 1.25 MJ</b>	.03	.04
1.5	16	3/8	<b>16 ER 1.5 MJ</b>	<b>16 IR 1.5 MJ</b>	.03	.04
2.0	16	3/8	<b>16 ER 2.0 MJ</b>	<b>16 IR 2.0 MJ</b>	.04	.05

Order example: 16 ER 1.5 MJ BMA

## Type B

Ground Profile with Sintered Chip-breaker

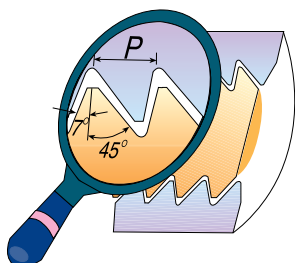
Pitch mm	L	I.C. in	<b>INTERNAL</b>	X	Y
			Ordering Code Right Hand		
1.0	11	1/4	<b>11 IR B 1.0 MJ</b>	.02	.02
1.5			<b>11 IR B 1.5 MJ</b>	.03	.04



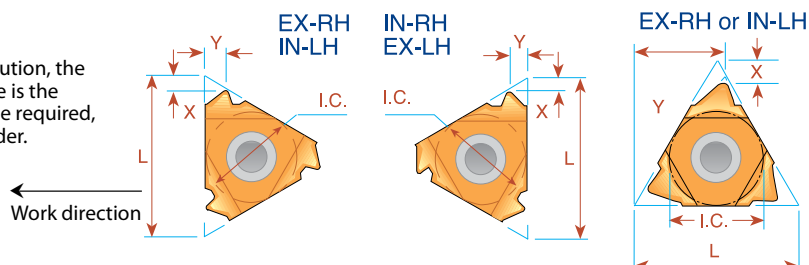
Order example: 11 IR B 1.5 MJ BMA

For Carbide Grade and Cutting Speed see page 66-67

## 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 mm	I.C.	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
			Right Hand	Left Hand	Right Hand	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>	.04	.05
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>	.04	.06
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>	.04	.05
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>	.04	.06
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>	.06	.08
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>	.06	.09
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>	.08	.13
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>	.08	.13
<sup>(1)</sup> 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>	.09	.37
<sup>(2)</sup> 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>	.12	.46

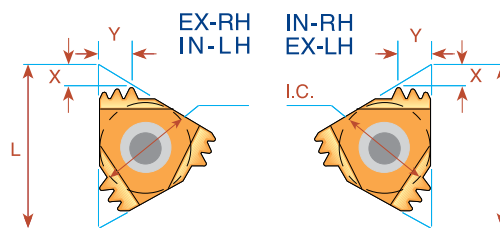
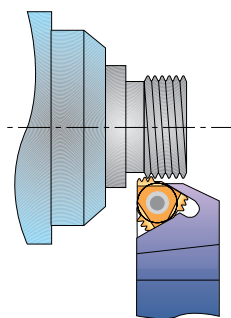
Order example: 16 IL 12 ABUT MXC

Most applications requires anvil change in toolholder see page 71

(1) Requires a special anvil AE 22U-1.5 ABUT4, AI22U-1.5 ABUT4

(2) Requires a special anvil AE 27U-1.5 ABUT3, AI27U-1.5 ABUT3

## Multitooth

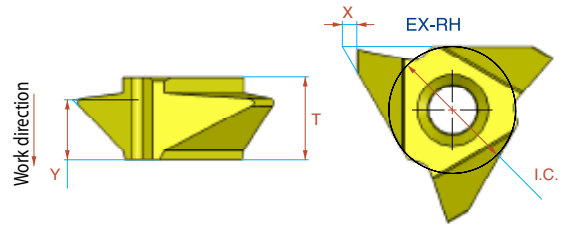


Pitch TPI	L	I.C. in	Number of Teeth	<b>EXTERNAL</b>	Anvil	<b>INTERNAL</b>	Anvil	X	Y
				Ordering Code		Ordering Code			
12	22	1/2	2	<b>22 ER 12 ABUT 2M</b>	AE22M	<b>22 IR 16 ABUT 2M</b>	AI22M	.10	.16

Order example: 22 IR 16 ABUT 2M BMA

For Carbide Grade and Cutting Speed see page 66-67

## American Buttress Vertical

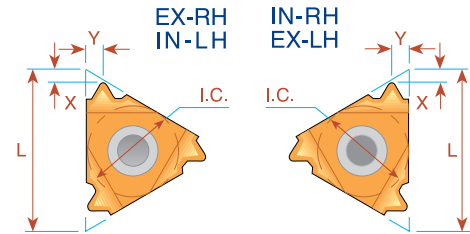
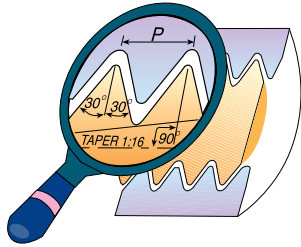


