



TURNING

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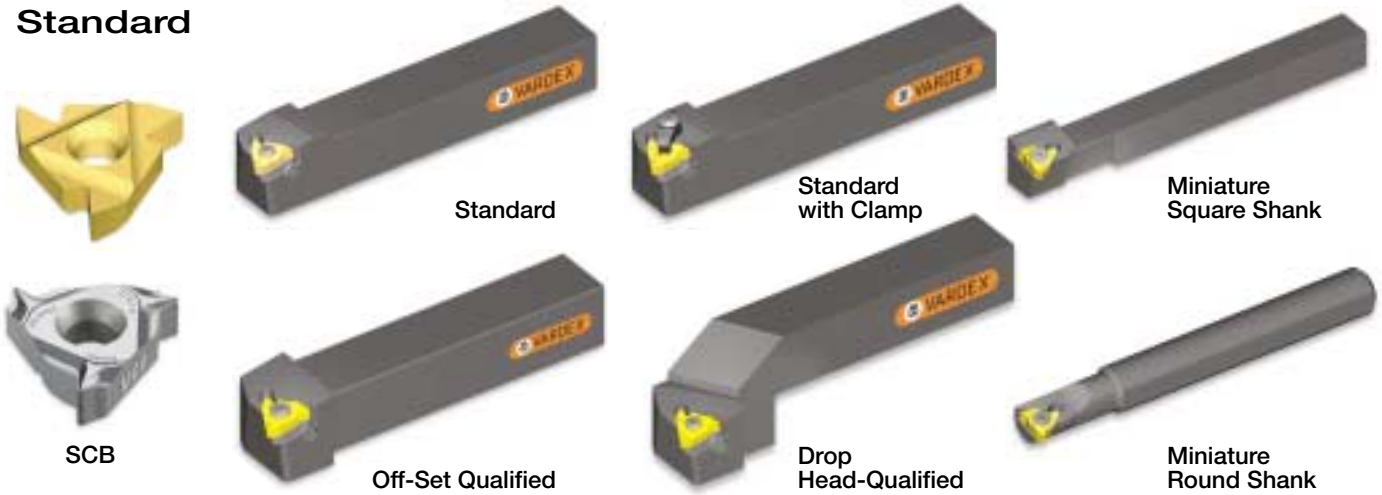
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Thread Turning System - External

Standard



U Style



V Style



M Style



Z Style



T Style





Thread Turning System - Internal

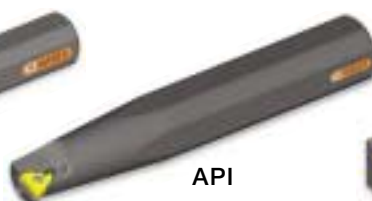
Standard



SCB



Standard



API



Miniature Square Shank



Standard with Clamp



Carbide Shank



Miniature Round Shank

U Style



U Style



U Style with Clamp

M Style



M Style

V Style



V Style

T Style



T Style

Z Style



Z Style

Mini-3



Mini-3



Mini-3 Adjustable

Mini-L



Mini-L



Mini-L Adjustable

Micro



Micro Single-Ended



Micro Double-Ended



Tooling recommendation for a given **Internal** thread specification

ISO Metric

Pitch mm	Thread	Insert Size	Ordering Code		
			Insert	Holder	Anvil
0.70	4	Micro 3.0	3.0SIR0.7ISO	SMC...-3	-
	6	Micro 4.0	4.0SIR0.75ISO	SMC...-4	-
0.75	8	Micro 6.0	6.0SIR0.75ISO	SMC...-6	-
	10	IC 5.0 L	5LIR0.75ISO	.NVR10...-5L	-
0.80	5	Micro 3.0	3.0SIR0.8ISO	SMC...-3	-
	M6	Micro 4.0	4.0SIR1.0ISO	SMC...-4	-
1.00	8	Micro 6.0	6.0SIR1.0ISO	SMC...-6	-
	10	IC 5.0 L	5LIR1.0ISO	.NVR10...-5L	-
	12-14	IC 6.0	6.0IR1.0ISO	.NVR1...-6.0	-
	15-17	IC 1/4"	2IR1.0ISO	NVR10-2	-
	18	IC 1/4"	2IR1.0ISO	NVR13-2	-
	20-24	IC 3/8"	3IR1.0ISO	NVR13-3	-
1.25	M8	Micro 6.0	6.0SIR1.25ISO	SMC...-6.0	-
	10	IC 5.0 L	5LIR1.25ISO	.NVR10...-5L	-
	12-14	IC 6.0	6.0IR1.25ISO	.NVR1...-6.0	-
1.50	M10	IC 5.0 L	5LIR1.5ISO	.NVR10...-5L	-
	12-14	IC 6.0	6.0IR1.5ISO	.NVR1...-6.0	-
	15-18	IC 1/4"	2IR1.5ISO	NVR10-2	-
	20-25	IC 3/8"	3IR1.5ISO	NVR13-3	-
	26-28	IC 3/8"	3IR1.5ISO	AVR20-3	YI3
	30-36	IC 3/8"	3IR1.5ISO	AVR20-3	YI3-1N
	38-45	IC 3/8"	3IR1.5ISO	AVR32-3	YI3-1N
	48-68	IC 3/8"	3IR1.5ISO	AVR40-3	YI3-1N
1.75	M12	IC 6.0	6.0IR1.75ISO	.NVR1...-6.0	-
	M14	IC 6.0	6.0IR2.0ISO	.NVR1...-6.0	-
	M16-18	IC 1/4"	2IR2.0ISO	NVR10-2	-
	20-22	IC 3/8"	3IR2.0ISO	NVR13-3	-
2.00	24	IC 3/8"	3IR2.0ISO	NVR16-3	-
	27-30	IC 3/8"	3IR2.0ISO	AVR20-3	YI3
	33-36	IC 3/8"	3IR2.0ISO	AVR25-3	YI3
	39-45	IC 3/8"	3IR2.0ISO	AVR32-3	YI3-1N
	48-68	IC 3/8"	3IR2.0ISO	AVR40-3	YI3-1N
2.50	M18	IC 1/4"	2IR2.5ISO	NVR10-2	-
	M20-M22	IC 3/8"	3IR2.5ISO	NVR13-3	-
	M24-M27	IC 3/8"	3IR3.0ISO	NVR16-3	-
3.00	36-45	IC 3/8"	3IR3.0ISO	AVR25-3	YI3
	48-68	IC 3/8"	3IR3.0ISO	AVR40-3	YI3
3.50	M30-M33	IC 1/2"	4IR3.5ISO	NVR20-4	-
4.00	M36	IC 1/2"	4IR4.0ISO	NVR20-4	-
	M39	IC 1/2"	4IR4.0ISO	AVR25-4	YI4
	56-68	IC 1/2"	4IR4.0ISO	AVR40-4	YI4
4.50	M42	IC 1/2"	4IR4.5ISO	AVR25-4	YI4-1P
	M45	IC 1/2"	4IR4.5ISO	AVR32-4	YI4
5.00	M48	IC 1/2"	4IR5.0ISO	AVR32-4	YI4-1P
	M52	IC 1/2"	4IR5.0ISO	AVR32-4	YI4
5.50	M56-60	IC 5/8"	5IR5.5ISO	AVR40-5	YI5
6.00	M64-68	IC 5/8"	5IR6.0ISO	AVR40-5	YI5



Tooling recommendation for a given **Internal** thread specification

American UN

Pitch tpi	Thread	Insert Size	Insert	Holder	Anvil
56	10 - 1/4	Micro 4.0	Special	SMC...-4.0	-
48	10 - 5/16	Micro 4.0	Special	SMC...-4.0	-
40	10 - 3/8	Micro 4.0	4.0SIR40UN	SMC...-4.0	-
36	12 - 3/8	Micro 4.0	4.0SIR36UN	SMC...-4.0	-
32	12 - 1/4	Micro 4.0	4.0SIR32UN	SMC...-4.0	-
	5/16 - 3/8	Micro 6.0	6.0SIR32UN	SMC...-6.0	-
	7/16 - 1/2	IC 6.0	6.0IR32UN	.NVR 1...-6.0	-
	9/16 - 11/16	IC 1/4"	2IR32UN	NVR10-2	-
	3/4 - 15/16	IC 3/8"	3IR32UN	NVR13-3	-
	7/8 - 15/16	IC 3/8"	3IR32UN	NVR16-3	-
	1	IC 3/8"	3IR32UN	AVR20-3	YI3 - 1N
28	12 - 1/4	Micro 4.0	4.0SIR28UN	SMC...-4.0	-
	5/16 - 3/8	Micro 6.0	6.0SIR28UN	SMC...-6.0	-
	7/16 - 1/2	IC 6.0	6.0IR28UN	.NVR 1...-6.0	-
	5/8 - 11/16	IC 1/4"	2IR28UN	NVR10-2	-
	3/4 - 13/16	IC 3/8"	3IR28UN	NVR13-3	-
	7/8 - 15/16	IC 3/8"	3IR28UN	NVR16-3	-
	1 - 1 1/8	IC 3/8"	3IR28UN	AVR20-3	YI3 - 1N
27	1 3/16	IC 3/8"	3IR28UN	AVR25-3	YI3 - 1N
	1/4	Micro 4.0	4.0SIR27UN	SMC...-4.0	-
	5/16 - 3/8	Micro 6.0	6.0SIR27UN	SMC...-6.0	-
	7/16 - 1/2	IC 6.0	Special	.NVR 1...-6.0	-
	9/16 - 5/8	IC 1/4"	2IR27UN	NVR10-2	-
	3/4	IC 3/8"	3IR27UN	NVR13-3	-
	7/8	IC 3/8"	3IR27UN	NVR16-3	-
24	1	IC 3/8"	3IR27UN	AVR20-3	YI3 - 1N
	12 - 1/4	Micro 4.0	4.0SIR24UN	SMC...-4.0	-
	5/16 - 3/8	Micro 6.0	6.0SIR24UN	SMC...-6.0	-
	7/16	IC 5.0 L	5LIR24UN	.NVR10.-5L	-
	1/2	IC 6.0	6.0IR24UN	.NVR 1...-6.0	-
	9/16 - 11/16	IC 1/4"	2IR24UN	NVR10-2	-
	3/4	IC 3/8"	3IR24UN	NVR13-3	-
20	7/8	IC 3/8"	3IR24UN	NVR16-3	-
	1 - 1 1/8	IC 3/8"	3IR24UN	AVR20-3	YI3 - 1N
	1 1/4 - 1 1/2	IC 3/8"	3IR24UN	AVR25-3	YI3 - 1N
	1 5/8 - 24	IC 3/8"	3IR24UN	AVR32-3	YI3 - 1N
	5/16 - 3/8	Micro 6.0	6.0SIR20UN	SMC...-6.0	-
	7/16	IC 5.0 L	5LIR20UN	.NVR10.-5L	-
	1/2 - 9/16	IC 6.0	6.0IR20UN	.NVR 1...-6.0	-
16	5/8 - 11/16	IC 1/4"	2IR20UN	NVR10-2	-
	3/4 - 13/16	IC 3/8"	3IR20UN	NVR13-3	-
	7/8 - 15/16	IC 3/8"	3IR20UN	NVR16-3	-
	1 - 1 3/16	IC 3/8"	3IR20UN	AVR20-3	YI3 - 1N
	1 1/4 - 1 1/2	IC 3/8"	3IR20UN	AVR25-3	YI3 - 1N
	1 9/16 - 1 13/16	IC 3/8"	3IR20UN	AVR32-3	YI3 - 1N
	1 7/8 - 2 1/8	IC 3/8"	3IR20UN	AVR40-3	YI3 - 1N

Tooling recommendation for a given **Internal** thread specification

American UN

	Pitch tpi	Thread	Insert Size	Ordering Code		
				Insert	Holder	Anvil
18		5/16 - 3/8	Micro 6.0	6.0SIR18UN	SMC...-6.0	-
		7/16	IC 5.0 L	5LIR18UN	.NVR10.-5L	-
		1/2 - 9/16	IC 6.0	6.0IR18UN	.NVR 1...-6.0	-
		5/8	IC 1/4"	2IR18UN	NVR10-2	-
		3/4	IC 3/8"	3IR18UN	NVR13-3	-
		7/8 - 1	IC 3/8"	3IR18UN	NVR16-3	-
		1 1/16 - 1 3/16	IC 3/8"	3IR18UN	AVR20-3	YI3 - 1N
		1 1/4 - 1 1/2	IC 3/8"	3IR18UN	AVR25-3	YI3 - 1N
		1 9/16 - 1 3/4	IC 3/8"	3IR18UN	AVR32-3	YI3 - 1N
		1 7/8 - 2	IC 3/8"	3IR18UN	AVR40-3	YI3 - 1N
16		3/8	Micro 6.0	6.0SIR16UN	SMC...-6.0	-
		7/16	IC 5.0 L	5LIR16UN	.NVR10.-5L	-
		1/2 - 9/16	IC 6.0	6.0IR16UN	.NVR 1...-6.0	-
		5/8 - 11/16	IC 1/4"	2IR16UN	NVR10-2	-
		3/4 - 13/16	IC 3/8"	3IR16UN	NVR13-3	-
		7/8 - 1	IC 3/8"	3IR16UN	NVR16-3	-
		1 1/16 - 1 1/8	IC 3/8"	3IR16UN	AVR20-3	YI3
		1 3/16	IC 3/8"	3IR16UN	AVR20-3	YI3 - 1N
		1 1/4 - 1 1/2	IC 3/8"	3IR16UN	AVR25-3	YI3 - 1N
		1 9/16 - 1 13/16	IC 3/8"	3IR16UN	AVR32-3	YI3 - 1N
14		1 7/8 - 2 1/8	IC 3/8"	3IR16UN	AVR40-3	YI3 - 1N
		7/16	IC 5.0 L	5LIR14UN	.NVR10.-5L	-
		1/2 - 9/16	IC 6.0	6.0IR14UN	.NVR 1...-6.0	-
		5/8	IC 1/4"	2IR14UN	NVR10-2	-
		3/4	IC 3/8"	3IR14UN	NVR13-3	-
		7/8 - 1	IC 3/8"	3IR14UN	NVR16-3	-
		1 1/8	IC 3/8"	3IR14UN	AVR20-3	YI3
		1 1/4	IC 3/8"	3IR14UN	AVR25-3	YI3
		1 3/8 - 1 1/2	IC 3/8"	3IR14UN	AVR25-3	YI3 - 1N
		1 5/8 - 1 3/4	IC 3/8"	3IR14UN	AVR32-3	YI3 - 1N
13		1 7/8 - 2	IC 3/8"	3IR14UN	AVR40-3	YI3 - 1N
		1/2 - 13	IC 6.0	6.0I13UN...158/001	BNVR 10S-6.0	-
12		9/16 - 11/16	IC 1/4"	2I12UN...158/002	NVRC10-2 156/001	-
		3/4 - 7/8	IC 3/8"	3IR12UN	NVR13-3	-
		15/16 - 1	IC 3/8"	3IR12UN	NVR16-3	-
		1 1/16 - 1 3/16	IC 3/8"	3IR12UN	AVR20-3	YI3
		1 1/4 - 1 1/2	IC 3/8"	3IR12UN	AVR25-3	YI3
		1 9/16 - 1 13/16	IC 3/8"	3IR12UN	AVR32-3	YI3
		1 7/8 - 2 1/8	IC 3/8"	3IR12UN	AVR40-3	YI3 - 1N
11		5/8 - 11	IC 1/4U"	2URI11UN...158/003	NVRC11-U 156/002	-
		3/4 - 7/8	IC 3/8"	3IR10UN	NVR13-3	-
10		1 - 10	IC 3/8"	3IR10UN	NVR16-3	-
		1 1/8 - 10	IC 3/8"	3IR10UN	AVR20-3	YI3
		1 1/4 - 1 1/2	IC 3/8"	3IR10UN	AVR25-3	YI3
		1 5/8 - 1 3/4	IC 3/8"	3IR10UN	AVR32-3	YI3
		1 7/8 - 2	IC 3/8"	3IR10UN	AVR40-3	YI3



Tooling recommendation for a given **Internal** thread specification

American UN (Con't)

Pitch tpi	Thread	Insert Size	Ordering Code		
			Insert	Holder	Anvil
9	7/8 - 9	IC 3/8"	3IR9UN	NVR13-3	-
	1	IC 3/8"	3IR8UN	NVR16-3	-
8	1 1/16 - 1 3/16	IC 3/8"	3IR8UN	AVR20-3	YI3 - 1P
	1 1/4	IC 3/8"	3IR8UN	AVR20-3	YI3
	1 5/16 - 1 1/2	IC 3/8"	3IR8UN	AVR25-3	YI3
	1 9/16 - 1 13/16	IC 3/8"	3IR8UN	AVR32-3	YI3
	1 7/8 - 2 1/8	IC 3/8"	3IR8UN	AVR40-3	YI3
7	1 1/8 - 1 1/4	IC 1/2"	4IR7UN	NVR20-4	-
	1 3/8 - 1 7/16	IC 1/2"	4IR6UN	NVR20-4	-
6	1 1/2 - 1 5/8	IC 1/2"	4IR6UN	AVR25-4	YI4 - 1P
	1 11/16	IC 1/2"	4IR6UN	AVR25-4	YI4
	1 3/4 - 2	IC 1/2"	4IR6UN	AVR32-4	YI4
	2 1/8 - 6	IC 1/2"	4IR6UN	AVR40-4	YI4
5	1 3/4 - 5	IC 1/2"	4IR5UN	AVR25-4	YI4 - 1P
4.5	2 - 4 1/2	IC 5/8"	5IR4.5UN	AVR32-5	YI5 - 1P



Tooling recommendation for a given **Internal** thread specification

Whitworth

	Pitch tpi	Thread	Insert Size	Ordering Code		
				Insert	Holder	Anvil
26		1/4	Micro 4.0	4.0SIR26W	SMC..-4.0	-
		5/16 - 1/2	Micro 6.0	6.0SIR26W	SMC..-6.0	-
		9/16 - 5/8	IC 1/4"	2IR26W	NVR10-2	-
		11/16	IC 1/4"	2IR26W	NVR13-2	-
		3/4 - 13/16	IC 3/8"	3IR26W	NVR13-3	-
		7/8 - 15/16	IC 3/8"	3IR26W	NVR16-3	-
		1 - 1 3/16	IC 3/8"	3IR26W	AVR20-3	YI3 - 1N
		1 1/4 - 1 7/16	IC 3/8"	3IR26W	AVR25-3	YI3 - 1N
		1 1/2 - 1 3/4	IC 3/8"	3IR26W	AVR32-3	YI3 - 1N
		1 7/8 - 2	IC 3/8"	3IR26W	AVR40-3	YI3 - 1N
22		5/16	Micro 6.0	6.0SIR22W	SMC..-6.0	-
		3/8 - 9/16	Micro 6.0	6.0SIR20W	SMC..-6.0	-
20		5/8 - 11/16	IC 1/4"	2IR20W	NVR10-2	-
		3/4 - 13/16	IC 3/8"	3IR20W	NVR13-3	-
		7/8 - 1	IC 3/8"	3IR20W	NVR16-3	-
		1 1/16 - 1 3/16	IC 3/8"	3IR20W	AVR20-3	YI3 - 1N
		1 1/4 - 1 7/16	IC 3/8"	3IR20W	AVR25-3	YI3 - 1N
		1 1/2 - 1 3/4	IC 3/8"	3IR20W	AVR32-3	YI3 - 1N
		1 7/8 - 3	IC 3/8"	3IR20W	AVR40-3	YI3 - 1N
		11/16	IC 1/4"	2IR16W	NVR10-2	-
16		3/4 - 11/16	IC 3/8"	3IR16W	NVR13-3	-
		7/8 - 1	IC 3/8"	3IR16W	NVR16-3	-
		1 1/16 - 1 1/8	IC 3/8"	3IR16W	AVR20-3	YI3
		1 3/16	IC 3/8"	3IR16W	AVR20-3	YI3 - 1N
		1 1/4 - 1 7/16	IC 3/8"	3IR16W	AVR25-3	YI3 - 1N
		1 1/2 - 1 3/4	IC 3/8"	3IR16W	AVR32-3	YI3 - 1N
		1 7/8 - 4 5/8	IC 3/8"	3IR16W	AVR40-3	YI3 - 1N
		4 3/4 - 7	IC 3/8"	3IR16W	AVR40-3	YI3 - 1.5N
14		7/16	IC 5.0 L	5LIR14W	.NVR10.-5L	-
		5/8 - 11/16	IC 1/4"	2IR14W	NVR10-2	-
12		13/16	IC 3/8"	3IR12W	NVR13-3	-
		15/16 - 1	IC 3/8"	3IR12W	NVR16-3	-
		1 1/16 - 1 3/16	IC 3/8"	3IR12W	AVR20-3	YI3
		1 1/4 - 1 1/2	IC 3/8"	3IR12W	AVR25-3	YI3
		1.6 - 1 3/4	IC 3/8"	3IR12W	AVR32-3	YI3 - 1N
		1 7/8 - 6	IC 3/8"	3IR12W	AVR40-3	YI3 - 1N
		6 1/4 - 7	IC 3/8"	3IR12W	AVR40-3	YI3 - 1.5N
11		7/8	IC 3/8"	3IR11W	NVR13-3	-
10		1	IC 3/8"	3IR10W	NVR16-3	-



Tooling recommendation for a given **Internal** thread specification

Whitworth (Con't)

Pitch tpi	Thread	Insert Size	Ordering Code		
			Insert	Holder	Anvil
9	7/8	IC 3/8"	3IR9W	NVR13-3	-
	1 1/8 - 1 1/4	IC 3/8"	3IR9W	AVR20-3	YI3
8	1	IC 3/8"	3IR8W	NVR16-3	-
	1 3/16	IC 3/8"	3IR8W	AVR20-3	YI3 - 1P
	1 5/16 - 1 1/2	IC 3/8"	3IR8W	AVR25-3	YI3
	1.6 - 1 7/8	IC 3/8"	3IR8W	AVR32-3	YI3
	1.9 - 2 1/4	IC 3/8"	3IR8W	AVR40-3	YI3
	2.4 - 7	IC 3/8"	3IR8W	AVR40-3	YI3 - 1N
7	1 1/4	IC 1/2"	4IR7W	NVR20-4	-
	1 3/4 - 2	IC 1/2"	4IR7W	AVR32-4	YI4
6	1 5/16 - 1 7/16	IC 1/2"	4IR6W	NVR20-4	-
	1 1/2 - 1 5/8	IC 1/2"	4IR6W	AVR25-4	YI4 - 1P
	1 7/8 - 1.9	IC 1/2"	4IR6W	AVR32-4	YI4
	2.1 - 3.1	IC 1/2"	4IR6W	AVR40-4	YI4
	3 1/4 - 7	IC 1/2"	4IR6W	AVR40-4	YI4 - 1N
5	1 3/4	IC 1/2"	4IR5W	AVR25-4	YI4 - 1P
	3 - 3 1/4	IC 1/2"	4IR5W	AVR40-4	YI4
4.5	2	IC 5/8"	5IR4.5W	AVR32-5	YI5 - 1P
	3 1/2 - 4	IC 5/8"	5IR4.5W	AVR60-5	YI5
4	2 1/4	IC 5/8"	5IR4W	AVR40-5	YI5 - 1P
	2 1/2	IC 5/8"	5IR4W	AVR40-5	YI5
	4 1/4 - 4 3/4	IC 5/8"	5IR4W	AVR60-5	YI5
	4 7/8 - 7	IC 5/8"	5IR4W	AVR60-5	YI5 - 1N
3.5	2 3/4	IC 5/8" U	5UEI3.5W	AVR40-5U	YI5U - 1P
	3	IC 5/8" U	5UEI3.5W	AVR50-5U	YI5U
3.25	3 1/4	IC 5/8" U	5UEI3.25W	AVR50-5U	YI5U
	3 1/2	IC 5/8" U	5UEI3.25W	AVR60-5U	YI5U
3	3 3/4 - 4	IC 5/8" U	5UEI3W	AVR60-5U	YI5U
2.75	5	IC 5/8" U	5UEI2.75W	AVR60-5U	YI5U
2.5	6	IC 5/8" V	5VIR2.5W	NVR60-5V	-

Tooling recommendation for a given **Internal** thread specification

BSP (55°)