Pitch TPI	L mm	I.C.	<b>EXTERNAL</b>			<b>INTERNAL</b>				
			Ordering Code Right Hand	X	Y	T	Ordering Code Right Hand	X	Y	T
* 4	27	5/8	<b>*27V ER 4 ABUT</b>	0.07	0.30	0.41	<b>27V IR 4 ABUT</b>	0.07	0.30	0.41
** 3	27	5/8	<b>*27V ER 3 ABUT</b>	0.07	0.30	0.41	<b>27V IR 3 ABUT</b>	0.07	0.24	0.41

\* For EXT. RH use only holders SER 1000M27V-ABUT 4/3-T10, SER1250P27V-ABUT 4/3-T10

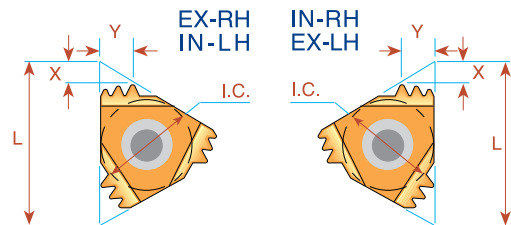
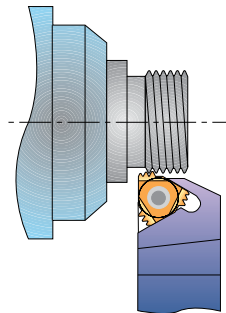
\* Minimum bore: Ø2.17"    \*\* Minimum bore: Ø2.76"

## OIL Threads API Round



Pitch TPI	L mm	I.C.	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>	.06	.06
8	16	3/8	0.75	<b>16 ER 8 API RD</b>	<b>16 IR 8 API RD</b>	.05	.06

## Multitooth

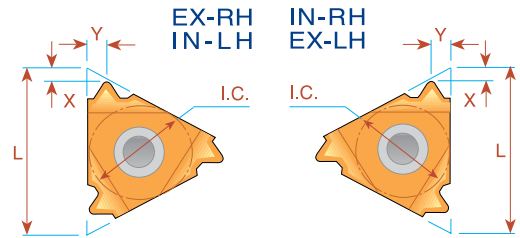
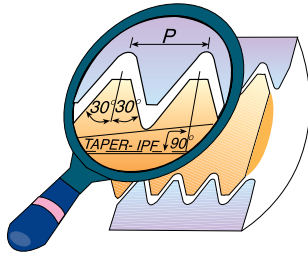


Pitch TPI	L mm	I.C.	Number of Teeth	<b>EXTERNAL</b> Ordering Code	Anvil	<b>INTERNAL</b> Ordering Code	Anvil	X	Y
10	22	1/2	2	<b>22 ER 10API RD 2M</b>	AE22M	<b>22 IR 10API RD 2M</b>	AI22M	.09	.15
10	27	5/8	3	<b>27 ER 10API RD 3M</b>	AE27M	<b>27 IR 10API RD 3M</b>	AI27M	.15	.24
8	27	5/8	2	<b>27 ER 8API RD 2M</b>	AE27M	<b>27 IR 8API RD 2M</b>	AI27M	.12	.18

Order example: 27 IR 10 API RD 3M MXC  
For recommended number of passes see page 68

For Carbide Grade and Cutting Speed see page 66-67

## OIL Threads



### V-0.040

Pitch TPI	L mm	I.C.	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	3	<b>22 ER 5 API 403</b>	<b>22 IR 5 API 403</b>	.07	.10	23/8-4 1/2 REG

### V-0.038R

Pitch TPI	L mm	I.C.	Taper IPF	<b>EXTERNAL</b>	<b>INTERNAL</b>	X	Y	Connection No. or Size
				Ordering Code Right Hand	Ordering Code Right Hand			
4	27	5/8	2	<b>27 ER 4 API 382</b>	<b>27 IR 4 API 382</b>	.08	.08	NC23-NC50
4	27	5/8	3	<b>27 ER 4 API 383</b>	<b>27 IR 4 API 383</b>	.08	.11	NC56-NC77