Pitch tpi	Thread	Insert Size	Ordering Code		
			Insert	Holder	Anvil
28	G1/16	Micro 6.0	6.0SIR28W	SMC...-6.0	-
	G1/8	IC 5.0 L	5LIR28W	.NVR10...-5L	-
19	G1/4	IC 6.0	6.0IR19W	.NVR1...-6.0	-
	G3/8	IC 1/4"	2IR19W	NVR10-2	-
14	G1/2 & G5/8	IC 3/8"	3IR14W	NVR13-3	-
	G3/4 & G7/8	IC 3/8"	3IR14W	AVR20-3	YI3
11	G1 & G1 1/8 & 1 1/4	IC 3/8"	3IR11W	AVR25-3	YI3
	G1 1/2	IC 3/8"	3IR11W	AVR40-3	YI3 - 1N
	G1 3/4	IC 3/8"	3IR11W	AVR40-3	YI3 - 1N
	G2	IC 3/8"	3IR11W	AVR40-3	YI3 - 1N
	G2 1/4	IC 3/8"	3IR11W	AVR40-3	YI3 - 1N
	G2 1/2	IC 3/8"	3IR11W	AVR40-3	YI3 - 1N
	G2 3/4	IC 3/8"	3IR11W	AVR40-3	YI3 - 1N
	G3	IC 3/8"	3IR11W	AVR40-3	YI3 - 1N
	G3 1/2	IC 3/8"	3IR11W	AVR40-3	YI3 - 1N
	G4	IC 3/8"	3IR11W	AVR40-3	YI3 - 1N
	G4 1/2	IC 3/8"	3IR11W	AVR40-3	YI3 - 1N
	G5	IC 3/8"	3IR11W	AVR40-3	YI3 - 1N
	G5 1/2	IC 3/8"	3IR11W	AVR40-3	YI3 - 1N
	G6	IC 3/8"	3IR11W	AVR40-3	YI3 - 1N

BSPT

Pitch tpi	Thread	Insert Size	Ordering Code		
			Insert	Holder	Anvil
28	1/8	IC 5.0 L	5LIR28BSPT	.NVR1...-5.0L	-
19	1/4	IC 6.0	6.0IR19BSPT	.NVR1...-6.0	-
	3/8	IC 1/4"	2IR19BSPT	NVR10-2	-
14	1/2	IC 3/8"	3IR14BSPT	NVR13-3	-
	3/4	IC 3/8"	3IR14BSPT	AVR20-3	YI3
11	1	IC 3/8"	3IR11BSPT	AVR25-3	YI3
	1 1/4	IC 3/8"	3IR11BSPT	AVR32-3	YI3
	1 1/2	IC 3/8"	3IR11BSPT	AVR40-3	YI3 - 1N
	2	IC 3/8"	3IR11BSPT	AVR40-3	YI3 - 1N
	2 1/2	IC 3/8"	3IR11BSPT	AVR40-3	YI3 - 1N
	3	IC 3/8"	3IR11BSPT	AVR40-3	YI3 - 1N
	4	IC 3/8"	3IR11BSPT	AVR40-3	YI3 - 1N
	5	IC 3/8"	3IR11BSPT	AVR40-3	YI3 - 1N
	6	IC 3/8"	3IR11BSPT	AVR40-3	YI3 - 1N



Tooling recommendation for a given **Internal** thread specification

NPT

Pitch tpi	Thread	Insert Size	Ordering Code		
			Insert	Holder	Anvil
27	1/8	Micro 6.0	6.0SIR27NPT	SMC...-6.0	-
18	1/4	Micro 6.0	6.0SIR18NPT	SMC...-6.0	-
	3/8	Micro 6.0	6.0SIR18NPT	SMC...-6.0	-
14	1/2	IC 3/8"	3IR14NPT	NVR13-3	-
	3/4	IC 3/8"	3IR14NPT	NVR13-3	-
11.5	1	IC 3/8"	3IR11.5NPT	AVR20-3	YI3
	1 1/4	IC 3/8"	3IR11.5NPT	AVR32-3	YI3
	1 1/2	IC 3/8"	3IR11.5NPT	AVR32-3	YI3 - 1N
	2	IC 3/8"	3IR11.5NPT	AVR40-3	YI3 - 1N
8	2 1/2	IC 3/8"	3IR8NPT	AVR40-3	YI3 - 1N
	3	IC 3/8"	3IR8NPT	AVR40-3	YI3 - 1N
	3 1/2	IC 3/8"	3IR8NPT	AVR40-3	YI3 - 1N
	4	IC 3/8"	3IR8NPT	AVR40-3	YI3 - 1N
	5	IC 3/8"	3IR8NPT	AVR40-3	YI3 - 1N
	6	IC 3/8"	3IR8NPT	AVR40-3	YI3 - 1N
	8	IC 3/8"	3IR8NPT	AVR40-3	YI3 - 1N
	10	IC 3/8"	3IR8NPT	AVR40-3	YI3 - 1N
	12	IC 3/8"	3IR8NPT	AVR40-3	YI3 - 1N

NPTF

Pitch tpi	Thread	Insert Size	Ordering Code		
			Insert	Holder	Anvil
27	1/8	IC 5.0 L	5LIR27NPTF	.NVR1...-5.0L	-
18	1/4	IC 6.0	6.0IR18NPTF	.NVR1...-6.0	-
	3/8	IC 1/4"	2IR18NPTF	NVR10-2	-
14	1/2	IC 3/8"	3IR14NPTF	NVR13-3	-
	3/4	IC 3/8"	3IR14NPTF	NVR16-3	-
11.5	1	IC 3/8"	3IR11.5NPTF	AVR20-3	YI3
	1 1/4	IC 3/8"	3IR11.5NPTF	AVR32-3	YI3
	1 1/2	IC 3/8"	3IR11.5NPTF	AVR32-3	YI3 - 1N
	2	IC 3/8"	3IR11.5NPTF	AVR40-3	YI3 - 1N
8	2 1/2	IC 3/8"	3IR8NPTF	AVR40-3	YI3 - 1N
	3	IC 3/8"	3IR8NPTF	AVR40-3	YI3 - 1N

PG

Pitch tpi	Thread	Insert Size	Ordering Code		
			Insert	Holder	Anvil
20	Pg 7	IC 6.0	6.0IR20PG	.NVR 1..6.0	-
	Pg 9	IC 1/4"	2IR18PG	NVR10-2	-
18	Pg 11 & Pg 13.5	IC 3/8"	3IR18PG	NVR13-3	-
	Pg 16	IC 3/8"	3IR18PG	NVR16-3	-
16	Pg 21	IC 3/8"	3IR16PG	AVR20-3	YI3
	Pg 29	IC 3/8"	3IR16PG	AVR25-3	YI3 - 1N
	Pg 36 & Pg 42 & Pg 48	IC 3/8"	3IR16PG	AVR40-3	YI3 - 1N



THREAD TURNING INSERTS

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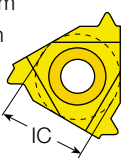




Vardex Ordering Code System

Threading Inserts (Not Including Micro System)

3		E	R	1.5	ISO				VTX	
1	2	3	4	5	6	7	8	9	10	11

1 - Insert size 5L -IC5.0L mm 6.0 -IC6.0 mm 2 -IC1/4" 3 -IC 3/8" 4 -IC 1/2" 5 -IC5/8" 	2 - Insert style U  V  L  J  SCB	3 - Type of Insert E - External I - Internal EI - External+Internal	4 - RH/LH Insert R - Right Hand Insert L - Left Hand Insert None - Right+Left Hand Insert																							
5 - Pitch Full Profile - Pitch Range <table><tr><td>mm</td><td>tpi</td></tr><tr><td>0.35-12.0</td><td>72-2</td></tr></table> Partial Profile - Pitch Range <table><tr><td>mm</td><td>tpi</td></tr><tr><td>A 0.5 - 1.5</td><td>48 - 16</td></tr><tr><td>AG 0.5 - 3.0</td><td>48 - 8</td></tr><tr><td>G 1.75 - 3.0</td><td>14 - 8</td></tr><tr><td>N 3.5 - 5.0</td><td>7 - 5</td></tr><tr><td>U 5.5 - 8.0</td><td>4 1/2 - 3 1/2</td></tr><tr><td>Q 5.5 - 6.0</td><td>4 1/2 - 4</td></tr><tr><td>U 6.5 - 9.0</td><td>4 - 2 3/4</td></tr><tr><td>V 6.0 - 10.0</td><td>4 - 2 1/2</td></tr></table>	mm	tpi	0.35-12.0	72-2	mm	tpi	A 0.5 - 1.5	48 - 16	AG 0.5 - 3.0	48 - 8	G 1.75 - 3.0	14 - 8	N 3.5 - 5.0	7 - 5	U 5.5 - 8.0	4 1/2 - 3 1/2	Q 5.5 - 6.0	4 1/2 - 4	U 6.5 - 9.0	4 - 2 3/4	V 6.0 - 10.0	4 - 2 1/2	6 - Standard 60° - Partial profile 60° 55° - Partial profile 55° ISO - ISO Metric UN - American UN W - Whitworth for BSW, BSP BSPT - British Standard Pipe Thread NPT - NPT NPTF - NPTF NPS - NPS RD - Round DIN 405 RD20400 - Round DIN 20400 TR - Trapez DIN 103 ACME - ACME STACME - Stub ACME UNJ - UNJ MJ - ISO 5855 ABUT - American Buttress BBUT - British Buttress SAGE - Metric Buttress DIN 513 API - API BUT - API Buttress Casing APIRD - API Round Casing & Tubing VAM - VAM EL - Extreme Line Casing H90 - H90 PG - Pg DIN 40430			7 - API 382 383 403 502 503
mm	tpi																									
0.35-12.0	72-2																									
mm	tpi																									
A 0.5 - 1.5	48 - 16																									
AG 0.5 - 3.0	48 - 8																									
G 1.75 - 3.0	14 - 8																									
N 3.5 - 5.0	7 - 5																									
U 5.5 - 8.0	4 1/2 - 3 1/2																									
Q 5.5 - 6.0	4 1/2 - 4																									
U 6.5 - 9.0	4 - 2 3/4																									
V 6.0 - 10.0	4 - 2 1/2																									
10 - Carbide Grade VTX, VCB, VM7, VKX, VSX, VK2, VK2P, VHX, VKP	11-Coarse Pitch Inserts 158/...			8 - No. (for Multitooth Style) 2, 3, 5, 6, 9 - Multitooth style M  Z 																						

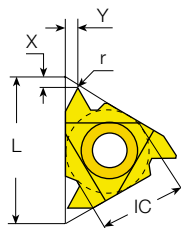
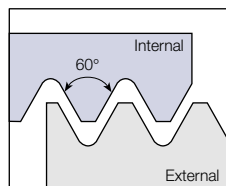
Micro Threading Inserts

3	S	I	R	0.5	ISO	VMX	1- SIDE
1	2	3	4	5	6	7	8

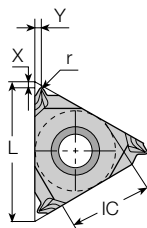
1 - Insert Dia.	2 - Insert style	3 - Type of Insert	4 - RH/LH Insert	5 - Pitch	
3.0 -3.0 mm	S - Micro Insert	I - Internal	R - Right Hand Insert	Full Profile - Pitch Range	
4.0 -4.0 mm			L - Left Hand Insert	mm 0.30-1.5	tpi 40-16
6.0 -6.0 mm				Partial Profile - Pitch Range	
8.0 -8.0 mm				mm	tpi
10.0 -10.0 mm				A 0.5 - 1.5	48 - 16
				F 0.25 - 1.0	72 - 24
	6 - Standard				
	55° - Partial profile 55°				
	60° - Partial profile 60°				
	ISO - ISO Metric				
	MJ - ISO 5855				
	NPT - NPT				
	NPTF - NPTF	7 - Carbide Grade	8 - Micro Ended		
	UN - American UN	VMX	1- SIDE - Single Ended		
	W - British Standard Whitworth		None - Double Ended		

Partial Profile 60°

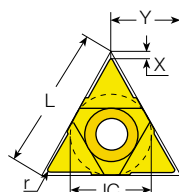
External



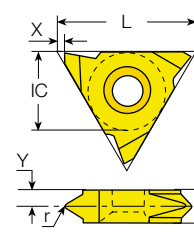
Standard



SCB
Sintered Chipbreaker



U Style



V Style / Slim Throat

Standard



SCB

Insert Size		Pitch		Ordering Code		Dimensions mm			Anvil		
IC	L mm	mm	tpi	RH	LH	r	X	Y	RH	LH	Toolholder
1/4"	11	0.5-1.5	48-16	2ERA60...	2ELA60...	0.05	0.8	0.9	-	-	NL...-2 (LH)
		0.5-1.5	48-16	3ERA60...	3ELA60...	0.05	0.8	0.9			
3/8"	16	1.75-3.0	14-8	3ERG60...	3ELG60...	0.27	1.2	1.7	YE3	YI3	AL...-3 (LH)
		0.5-3.0	48-8	3ERAG60...	3ELAG60...	0.08	1.2	1.7			
3/8" SCB	16	0.5-1.5	48-16	3JERA60...		0.05	0.6	0.8	YE3	-	AL...-3
		1.75-3.0	14-8	3JERG60...		0.27	1.1	1.5			
		0.5-3.0	48-8	3JERAG60...		0.08	0.9	1.5			
1/2"	22	3.5-5.0	7-5	4ERN60...	4ELN60...	0.53	1.7	2.5	YE4	YI4	AL...-4 (LH)
5/8"	27	5.5-6.0	4.5-4	5ERQ60...	5ELQ60...	0.64	2.1	3.1	YE5	YI5	AL...-5 (LH)

U Style



Insert Size		Pitch		Ordering Code		Dimensions mm			Anvil		
IC	L mm	mm	tpi	RH+LH		r	X	Y	RH	LH	Toolholder
1/2"U	22	5.5-8.0	4.5-3.25	4UEIU60...		0.30	0.6	11.0	YE4U	YI4U	AL...-4U (LH)
5/8"U	27	6.5-9.0	4-2.75	5UEIU60...		0.37	1.0	13.7	YE5U	YI5U	AL...-5U (LH)

Slim Throat



Insert Size		Pitch		Ordering Code		Dimensions mm				
IC	L mm	mm	tpi	RH	LH	r	X	Y	T	Toolholder
1/4"V	11	0.5-1.5	48-16	2VERA60...	2VELA60...	0.05	0.69	2.3	3.2	NL...-2V (LH)
		0.5-1.5	48-16	3VERA60...	3VELA60...	0.05	1.10	2.7	3.6	
3/8"V	16	1.75-3.0	14-8	3VERG60...	3VELG60...	0.27	1.10	1.9	3.6	NL...-3V (LH)
		0.5-3.0	48-8	3VERAG60...	3VELAG60...	0.08	1.10	1.9	3.6	
1/2"V	22	3.5-5.0	7-5	4VERN60...	4VELN60...	0.53	1.10	2.3	4.8	NL...-4V (LH)

V Style

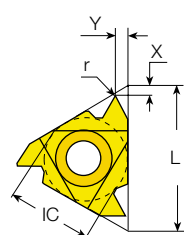
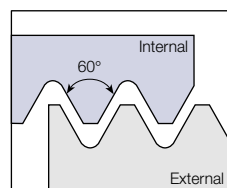


Insert Size		Pitch		Ordering Code		Dimensions mm				
IC	L mm	mm	tpi	RH	LH	r	X	Y	T	Toolholder
5/8"V	27	6.0-10.0	4-2.5	5VERV60...	5VELV60...	0.75	0.6	5.2	10	NL...-5V-10 (LH)

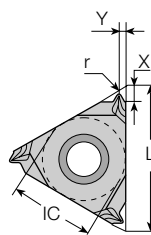
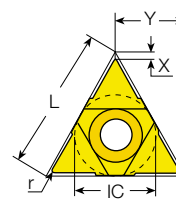


Partial Profile 60° (con't)

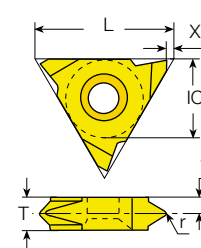
Internal



Standard


SCB
Sintered Chipbreaker


U Style



V Style

Standard



SCB

Insert Size		Pitch		Ordering Code		Dimensions mm			Anvil		
IC	L mm	mm	tpi	RH	LH	r	X	Y	RH	LH	Toolholder
1/4"	11	0.5-1.5	48-16	2IRA60...	2ILA60...	0.05	0.8	0.9	-	-	NVR...-2 (LH)
1/4" SCB	11	0.5-1.5	48-16	2JIRA60...		0.05	0.6	0.8	-	-	NVR...-2
3/8"	16	0.5-1.5	48-16	3IRA60...	3ILA60...	0.05	0.8	0.9	YI3	YE3	AVR...-3 (LH)
		1.75-3.0	14-8	3IRG60...	3ILG60...	0.16	1.2	1.7			
		0.5-3.0	48-8	3IRAG60...	3ILAG60...	0.05	1.2	1.7			
3/8" SCB	16	0.5-1.5	48-16	3JIRA60...		0.05	0.6	0.8	YI3	-	AVR...-3
		1.75-3.0	14-8	3JIRG60...		0.16	1.0	1.5			
		0.5-3.0	48-8	3JIRAG60...		0.05	0.9	1.5			
1/2"	22	3.5-5.0	7-5	4IRN60...	4ILN60...	0.30	1.7	2.5	YI4	YE4	AVR...-4 (LH)
5/8"	27	5.5-6.0	4.5-4	5IRQ60...	5ILQ60...	0.30	1.8	2.7	YI5	YE5	AVR...-5 (LH)

U Style



Insert Size		Pitch		Ordering Code		Dimensions mm			Anvil		
IC	L mm	mm	tpi	RH+LH		r	X	Y	RH	LH	Toolholder
1/2"U	22	5.5-8.0	4.5-3.25	4UEIU60...		0.30	0.6	11.0	YI4U	YE4U	AVR...-4U (LH)
5/8"U	27	6.5-9.0	4-2.75	5UEIU60...		0.37	1.0	13.7	YI5U	YE5U	AVR...-5U (LH)

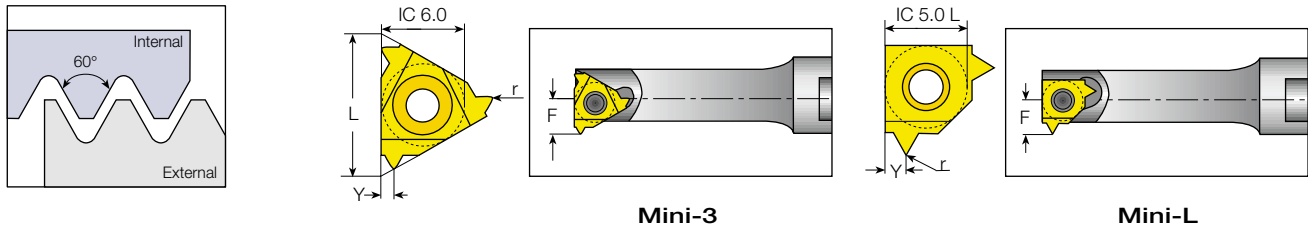
V Style



Insert Size		Pitch		Ordering Code		Dimensions mm			Anvil		
IC	L mm	mm	tpi	RH	LH	r	X	Y	T	Toolholder	
5/8"V	27	6.0-10.0	4-2.5	5VIRV60...	5VILV60...	0.35	1.0	4.3	8	NVR...-5V (LH)	

Partial Profile 60° (con't)

Internal


Mini-3
Mini-L

Mini-3



Insert Size		Pitch		Ordering Code		Dimensions mm			Min. Bore dia.	
IC	L mm	mm	tpi	RH	r	Y	F		mm	Toolholder
6.0	10	0.5-1.5	48-16	6.0IRA60...	0.05	0.9	5.3		10.0	.NVR 1..-6.0

Mini-L



Insert Size		Pitch		Ordering Code		Dimensions mm			Min. Bore dia.	
IC	mm	tpi		RH	r	Y	F		mm	Toolholder
5.0L	0.5-1.5	48-16		5LIRA60...	0.05	0.9	4.65		8.0	.NVR 10.-5L

Internal


RH-Double Ended
RH-Single Ended

Micro

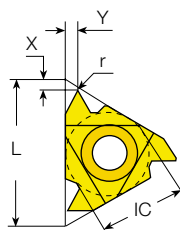
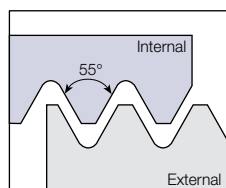
Insert dia.		Pitch		Ordering Code		Dimensions mm					Min. Bore dia.	
d mm	mm	tpi	RH-Single Ended	RH-Double Ended	r	L1	L2	L	F	Y	mm	Toolholder
3.0	0.5-1.0	48-24	3.0SIRF60...1-SIDE	3.0SIRF60...	0.05	16	43	50	1.46	0.9	3.3	SMC...-3.0
4.0	0.5-1.0	48-24	4.0SIRF60...1-SIDE	4.0SIRF60...	0.05	16	43	50	1.96	0.9	4.3	SMC...-4.0
6.0	0.5-1.5	48-16	6.0SIRA60...1-SIDE	6.0SIRA60...	0.05	16	43	50	2.50	0.9	6.0	SMC...-6.0

Left Handed Tool Supplied by Request. (Example: 6.0SILA60...1-SIDE)

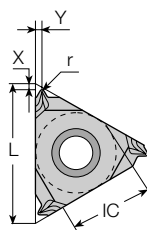
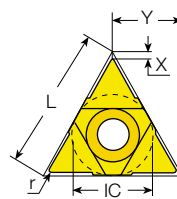


Partial Profile 55°

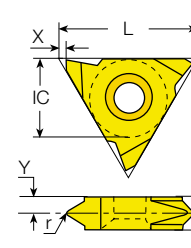
External



Standard


SCB
Sintered Chipbreaker


U Style



V Style / Slim Throat

Standard



SCB

Insert Size		Pitch		Ordering Code		Dimensions mm			Anvil		
IC	L mm	mm	tpi	RH	LH	r	X	Y	RH	LH	Toolholder
1/4"	11	0.5-1.5	48-16	2ERA55...	2ELA55...	0.05	0.8	0.9	-	-	NL...-2 (LH)
3/8"	16	0.5-1.5	48-16	3ERA55...	3ELA55...	0.05	0.8	0.9	YE3	YI3	AL...-3 (LH)
		1.75-3.0	14-8	3ERG55...	3ELG55...	0.21	1.2	1.7			
		0.5-3.0	48-8	3ERAG55...	3ELAG55...	0.07	1.2	1.7			
3/8" SCB	16	0.5-1.5	48-16	3JERA55...		0.05	0.6	0.8	YE3	-	AL...-3
		1.75-3.0	14-8	3JERG55...		0.21	1.1	1.5			
		0.5-3.0	48-8	3JERAG55...		0.07	0.9	1.5			
1/2"	22	3.5-5.0	7-5	4ERN55...	4ELN55...	0.43	1.7	2.5	YE4	YI4	AL...-4 (LH)
5/8"	27	5.5-6.0	4.5-4	5ERQ55...	5ELQ55...	0.60	2.0	2.9	YE5	YI5	AL...-5 (LH)

U Style



Insert Size		Pitch		Ordering Code		Dimensions mm			Anvil		
IC	L mm	mm	tpi	RH+LH		r	X	Y	RH	LH	Toolholder
1/2"U	22	5.5-8.0	4.5-3.25	4UEIU55...		0.60	0.9	11.0	YE4U	YI4U	AL...-4U (LH)
5/8"U	27	6.5-9.0	4-2.75	5UEIU55...		0.80	1.2	13.7	YE5U	YI5U	AL...-5U (LH)

Slim Throat



Insert Size		Pitch		Ordering Code		Dimensions mm				Toolholder	
IC	L mm	mm	tpi	RH	LH	r	X	Y	T		
1/4"V	11	0.5-1.5	48-16	2VERA55...	2VELA55...	0.05	0.8	2.7	3.2	NL...-2V (LH)	
3/8"V	16	0.5-1.5	48-16	3VERA55...	3VELA55...	0.05	1.1	2.7	3.6	NL...-3V (LH)	
		1.75-3.0	14-8	3VERG55...	3VELG55...	0.21	1.1	1.9	3.6		
		0.5-3.0	48-8	3VERAG55...	3VELAG55...	0.07	1.1	1.9	3.6		
1/2"V	22	3.5-5.0	7-5	4VERN55...	4VELN55...	0.43	1.1	2.3	4.8	NL...-4V (LH)	

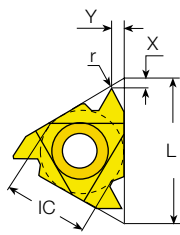
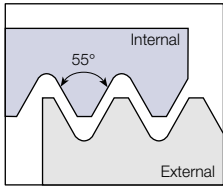
V Style



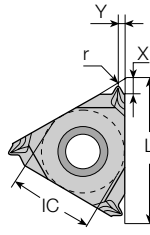
Insert Size		Pitch		Ordering Code		Dimensions mm				Toolholder	
IC	L mm	mm	tpi	RH	LH	r	X	Y	T		
5/8"V	27	6.0-9.0	4-2.75	5VERV55...	5VELV55...	0.70	1.0	4.3	8	NL...-5V-8 (LH)	

Partial Profile 55° (con't)

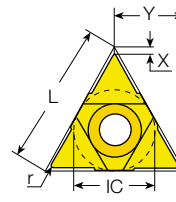
Internal



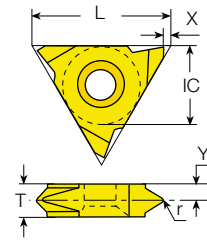
Standard



SCB
Sintered Chipbreaker



U Style



V Style

Standard



SCB

Insert Size		Pitch		Ordering Code		Dimensions mm			Anvil		
IC	L mm	mm	tpi	RH	LH	r	X	Y	RH	LH	Toolholder
1/4"	11	0.5-1.5	48-16	2IRA55...	2ILA55...	0.05	0.8	0.9	-	-	NVR...-2 (LH)
1/4" SCB	11	0.5-1.5	48-16	2JIRA55...		0.05	0.6	0.8	-	-	NVR...-2
3/8"	16	0.5-1.5	48-16	3IRA55...	3ILA55...	0.05	0.8	0.9	YI3	YE3	AVR...-3 (LH)
		1.75-3.0	14-8	3IRG55...	3ILG55...	0.21	1.2	1.7			
		0.5-3.0	48-8	3IRAG55...	3ILAG55...	0.07	1.2	1.7			
3/8" SCB	16	0.5-1.5	48-16	3JIRA55...		0.05	0.6	0.8	YI3	-	AVR...-3
		1.75-3.0	14-8	3JIRG55...		0.21	1.1	1.5			
		0.5-3.0	48-8	3JIRAG55...		0.07	0.9	1.5			
1/2"	22	3.5-5.0	7-5	4IRN55...	4ILN55...	0.43	1.7	2.5	YI4	YE4	AVR...-4 (LH)
5/8"	27	5.5-6.0	4.5-4	5IRQ55...	5ILQ55...	0.60	2.0	2.9	YI5	YE5	AVR...-5 (LH)

U Style



Insert Size		Pitch		Ordering Code		Dimensions mm			Anvil		
IC	L mm	mm	tpi	RH+LH		r	X	Y	RH	LH	Toolholder
1/2"U	22	5.5-8.0	4.5-3.25	4UEIU55...		0.60	0.9	11.0	YI4U	YE4U	AVR...-4U (LH)
5/8"U	27	6.5-9.0	4-2.75	5UEIU55...		0.80	1.2	13.7	YI5U	YE5U	AVR...-5U (LH)

V Style

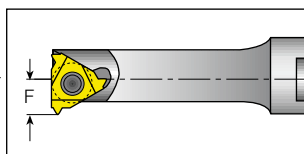
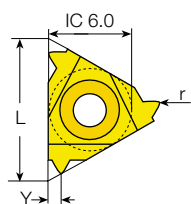
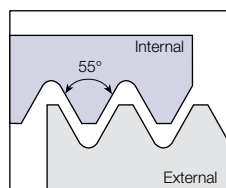


Insert Size		Pitch		Ordering Code		Dimensions mm			Anvil		
IC	L mm	mm	tpi	RH	LH	r	X	Y	T	Toolholder	
5/8"V	27	6.0-9.0	4-2.75	5VIRV55...	5VILV55...	0.70	1.0	4.3	8	NVR...-5V (LH)	

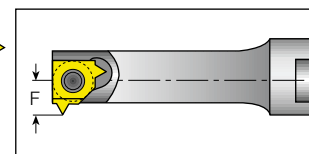
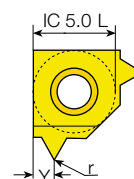


Partial Profile 55° (con't)

Internal



Mini-3



Mini-L

Mini-3



Insert Size		Pitch		Ordering Code		Dimensions mm			Min. Bore dia.	
IC	L mm	mm	tpi	RH	r	Y	F	mm	Toolholder	
6.0	10	0.5-1.5	48-16	6.0IRA55...	0.05	0.9	5.3	10.0	.NVR 1..-6.0	

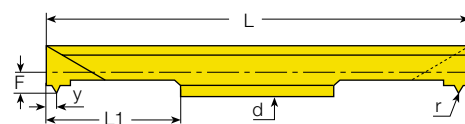
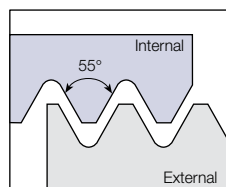
Mini-L



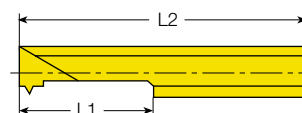
Insert Size		Pitch		Ordering Code		Dimensions mm			Min. Bore dia.	
IC	mm	tpi	RH	r	Y	F	mm	Toolholder		
5.0L	0.5-1.5	48-16	5LIRA55...	0.05	0.9	4.65	8.0	.NVR 10.-5L		

Partial Profile 55°

Internal



RH-Double Ended



RH-Single Ended

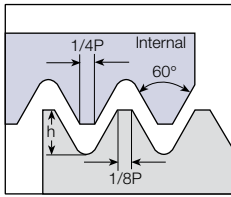
Micro

Insert dia.		Pitch		Ordering Code		Dimensions mm					Min. Bore dia.	
d mm	mm	tpi	RH-Single Ended	RH-Double Ended	r	L1	L2	L	F	Y	mm	Toolholder
3.0	0.5-1.0	48-24	3.0SIRF55...1-SIDE	3.0SIRF55...	0.05	16	43	50	1.46	0.9	3.3	SMC...-3.0
4.0	0.5-1.0	48-24	4.0SIRF55...1-SIDE	4.0SIRF55...	0.05	16	43	50	1.96	0.9	4.3	SMC...-4.0
6.0	0.5-1.5	48-16	6.0SIRA55...1-SIDE	6.0SIRA55...	0.05	16	43	50	2.50	0.9	6.0	SMC...-6.0

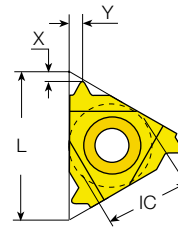
Left Handed Tool Supplied by Request. (Example: 6.0SILA55...1-SIDE)

ISO Metric

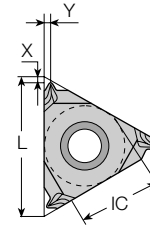
External



Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



Standard



SCB
Sintered Chipbreaker

Standard

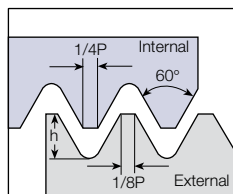
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	mm	RH	LH	h min	X	Y	RH	LH	
1/4"	11	0.35	2ER0.35ISO...	2EL0.35ISO...	0.21	0.8	0.4	-	-	NL...-2 (LH)
		0.4	2ER0.4ISO...	2EL0.4ISO...	0.25	0.7	0.4			
		0.45	2ER0.45ISO...	2EL0.45ISO...	0.28	0.7	0.4			
		0.5	2ER0.5ISO...	2EL0.5ISO...	0.31	0.6	0.4			
		0.6	2ER0.6ISO...	2EL0.6ISO...	0.37	0.6	0.6			
		0.7	2ER0.7ISO...	2EL0.7ISO...	0.43	0.6	0.6			
		0.75	2ER0.75ISO...	2EL0.75ISO...	0.46	0.6	0.6			
		0.8	2ER0.8ISO...	2EL0.8ISO...	0.49	0.6	0.6			
		1.0	2ER1.0ISO...	2EL1.0ISO...	0.61	0.7	0.7			
		1.25	2ER1.25ISO...	2EL1.25ISO...	0.77	0.8	0.9			
		1.5	2ER1.5ISO...	2EL1.5ISO...	0.92	0.8	1.0			
		1.75	2ER1.75ISO...	2EL1.75ISO...	1.07	0.8	1.1			
3/8"	16	0.35	3ER0.35ISO...	3EL0.35ISO...	0.21	0.8	0.4	YE3	YI3	AL...-3 (LH)
		0.4	3ER0.4ISO...	3EL0.4ISO...	0.25	0.7	0.4			
		0.45	3ER0.45ISO...	3EL0.45ISO...	0.28	0.7	0.4			
		0.5	3ER0.5ISO...	3EL0.5ISO...	0.31	0.6	0.4			
		0.6	3ER0.6ISO...	3EL0.6ISO...	0.37	0.6	0.6			
		0.7	3ER0.7ISO...	3EL0.7ISO...	0.43	0.6	0.6			
		0.75	3ER0.75ISO...	3EL0.75ISO...	0.46	0.6	0.6			
		0.8	3ER0.8ISO...	3EL0.8ISO...	0.49	0.6	0.6			
		1.0	3ER1.0ISO...	3EL1.0ISO...	0.61	0.7	0.7			
		1.25	3ER1.25ISO...	3EL1.25ISO...	0.77	0.8	0.9			
		1.5	3ER1.5ISO...	3EL1.5ISO...	0.92	0.8	1.0			
		1.75	3ER1.75ISO...	3EL1.75ISO...	1.07	0.9	1.2			
		2.0	3ER2.0ISO...	3EL2.0ISO...	1.23	1.0	1.3			
		2.5	3ER2.5ISO...	3EL2.5ISO...	1.53	1.1	1.5			
3/8" SCB	16	0.5	3JER0.5ISO...		0.31	1.2	0.5	YE3	-	AL...-3
		0.75	3JER0.75ISO...		0.46	1.2	0.5			
		0.8	3JER0.8ISO...		0.49	1.2	0.5			
		1.0	3JER1.0ISO...		0.61	0.7	0.8			
		1.25	3JER1.25ISO...		0.77	0.7	0.8			
		1.5	3JER1.5ISO...		0.92	0.7	0.8			
		1.75	3JER1.75ISO...		1.07	1.2	1.5			
		2.0	3JER2.0ISO...		1.23	1.2	1.5			
		2.5	3JER2.5ISO...		1.53	1.2	1.5			
		3.0	3JER3.0ISO...		1.84	1.3	1.5			

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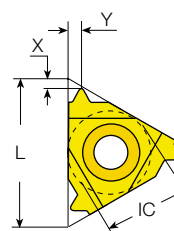


ISO Metric (con't)

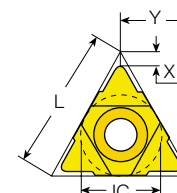
External



Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



Standard



U Style

Standard (con't)



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	mm	RH	LH	h _{min}	X	Y	RH	LH	Toolholder
1/2"	22	3.5	4ER3.5ISO...	4EL3.5ISO...	2.15	1.6	2.3	YE4	YI4	AL...-4 (LH)
		4.0	4ER4.0ISO...	4EL4.0ISO...	2.45	1.6	2.3			
		4.5	4ER4.5ISO...	4EL4.5ISO...	2.76	1.7	2.4			
		5.0	4ER5.0ISO...	4EL5.0ISO...	3.07	1.7	2.5			
5/8"	27	5.5	5ER5.5ISO...	5EL5.5ISO...	3.37	1.9	2.7	YE5	YI5	AL...-5 (LH)
		6.0	5ER6.0ISO...	5EL6.0ISO...	3.68	2.0	2.9			

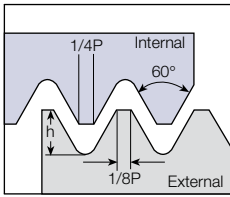
U Style



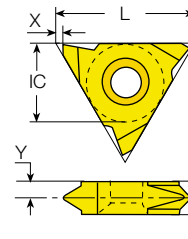
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	mm	RH+LH		h _{min}	X	Y	RH	LH	Toolholder
1/2"U	22	5.5	4UE5.5ISO...		3.37	2.3	11.0	YE4U	YI4U	AL...-4U (LH)
		6.0	4UE6.0ISO...		3.68	2.6	11.0			
5/8"U	27	8.0	5UE8.0ISO...		4.91	2.4	13.7	YE5U	YI5U	AL...-5U (LH)

ISO Metric (con't)

External



Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



V Style / Slim Throat

Slim Throat

Insert Size		Pitch	Ordering Code		Dimensions mm				Toolholder
IC	L mm	mm	RH	LH	h _{min}	X	Y	T	
1/4"V	11	0.75	2VER0.75ISO...	2VEL0.75ISO...	0.46	0.69	2.6	3.2	NL...-2V (LH)
		1.0	2VER1.0ISO...	2VEL1.0ISO...	0.61	0.69	2.5	3.2	
		1.5	2VER1.5ISO...	2VEL1.5ISO...	0.92	0.69	2.2	3.2	
		1.75	2VER1.75ISO...	2VEL1.75ISO...	1.07	0.69	2.1	3.2	
		2.0	2VER2.0ISO...	2VEL2.0ISO...	1.23	0.69	1.9	3.2	
3/8"V	16	0.35	3VER0.35ISO...	3VEL0.35ISO...	0.20	1.1	3.25	3.6	NL...-3V (LH)
		0.4	3VER0.4ISO...	3VEL0.4ISO...	0.25	1.1	3.20	3.6	
		0.5	3VER0.5ISO...	3VEL0.5ISO...	0.31	1.1	3.0	3.6	
		0.75	3VER0.75ISO...	3VEL0.75ISO...	0.46	1.1	3.0	3.6	
		1.0	3VER1.0ISO...	3VEL1.0ISO...	0.61	1.1	2.9	3.6	
		1.25	3VER1.25ISO...	3VEL1.25ISO...	0.77	1.1	2.7	3.6	
		1.5	3VER1.5ISO...	3VEL1.5ISO...	0.92	1.1	2.6	3.6	
		1.75	3VER1.75ISO...	3VEL1.75ISO...	1.07	1.1	2.45	3.6	
		2.0	3VER2.0ISO...	3VEL2.0ISO...	1.23	1.1	2.3	3.6	
		2.5	3VER2.5ISO...	3VEL2.5ISO...	1.53	1.1	2.1	3.6	
		3.0	3VER3.0ISO...	3VEL3.0ISO...	1.84	1.1	2.0	3.6	

V Style

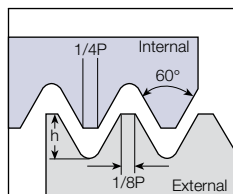


Insert Size		Pitch	Ordering Code		Dimensions mm				Toolholder
IC	L mm	mm	RH	LH	h _{min}	X	Y	T	
5/8"V	27	6.0	5VER6.0ISO...	5VEL6.0ISO...	3.68	1.0	3.3	6	NL...-5V-6 (LH)
		8.0	5VER8.0ISO...	5VEL8.0ISO...	4.91	1.0	4.3	8	NL...-5V-8 (LH)
		10.0	5VER10.0ISO...	5VEL10.0ISO...	6.13	1.0	5.2	10	NL...-5V-10 (LH)

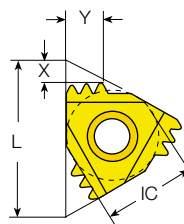


ISO Metric (con't)

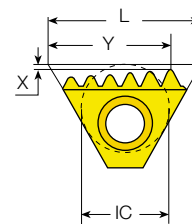
External



Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



M Style



T Style

M Style



Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	mm		RH	h min	X	Y	RH	Toolholder
3/8"	16	1.0	3	3ER1.0ISO3M...	0.61	1.8	2.6	YE3M	AL...-3
		1.5	2	3ER1.5ISO2M...	0.92	1.6	2.4		
1/2"	22	1.5	3	4ER1.5ISO3M...	0.92	2.5	3.8	YE4M	AL...-4
		2.0	2	4ER2.0ISO2M...	1.23	2.1	3.1		
5/8"	27	2.0	3	4ER2.0ISO3M...	1.23	3.2	5.1	YE5M	AL...-5M
		3.0	2	5ER3.0ISO2M...	1.84	3.0	4.6		

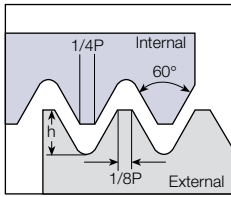
T Style



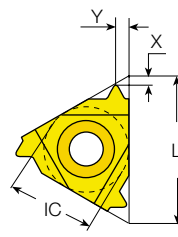
Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	mm		RH	h min	X	Y	RH	Toolholder
1/2"T	22	1.5	8	4ER1.5ISO8T...	0.92	0.1	11.7	Y4T	AL...-4T
		2.0	6	4ER2.0ISO6T...	1.23	0.1	11.8		
		2.0	8	4ER2.0ISO8T...	1.23	0.1	15.8		

ISO Metric (con't)

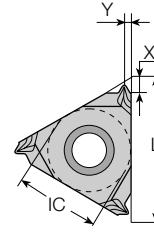
Internal



Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



Standard



SCB
Sintered Chipbreaker

Standard

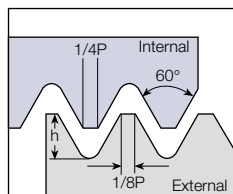
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	mm	RH	LH	h _{min}	X	Y	RH	LH	
1/4"	11	0.35	2IR0.35ISO...	2IL0.35ISO...	0.20	0.8	0.3	-	-	NVR...-2 (LH)
		0.4	2IR0.4ISO...	2IL0.4ISO...	0.23	0.8	0.4			
		0.45	2IR0.45ISO...	2IL0.45ISO...	0.26	0.8	0.4			
		0.5	2IR0.5ISO...	2IL0.5ISO...	0.29	0.6	0.4			
		0.6	2IR0.6ISO...	2IL0.6ISO...	0.35	0.6	0.6			
		0.7	2IR0.7ISO...	2IL0.7ISO...	0.40	0.6	0.6			
		0.75	2IR0.75ISO...	2IL0.75ISO...	0.43	0.6	0.6			
		0.8	2IR0.8ISO...	2IL0.8ISO...	0.46	0.6	0.6			
		1.0	2IR1.0ISO...	2IL1.0ISO...	0.58	0.6	0.7			
		1.25	2IR1.25ISO...	2IL1.25ISO...	0.72	0.8	0.9			
		1.5	2IR1.5ISO...	2IL1.5ISO...	0.87	0.8	1.0			
		1.75	2IR1.75ISO...	2IL1.75ISO...	1.01	0.9	1.1			
		2.0	2IR2.0ISO...	2IL2.0ISO...	1.15	0.9	1.1			
1/4"	SCB	0.5	2JIR0.5ISO...		0.29	1.2	0.5	-	-	NVR...-2
		0.75	2JIR0.75ISO...		0.43	1.2	0.5			
		0.8	2JIR0.8ISO...		0.46	1.2	0.5			
		1.0	2JIR1.0ISO...		0.58	0.7	0.8			
		1.25	2JIR1.25ISO...		0.72	0.7	0.8			
		1.5	2JIR1.5ISO...		0.87	0.7	0.8			
3/8"	16	0.35	3IR0.35ISO...	3IL0.35ISO...	0.20	0.8	0.3	YI3	YE3	AVR...-3 (LH)
		0.4	3IR0.4ISO...	3IL0.4ISO...	0.23	0.8	0.4			
		0.45	3IR0.45ISO...	3IL0.45ISO...	0.26	0.8	0.4			
		0.5	3IR0.5ISO...	3IL0.5ISO...	0.29	0.6	0.4			
		0.6	3IR0.6ISO...	3IL0.6ISO...	0.35	0.6	0.6			
		0.7	3IR0.7ISO...	3IL0.7ISO...	0.40	0.6	0.6			
		0.75	3IR0.75ISO...	3IL0.75ISO...	0.43	0.6	0.6			
		0.8	3IR0.8ISO...	3IL0.8ISO...	0.46	0.6	0.6			
		1.0	3IR1.0ISO...	3IL1.0ISO...	0.58	0.6	0.7			
		1.25	3IR1.25ISO...	3IL1.25ISO...	0.72	0.8	0.9			
		1.5	3IR1.5ISO...	3IL1.5ISO...	0.87	0.8	1.0			
		1.75	3IR1.75ISO...	3IL1.75ISO...	1.01	0.9	1.2			
		2.0	3IR2.0ISO...	3IL2.0ISO...	1.15	1.0	1.3			
		2.5	3IR2.5ISO...	3IL2.5ISO...	1.44	1.1	1.5			
		3.0	3IR3.0ISO...	3IL3.0ISO...	1.73	1.1	1.5			

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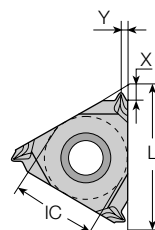


ISO Metric (con't)

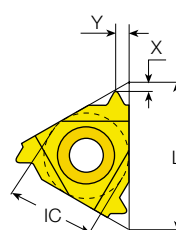
Internal



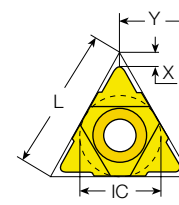
Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



SCB
Sintered Chipbreaker



Standard



U Style

Standard (con't)



SCB



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	mm	RH	LH	h min	X	Y	RH	LH	Toolholder
3/8"	16	0.5	3JIR0.5ISO...		0.29	1.2	0.5	YI3	-	AVR...-3
		0.75	3JIR0.75ISO...		0.43	1.1	0.5			
		0.8	3JIR0.8ISO...		0.46	1.2	0.5			
		1.0	3JIR1.0ISO...		0.58	0.7	0.8			
		1.25	3JIR1.25ISO...		0.72	0.7	0.8			
		1.5	3JIR1.5ISO...		0.87	0.7	0.8			
		1.75	3JIR1.75ISO...		1.01	1.1	1.5			
		2.0	3JIR2.0ISO...		1.15	1.1	1.5			
		2.5	3JIR2.5ISO...		1.44	1.1	1.5			
1/2"	22	3.5	4IR3.5ISO...	4IL3.5ISO...	2.02	1.6	2.3	YI4	YE4	AVR...-4 (LH)
		4.0	4IR4.0ISO...	4IL4.0ISO...	2.31	1.6	2.3			
		4.5	4IR4.5ISO...	4IL4.5ISO...	2.60	1.6	2.4			
		5.0	4IR5.0ISO...	4IL5.0ISO...	2.89	1.6	2.3			
5/8"	27	5.5	5IR5.5ISO...	5IL5.5ISO...	3.17	1.6	2.3	YI5	YE5	AVR...-5 (LH)
		6.0	5IR6.0ISO...	5IL6.0ISO...	3.46	1.8	2.5			

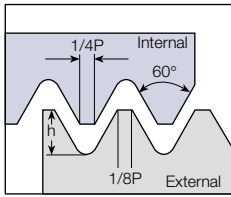
U Style



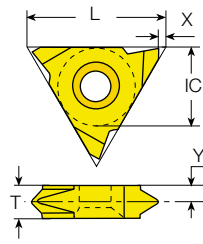
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	mm	RH+LH		h min.	X	Y	RH	LH	Toolholder
1/2"U	22	5.5	4UI5.5ISO...		3.17	2.4	11.0	YI4U	YE4U	AVR...-4U (LH)
		6.0	4UI6.0ISO...		3.46	2.1	11.0			
5/8"U	27	8.0	5UI8.0ISO...		4.62	2.4	13.7	YI5U	YE5U	AVR...-5U (LH)

ISO Metric (con't)

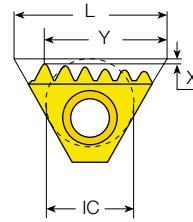
Internal



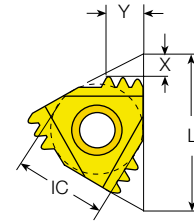
Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



V Style



T Style



M Style

V Style



Insert Size		Pitch	Ordering Code		Dimensions mm				Toolholder
IC	L mm	mm	RH	LH	h _{min}	X	Y	T	
5/8"V	27	6.0	5VIR6.0ISO...	5VIL6.0ISO...	3.46	1.0	3.3	6	NVR...-5V (LH)
		8.0	5VIR8.0ISO...	5VIL8.0ISO...	4.62	1.0	4.3	8	
		10.0	5VIR10.0ISO...	5VIL10.0ISO...	5.77	1.0	5.2	10	

T Style



Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	Toolholder
IC	L mm	mm		RH	h _{min}	X	Y	RH	
1/2"T	22	1.5	8	4IR1.5ISO8T...	0.87	0.1	11.6	Y4T	AVR...-4T
		2.0	6	4IR2.0ISO6T...	1.15	0.1	11.4		
		2.0	8	4IR2.0ISO8T...	1.15	0.1	15.4		

M Style

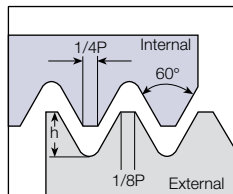


Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	Toolholder
IC	L mm	mm		RH	h _{min}	X	Y	RH	
3/8"	16	1.0	3	3IR1.0ISO3M...	0.58	1.7	2.6	YI3M	AVR...-3
		1.5	2	3IR1.5ISO2M...	0.87	1.6	2.4		
1/2"	22	1.5	3	4IR1.5ISO3M...	0.87	2.4	3.8	YI4M	AVR...-4
		2.0	2	4IR2.0ISO2M...	1.15	2.0	3.0		
		2.0	3	4IR2.0ISO3M...	1.15	3.1	4.9		
5/8"	27	3.0	2	5IR3.0ISO2M...	1.73	2.7	4.3	YI5M	AVR...-5M

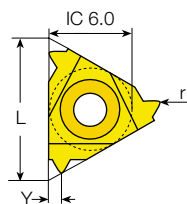


ISO Metric (con't)