### V-0.050

Pitch TPI	L mm	I.C.	Taper IPF	<b>EXTERNAL</b>	<b>INTERNAL</b>	X	Y	Connection No. or Size
				Ordering Code Right Hand	Ordering Code Right Hand			
4	27	5/8	2	<b>27 ER 4 API 502</b>	<b>27 IR 4 API 502</b>	.08	.12	65/8 REG
4	27	5/8	3	<b>27 ER 4 API 503</b>	<b>27 IR 4 API 503</b>	.08	.12	5 1/2, 7 5/8, 8 5/8 REG

### V-0.055

Macaroni Tubing (MT)

American Macaroni Tubing (AMT)

American Mining Macaroni Tubing (AMMT)

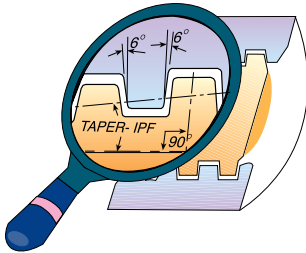
Pitch TPI	L	I.C. in	Taper IPF	<b>EXTERNAL</b>	<b>INTERNAL</b>	X	Y	Connection No. or Size
				Ordering Code Right Hand	Ordering Code Right Hand			
6	22	1/2	1.5	<b>22 ER 6 API 551.5</b>	-	.08	.07	NC10,NC12,NC13,NC16
6	16	3/8	1.5	-	<b>16 IR 6 API 551.5</b>	.08	.07	NC10,NC12,NC13 *
6	22	1/2	1.5	-	<b>22 IR 6 API 551.5</b>	.08	.07	NC16 **

\* For NC10,NC12 use holder SIR062516CB  
For NC13 use holders SIR0750P16/SIR0750P16B/SIR0750S16CB

\*\* For NC16 use holder SIR1000R22

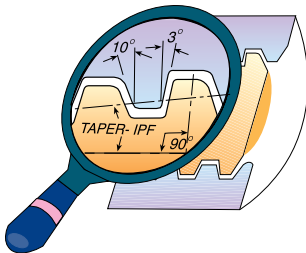
For Carbide Grade and Cutting Speed see page 66-67

## OIL Threads Extreme - Line Casing



Pitch TPI	L mm	I.C.	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>	.07	.07	5-7 <sup>5</sup> / <sub>8</sub>
5	22	1/2	1.25	<b>22 ER 5 EL 1.25</b>	<b>22 IR 5 EL 1.25</b>	.09	.09	8 <sup>5</sup> / <sub>8</sub> -10 <sup>3</sup> / <sub>4</sub>

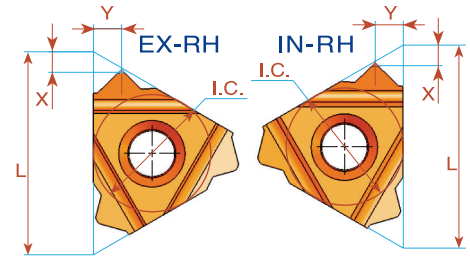
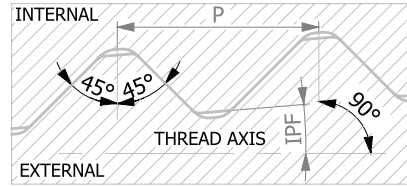
## Buttress Casing



Pitch TPI	L mm	I.C.	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>	.09	.09	4 <sup>1</sup> / <sub>2</sub> -13 <sup>3</sup> / <sub>8</sub>
5	22	1/2	1.00	<b>22 ER 5 BUT 1.0</b>	<b>22 IR 5 BUT 1.0</b>	.09	.09	16-20

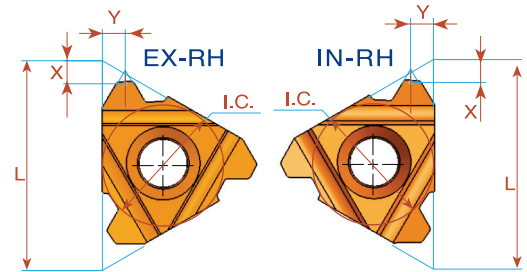
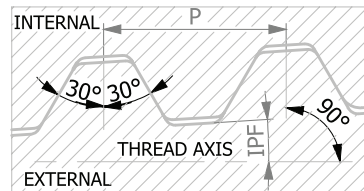
Order example: 22 ER 5 BUT 0.75 MXC