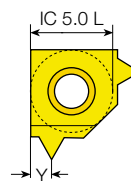
Internal



Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



Mini-3



Mini-L

Mini-3



Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC	L mm	mm	RH	h _{min}	Y	F	mm	
6.0	10	0.5	6.0IR0.5ISO...	0.29	0.6	4.4	9.3	.NVR1...-6.0
		0.75	6.0IR0.75ISO...	0.43	0.6	4.6	9.5	
		1.0	6.0IR1.0ISO...	0.58	0.7	4.7	9.6	
		1.25	6.0IR1.25ISO...	0.72	0.9	4.9	9.8	
		1.5	6.0IR1.5ISO...	0.87	1.0	5.0	9.9	
		1.75	6.0IR1.75ISO...	1.01	1.05	5.2	10.0	
		2.0	6.0IR2.0ISO...	1.15	1.05	5.3	10.0	

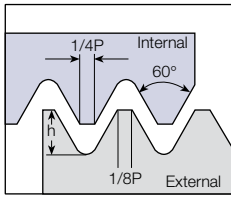
Mini-L



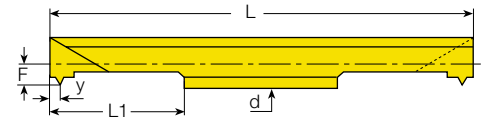
Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC mm		mm	RH	h _{min}	Y	F	mm	
5.0L		0.5	5LIR0.5ISO...	0.29	0.6	3.75	7.3	.NVR10.-5L
		0.75	5LIR0.75ISO...	0.43	0.6	3.91	7.5	
		1.0	5LIR1.0ISO...	0.58	0.7	4.06	7.7	
		1.25	5LIR1.25ISO...	0.72	0.9	4.21	7.8	
		1.5	5LIR1.5ISO...	0.87	1.0	4.35	7.9	
		1.75	5LIR1.75ISO...	1.01	1.05	4.51	8.0	
		2.0	5LIR2.0ISO...	1.15	1.05	4.65	8.0	

ISO Metric (con't)

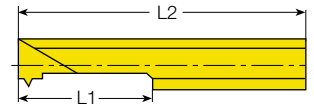
Internal



Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



RH-Double Ended



RH-Single Ended

Micro

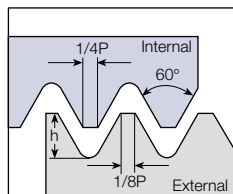
Insert dia.	Pitch	Ordering Code		Dimensions mm						Min. Bore dia.	
d mm	mm	RH-Single Ended	RH-Double Ended	L1	L2	L	F	Y	h min	mm	Toolholder
3.0	0.3	3.0SIR0.3ISO...1-SIDE	3.0SIR0.3ISO...	16	43	50	1.31	0.20	0.10	3.2	SMC...-3.0
	0.4	3.0SIR0.4ISO...1-SIDE	3.0SIR0.4ISO...	16	43	50	1.31	0.35	0.22	3.2	
	0.5	3.0SIR0.5ISO...1-SIDE	3.0SIR0.5ISO...	16	43	50	1.31	0.40	0.29	3.2	
	0.6	3.0SIR0.6ISO...1-SIDE	3.0SIR0.6ISO...	16	43	50	1.34	0.60	0.35	3.2	
	0.7	3.0SIR0.7ISO...1-SIDE	3.0SIR0.7ISO...	16	43	50	1.43	0.60	0.40	3.3	
	0.75	3.0SIR0.75ISO...1-SIDE	3.0SIR0.75ISO...	16	43	50	1.45	0.60	0.43	3.3	
	0.8	3.0SIR0.8ISO...1-SIDE	3.0SIR0.8ISO...	16	43	50	1.46	0.60	0.46	3.3	
4.0	0.4	4.0SIR0.4ISO...1-SIDE	4.0SIR0.4ISO...	16	43	50	1.65	0.35	0.22	4.0	SMC...-4.0
	0.5	4.0SIR0.5ISO...1-SIDE	4.0SIR0.5ISO...	16	43	50	1.65	0.40	0.29	4.0	
	0.6	4.0SIR0.6ISO...1-SIDE	4.0SIR0.6ISO...	16	43	50	1.68	0.60	0.35	4.0	
	0.7	4.0SIR0.7ISO...1-SIDE	4.0SIR0.7ISO...	16	43	50	1.77	0.60	0.40	4.1	
	0.75	4.0SIR0.75ISO...1-SIDE	4.0SIR0.75ISO...	16	43	50	1.81	0.60	0.43	4.2	
	0.8	4.0SIR0.8ISO...1-SIDE	4.0SIR0.8ISO...	16	43	50	1.80	0.60	0.46	4.2	
	1.0	4.0SIR1.0ISO...1-SIDE	4.0SIR1.0ISO...	16	43	50	1.96	0.90	0.58	4.3	
6.0	0.5	6.0SIR0.5ISO...1-SIDE	6.0SIR0.5ISO...	16	43	50	1.90	0.60	0.29	5.4	SMC...-6.0
	0.75	6.0SIR0.75ISO...1-SIDE	6.0SIR0.75ISO...	16	43	50	2.06	0.60	0.43	5.6	
	1.0	6.0SIR1.0ISO...1-SIDE	6.0SIR1.0ISO...	16	43	50	2.21	0.70	0.58	5.7	
	1.25	6.0SIR1.25ISO...1-SIDE	6.0SIR1.25ISO...	16	43	50	2.36	0.90	0.72	5.9	
	1.5	6.0SIR1.5ISO...1-SIDE	6.0SIR1.5ISO...	16	43	50	2.50	1.00	0.87	6.0	

Left Handed Tool Supplied by Request. (Example: 6.0SIR1.5ISO...1-SIDE)

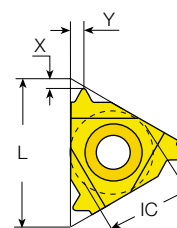


American UN

External



Defined by: ANSI B1.1:74
Tolerance class: 2A/2B



Standard

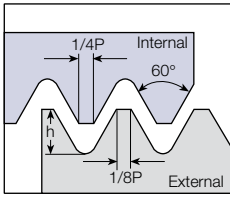
Standard

Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h _{min}	X	Y	RH	LH	
1/4"	11	72	2ER72UN...	2EL72UN...	0.22	0.8	0.4	-	-	NL ...-2 (LH)
		64	2ER64UN...	2EL64UN...	0.24	0.8	0.4			
		56	2ER56UN...	2EL56UN...	0.28	0.7	0.4			
		48	2ER48UN...	2EL48UN...	0.32	0.6	0.6			
		44	2ER44UN...	2EL44UN...	0.35	0.6	0.6			
		40	2ER40UN...	2EL40UN...	0.39	0.6	0.6			
		36	2ER36UN...	2EL36UN...	0.43	0.6	0.6			
		32	2ER32UN...	2EL32UN...	0.49	0.6	0.6			
		28	2ER28UN...	2EL28UN...	0.56	0.6	0.7			
		27	2ER27UN...	2EL27UN...	0.58	0.7	0.8			
		24	2ER24UN...	2EL24UN...	0.65	0.7	0.8			
		20	2ER20UN...	2EL20UN...	0.78	0.8	0.9			
		18	2ER18UN...	2EL18UN...	0.87	0.8	1.0			
		16	2ER16UN...	2EL16UN...	0.97	0.9	1.1			
3/8"	16	14	2ER14UN...	2EL14UN...	1.11	0.9	1.1			
		72	3ER72UN...	3EL72UN...	0.22	0.8	0.4	YE3	YI3	AL...-3 (LH)
		64	3ER64UN...	3EL64UN...	0.24	0.8	0.4			
		56	3ER56UN...	3EL56UN...	0.28	0.7	0.4			
		48	3ER48UN...	3EL48UN...	0.32	0.6	0.6			
		44	3ER44UN...	3EL44UN...	0.35	0.6	0.6			
		40	3ER40UN...	3EL40UN...	0.39	0.6	0.6			
		36	3ER36UN...	3EL36UN...	0.43	0.6	0.6			
		32	3ER32UN...	3EL32UN...	0.49	0.6	0.6			
		28	3ER28UN...	3EL28UN...	0.56	0.6	0.7			
		27	3ER27UN...	3EL27UN...	0.58	0.7	0.8			
		24	3ER24UN...	3EL24UN...	0.65	0.7	0.8			
		20	3ER20UN...	3EL20UN...	0.78	0.8	0.9			
		18	3ER18UN...	3EL18UN...	0.87	0.8	1.0			
		16	3ER16UN...	3EL16UN...	0.97	0.9	1.1			
		14	3ER14UN...	3EL14UN...	1.11	1.0	1.2			
		13	3ER13UN...	3EL13UN...	1.20	1.0	1.3			
		12	3ER12UN...	3EL12UN...	1.30	1.1	1.4			
		11.5	3ER11.5UN...	3EL11.5UN...	1.35	1.1	1.5			
		11	3ER11UN...	3EL11UN...	1.42	1.1	1.5			
		10	3ER10UN...	3EL10UN...	1.56	1.1	1.5			
		9	3ER9UN...	3EL9UN...	1.73	1.2	1.7			
		8	3ER8UN...	3EL8UN...	1.95	1.2	1.6			

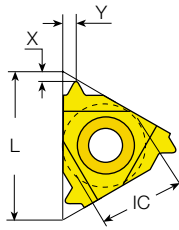
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American UN (con't)

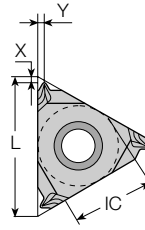
External



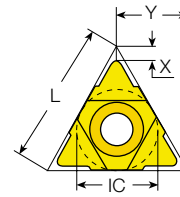
Defined by: ANSI B1.1:74
Tolerance class: 2A/2B



Standard



SCB
Sintered Chipbreaker



U Style

Standard (con't)

Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
 SCB	3/8" SCB	16	36	3JER36UN...	0.43	1.2	0.5	YE3	-	AL...-3
			32	3JER32UN...	0.49	1.2	0.5			
			28	3JER28UN...	0.56	0.7	0.8			
			24	3JER24UN...	0.65	0.7	0.8			
			20	3JER20UN...	0.78	0.7	0.8			
			18	3JER18UN...	0.87	0.7	0.8			
			16	3JER16UN...	0.97	0.8	0.8			
			14	3JER14UN...	1.11	1.2	1.5			
			13	3JER13UN...	1.20	1.2	1.5			
			12	3JER12UN...	1.30	1.3	1.5			
			10	3JER10UN...	1.56	1.2	1.5			
			9	3JER9UN...	1.73	1.2	1.5			
	1/2"	22	7	4ER7UN... 4EL7UN...	2.22	1.6	2.3	YE4	YI4	AL...-4 (LH)
			6	4ER6UN... 4EL6UN...	2.60	1.6	2.3			
			5	4ER5UN... 4EL5UN...	3.12	1.7	2.5			
	5/8"	27	4.5	5ER4.5UN... 5EL4.5UN...	3.46	1.9	2.7	YE5	YI5	AL...-5 (LH)
			4	5ER4UN... 5EL4UN...	3.89	2.1	3.0			

U Style

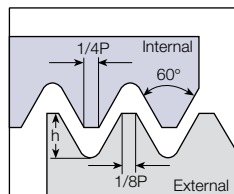


Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH+LH		h min.	X	Y	RH	LH	
1/2"U	22	4.5	4UE4.5UN...		3.46	2.0	11.0	YE4U	YI4U	AL...-4U (LH)
		4	4UE4UN...		3.89	2.0	11.0			
5/8"U	27	3	5UE3UN...		5.19	2.5	13.7	YE5U	YI5U	AL...-5U (LH)

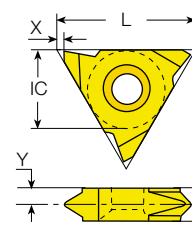


American UN (con't)

External



Defined by: ANSI B1.1:74
Tolerance class: 2A/2B



V Style / Slim Throat

Slim Throat

Insert Size		Pitch	Ordering Code		Dimensions mm				Toolholder
IC	L mm	tpi	RH	LH	h _{min}	X	Y	T	
1/4"V	11	20	2VER20UN...	2VEL20UN...	0.78	0.69	2.3	3.2	NL...-2V (LH)
		18	2VER18UN...	2VEL18UN...	0.87	0.69	2.2	3.2	
		16	2VER16UN...	2VEL16UN...	0.97	0.69	2.2	3.2	
		14	2VER14UN...	2VEL14UN...	1.11	0.69	2.0	3.2	
		12	2VER12UN...	2VEL12UN...	1.30	0.69	1.8	3.2	
3/8"V	16	32	3VER32UN...	3VEL32UN...	0.48	1.1	3.0	3.6	NL...-3V (LH)
		28	3VER28UN...	3VEL28UN...	0.56	1.1	3.0	3.6	
		24	3VER24UN...	3VEL24UN...	0.65	1.1	2.9	3.6	
		20	3VER20UN...	3VEL20UN...	0.78	1.1	2.7	3.6	
		18	3VER18UN...	3VEL18UN...	0.87	1.1	2.6	3.6	
		16	3VER16UN...	3VEL16UN...	0.97	1.1	2.55	3.6	
		14	3VER14UN...	3VEL14UN...	1.11	1.1	2.4	3.6	
		12	3VER12UN...	3VEL12UN...	1.30	1.1	2.2	3.6	
		10	3VER10UN...	3VEL10UN...	1.56	1.1	2.1	3.6	
1/2"V	22	7	4VER7UN...	4VEL7UN...	1.95	1.1	2.0	3.6	NL...-4V (LH)
					2.22	1.1	2.5	4.8	

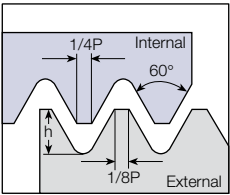
V Style



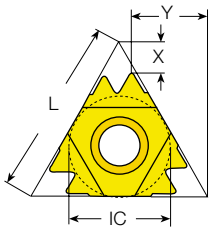
Insert Size		Pitch	Ordering Code		Dimensions mm				Toolholder
IC	L mm	tpi	RH	LH	h _{min}	X	Y	T	
5/8"V	27	4	5VER4UN...	5VEL4UN...	3.89	1.0	3.3	6	NL...-5V-6 (LH)
		3	5VER3UN...	5VEL3UN...	5.19	1.0	4.3	8	NL...-5V-8 (LH)

American UN (con't)

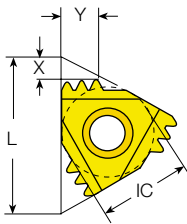
External



Defined by: ANSI B1.1:74
Tolerance class: 2A/2B



Z Style



M Style

Z Style



Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
1/2"	22	8	2	4ER8UN2Z...	1.95	3.7	9.6	YE4Z	AL...-4Z

M Style



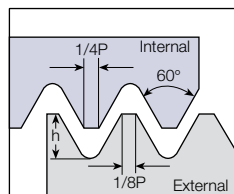
Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
3/8"	16	16	2	3ER16UN2M...	0.97	1.7	2.5	YE3M	AL...-3
		16	3	4ER16UN3M...	0.97	2.6	4.1		
1/2"	22	12	2	4ER12UN2M...	1.30	2.1	3.2	YE4M	AL...-4
		12	3	4ER12UN3M...	1.30	3.4	5.3		
5/8"	27	8	2	5ER8UN2M...	1.95	3.2	5.0	YE5M	AL...-5M



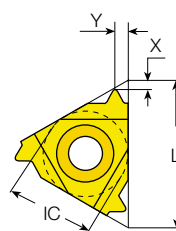


American UN (con't)

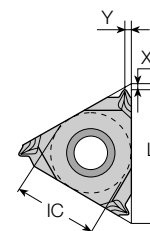
Internal



Defined by: ANSI B1.1:74
Tolerance class: 2A/2B



Standard



SCB
Sintered Chipbreaker

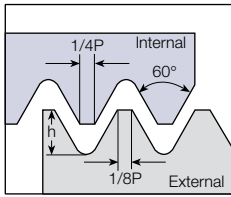
Standard (con't)

Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	Toolholder
	1/4"	72	2IR72UN...	2IL72UN...	0.20	0.8	0.3	-	-	NVR...-2 (LH)
		64	2IR64UN...	2IL64UN...	0.23	0.8	0.4			
		56	2IR56UN...	2IL56UN...	0.26	0.7	0.4			
		48	2IR48UN...	2IL48UN...	0.31	0.6	0.6			
		44	2IR44UN...	2IL44UN...	0.33	0.6	0.6			
		40	2IR40UN...	2IL40UN...	0.37	0.6	0.6			
		36	2IR36UN...	2IL36UN...	0.41	0.6	0.6			
		32	2IR32UN...	2IL32UN...	0.46	0.6	0.6			
		28	2IR28UN...	2IL28UN...	0.52	0.6	0.7			
		27	2IR27UN...	2IL27UN...	0.54	0.7	0.8			
		24	2IR24UN...	2IL24UN...	0.61	0.7	0.8			
		20	2IR20UN...	2IL20UN...	0.73	0.8	0.9			
		18	2IR18UN...	2IL18UN...	0.81	0.8	1.0			
		16	2IR16UN...	2IL16UN...	0.92	0.9	1.1			
	1/4" SCB	14	2IR14UN...	2IL14UN...	1.05	0.9	1.1			NVR...-2
		12	2IR12UN...	2IL12UN...	1.22	0.8	1.1			
		11	2IR11UN...	2IL11UN...	1.33	0.8	1.1			
		36	2JIR36UN...		0.43	1.1	0.5			
		32	2JIR32UN...		0.49	1.2	0.5			
		28	2JIR28UN...		0.56	0.6	0.8			
		24	2JIR24UN...		0.65	0.7	0.8			
	3/8"	20	2JIR20UN...		0.78	0.6	0.8	YI3	YE3	AVR...-3 (LH)
		18	2JIR18UN...		0.87	0.6	0.8			
		16	2JIR16UN...		0.97	0.7	0.8			
		72	3IR72UN...	3IL72UN...	0.20	0.8	0.3			
		64	3IR64UN...	3IL64UN...	0.23	0.8	0.4			
		56	3IR56UN...	3IL56UN...	0.26	0.7	0.4			
		48	3IR48UN...	3IL48UN...	0.31	0.6	0.6			
		44	3IR44UN...	3IL44UN...	0.33	0.6	0.6			
		40	3IR40UN...	3IL40UN...	0.37	0.6	0.6			
		36	3IR36UN...	3IL36UN...	0.41	0.6	0.6			
		32	3IR32UN...	3IL32UN...	0.51	0.6	0.6			
		28	3IR28UN...	3IL28UN...	0.52	0.6	0.7			
		27	3IR27UN...	3IL27UN...	0.54	0.7	0.8			

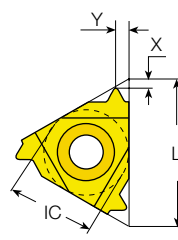
continued on next page ▶

American UN (con't)

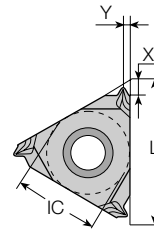
Internal



Defined by: ANSI B1.1:74
Tolerance class: 2A/2B



Standard



SCB
Sintered Chipbreaker

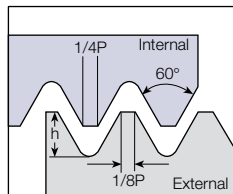
Standard (con't)

Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	tpi	RH	LH	h _{min}	X	Y	RH	LH	Toolholder
3/8"	16	24	3IR24UN...	3IL24UN...	0.61	0.7	0.8	YI3	YE3	AVR...-3 (LH)
		20	3IR20UN...	3IL20UN...	0.73	0.8	0.9			
		18	3IR18UN...	3IL18UN...	0.81	0.8	1.0			
		16	3IR16UN...	3IL16UN...	0.92	0.9	1.1			
		14	3IR14UN...	3IL14UN...	1.05	0.9	1.2			
		13	3IR13UN...	3IL13UN...	1.13	1.0	1.3			
		12	3IR12UN...	3IL12UN...	1.22	1.1	1.4			
		11.5	3IR11.5UN...	3IL11.5UN...	1.28	1.1	1.5			
		11	3IR11UN...	3IL11UN...	1.33	1.1	1.5			
		10	3IR10UN...	3IL10UN...	1.47	1.1	1.5			
		9	3IR9UN...	3IL9UN...	1.63	1.2	1.7			
8	3IR8UN...	3IL8UN...	1.83	1.1	1.5					
3/8" SCB	16	36	3JIR36UN...		0.43	1.1	0.5	YI3	-	AVR...-3
		32	3JIR32UN...		0.49	1.1	0.5			
		28	3JIR28UN...		0.56	0.6	0.8			
		24	3JIR24UN...		0.65	0.7	0.8			
		20	3JIR20UN...		0.78	0.6	0.8			
		18	3JIR18UN...		0.87	0.6	0.8			
		16	3JIR16UN...		0.97	0.7	0.8			
		14	3JIR14UN...		1.11	1.1	1.5			
		13	3JIR13UN...		1.13	1.1	1.5			
		12	3JIR12UN...		1.30	1.1	1.5			
		10	3JIR10UN...		1.56	1.1	1.5			
		9	3JIR9UN...		1.63	1.0	1.5			
		8	3JIR8UN...		1.95	1.1	1.5			
1/2"	22	7	4IR7UN...	4IL7UN...	2.09	1.6	2.3	YI4	YE4	AVR...-4 (LH)
		6	4IR6UN...	4IL6UN...	2.44	1.6	2.3			
		5	4IR5UN...	4IL5UN...	2.93	1.6	2.3			
5/8"	27	4.5	5IR4.5UN...	5IL4.5UN...	3.26	1.7	2.4	YI5	YE5	AVR...-5 (LH)
		4	5IR4UN...	5IL4UN...	3.67	1.8	2.7			

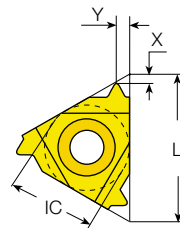


American UNC (con't)

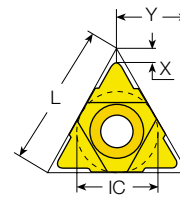
Internal



Defined by: ANSI B1.1:74
Tolerance class: 2A/2B



Standard



U Style

Coarse Pitch

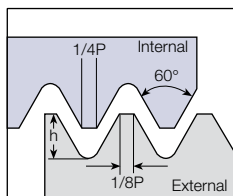


Thread	Insert Size		Ordering Code	Dimensions mm			Min Bore dia.		
	IC	L mm	RH	h min	X	Y	Toolholder	mm	
1/2 x 13UN	6.0	10	6.0IR13UN...158/001	1.13	0.82	0.95	BNVR10S-6.0	10.6	
9/16 x 12UN	1/4	11	2IR12UN...158/002	1.22	0.86	1.00	NVRC10-2 156/001	12.0	
5/8 x 11UN	1/4U		2UIR11UN...158/003	1.33	1.20	5.50	NVRC11-2U 156/002	13.4	
3/4 x 10UN			3IR10UN...	1.47	1.10	1.50	NVRC13-3 156/016	16.3	
7/8 x 9UN	3/8	16	3IR9UN...	1.63	1.20	1.70	NVRC13-3 156/016	19.2	
1 x 8UN			3IR8UN...	1.83	1.10	1.50	NVRC16-3	22.0	
1 1/8 x 7UN			4IR7UN...	2.09	1.60	2.30	NVRC20-4	24.6	
1 1/4 x 7UN	1/2	22	4IR7UN...	2.09	1.60	2.30	NVRC20-4	27.8	
1 3/8 x 6UN			4IR6UN...	2.44	1.60	2.30	NVRC20-4	30.3	

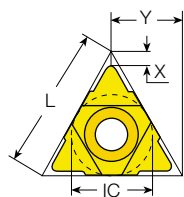


American UN (con't)

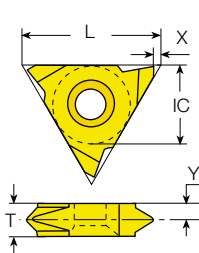
Internal



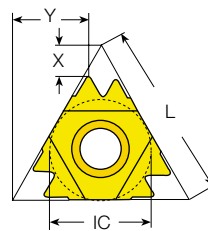
Defined by: ANSI B1.1:74
Tolerance class: 2A/2B



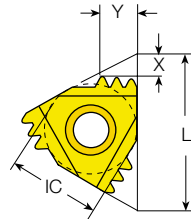
U Style



V Style



Z Style



M Style

U Style



Insert Size		Pitch	Ordering Code	Dimensions mm			Anvil		
IC	L mm	tpi	RH+LH	h min	X	Y	RH	LH	Toolholder
1/2"U	22	4.5	4UI4.5UN...	3.26	2.4	11.0	YI4U	YE4U	AVR...-4U (LH)
		4	4UI4UN...	3.67	2.4	11.0			
5/8"U	27	3	5UI3UN...	4.89	2.7	13.7	YI5U	YE5U	AVR...-5U (LH)

V Style



Insert Size		Pitch	Ordering Code		Dimensions mm				
IC	L mm	tpi	RH	LH	h min	X	Y	T	Toolholder
5/8"V	27	4	5VIR4UN...	5VIL4UN...	3.67	1.0	3.3	6	NVR...-5V (LH)
		3	5VIR3UN...	5VIL3UN...	4.89	1.0	4.3	8	

Z Style



Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
1/2"	22	8	2	4IR8UN2Z...	1.83	3.5	9.6	YI4Z	AVR...-4Z

M Style

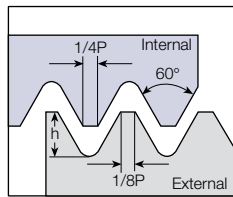


Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
3/8"	16	16	2	3IR16UN2M...	0.92	1.7	2.4	YI3M	AVR...-3
		16	3	4IR16UN3M...	0.92	2.5	4.0		
1/2"	22	12	2	4IR12UN2M...	1.22	2.1	3.2	YI4M	AVR...-4
		12	3	4IR12UN3M...	1.22	3.3	5.2		
5/8"	27	8	2	5IR8UN2M...	1.83	3.0	4.8	YI5M	AVR...-5M

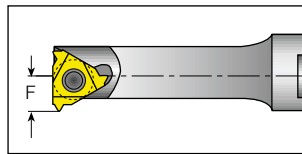
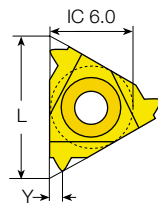


American UN (con't)

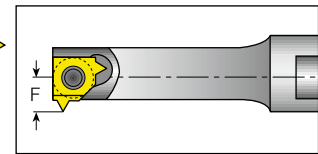
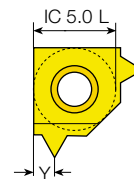
Internal



Defined by: ANSI B1.1:74
Tolerance class: 2A/2B



Mini-3



Mini-L

Mini-3



Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC	L mm	tpi	RH	h min	Y	F	mm	
6.0	10	32	6.0IR32UN...	0.46	0.6	4.60	9.5	.NVR1...-6.0
		28	6.0IR28UN...	0.52	0.65	4.70	9.6	
		24	6.0IR24UN...	0.61	0.75	4.80	9.7	
		20	6.0IR20UN...	0.73	0.9	4.90	9.8	
		18	6.0IR18UN...	0.81	1.0	5.00	9.9	
		16	6.0IR16UN...	0.92	1.05	5.10	10.0	
		14	6.0IR14UN...	1.05	1.05	5.20	10.0	

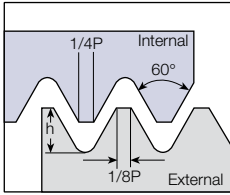
Mini-L



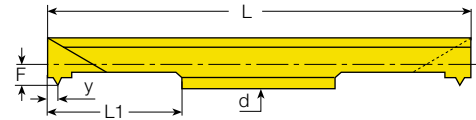
Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC mm		tpi	RH	h min	Y	F	mm	
5.0L		32	5LIR32UN...	0.46	0.6	3.92	7.5	.NVR10.-5L
		28	5LIR28UN...	0.52	0.65	3.99	7.6	
		24	5LIR24UN...	0.61	0.75	4.09	7.7	
		20	5LIR20UN...	0.73	0.9	4.21	7.8	
		18	5LIR18UN...	0.81	1.0	4.30	7.9	
		16	5LIR16UN...	0.92	1.05	4.41	8.0	
		14	5LIR14UN...	1.05	1.05	4.54	8.0	

American UN (con't)

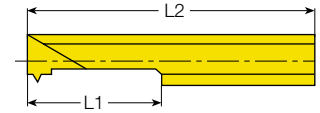
Internal



Defined by: ANSI B1.1:74
Tolerance class: 2A/2B



RH-Double Ended



RH-Single Ended

Micro Thread

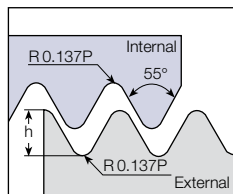
Insert dia.	Pitch	Ordering Code		Dimensions mm						Min. Bore dia.	Toolholder
d mm	tpi	RH-Single Ended	RH-Double Ended	L1	L2	L	F	Y	h min	mm	Toolholder
3.0	40	3.0SIR40UN...1-SIDE	3.0SIR40UN...	16	43	50	1.35	0.60	0.37	3.2	SMC...-3.0
	36	3.0SIR36UN...1-SIDE	3.0SIR36UN...	16	43	50	1.46	0.60	0.41	3.2	
	32	3.0SIR32UN...1-SIDE	3.0SIR32UN...	16	43	50	1.40	0.60	0.46	3.3	
4.0	40	4.0SIR40UN...1-SIDE	4.0SIR40UN...	16	43	50	1.65	0.60	0.37	4.0	SMC...-4.0
	36	4.0SIR36UN...1-SIDE	4.0SIR36UN...	16	43	50	1.70	0.60	0.41	4.1	
	32	4.0SIR32UN...1-SIDE	4.0SIR32UN...	16	43	50	1.76	0.60	0.46	4.1	
	28	4.0SIR28UN...1-SIDE	4.0SIR28UN...	16	43	50	1.83	0.65	0.52	4.2	
	27	4.0SIR27UN...1-SIDE	4.0SIR27UN...	16	43	50	1.85	0.75	0.54	4.2	
6.0	24	4.0SIR24UN...1-SIDE	4.0SIR24UN...	16	43	50	1.93	0.75	0.61	4.3	SMC...-6.0
	32	6.0SIR32UN...1-SIDE	6.0SIR32UN...	16	43	50	2.01	0.60	0.46	5.5	
	28	6.0SIR28UN...1-SIDE	6.0SIR28UN...	16	43	50	2.08	0.65	0.52	5.6	
	27	6.0SIR27UN...1-SIDE	6.0SIR27UN...	16	43	50	2.10	0.75	0.54	5.6	
	24	6.0SIR24UN...1-SIDE	6.0SIR24UN...	16	43	50	2.18	0.75	0.61	5.7	
	20	6.0SIR20UN...1-SIDE	6.0SIR20UN...	16	43	50	2.30	0.90	0.73	5.8	
	18	6.0SIR18UN...1-SIDE	6.0SIR18UN...	16	43	50	2.39	1.00	0.81	5.9	
	16	6.0SIR16UN...1-SIDE	6.0SIR16UN...	16	43	50	2.50	1.05	0.92	6.0	

Left Handed Tool Supplied by Request. (Example: 6.0SIL16UN...1-SIDE)

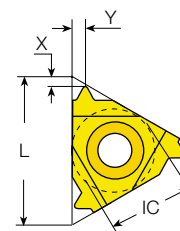


Whitworth for BSW, BSP

External



Defined by: B.S.84:1956, DIN 259, ISO228/1:1982
Tolerance class: Medium Class A



Standard

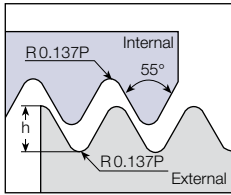
Standard

Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	Toolholder
1/4"	11	72	2ER72W...	2EL72W...	0.23	0.7	0.4	-	-	NL ...-2 (LH)
		60	2ER60W...	2EL60W...	0.27	0.7	0.4			
		56	2ER56W...	2EL56W...	0.29	0.7	0.4			
		48	2ER48W...	2EL48W...	0.34	0.6	0.6			
		40	2ER40W...	2EL40W...	0.41	0.6	0.6			
		36	2ER36W...	2EL36W...	0.45	0.6	0.6			
		32	2ER32W...	2EL32W...	0.51	0.6	0.6			
		28	2ER28W...	2EL28W...	0.58	0.6	0.7			
		26	2ER26W...	2EL26W...	0.63	0.7	0.8			
		24	2ER24W...	2EL24W...	0.68	0.7	0.8			
		22	2ER22W...	2EL22W...	0.74	0.8	0.9			
		20	2ER20W...	2EL20W...	0.81	0.8	0.9			
		19	2ER19W...	2EL19W...	0.86	0.8	1.0			
		18	2ER18W...	2EL18W...	0.90	0.8	1.0			
3/8"	16	16	2ER16W...	2EL16W...	1.02	0.9	1.1	YE3	YI3	AL...-3 (LH)
		14	2ER14W...	2EL14W...	1.16	1.0	1.2			
		72	3ER72W...	3EL72W...	0.23	0.7	0.4			
		60	3ER60W...	3EL60W...	0.27	0.7	0.4			
		56	3ER56W...	3EL56W...	0.29	0.7	0.4			
		48	3ER48W...	3EL48W...	0.34	0.6	0.6			
		40	3ER40W...	3EL40W...	0.41	0.6	0.6			
		36	3ER36W...	3EL36W...	0.45	0.6	0.6			
		32	3ER32W...	3EL32W...	0.51	0.6	0.6			
		30	3ER30W...	3EL30W...	0.55	0.6	0.7			
		28	3ER28W...	3EL28W...	0.58	0.6	0.7			
		26	3ER26W...	3EL26W...	0.63	0.7	0.8			
		24	3ER24W...	3EL24W...	0.68	0.7	0.8			
		22	3ER22W...	3EL22W...	0.74	0.8	0.9			
		20	3ER20W...	3EL20W...	0.81	0.8	0.9			
		19	3ER19W...	3EL19W...	0.86	0.8	1.0			
		18	3ER18W...	3EL18W...	0.90	0.8	1.0			
		16	3ER16W...	3EL16W...	1.02	0.9	1.1			
		14	3ER14W...	3EL14W...	1.16	1.0	1.2			
		12	3ER12W...	3EL12W...	1.36	1.1	1.4			
		11	3ER11W...	3EL11W...	1.48	1.1	1.5			
		10	3ER10W...	3EL10W...	1.63	1.1	1.5			
		9	3ER9W...	3EL9W...	1.81	1.2	1.7			
		8	3ER8W...	3EL8W...	2.03	1.2	1.5			

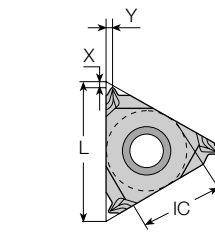
continued on next page ▶

Whitworth for BSW, BSP (con't)

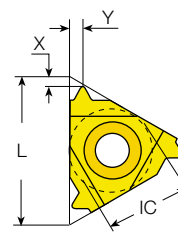
External



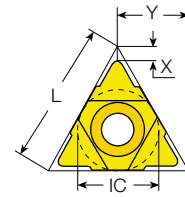
Defined by: B.S.84:1956, DIN 259, ISO228/1:1982
Tolerance class: Medium Class A



SCB
Sintered Chipbreaker



Standard



U Style

Standard (con't)



SCB



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
3/8"	16	36	3JER36W...		0.45	1.2	0.5	YE3	-	AL...-3
		32	3JER32W...		0.51	1.2	0.5			
		28	3JER28W...		0.58	0.7	0.8			
		24	3JER24W...		0.68	0.7	0.8			
		20	3JER20W...		0.81	0.7	0.8			
		19	3JER19W...		0.86	0.7	0.8			
		18	3JER18W...		0.90	0.8	0.8			
		16	3JER16W...		1.02	0.8	0.8			
		14	3JER14W...		1.16	1.3	1.5			
		12	3JER12W...		1.36	1.3	1.5			
		11	3JER11W...		1.48	1.3	1.5			
		10	3JER10W...		1.63	1.3	1.5			
1/2"	22	8	3JER8W...		2.03	1.3	1.5	YE4	YI4	AL...-4 (LH)
		7	4ER7W...	4EL7W...	3.32	1.6	2.3			
		6	4ER6W...	4EL6W...	2.71	1.6	2.3			
5/8"	27	5	4ER5W...	4EL5W...	3.25	1.7	2.4	YE5	YI5	AL...-5 (LH)
		4.5	5ER4.5W...	5EL4.5W...	3.61	1.8	2.6			
		4	5ER4W...	5EL4W...	4.07	2.0	2.9			

U Style

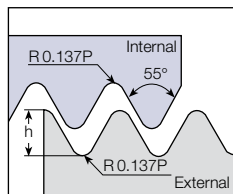


Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH+LH		h min.	X	Y	RH	LH	
1/2"U	22	4.5	4UEI4.5W...		3.61	2.3	11.0	YE4U	YI4U	AL...-4U (LH)
		4	4UEI4W...		4.07	1.8	11.0			
		3.5	4UEI3.5W...		4.65	2.1	11.0			
		3.25	4UEI3.25W...		5.00	2.0	11.0			
5/8"U	27	3.5	5UEI3.5W...		4.65	2.1	13.7	YE5U	YI5U	AL...-5U (LH)
		3.25	5UEI3.25W...		5.00	2.0	13.7			
		3	5UEI3W...		5.42	2.3	13.7			
		2.75	5UEI2.75W...		5.91	2.4	13.7			

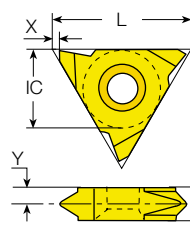


Whitworth for BSW, BSP (con't)

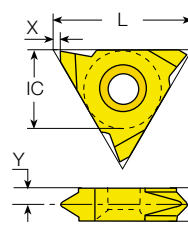
External



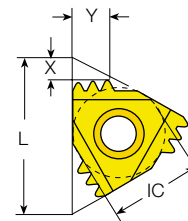
Defined by: B.S.84:1956, DIN 259, ISO228/1:1982
Tolerance class: Medium class A



Slim Throat



V Style



M Style

Slim Throat



Insert Size		Pitch	Ordering Code		Dimensions mm				Toolholder
IC	L mm	tpi	RH	LH	h_{min}	X	Y	T	
1/4"V	11	19	2VER19W...	2VEL19W...	0.86	0.69	2.3	3.2	NL...-2V (LH)
		14	2VER14W...	2VEL14W...	1.16	0.69	2.0	3.2	
		11	2VER11W...	2VEL11W...	1.48	0.69	1.7	3.2	
3/8"V	16	19	3VER19W...	3VEL19W...	0.86	1.1	2.7	3.6	NL...-3V (LH)
		18	3VER18W...	3VEL18W...	0.90	1.1	2.6	3.6	
		16	3VER16W...	3VEL16W...	1.02	1.1	2.6	3.6	
		14	3VER14W...	3VEL14W...	1.16	1.1	2.4	3.6	
		12	3VER12W...	3VEL12W...	1.36	1.1	2.2	3.6	
		11	3VER11W...	3VEL11W...	1.48	1.1	2.1	3.6	

V Style



Insert Size		Pitch	Ordering Code		Dimensions mm				Toolholder
IC	L mm	tpi	RH	LH	h_{min}	X	Y	T	
5/8"V	27	4	5VER4W...	5VEL4W...	4.07	1.0	3.3	6	NL...-5V-6 (LH)
		3	5VER3W...	5VEL3W...	5.42	1.0	4.3	8	NL...-5V-8 (LH)
		2.5	5VER2.5W...	5VEL2.5W...	6.51	1.0	5.2	10	NL...-5V-10 (LH)

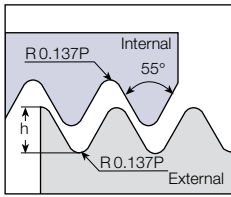
M Style



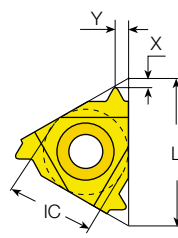
Insert Size		Pitch	Teeth	Ordering Code		Dimensions mm			Anvil	Toolholder
IC	L mm	tpi		RH	LH	h_{min}	X	Y	RH	
3/8"	16	14	2	3ER14W2M...		1.16	1.9	2.8	YE3M	AL...-3
1/2"	22	14	3	4ER14W3M...		1.16	2.9	4.6	YE4M	AL...-4
		11	2	4ER11W2M...		1.48	2.3	3.5		

Whitworth for BSW, BSP (con't)

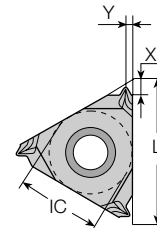
Internal



Defined by: B.S.84:1956, DIN 259, ISO228/1:1982
Tolerance class: Medium class A



Standard



SCB
Sintered Chipbreaker

Standard

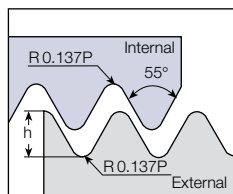
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	Toolholder
1/4"	11	72	2IR72W...	2IL72W...	0.23	0.7	0.4	-	-	NVR...-2 (LH)
		60	2IR60W...	2IL60W...	0.27	0.7	0.4			
		56	2IR56W...	2IL56W...	0.29	0.7	0.4			
		48	2IR48W...	2IL48W...	0.34	0.6	0.6			
		40	2IR40W...	2IL40W...	0.41	0.6	0.6			
		36	2IR36W...	2IL36W...	0.45	0.6	0.6			
		32	2IR32W...	2IL32W...	0.51	0.6	0.6			
		28	2IR28W...	2IL28W...	0.58	0.6	0.7			
		26	2IR26W...	2IL26W...	0.63	0.7	0.8			
		24	2IR24W...	2IL24W...	0.68	0.7	0.8			
		22	2IR22W...	2IL22W...	0.74	0.8	0.9			
		20	2IR20W...	2IL20W...	0.81	0.8	0.9			
		19	2IR19W...	2IL19W...	0.86	0.8	1.0			
		18	2IR18W...	2IL18W...	0.90	0.8	1.0			
		16	2IR16W...	2IL16W...	1.02	0.9	1.1			
14	2IR14W...	2IL14W...	1.16	0.9	1.1					
12	2IR12W...	2IL12W...	1.32	0.9	1.2					
1/4" SCB	11	36	2JIR36W...		0.45	1.2	0.5	-		NVR...-2
		32	2JIR32W...		0.51	1.2	0.5			
		28	2JIR28W...		0.58	0.7	0.8			
		24	2JIR24W...		0.68	0.7	0.8			
		20	2JIR20W...		0.81	0.7	0.8			
		19	2JIR19W...		0.86	0.6	0.8			
		18	2JIR18W...		0.90	0.8	0.8			
		16	2JIR16W...		1.02	0.8	0.8			
		14	2JIR14W...		1.16	0.7	0.9			
3/8"	16	72	3IR72W...	3IL72W...	0.23	0.7	0.4	YI3	YE3	AVR...-3 (LH)
		60	3IR60W...	3IL60W...	0.27	0.7	0.4			
		56	3IR56W...	3IL56W...	0.29	0.7	0.4			
		48	3IR48W...	3IL48W...	0.34	0.6	0.6			
		40	3IR40W...	3IL40W...	0.41	0.6	0.6			
		36	3IR36W...	3IL36W...	0.45	0.6	0.6			
		32	3IR32W...	3IL32W...	0.51	0.6	0.6			
		30	3IR30W...	3IL30W...	0.55	0.6	0.7			

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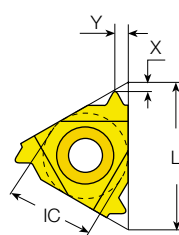


Whitworth for BSW, BSP (con't)

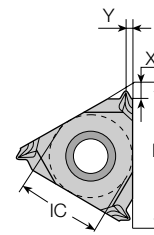
Internal



Defined by: B.S.84:1956, DIN 259, ISO228/1:1982
Tolerance class: Medium Class A



Standard



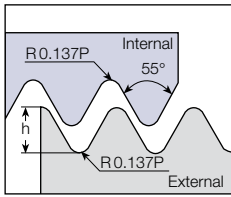
SCB
Sintered Chipbreaker

Standard (con't)

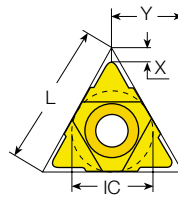
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
	3/8"	16	28 3IR28W...	3IL28W...	0.58	0.6	0.7	YI3	YE3	AVR...-3 (LH)
			26 3IR26W...	3IL26W...	0.63	0.7	0.8			
			24 3IR24W...	3IL24W...	0.68	0.7	0.8			
			22 3IR22W...	3IL22W...	0.74	0.8	0.9			
			20 3IR20W...	3IL20W...	0.81	0.8	0.9			
			19 3IR19W...	3IL19W...	0.86	0.8	1.0			
			18 3IR18W...	3IL18W...	0.90	0.8	1.0			
			16 3IR16W...	3IL16W...	1.02	0.9	1.1			
			14 3IR14W...	3IL14W...	1.16	1.0	1.2			
			12 3IR12W...	3IL12W...	1.36	1.1	1.4			
			11 3IR11W...	3IL11W...	1.48	1.1	1.5			
			10 3IR10W...	3IL10W...	1.63	1.1	1.5			
	3/8" SCB	16	8 3IR8W...	3IL8W...	2.03	1.2	1.5	YI3	-	AVR...-3
			36 3JIR36W...		0.45	1.2	0.5			
			32 3JIR32W...		0.51	1.2	0.5			
			28 3JIR28W...		0.58	0.7	0.8			
			24 3JIR24W...		0.68	0.7	0.8			
			20 3JIR20W...		0.81	0.7	0.8			
			19 3JIR19W...		0.86	0.6	0.5			
			18 3JIR18W...		0.90	0.8	0.8			
			16 3JIR16W...		1.02	0.8	0.8			
			14 3JIR14W...		1.16	1.3	1.5			
			12 3JIR12W...		1.36	1.3	1.5			
			11 3JIR11W...		1.48	1.3	1.5			
	1/2"	22	7 4IR7W...	4IL7W...	3.32	1.6	2.3	YI4	YE4	AVR...-4 (LH)
			6 4IR6W...	4IL6W...	2.71	1.6	2.3			
			5 4IR5W...	4IL5W...	3.25	1.7	2.4			
	5/8"	27	4.5 5IR4.5W...	5IL4.5W...	3.61	1.8	2.6	YI5	YE5	AVR...-5 (LH)
			4 5IR4W...	5IL4W...	4.07	2.0	2.9			

Whitworth for BSW, BSP (con't)

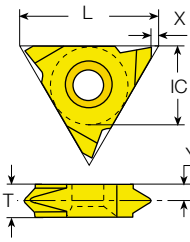
Internal



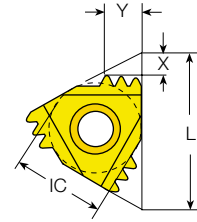
Defined by: B.S.84:1956, DIN 259, ISO228/1:1982
Tolerance class: Medium Class A



U Style



V Style



M Style

U Style



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH+LH		h _{min}	X	Y	RH	LH	
1/2"U	22	4.5	4UEI4.5W...		3.61	2.3	11.0	YI4U	YE4U	AVR...-4U (LH)
		4	4UEI4W...		4.07	1.8	11.0			
		3.5	4UEI3.5W...		4.65	2.1	11.0			
		3.25	4UEI3.25W...		5.00	2.0	11.0			
5/8"U	27	3.5	5UEI3.5W...		4.65	2.1	13.7	YI5U	YE5U	AVR...-5U (LH)
		3.25	5UEI3.25W...		5.00	2.0	13.7			
		3	5UEI3W...		5.42	2.3	13.7			
		2.75	5UEI2.75W...		5.91	2.4	13.7			

V Style



Insert Size		Pitch	Ordering Code		Dimensions mm				Toolholder
IC	L mm	tpi	RH	LH	h _{min}	X	Y	T	
5/8"V	27	4	5VIR4W...	5VIL4W...	4.07	1.0	3.3	6	NVR...-5V (LH)
		3	5VIR3W...	5VIL3W...	5.42	1.0	4.3	8	
		2.5	5VIR2.5W...	5VIL2.5W...	6.51	1.0	5.2	10	

M Style

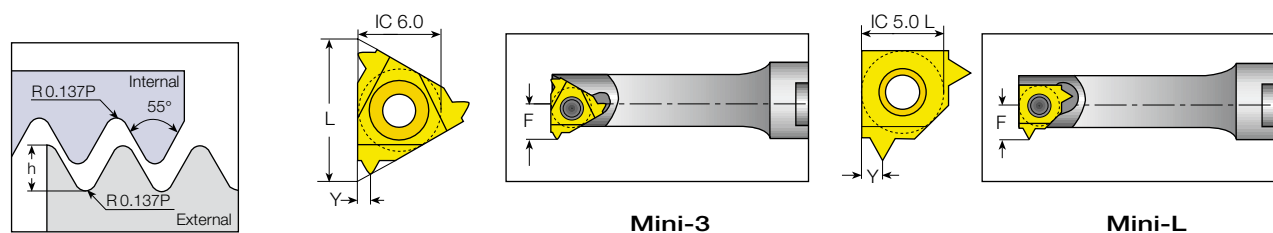


Insert Size		Pitch	Teeth	Ordering Code		Dimensions mm			Anvil	
IC	L mm	tpi		RH	h _{min}	X	Y		RH	Toolholder
3/8"	16	14	2	3IR14W2M...	1.16	1.9	2.8		YI3M	AVR...-3
1/2"	22	14	3	4IR14W3M...	1.16	2.9	4.6		YI4M	AVR...-4
		11	2	4IR11W2M...	1.48	2.3	3.5			



Whitworth for BSW, BSP (con't)

Internal



Mini-3

Mini-L

Defined by: B.S.84:1956, DIN 259, ISO228/1:1982
Tolerance class: Medium Class A

Mini-3



Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC	L mm	tpi	RH	h min	Y	F	mm	
6.0	10	28	6.0IR28W...	0.58	0.7	4.7	9.6	.NVR1...-6.0
		19	6.0IR19W...	0.86	1.0	5.0	9.9	
		14	6.0IR14W...	1.16	1.1	5.3	10.0	