## HUGHES



Pitch TPI	L mm	I.C.	Taper IPF	<b>EXTERNAL</b>	<b>INTERNAL</b>	X	Y	Connection No. or Size
				Ordering Code Right Hand	Ordering Code Right Hand			
3.5	27	5/8	2	<b>27 ER 3.5 H 902</b>	<b>27 IR 3.5 H 902</b>	.11	.15	3 1/2 - 6 5/8
3.5	27	5/8	3	<b>27 ER 3.5 H 903</b>	<b>27 IR 3.5 H 903</b>	.11	.15	7 - 8 5/8
3	27	5/8	1.25	<b>27 ER 3 SLH 90</b>	<b>27 IR 3 SLH 90</b>	.13	.18	2 3/8 - 3 1/2

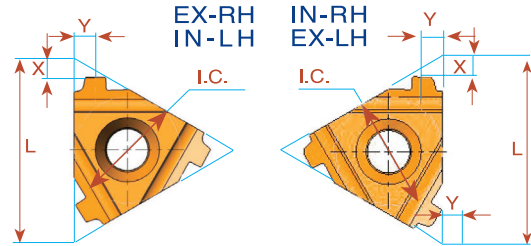
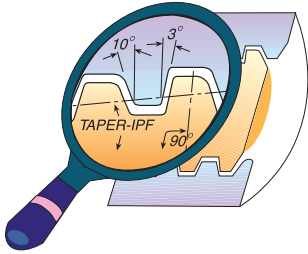
## PAC



Pitch TPI	L mm	I.C.	Taper IPF	<b>EXTERNAL</b>	<b>INTERNAL</b>	X	Y	Connection No. or Size
				Ordering Code Right Hand	Ordering Code Right Hand			
4	22	1/2	1.5	<b>22 ER 4 PAC</b>	<b>22 IR 4 PAC</b>	.09	.09	2 1/2 - 2 7/8
4	27	5/8	1.5	<b>27 ER 4 PAC</b>	<b>27 IR 4 PAC</b>	.09	.09	2 1/2 - 2 7/8



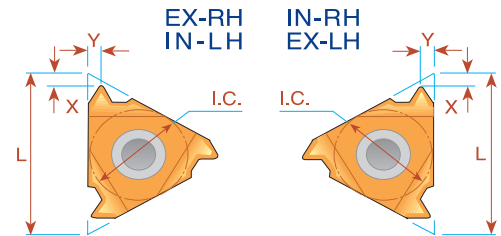
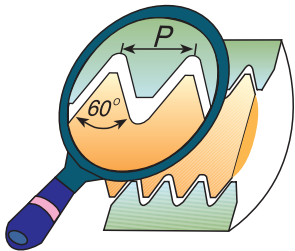
## VAM



Pitch TPI	L mm	I.C.	Taper IPF	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y	Connection No. or Size
				Ordering Code Right Hand	Ordering Code Left Hand	Ordering Code Right Hand	Ordering Code Left Hand			
8	16	3/8	0.75	<b>16 ER 8 VAM</b>		<b>16 IR 8 VAM</b>		.07	.07	2 3/8" - 2 7/8"
6	22	1/2	0.75	<b>22 ER 6 VAM</b>		<b>22 IR 6 VAM</b>		.09	.09	3 1/2" - 4 1/2"
5	22	1/2	0.75	<b>22 ER 5 VAM</b>		<b>22 IR 5 VAM</b>		.09	.11	5" - 13 3/8"

Order example: 16 ER 8 VAM BMA

## NPS



Pitch TPI	L mm	I.C.	<b>EXTERNAL</b>		<b>INTERNAL</b>		X	Y
			Ordering Code Right Hand	Ordering Code Left Hand	Ordering Code Right Hand	Ordering Code Left Hand		
18	16	3/8	<b>16 ER 18 NPS</b>	<b>16 EL 18 NPS</b>	<b>16 IR 18 NPS</b>	<b>16 IL 18 NPS</b>	.03	.04
14	16	3/8	<b>16 ER 14 NPS</b>	<b>16 EL 14 NPS</b>	<b>16 IR 14 NPS</b>	<b>16 IL 14 NPS</b>	.04	.05
11.5	16	3/8	<b>16 ER 11.5 NPS</b>	<b>16 EL 11.5 NPS</b>	<b>16 IR 11.5 NPS</b>	<b>16 IL 11.5 NPS</b>	.04	.06
8	16	3/8	<b>16 ER 8 NPS</b>	<b>16 EL 8 NPS</b>	<b>16 IR 8 NPS</b>	<b>16 IL 8 NPS</b>	.05	.07

Order example: 30-11.5 NPS MT7

\* One cutting edge

For Carbide Grade and Cutting Speed see page 66-67