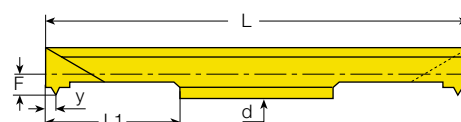
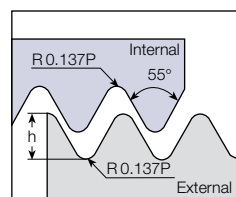
Mini-L



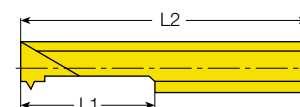
Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC mm		tpi	RH	h min	Y	F	mm	
5.0 L		28	5LIR28W...	0.58	0.7	4.05	7.6	.NVR 10. -5L
		19	5LIR19W...	0.86	1.0	4.35	7.9	
		14	5LIR14W...	1.16	1.1	4.68	8.0	

Whitworth for BSW, BSP

Internal



RH-Double Ended



RH-Single Ended

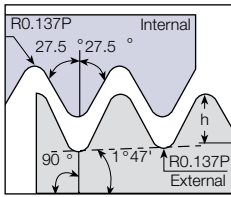
Defined by: B.S.84:1956, DIN 259, ISO228/1:1982
Tolerance class: Medium Class A

Micro

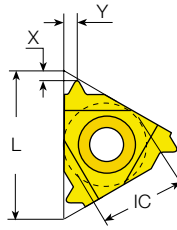
Insert dia.		Pitch	Ordering Code	Dimensions mm						Min. Bore dia.	Toolholder
d mm	tpi			L1	L2	L	F	Y	hmin	mm	
4.0	28		4.0SIR28W...1-SIDE	16	43	50	1.86	0.65	0.58	4.2	SMC...-4.0
	26		4.0SIR26W...1-SIDE	16	43	50	1.93	0.75	0.63	4.2	
	24		4.0SIR24W...1-SIDE	16	43	50	1.96	0.75	0.68	4.3	
6.0	28		6.0SIR28W...1-SIDE	16	43	50	2.50	0.65	0.58	6.0	SMC...-6.0
	26		6.0SIR26W...1-SIDE	16	43	50	2.50	0.75	0.63	6.0	
	24		6.0SIR24W...1-SIDE	16	43	50	2.50	0.75	0.68	6.0	
	22		6.0SIR22W...1-SIDE	16	43	50	2.50	0.90	0.74	6.0	
	20		6.0SIR20W...1-SIDE	16	43	50	2.50	0.90	0.86	6.0	
	19		6.0SIR19W...1-SIDE	16	43	50	2.50	0.95	0.86	6.0	

BSPT

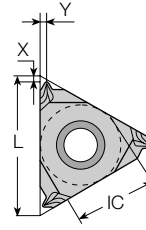
External



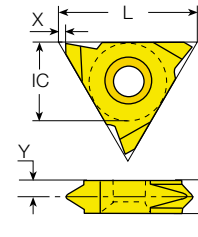
Defined by: B.S. 21:1985
Tolerance class: Standard BSPT



Standard



SCB
Sintered Chipbreaker



Slim Throat

Standard



SCB

Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	11	28	2ER28BSPT...	2EL28BSPT...	0.58	0.6	0.6	-	-	NL...-2 (LH)
		19	2ER19BSPT...	2EL19BSPT...	0.86	0.8	0.9			
		14	2ER14BSPT...	2EL14BSPT...	1.16	0.9	1.0			
3/8"	16	28	3ER28BSPT...	3EL28BSPT...	0.58	0.6	0.6	YE3	YI3	AL...-3 (LH)
		19	3ER19BSPT...	3EL19BSPT...	0.86	0.8	0.9			
		14	3ER14BSPT...	3EL14BSPT...	1.16	1.0	1.2			
		11	3ER11BSPT...	3EL11BSPT...	1.48	1.1	1.5			
3/8" SCB	16	28	3JER28BSPT...		0.58	0.7	0.8	YE3	-	AL...-3
		19	3JER19BSPT...		0.86	0.7	0.8			
		14	3JER14BSPT...		1.16	1.3	1.5			
		11	3JER11BSPT...		1.48	1.3	1.5			

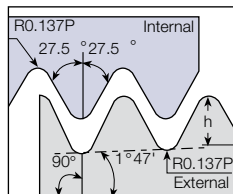
Slim Throat



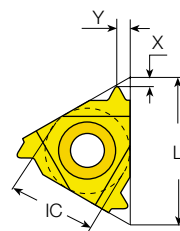
Insert Size		Pitch	Ordering Code		Dimensions mm				Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	T	
3/8"V	16	28	3VER28BSPT...	3VEL28BSPT...	0.58	1.1	3.0	3.6	NL...-3V (LH)
		19	3VER19BSPT...	3VEL19BSPT...	0.86	1.1	2.7	3.6	
		14	3VER14BSPT...	3VEL14BSPT...	1.16	1.1	2.4	3.6	
		11	3VER11BSPT...	3VEL11BSPT...	1.48	1.1	2.1	3.6	

BSPT (con't)

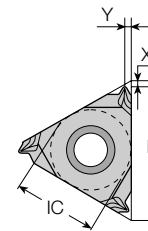
Internal



Defined by: B.S. 21:1985
Tolerance class: Standard BSPT



Standard



SCB
Sintered Chipbreaker

Standard

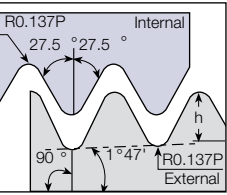


SCB

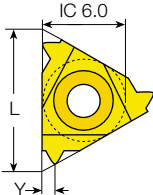
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	11	28	2IR28BSPT...	2IL28BSPT...	0.58	0.6	0.6	-	-	NVR...-2 (LH)
		19	2IR19BSPT...	2IL19BSPT...	0.86	0.8	0.9			
		14	2IR14BSPT...	2IL14BSPT...	1.16	0.9	1.0			
1/4" SCB	11	28	2JIR28BSPT...		0.58	0.7	0.8	-	-	NVR...-2
		19	2JIR19BSPT...		0.86	0.7	0.8			
3/8"	16	28	3IR28BSPT...	3IL28BSPT...	0.58	0.6	0.6	YI3	YE3	AVR...-3 (LH)
		19	3IR19BSPT...	3IL19BSPT...	0.86	0.8	0.9			
		14	3IR14BSPT...	3IL14BSPT...	1.16	1.0	1.2			
		11	3IR11BSPT...	3IL11BSPT...	1.48	1.1	1.5			
3/8" SCB	16	28	3JIR28BSPT...		0.58	0.7	0.8	YI3	-	AVR...-3
		19	3JIR19BSPT...		0.86	0.7	0.8			
		14	3JIR14BSPT...		1.16	1.3	1.5			
		11	3JIR11BSPT...		1.48	1.3	1.5			

BSPT (con't)

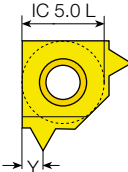
Internal



Defined by: B.S. 21:1985
Tolerance class: Standard BSPT



Mini-3



Mini-L

Mini-3



Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC	L mm	tpi	RH	h min	Y	F	mm	
6.0	10	28	6.0IR28BSPT...	0.58	0.6	4.7	9.6	.NVR1...-6.0
		19	6.0IR19BSPT...	0.86	0.9	5.0	9.9	
		14	6.0IR14BSPT...	1.16	1.2	5.3	10.0	

Mini-L

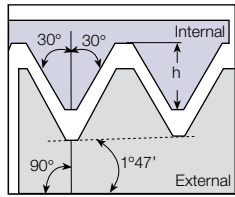


Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC mm		tpi	RH	h min	Y	F	mm	
5.0L		28	5LIR28BSPT...	0.58	0.6	4.05	7.6	.NVR10...-5L
		19	5LIR19BSPT...	0.86	0.9	4.35	7.9	
		14	5LIR14BSPT...	1.16	1.2	4.68	8.0	

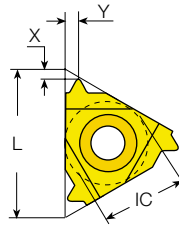


NPT

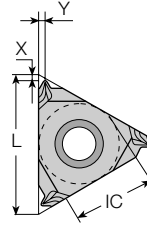
External



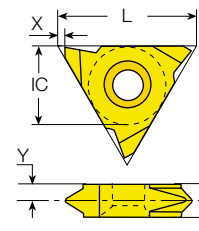
Defined by: USAS B2.1:1968
Tolerance class: Standard NPT



Standard



SCB
Sintered Chipbreaker



Slim Throat

Standard



SCB

Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h _{min}	X	Y	RH	LH	
1/4"	11	27	2ER27NPT...	2EL27NPT...	0.66	0.7	0.8	-	-	NL...-2 (LH)
		18	2ER18NPT...	2EL18NPT...	1.01	0.8	1.0			
		14	2ER14NPT...	2EL14NPT...	1.33	0.8	1.0			
3/8"	16	27	3ER27NPT...	3EL27NPT...	0.66	0.7	0.8	YE3	YI3	AL...-3 (LH)
		18	3ER18NPT...	3EL18NPT...	1.01	0.8	1.0			
		14	3ER14NPT...	3EL14NPT...	1.33	0.9	1.2			
		11.5	3ER11.5NPT...	3EL11.5NPT...	1.64	1.1	1.5			
		8	3ER8NPT...	3EL8NPT...	2.42	1.3	1.8			
3/8" SCB	16	27	3JER27NPT...		0.66	0.6	0.8	YE3	-	AL...-3
		18	3JER18NPT...		1.01	0.6	0.8			
		14	3JER14NPT...		1.33	1.1	1.5			
		11.5	3JER11.5NPT...		1.64	1.1	1.5			
		8	3JER8NPT...		2.42	1.0	1.5			

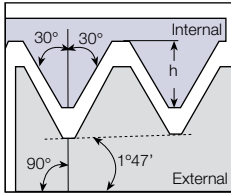
Slim Throat



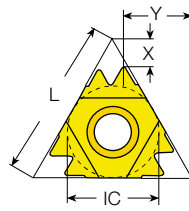
Insert Size		Pitch	Ordering Code		Dimensions mm			Toolholder
IC	L mm	tpi	RH	LH	h _{min}	X	Y	
1/4"V	11	27	2VER27NPT...	2VEL27NPT...	0.66	0.69	2.0	NL...-2V (LH)
		18	2VER18NPT...	2VEL18NPT...	1.01	0.69	1.8	
		14	2VER14NPT...	2VEL14NPT...	1.33	0.69	1.8	
		11.5	2VER11.5NPT...	2VEL11.5NPT...	1.64	0.69	2.1	
3/8"V	16	27	3VER27NPT...	3VEL27NPT...	0.66	1.1	2.9	NL...-3V (LH)
		18	3VER18NPT...	3VEL18NPT...	1.01	1.1	2.6	
		11.5	3VER11.5NPT...	3VEL11.5 NPT...	1.64	1.1	2.1	

NPT (con't)

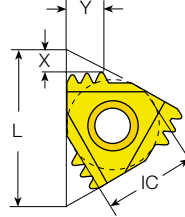
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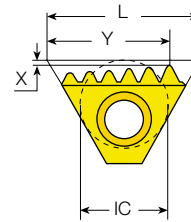
Defined by: USAS B2.1:1968
Tolerance class: Standard NPT



Z Style



M Style



T Style

Z Style



Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
1/2"	22	11.5	2	4ER11.5NPT2Z...	1.64	2.3	10.0	YE4Z	AVR...-4Z
		8	2	4ER8NPT2Z...	2.42	3.4	9.6		

M Style



Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
1/2"	22	11.5	2	4ER11.5NPT2M...	1.64	3.4	2.2	YE4M	AL...-4
5/8"	27	11.5	3	5ER11.5NPT3M...	1.64	3.5	5.6		
		8	2	5ER8NPT2M...	2.42	2.9	4.7	YE5M	AL...-5M

T Style

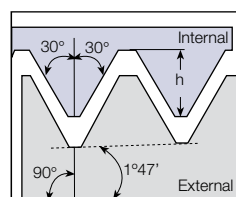


Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
1/2"T	22	11.5	6	4ER11.5NPT6T...	1.64	0.1	13.4	Y4T	AL...-4T
		8	5	4ER8NPT5T...	2.42	0.1	15.7		

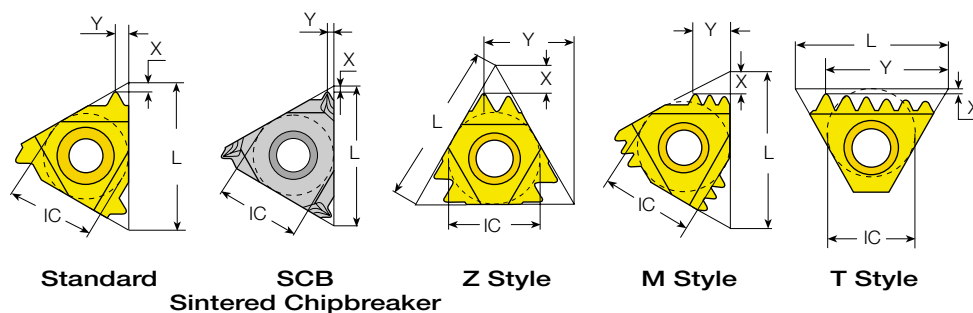


NPT (con't)

Internal



Defined by: USAS B2.1:1968
Tolerance class: Standard NPT



Standard



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	Toolholder
1/4"	11	27	2IR27NPT...	2IL27NPT...	0.66	0.7	0.8	-	-	NVR...-2 (LH)
		18	2IR18NPT...	2IL18NPT...	1.01	0.8	1.0			
		14	2IR14NPT...	2IL14NPT...	1.33	0.8	1.0			
1/4" SCB	11	27	2JIR27NPT...		0.66	0.6	0.8	-	-	NVR...-2
		18	2JIR18NPT...		1.01	0.6	0.8			
3/8"	16	27	3IR27NPT...	3IL27NPT...	0.66	0.7	0.8	YI3	YE3	AVR...-3 (LH)
		18	3IR18NPT...	3IL18NPT...	1.01	0.8	1.0			
		14	3IR14NPT...	3IL14NPT...	1.33	0.9	1.2			
		11.5	3IR11.5NPT...	3IL11.5NPT...	1.64	1.1	1.5			
		8	3IR8NPT...	3IL8NPT...	2.42	1.3	1.8			
3/8" SCB	16	27	3JIR27NPT...		0.66	0.6	0.8	YI3	-	AVR...-3
		18	3JIR18NPT...		1.01	0.6	0.8			
		14	3JIR14NPT...		1.33	1.1	1.5			
		11.5	3JIR11.5NPT...		1.64	1.1	1.5			
		8	3JIR8NPT...		2.42	1.0	1.5			

Z Style



Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
1/2"	22	11.5	2	4IR11.5NPT2Z...	1.64	2.3	10.0	YI4Z	AVR...-4Z
		8	2	4IR8NPT2Z...	2.42	3.4	9.6		

M Style



Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
1/2"	22	11.5	2	4IR11.5NPT2M...	1.64	3.4	2.2	YI4M	AVR...-4
5/8"	27	11.5	3	5IR11.5NPT3M...	1.64	3.5	5.6	YI5M	AVR...-5M
		8	2	5IR8NPT2M...	2.42	2.9	4.7		

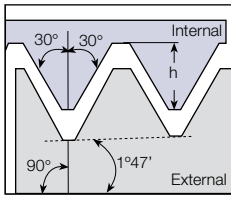
T Style



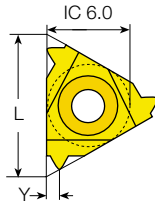
Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
1/2"T	22	11.5	6	4IR11.5NPT6T...	1.64	0.1	13.4	Y4T	AVR...-4T
		8	5	4IR8NPT5T...	2.42	0.1	15.7		

NPT (con't)

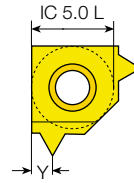
Internal



Defined by: USAS B2.1:1968
Tolerance class: Standard NPT



Mini-3



Mini-L

Mini-3



Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC	L mm	tpi	RH	h min	Y	F	mm	
6.0	10	27	6.0IR27NPT...	0.66	0.8	5.3	10.0	.NVR1...-6.0
		18	6.0IR18NPT...	1.01	1.0	5.3		
		14	6.0IR14NPT...	1.33	1.1	5.3		

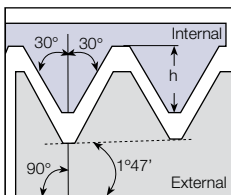
Mini-L



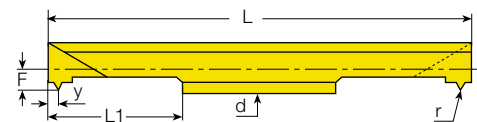
Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC mm		tpi	RH	h min	Y	F	mm	
5.0L		27	5LIR27NPT...	0.66	0.8	4.65	8.0	.NVR10...-5L
		18	5LIR18NPT...	1.01	1.0	4.65		
		14	5LIR14NPT...	1.33	1.1	4.65		

NPT

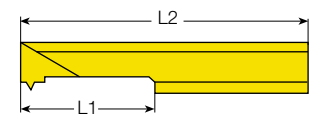
Internal



Defined by: USAS B2.1:1968
Tolerance class: Standard NPT



RH-Double Ended



RH-Single Ended

Micro

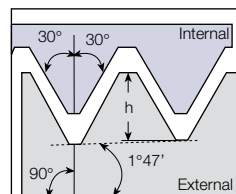
Insert dia.	Pitch	Ordering Code		Dimensions mm						Min. Bore dia.	Toolholder
d mm	tpi	RH-Single Ended	RH-Double Ended	L1	L2	L	F	Y	h min	mm	
6.0	27	6.0SIR27NPT...1-SIDE	6.0SIR27NPT...	16	43	50	2.50	1.00	0.66	6.0	SMC...-6.0
	18	6.0SIR18NPT...1-SIDE	6.0SIR18NPT...	16	43	50	2.50	0.80	1.01		

Left Handed Tool Supplied by Request. (Example: 6.0SIL18NPT...1-SIDE)

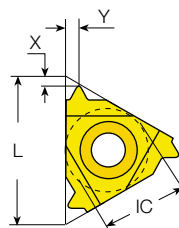


NPTF

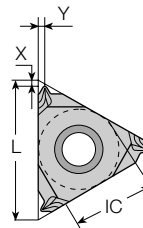
External



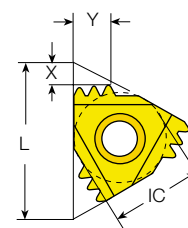
Defined by: ANSI B1.20.3-1976
Tolerance class: Class 2



Standard



SCB
Sintered Chipbreaker



M Style

Standard



SCB

Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	11	27	2ER27NPTF...	2EL27NPTF...	0.64	0.7	0.8	-	-	NL...-2 (LH)
		18	2ER18NPTF...	2EL18NPTF...	1.00	0.8	1.0			
		14	2ER14NPTF...	2EL14NPTF...	1.35	0.8	1.0			
3/8"	16	27	3ER27NPTF...	3EL27NPTF...	0.64	0.7	0.8	YE3	YI3	AL...-3 (LH)
		18	3ER18NPTF...	3EL18NPTF...	1.00	0.8	1.0			
		14	3ER14NPTF...	3EL14NPTF...	1.35	0.9	1.2			
		11.5	3ER11.5NPTF...	3EL11.5NPTF...	1.63	1.1	1.5			
		8	3ER8NPTF...	3EL8NPTF...	2.38	1.3	1.8			
3/8" SCB	16	27	3JER27NPTF...		0.64	0.7	0.8	YE3	-	AL...-3
		18	3JER18NPTF...		1.00	0.6	0.8			
		14	3JER14NPTF...		1.35	1.1	1.5			
		11.5	3JER11.5NPTF...		1.63	1.1	1.5			
		8	3JER8NPTF		2.38	1.1	1.5			

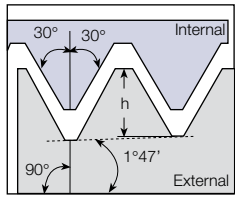
M Style



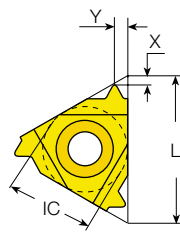
Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
1/2"	22	11.5	2	4ER11.5NPTF2M...	1.64	3.4	2.2	YE4M	AL...-4

NPTF (con't)

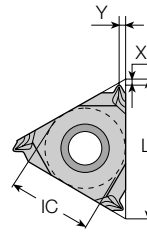
Internal



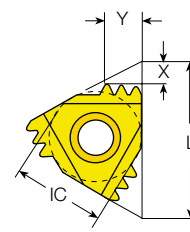
Defined by: ANSI B1.20.3-1976
Tolerance class: Class 2



Standard



SCB
Sintered Chipbreaker



M Style

Standard



SCB

Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	11	27	2IR27NPTF...	2IL27NPTF...	0.64	0.7	0.8	-	-	NVR...-2 (LH)
		18	2IR18NPTF...	2IL18NPTF...	1.00	0.8	1.0			
		14	2IR14NPTF...	2IL14NPTF...	1.35	0.8	1.0			
1/4" SCB	11	27	2JIR27NPTF...		0.64	0.7	0.8	-	-	NVR...-2
		18	2JIR18NPTF...		1.00	0.6	0.8			
3/8"	16	27	3IR27NPTF...	3IL27NPTF...	0.64	0.7	0.8	YI3	YE3	AVR...-3 (LH)
		18	3IR18NPTF...	3IL18NPTF...	1.00	0.8	1.0			
		14	3IR14NPTF...	3IL14NPTF...	1.35	0.9	1.2			
		11.5	3IR11.5NPTF...	3IL11.5NPTF...	1.63	1.1	1.5			
		8	3IR8NPTF...	3IL8NPTF...	2.38	1.3	1.8			
3/8" SCB	16	27	3JIR27NPTF...		0.64	0.7	0.8	YI3	-	AVR...-3
		18	3JIR18NPTF...		1.00	0.6	0.8			
		14	3JIR14NPTF...		1.35	1.1	1.5			
		11.5	3JIR11.5NPTF...		1.63	1.1	1.5			
		8	3JIR8NPTF...		2.38	1.1	1.5			

M Style

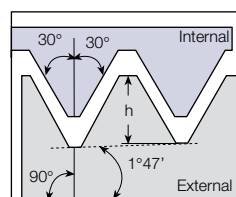


Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil		Toolholder
IC	L mm	tpi		RH	h min	X	Y	RH		
1/2"	22	11.5	2	4IR11.5NPTF2M...	1.63	3.4	2.2	YI4M		AVR...-4
5/8"	27	11.5	3	5IR11.5NPTF3M...	1.63	3.5	5.6	YI5M		AVR...-5M

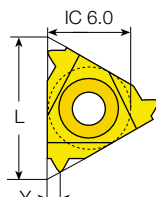


NPTF (con't)

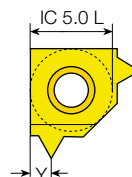
Internal



Defined by: ANSI B1.20.3-1976
Tolerance class: Class 2



Mini-3



Mini-L

Mini-3



Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	
IC	L mm	tpi	RH	h min	Y	F	mm	Toolholder
6.0	10	27	6.0IR27NPTF...	0.64	0.8	5.3	10.0	.NVR1...-6.0
		18	6.0IR18NPTF...	1.00	1.0	5.3		
		14	6.0IR14NPTF...	1.35	1.1	5.3		

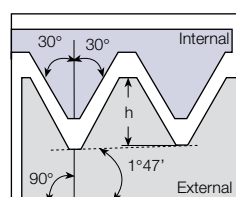
Mini-L



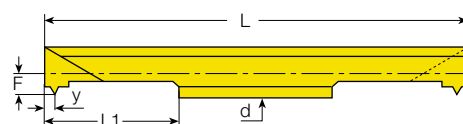
Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	
IC mm		tpi	RH	h min	Y	F	mm	Toolholder
5.0L		27	5LIR27NPTF...	0.64	0.8	4.65	8.0	.NVR 10.-5L
		18	5LIR18NPTF...	1.00	1.0	4.65		
		14	5LIR14NPTF...	1.35	1.1	4.65		

NPTF

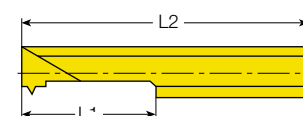
Internal



Defined by: ANSI B1.20.3-1976
Tolerance class: Class 2



RH-Double Ended



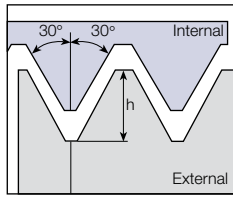
RH-Single Ended

Micro

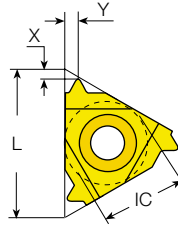
Insert dia.	Pitch	Ordering Code		Dimensions mm						Min. Bore dia.	
d mm	tpi	RH-Single Ended	RH-Double Ended	L1	L2	L	F	Y	h min	mm	Toolholder
6.0	27	6.0SIR27NPTF...1-SIDE	6.0SIR27NPTF...	16	43	50	0.64	0.80	0.80	6.0	SMC...-6.0
	18	6.0SIR18NPTF...1-SIDE	6.0SIR18NPTF...	16	43	50	1.00	1.00	1.00		

Left Handed Tool Supplied by Request. (Example: 6.0SIL18NPTF...1-SIDE)

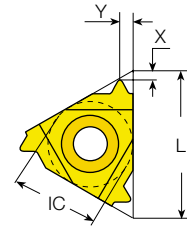
NPS



Defined by: USA NBS H28 (1957)
Tolerance class: Standard NPS



External - Standard



Internal - Standard

External

Standard



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
3/8"	16	9	3ER9NPS...	3EL9NPS...	2.2	1.2	1.6	YE3	YI3	AL...-3 (LH)
		11.5	3ER11.5NPS...	3EL11.5NPS...	1.71	1.1	1.5			
		12	3ER12NPS...	3EL12NPS...	1.63	1.1	1.4			
		16	3ER16NPS...	3EL16NPS...	1.21	0.8	1.1			
		24	3ER24NPS...	3EL24NPS...	0.79	0.7	0.8			
1/2"	22	6	4ER6NPS...	4EL6NPS...	3.31	1.6	2.3	YE4	YI4	AL...-4 (LH)
		7	4ER7NPS...	4EL7NPS...	2.82	1.6	2.3			
5/8"	27	5	5ER5NPS...	5EL5NPS...	3.98	1.9	2.8	YE5	YI5	AL...-5 (LH)

Internal

Standard

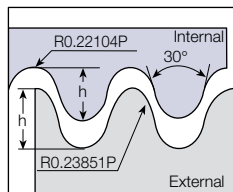


Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
3/8"	16	9	3IR9NPS...	3IL9NPS...	2.20	1.2	1.6	YI3	YE3	AVR...-3 (LH)
		11.5	3IR11.5NPS...	3IL11.5NPS...	1.71	1.1	1.5			
		12	3IR12NPS...	3IL12NPS...	1.63	1.1	1.4			
		24	3IR24NPS...	3IL24NPS...	0.79	0.7	0.8			
1/2"	22	6	4IR6NPS...	4IL6NPS...	3.31	1.6	2.3	YI4	YE4	AVR...-4 (LH)
		7	4IR7NPS...	4IL7NPS...	2.82	1.6	2.3			
		8	4IR8NPS...	4IL8NPS...	2.46	1.3	1.9			
5/8"	27	5	5IR5NPS...	5IL5NPS...	3.98	1.9	2.8	YI5	YE5	AVR...-5 (LH)

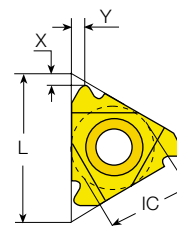


Round (DIN 405)

External



Defined by: DIN 405
Tolerance class: 7h/7H



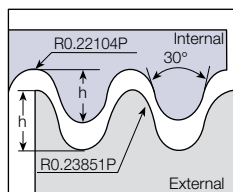
Standard

Standard

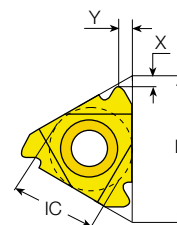


Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	Toolholder
3/8"	16	10	3ER10RD...	3EL10RD...	1.27	1.1	1.2	YE3	YI3	AL...-3 (LH)
		8	3ER8RD...	3EL8RD...	1.59	1.4	1.3			
		6	3ER6RD...	3EL6RD...	2.12	1.5	1.7			
1/2"	22	6	4ER6RD...	4EL6RD...	2.12	1.5	1.7	YE4	YI4	AL...-4 (LH)
		4	4ER4RD...	4EL4RD...	3.18	2.2	2.3			
5/8"	27	4	5ER4RD...	5EL4RD...	3.18	2.2	2.3	YE5	YI5	AL...-5 (LH)

Internal



Defined by: DIN 405
Tolerance class: 7h/7H



Standard

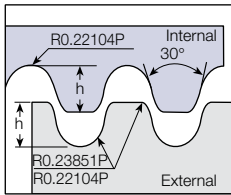
Standard



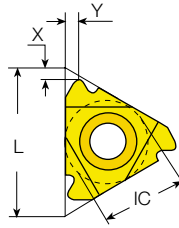
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	Toolholder
3/8"	16	10	3IR10RD...	3IL10RD...	1.27	1.1	1.2	YI3	YE3	AVR...-3 (LH)
		8	3IR8RD...	3IL8RD...	1.59	1.4	1.4			
		6	3IR6RD...	3IL6RD...	2.12	1.4	1.5			
1/2"	22	6	4IR6RD...	4IL6RD...	2.12	1.5	1.7	YI4	YE4	AVR...-4 (LH)
		4	4IR4RD...	4IL4RD...	3.18	2.2	2.3			
5/8"	27	4	5IR4RD...	5IL4RD...	3.18	2.2	2.3	YI5	YE5	AVR...-5 (LH)

Round (DIN 20400)

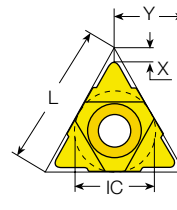
External



Defined by: DIN 20400
Tolerance class: Standard



Standard



U Style

Standard



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	mm	RH	LH	h min	X	Y	RH	LH	
1/2"	22	3.0	4ER3.0RD20400...	4EL3.0RD20400...	1.65	1.28	1.70	YE4	YI4	AL...-4 (LH)
		4.0	4ER4.0RD20400...	4EL4.0RD20400...	2.20	1.60	2.20			
		5.0	4ER5.0RD20400...	4EL5.0RD20400...	2.75	1.36	1.75			
		6.0	4ER6.0RD20400...	4EL 6.0RD20400...	3.30	1.70	2.10			

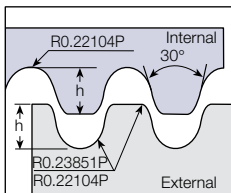
U Style



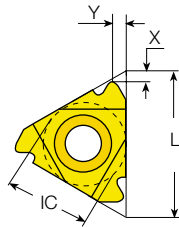
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	mm	RH+LH		h min	X	Y	RH	LH	
5/8"U	27	8.0	5UEI8.0RD20400...		4.4	2.95	13.5	YE5U	YI5U	AL...-5U (LH)

Round (DIN 20400)

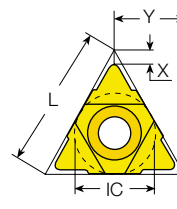
Internal



Defined by: DIN 20400
Tolerance class: Standard



Standard



U Style

Standard



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	mm	RH	LH	h min	X	Y	RH	LH	
1/2"	22	3.0	4IR3.0RD20400...	4IL3.0RD20400...	1.65	1.32	1.70	YI4	YE4	AVR...-4 (LH)
		4.0	4IR4.0RD20400...	4IL4.0RD20400...	2.20	1.64	2.20			
		5.0	4IR5.0RD20400...	4IL5.0RD20400...	2.75	1.41	1.75			
		6.0	4IR6.0RD20400...	4IL 6.0RD20400...	3.30	1.75	2.10			

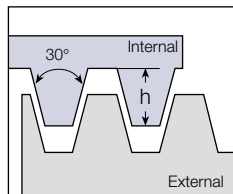
U Style



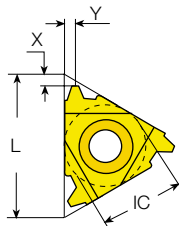
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	mm	RH+LH		h min	X	Y	RH	LH	
5/8"U	27	8.0	5UEI8.0RD20400...		4.4	2.95	13.5	YI5U	YE5U	AVR...-5U (LH)

Trapez

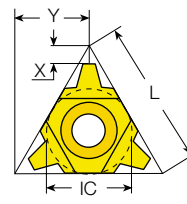
External



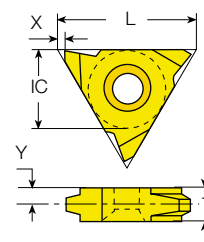
Defined by: DIN 103
Tolerance class: 7e/7H



Standard



U Style



V Style

Standard



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	mm	RH	LH	h min	X	Y	RH	LH	Toolholder
1/4"	11	1.5	2ER1.5TR...	2EL1.5TR...	0.90	0.8	0.9	-	-	NL...-2 (LH)
3/8"	16	1.5	3ER1.5TR...	3EL1.5TR...	0.90	1.0	1.1	YE3	YI3	AL...-3 (LH)
		2.0	3ER2.0TR...	3EL2.0TR...	1.25	1.1	1.3			
		3.0	3ER3.0TR...	3EL3.0TR...	1.75	1.3	1.5			
1/2"	22	4.0	4ER4.0TR...	4EL4.0TR...	2.25	1.7	1.9	YE4	YI4	AL...-4 (LH)
		5.0	4ER5.0TR...	4EL5.0TR...	2.75	2.1	2.5			
5/8"	27	6.0	5ER6.0TR...	5EL6.0TR...	3.50	2.3	2.7	YE5	YI5	AL...-5 (LH)

U Style



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	mm	RH+LH		h min	X	Y	RH	LH	Toolholder
1/2"U	22	6.0	4UE6.0TR...		3.50	2.0	11.0	YE4U	YI4U	AL...-4U (LH)
		7.0	4UE7.0TR...		4.00	2.3	11.0			
		8.0	4UE8.0TR...		4.50	2.6	11.0			
5/8"U	27	8.0	5UE8.0TR...		4.50	2.6	13.7	YE5U	YI5U	AL...-5U (LH)
		9.0	5UE9.0TR...		5.00	3.0	13.7			

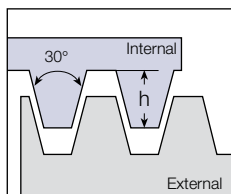
V Style



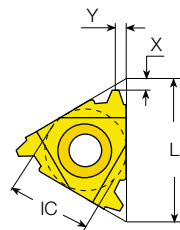
Insert Size		Pitch	Ordering Code		Dimensions mm				
IC	L mm	mm	RH	LH	h min	X	Y	T	Toolholder
5/8"V	27	6.0	5VER6.0TR...	5VEL6.0TR...	3.50	1.0	3.3	6	NL...-5V-6 (LH)
		7.0	5VER7.0TR...	5VEL7.0TR...	4.00	1.0	3.3	6	
		8.0	5VER8.0TR...	5VEL8.0TR...	4.50	1.0	3.3	6	
		9.0	5VER9.0TR...	5VEL9.0TR...	5.00	1.0	4.3	8	NL...-5V-8 (LH)
		10.0	5VER10.0TR...	5VEL10.0TR...	5.50	1.0	4.3	8	
		12.0	5VER12.0TR...	5VEL12.0TR...	6.50	1.0	5.2	10	NL...-5V-10 (LH)

Trapez (con't)

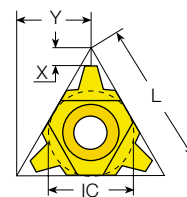
Internal



Defined by: DIN 103
Tolerance class: 7e/7H



Standard



U Style

Standard



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	mm	RH	LH	h min	X	Y	RH	LH	
1/4"	11	1.5	2IR1.5TR...	2IL1.5TR...	0.90	0.8	0.9	-	-	NVR 8-2 (LH)
3/8"	16	1.5	3IR1.5TR...	3IL1.5TR...	0.90	1.0	1.1	YI3	YE3	AVR...-3 (LH)
		2.0	3IR2.0TR...	3IL2.0TR...	1.25	1.1	1.3			
		2.5	3IR2.5TR...	3IL2.5TR...	1.53	1.2	1.4			
		3.0	3IR3.0TR...	3IL3.0TR...	1.75	1.3	1.5			
1/2"	22	4.0	4IR4.0TR...	4IL4.0TR...	2.25	1.7	1.9	YI4	YE4	AVR...-4 (LH)
		5.0	4IR5.0TR...	4IL5.0TR...	2.75	2.1	2.5			
5/8"	27	6.0	5IR6.0TR...	5IL6.0TR...	3.50	2.3	2.7	YI5	YE5	AVR...-5 (LH)

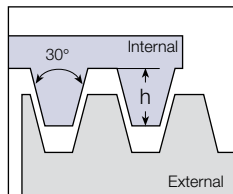
Coarse Pitch



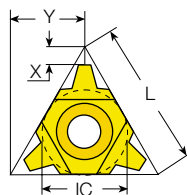
Thread	Insert Size		Ordering Code	Dimensions mm			Min Bore dia.	
	IC	L mm	RH	h min	X	Y	Toolholder	mm
TR18x4	3/8"U	16	3UIR4.0TR...158/013	2.25	2.10	8.0	NVRC11-3U 156/020	14.0
TR20x4	3/8"	16	3IR4.0TR...158/012	2.25	1.53	1.9	NVRC13-3 156/006	16.0
TR22x5	3/8"U	16	3UIR5.0TR...158/011	2.75	1.56	8.0	NVRC14-3U 156/018	17.0
TR24x5	3/8"U	16	3UIR5.0TR...158/011	2.75	1.56	8.0	NVRC15-3U 156/019	19.0
TR26x5	3/8"U	16	3UIR5.0TR...158/011	2.75	1.56	8.0	NVRC15-3U 156/019	21.0
TR28x5	1/2"	22	4IR5.0TR...	2.75	2.30	2.7	NVRC20-4 156/008	23.0
TR30x6	1/2"U	22	4UIR6.0TR...158/007	3.50	1.94	11.0	NVRC20-4U 156/011	24.0
TR36x6	5/8"	27	5IR6.0TR...	3.50	2.30	2.7	NVRC25-5 156/012	30.0
TR38x7	1/2"U	22	4UIR7.0TR...158/008	4.00	2.27	11.0	NVRC25-4U 156/013	31.0
TR40x7			4UIR7.0TR...158/008	4.00	2.27	11.0	NVRC25-4U 156/013	33.0
TR42x7			4UIR7.0TR...158/008	4.00	2.27	11.0	NVRC32-4U 156/014	35.0
TR44x7			4UIR7.0TR...158/008	4.00	2.27	11.0	NVRC32-4U 156/014	37.0
TR46x8	5/8"U	27	5UIR8.0TR...158/010	4.50	2.59	13.5	NVRC32-5U 156/015	38.0
TR48x8			5UIR8.0TR...158/010	4.50	2.59	13.5	NVRC32-5U 156/015	40.0
TR50x8			5UIR8.0TR...158/010	4.50	2.59	13.5	NVRC32-5U 156/015	42.0
TR52x8			5UIR8.0TR...158/010	4.50	2.59	13.5	NVRC32-5U 156/015	44.0

Trapez (con't)

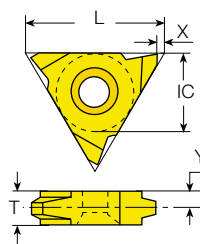
Internal



Defined by: DIN 103
Tolerance class: 7e/7H



U Style



V Style

U Style



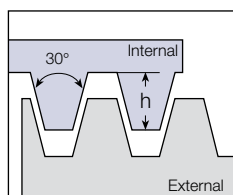
Insert Size		Pitch	Ordering Code	Dimensions mm			Anvil		
IC	L mm	mm	RH+LH	h min	X	Y	RH	LH	Toolholder
1/2"U	22	6.0	4UI6.0TR...	3.50	2.0	11.0	YI4U	YE4U	AVR...-4U (LH)
		7.0	4UI7.0TR...	4.00	2.3	11.0			
		8.0	4UI8.0TR...	4.50	2.6	11.0			
5/8"U	27	8.0	5UI8.0TR...	4.50	2.6	13.7	YI5U	YE5U	AVR...-5U (LH)
		9.0	5UI9.0TR...	5.00	3.0	13.7			

V Style

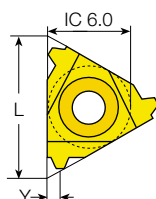


Insert Size		Pitch	Ordering Code		Dimensions mm				
IC	L mm	mm	RH	LH	h min	X	Y	T	Toolholder
5/8"V	27	6.0	5VIR6.0TR...	5VIL6.0TR...	3.50	1.0	3.3	6	NVR...-5V (LH)
		7.0	5VIR7.0TR...	5VIL7.0TR...	4.00	1.0	3.3	6	
		8.0	5VIR8.0TR...	5VIL8.0TR...	4.50	1.0	3.3	6	
		9.0	5VIR9.0TR...	5VIL9.0TR...	5.00	1.0	4.3	8	
		10.0	5VIR10.0TR...	5VIL10.0TR...	5.50	1.0	4.3	8	
		12.0	5VIR12.0TR...	5VIL12.0TR...	6.50	1.0	5.2	10	

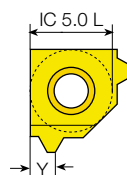
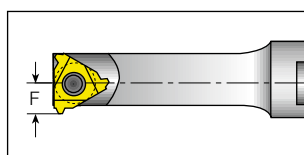
Internal



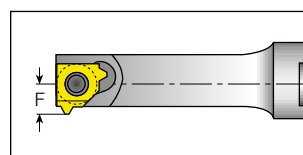
Defined by: DIN 103
Tolerance class: 7e/7H



Mini-3



Mini-L



Mini-3



Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	
IC	L mm	mm	RH	h min	Y	F	mm	Toolholder
6.0	10	1.5	6.0IR1.5TR...	0.85	0.85	5.3	10.0	.NVR1...-6.0
		2.0	6.0IR2.0TR...	1.25	1.30	5.3	10.0	

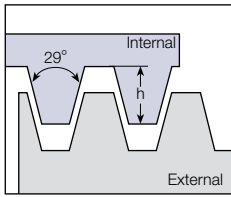
Mini-L



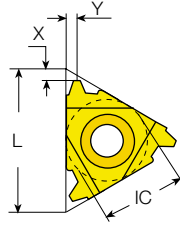
Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	
IC mm		mm	RH	h min	Y	F	mm	Toolholder
5.0L		1.5	5LIR1.5TR...	0.85	0.85	4.65	8.0	.NVR 10. -5L
		2.0	5LIR2.0TR...	1.25	1.30	4.65	8.0	

American ACME

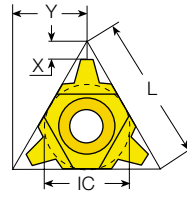
External



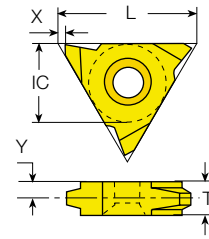
Defined by: ANSI B1.5:1988
Tolerance class: 3G



Standard



U Style



V Style

Standard



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	Toolholder
1/4"	11	16	2ER16ACME...	2EL16ACME...	0.92	1.0	1.1	-	-	NL...-2 (LH)
		16	3ER16ACME...	3EL16ACME...	0.92	1.0	1.1			
		14	3ER14ACME...	3EL14ACME...	1.03	1.0	1.2			
		12	3ER12ACME...	3EL12ACME...	1.19	1.1	1.2	YE3	YI3	AL...-3 (LH)
		10	3ER10ACME...	3EL10ACME...	1.52	1.3	1.4			
		8	3ER8ACME...	3EL8ACME...	1.84	1.4	1.5			
1/2"	22	6	4ER6ACME...	4EL6ACME...	2.37	1.7	1.9	YE3AC6	YI3AC6	
		5	4ER5ACME...	4EL5ACME...	2.79	2.0	2.3	YE4	YI4	AL...-4 (LH)
5/8"	27	4	5ER4ACME...	5EL4ACME...	3.43	2.4	2.7	YE5	YI5	AL...-5 (LH)

U Style



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	tpi	RH+LH		h min	X	Y	RH	LH	Toolholder
1/2"U	22	3	4UE3ACME...		4.49	3.0	11.0	YE4U	YI4U	AL...-4U (LH)
		4	4UE4ACME...		3.43	2.3	11.0			
5/8"U	27	3	5UE3ACME...		4.49	3.0	13.7	YE5U	YI5U	AL...-5U (LH)

V Style

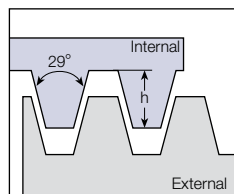


Insert Size		Pitch	Ordering Code		Dimensions mm				
IC	L mm	tpi	RH	LH	h min	X	Y	T	Toolholder
5/8"V	27	4	5VER4ACME...	5VEL4ACME...	3.43	1.0	3.3	6	NL...-5V-6 (LH)
		3	5VER3ACME...	5VEL3ACME...	4.49	1.0	3.3	6	NL...-5V-6 (LH)
		2	5VER2ACME...	5VEL2ACME...	6.60	1.0	5.2	10	NL...-5V-10 (LH)

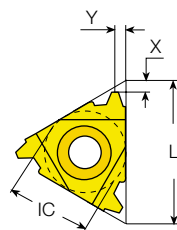


American ACME (con't)

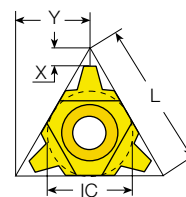
Internal



Defined by: ANSI B1.5:1988
Tolerance class: 3G



Standard



U Style

Standard

Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	11	16	2IR16ACME...	2IL16ACME...	0.92	0.9	0.9	-	-	NVR...-2 (LH)
3/8"	16	16	3IR16ACME...	3IL16ACME...	0.92	1.0	1.1	YI3	YE3	AVR...-3 (LH)
		14	3IR14ACME...	3IL14ACME...	1.03	1.1	1.2			
		12	3IR12ACME...	3IL12ACME...	1.19	1.2	1.3			
		10	3IR10ACME...	3IL10ACME...	1.52	1.2	1.3			
		8	3IR8ACME...	3IL8ACME...	1.84	1.4	1.5			
		6	3IR6ACME...	3IL6ACME...	2.37	1.7	1.9	YI3AC6	YE3AC6	
1/2"	22	6	4IR6ACME...	4IL6ACME...	2.37	1.8	2.1	YI4	YE4	AVR...-4 (LH)
		5	4IR5ACME...	4IL5ACME...	2.79	2.0	2.3			
5/8"	27	4	5IR4ACME...	5IL4ACME...	3.43	2.3	2.6	YI5	YE5	AVR...-5 (LH)

Coarse Pitch

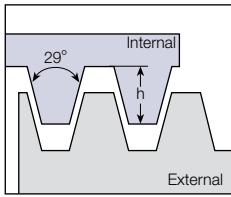
Thread	Insert Size		Ordering Code	Dimensions mm			Anvil	Min Bore dia.	
tpi	IC	L mm	RH	h min	X	Y	RH	Toolholder	mm
1/2 x 10	6.0U	10	6.0UIR10ACME...158/005	1.52	1.04	5.20	-	NVRC 8-6.0U 156/003	10.16
5/8 x 8	1/4"U	11	2UIR8ACME...158/006	1.84	1.00	5.50	-	NVRC 10-2U 156/004	12.70
3/4 x 6	3/8"	16	3IR6ACME...	2.37	1.67	1.85	-	NVRC 11-3 156/005	14.82
7/8 x 6			3IR6ACME...	2.37	1.67	1.85	-	NVRC 13-3 156/006	18.42
1 x 5	1/2"	22	4IR5ACME...	2.79	2.00	2.30	-	NVRC 17-4 156/007	20.32
1 1/8 x 5			4IR5ACME...	2.79	2.00	2.30	-	NVRC 20-4 156/008	24.00
1 1/4 x 5	5/8"	27	4IR5ACME...	2.79	2.00	2.30	-	NVRC 20-4 156/009	27.18
1 1/2 x 4			5IR4ACME...	3.43	2.30	2.60	-	NVRC 28-5 156/010	32.38
1 3/4 x 4			5IR4ACME...	3.43	2.30	2.60	YI5-1P	AVRC 32-5	38.74

U Style

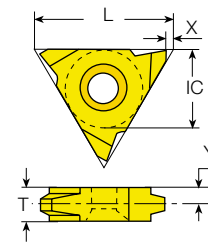
Insert Size		Pitch	Ordering Code	Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH+LH	h min	X	Y	RH	LH	
1/2"U	22	4	4UI4ACME...	3.43	2.3	11.0	YI4U	YE4U	AVR...-4U (LH)
		3	4UI3ACME...	4.49	2.9	11.0			
5/8"U	27	3	5UI3ACME...	4.49	2.9	13.7	YI5U	YE5U	AVR...-5U(LH)

American ACME (con't)

Internal



Defined by: ANSI B1.5:1988
Tolerance class: 3G



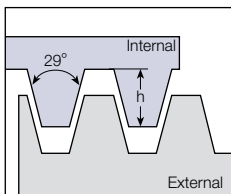
V Style

V Style

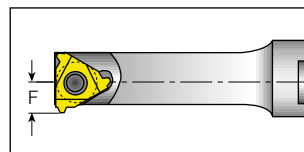
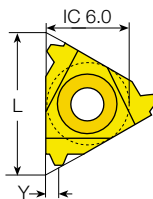


Insert Size		Pitch	Ordering Code		Dimensions mm				Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	T	
5/8"V	27	4	5VIR4ACME...	5VIL4ACME...	3.43	1.0	3.3	6	NVR...-5V (LH)
		3	5VIR3ACME...	5VIL3ACME...	4.49	1.0	3.3	6	
		2	5VIR2ACME...	5VIL2ACME...	6.60	1.0	5.2	10	

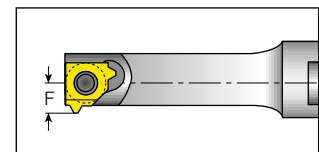
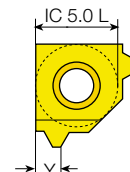
Internal



Defined by: ANSI B1.5:1988
Tolerance class: 3G



Mini-3



Mini-L

Mini-3



Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC	L mm	tpi	RH	h min	Y	F	mm	
6.0	10	12	6.0IR12ACME...	1.19	1.1	5.1	10.0	.NVR1...-6.0

Mini-L

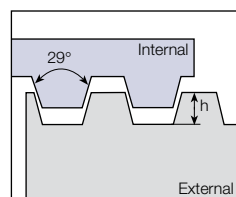


Insert Size	Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	
IC mm	tpi	RH	h min	Y	F	mm	Toolholder
5.0L	12	5LIR12ACME...	1.19	1.1	4.42	8.0	.NVR 10. -5L

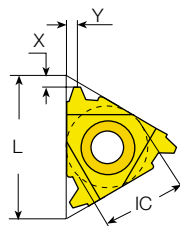


Stub ACME

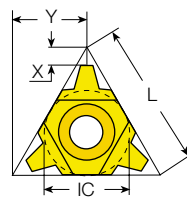
External



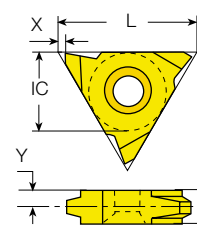
Defined by: ANSI B1.8:1988
Tolerance class: 2G



Standard



U Style



V Style

Standard



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	Toolholder
1/4"	11	16	2ER16STACME...	2EL16STACME...	0.60	1.0	1.0	-	-	NL8-2 (LH)
3/8"	16	16	3ER16STACME...	3EL16STACME...	0.60	1.0	1.0	YE3	YI3	AL...-3 (LH)
		14	3ER14STACME...	3EL14STACME...	0.67	1.1	1.1			
		12	3ER12STACME...	3EL12STACME...	0.76	1.2	1.2			
		10	3ER10STACME...	3EL10STACME...	1.02	1.2	1.3			
		8	3ER8STACME...	3EL8STACME...	1.21	1.4	1.5			
1/2"	22	6	4ER6STACME...	4EL6STACME...	1.52	1.7	1.8	YE4	YI4	AL...-4 (LH)
		5	4ER5STACME...	4EL5STACME...	1.78	2.1	2.3			
5/8"	27	4	5ER4STACME...	5EL4STACME...	2.16	2.3	2.4	YE5	YI5	AL...-5 (LH)
		3	5ER3STACME...	5EL3STACME...	2.79	2.9	2.9			

U Style



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	tpi	RH+LH		h min	X	Y	RH	LH	Toolholder
1/2"U	22	4	4UE4STACME...		2.16	2.6	11.0	YE4U	YI4U	AL...-4U (LH)
		3	4UE3STACME...		2.79	3.4	11.0			

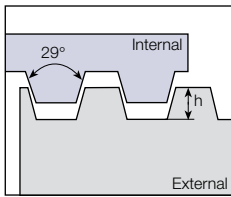
V Style



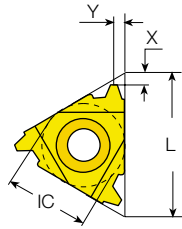
Insert Size		Pitch	Ordering Code		Dimensions mm				
IC	L mm	tpi	RH	LH	h min	X	Y	T	Toolholder
5/8"V	27	4	5VER4STACME...	5VEL4STACME...	2.16	1.0	3.3	6	NL...-5V-6 (LH)
		3	5VER3STACME...	5VEL3STACME...	2.79	1.0	3.3	6	
		2	5VER2STACME...	5VEL2STACME...	4.06	1.0	4.3	8	NL...-5V-8 (LH)

Stub ACME (con't)

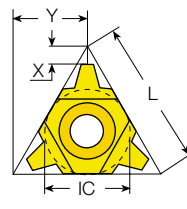
Internal



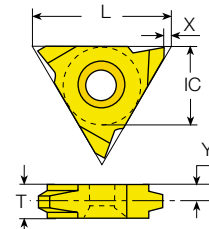
Defined by: ANSI B1.8:1988
Tolerance class: 2G



Standard



U Style



V Style

Standard



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	Toolholder
1/4"	11	16	2IR16STACME...	2IL16STACME...	0.60	1.0	1.0	-	-	NVR...-2 (LH)
3/8"	16	16	3IR16STACME...	3IL16STACME...	0.60	1.0	1.0	YI3	YE3	AVR...-3 (LH)
		14	3IR14STACME...	3IL14STACME...	0.67	1.1	1.1			
		12	3IR12STACME...	3IL12STACME...	0.76	1.1	1.2			
		10	3IR10STACME...	3IL10STACME...	1.02	1.2	1.3			
		8	3IR8STACME...	3IL8STACME...	1.21	1.4	1.5			
		6	3IR6STACME...	3IL6STACME...	1.52	1.7	1.8			
1/2"	22	6	4IR6STACME...	4IL6STACME...	1.52	1.7	1.8	YI4	YE4	AVR...-4 (LH)
		5	4IR5STACME...	4IL5STACME...	1.78	2.1	2.3			
5/8"	27	4	5IR4STACME...	5IL4STACME...	2.16	2.3	2.4	YI5	YE5	AVR...-5 (LH)
		3	5IR3STACME...	5IL3STACME...	2.79	2.9	2.9			

U Style



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	tpi	RH+LH		h min	X	Y	RH	LH	Toolholder
1/2"U	22	4	4UI4STACME...		2.16	2.5	11.0	YI4U	YE4U	AVR...-4U (LH)
		3	4UI3STACME...		2.79	3.3	11.0			

V Style

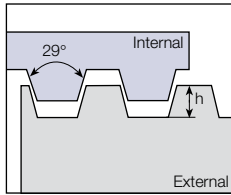


Insert Size		Pitch	Ordering Code		Dimensions mm				
IC	L mm	tpi	RH	LH	h min	X	Y	T	Toolholder
5/8"V	27	4	5VIR4STACME...	5VIL4STACME...	2.16	1.0	3.3	6	NVR...-5V (LH)
		3	5VIR3STACME...	5VIL3STACME...	2.79	1.0	3.3	6	
		2	5VIR2STACME...	5VIL2STACME...	4.06	1.0	4.3	8	

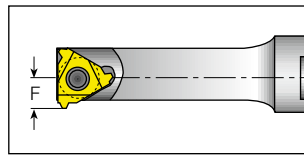
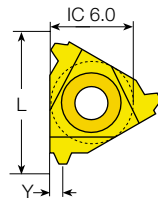


Stub ACME (con't)

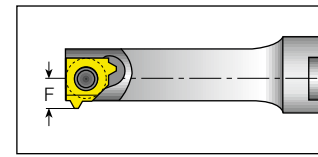
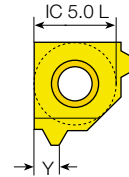
Internal



Defined by: ANSI B1.8:1988
Tolerance class: 2G



Mini-3



Mini-L

Mini-3



Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	
IC	L mm	tpi	RH	h min	Y	F	mm	Toolholder
6.0	10	12	6.0IR12STACME...	0.76	1.2	5.1	10.0	.NVR1...-6.0

Mini-L

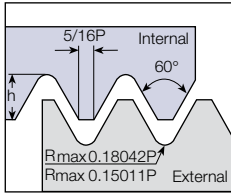


Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	
IC mm		tpi	RH	h min	Y	F	mm	Toolholder
5.0L		12	5LIR12STACME...	0.76	1.2	4.42	8.0	.NVR 10. -5L

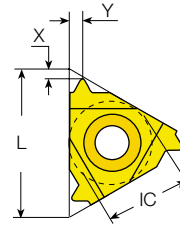


UNJ

External



Defined by: MIL-S-8879C
Tolerance class: 3A/3B



Standard

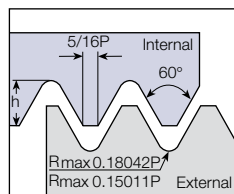
Standard

Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	11	48	2ER48UNJ...	2EL48UNJ...	0.31	0.6	0.5	-	-	NL...-2 (LH)
		44	2ER44UNJ...	2EL44UNJ...	0.33	0.6	0.6			
		40	2ER40UNJ...	2EL40UNJ...	0.37	0.6	0.6			
		36	2ER36UNJ...	2EL36UNJ...	0.41	0.6	0.6			
		32	2ER32UNJ...	2EL32UNJ...	0.46	0.6	0.7			
		28	2ER28UNJ...	2EL28UNJ...	0.52	0.7	0.7			
		24	2ER24UNJ...	2EL24UNJ...	0.61	0.7	0.8			
		20	2ER20UNJ...	2EL20UNJ...	0.73	0.8	0.9			
		18	2ER18UNJ...	2EL18UNJ...	0.81	0.8	1.0			
		16	2ER16UNJ...	2EL16UNJ...	0.92	0.9	1.1			
		14	2ER14UNJ...	2EL14UNJ...	1.05	1.0	1.2			
3/8"	16	48	3ER48UNJ...	3EL48UNJ...	0.31	0.6	0.5	YE3	YI3	AL...-3 (LH)
		44	3ER44UNJ...	3EL44UNJ...	0.33	0.6	0.6			
		40	3ER40UNJ...	3EL40UNJ...	0.37	0.6	0.6			
		36	3ER36UNJ...	3EL36UNJ...	0.41	0.6	0.6			
		32	3ER32UNJ...	3EL32UNJ...	0.46	0.6	0.7			
		28	3ER28UNJ...	3EL28UNJ...	0.52	0.7	0.7			
		24	3ER24UNJ...	3EL24UNJ...	0.61	0.7	0.8			
		20	3ER20UNJ...	3EL20UNJ...	0.73	0.8	0.9			
		18	3ER18UNJ...	3EL18UNJ...	0.81	0.8	1.0			
		16	3ER16UNJ...	3EL16UNJ...	0.92	0.9	1.1			
		14	3ER14UNJ...	3EL14UNJ...	1.05	1.0	1.2			
		13	3ER13UNJ...	3EL13UNJ...	1.13	1.0	1.3			
		12	3ER12UNJ...	3EL12UNJ...	1.22	1.1	1.3			
		11	3ER11UNJ...	3EL11UNJ...	1.33	1.2	1.5			
		10	3ER10UNJ...	3EL10UNJ...	1.47	1.2	1.5			
		9	3ER9UNJ...	3EL9UNJ...	1.63	1.3	1.7			
		8	3ER8UNJ...	3EL8UNJ...	1.83	1.2	1.6			

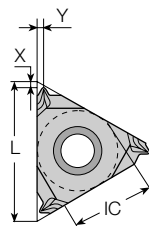
continued on next page ▶

UNJ (con't)

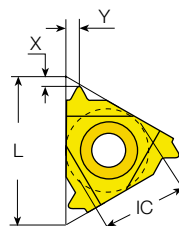
External



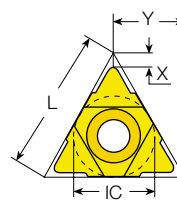
Defined by: MIL-S-8879C
Tolerance class: 3A/3B



SCB
Sintered Chipbreaker



Standard



U Style

Standard (con't)



SCB



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	Toolholder
3/8" SCB	16	36	3JER36UNJ...		0.41	1.3	0.5	YE3	-	AL...-3
		32	3JER32UNJ...		0.46	1.2	0.5			
		28	3JER28UNJ...		0.52	0.7	0.8			
		24	3JER24UNJ...		0.61	0.7	0.8			
		20	3JER20UNJ...		0.73	0.7	0.8			
		18	3JER18UNJ...		0.81	0.7	0.8			
		16	3JER16UNJ...		0.92	0.8	0.8			
		14	3JER14UNJ...		1.05	1.3	1.5			
		12	3JER12UNJ...		1.22	1.3	1.5			
		10	3JER10UNJ...		1.47	1.3	1.5			
1/2"	22	7	4ER7UNJ...	4EL7UNJ...	2.09	1.7	2.3	YE4	YI4	AL...-4 (LH)
		6	4ER6UNJ...	4EL6UNJ...	2.44	1.7	2.3			
		5	4ER5UNJ...	4EL5UNJ...	2.93	1.8	2.5			
5/8"	27	4.5	5ER4.5UNJ...	5EL4.5UNJ...	3.26	2.0	2.7	YE5	YI5	AL...-5 (LH)
		4	5ER4UNJ...	5EL4UNJ...	3.67	2.2	3.0			

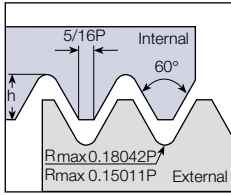
U Style



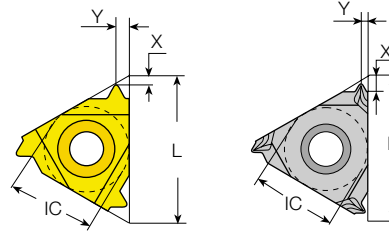
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH+LH		h min	X	Y	RH	LH	
1/2"U	22	4.5	4UE4.5UNJ...		3.26	2.1	11.0	YE4U	YI4U	AL...-4U (LH)
		4	4UE4 UNJ...		3.67	2.2	11.0			

UNJ (con't)

Internal



Defined by: MIL-S-8879C
Tolerance class: 3A/3B



Standard

**SCB
Sintered Chipbreaker**

Standard

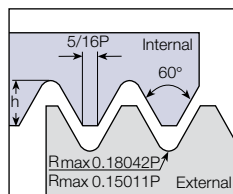
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	Toolholder
1/4"	11	48	2IR48UNJ...	2IL48UNJ...	0.28	0.6	0.5	-	-	NVR..-2 (LH)
		44	2IR44UNJ...	2IL44UNJ...	0.30	0.6	0.6			
		40	2IR40UNJ...	2IL40UNJ...	0.33	0.6	0.6			
		36	2IR36UNJ...	2IL36UNJ...	0.37	0.6	0.6			
		32	2IR32UNJ...	2IL32UNJ...	0.42	0.6	0.7			
		28	2IR28UNJ...	2IL28UNJ...	0.47	0.7	0.7			
		24	2IR24UNJ...	2IL24UNJ...	0.55	0.7	0.8			
		20	2IR20UNJ...	2IL20UNJ...	0.66	0.8	0.9			
		18	2IR18UNJ...	2IL18UNJ...	0.74	0.8	1.0			
		16	2IR16UNJ...	2IL16UNJ...	0.83	0.9	1.1			
	14	2IR14UNJ...	2IL14UNJ...	0.95	1.0	1.2				
1/4" SCB	11	36	2JIR36UNJ...		0.37	1.1	0.5	-	-	NVR...-2
		32	2JIR32UNJ...		0.42	1.2	0.5			
		28	2JIR28UNJ...		0.47	0.6	0.8			
		24	2JIR24UNJ...		0.55	0.6	0.8			
		20	2JIR20UNJ...		0.66	0.6	0.8			
		18	2JIR18UNJ...		0.74	0.6	0.8			
		16	2JIR16UNJ...		0.83	0.6	0.8			

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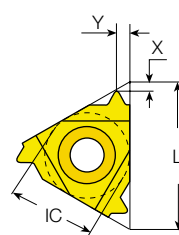


UNJ (con't)

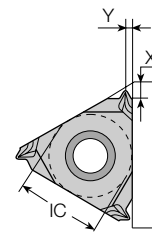
Internal



Defined by: MIL-S-8879C
Tolerance class: 3A/3B



Standard



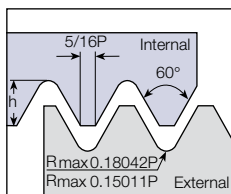
SCB
Sintered Chipbreaker

Standard (con't)

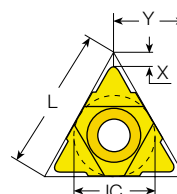
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	Toolholder
3/8"	16	48	3IR48UNJ...	3IL48UNJ...	0.28	0.6	0.5	YI3	YE3	AVR...-3 (LH)
		44	3IR44UNJ...	3IL44UNJ...	0.30	0.6	0.6			
		40	3IR40UNJ...	3IL40UNJ...	0.33	0.6	0.6			
		36	3IR36UNJ...	3IL36UNJ...	0.37	0.6	0.6			
		32	3IR32UNJ...	3IL32UNJ...	0.42	0.6	0.7			
		28	3IR28UNJ...	3IL28UNJ...	0.47	0.7	0.7			
		24	3IR24UNJ...	3IL24UNJ...	0.55	0.7	0.8			
		20	3IR20UNJ...	3IL20UNJ...	0.66	0.8	0.9			
		18	3IR18UNJ...	3IL18UNJ...	0.74	0.8	1.0			
		16	3IR16UNJ...	3IL16UNJ...	0.83	0.9	1.1			
		14	3IR14UNJ...	3IL14UNJ...	0.95	1.0	1.2			
		13	3IR13UNJ...	3IL13UNJ...	1.02	1.0	1.3			
		12	3IR12UNJ...	3IL12UNJ...	1.11	1.1	1.3			
		11	3IR11UNJ...	3IL11UNJ...	1.21	1.2	1.5			
		10	3IR10UNJ...	3IL10UNJ...	1.33	1.2	1.5			
		9	3IR9UNJ...	3IL9UNJ...	1.48	1.3	1.7			
		8	3IR8UNJ...	3IL8UNJ...	1.66	1.2	1.6			
3/8" SCB	16	36	3JIR36UNJ...		0.37	1.1	0.5	YI3	-	AVR...-3
		32	3JIR32UNJ...		0.42	1.1	0.5			
		28	3JIR28UNJ...		0.47	0.6	0.8			
		24	3JIR24UNJ...		0.55	0.6	0.8			
		20	3JIR20UNJ...		0.66	0.6	0.8			
		18	3JIR18UNJ...		0.74	0.6	0.8			
		16	3JIR16UNJ...		0.83	0.6	0.8			
		14	3JIR14UNJ...		0.95	1.1	1.5			
		12	3JIR12UNJ...		1.11	1.1	1.5			
		10	3JIR10UNJ...		1.33	1.1	1.5			
		8	3JIR8UNJ...		1.66	1.0	1.5			
1/2"	22	7	4IR7UNJ...	4IL7UNJ...	1.90	1.7	2.3	YI4	YE4	AVR...-4 (LH)
		6	4IR6UNJ...	4IL6UNJ...	2.21	1.7	2.3			
		5	4IR5UNJ...	4IL5UNJ...	2.66	1.8	2.5			
5/8"	27	4.5	5IR4.5UNJ...	5IL4.5UNJ...	2.95	2.0	2.7	YI5	YE5	AVR...-5 (LH)
		4	5IR4UNJ...	5IL4UNJ...	3.32	2.2	3.0			

UNJ (con't)

Internal



Defined by: MIL-S-8879C
Tolerance class: 3A/3B



U Style

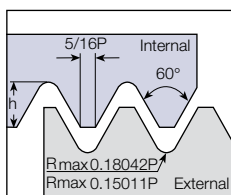
U Style



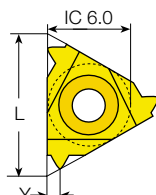
Insert Size		Pitch	Ordering Code	Dimensions mm			Anvil		
IC	L mm	tpi	RH+LH	h min	X	Y	RH	LH	Toolholder
1/2"U	22	4.5	4UI4.5UNJ...	2.95	2.1	11.0	Y14U	YE4U	AVR...-4U (LH)
		4	4UI4UNJ...	3.32	2.2	11.0			

UNJ

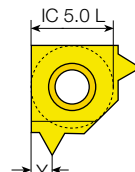
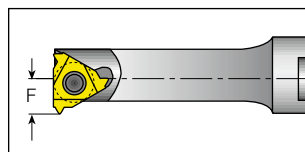
Internal



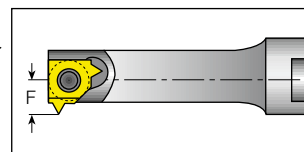
Defined by: MIL-S-8879C
Tolerance class: 3A/3B



Mini-3



Mini-L



Mini-3



Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	
IC	L mm	tpi	RH	h min	Y	F	mm	Toolholder
6.0	10	20	6.0IR20UNJ...	0.66	0.9	4.9	9.8	.NVR1...-6.0

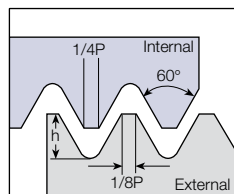
Mini-L



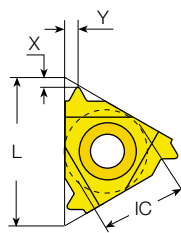
Insert Size	Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	
IC mm	tpi	RH	h min	Y	F	mm	Toolholder
5.0L	20	5LIR20UNJ...	0.66	0.9	4.21	7.8	.NVR 10. -5L



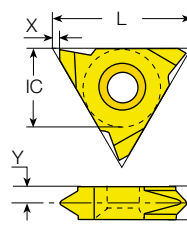
MJ



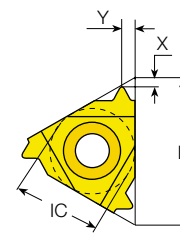
Defined by: ISO 5855
Tolerance class: 4h/6h-4H/5H



External - Standard



Slim Throat



Internal - Standard

External

Standard



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	mm	RH	LH	h min	X	Y	RH	LH	
1/4"	11	1.0	2ER1.0MJ...	2EL1.0MJ...	0.58	0.66	0.7	-	-	NL...-2 (LH)
		1.25	2ER1.25MJ...	2EL1.25MJ...	0.72	0.78	0.9			
		1.5	2ER1.5MJ...	2EL1.5MJ...	0.87	0.85	1.0			
3/8"	16	1.0	3ER1.0MJ...	3EL1.0MJ...	0.58	0.66	0.7	YE3	YI3	AL...-3 (LH)
		1.25	3ER1.25MJ...	3EL1.25MJ...	0.72	0.78	0.9			
		1.5	3ER1.5MJ...	3EL1.5MJ...	0.87	0.85	1.0			
		2.0	3ER2.0MJ...	3EL2.0MJ...	1.15	1.03	1.3			
		2.5	3ER2.5MJ...	3EL2.5MJ...	1.49	1.10	1.5			
		3.0	3ER3.0MJ...	3EL3.0MJ...	1.73	1.23	1.6			

Slim Throat



Insert Size		Pitch	Ordering Code		Dimensions mm				Toolholder
IC	L mm	mm	RH	LH	h min	X	Y	T	
1/4"V	11	0.7	2VER0.7MJ	2VELO.7MJ	0.40	0.7	2.5	3.2	NL...-2V (LH)
		0.8	2VER0.8MJ	2VELO.8MJ	0.44	0.7	2.5	3.2	
		0.9	2VER0.9MJ	2VELO.9MJ	0.53	0.7	2.6	3.2	
		1.0	2VER1.0MJ	2VEL1.0MJ	0.58	0.7	2.5	3.2	
		1.25	2VER1.25MJ	2VEL1.25MJ	0.72	0.7	2.3	3.2	
		1.5	2VER1.5MJ	2VEL1.5MJ	0.87	0.7	2.2	3.2	

Internal

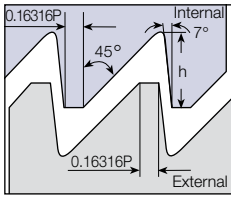
Standard



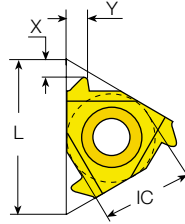
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	mm	RH	LH	h min	X	Y	RH	LH	
1/4"	11	1.0	2IR1.0MJ...	2IL1.0MJ...	0.49	0.64	0.70	-	-	NVR...-2 (LH)
		1.25	2IR1.25MJ...	2IL1.25MJ...	0.61	0.76	0.90			
		1.5	2IR1.5MJ...	2IL1.5MJ...	0.73	0.82	1.00			
		2.0	2IR2.0MJ...	2IL2.0MJ...	0.97	0.85	1.05			
3/8"	16	0.75	3IR0.75MJ...	3IL0.75MJ...	0.37	0.60	0.60	YI3	YE3	AVR...-3 (LH)
		1.0	3IR1.0MJ...	3IL1.0MJ...	0.49	0.64	0.70			
		1.25	3IR1.25MJ...	3IL1.25MJ...	0.61	0.76	0.90			
		1.5	3IR1.5MJ...	3IL1.5MJ...	0.73	0.82	1.00			
		2.0	3IR2.0MJ...	3IL2.0MJ...	0.97	0.82	1.30			
		2.5	3IR2.5MJ...	3IL2.5MJ...	1.23	1.10	1.50			
		3.0	3IR3.0MJ...	3IL3.0MJ...	1.46	1.19	1.60			

American Buttress

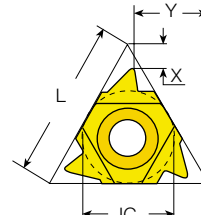
External



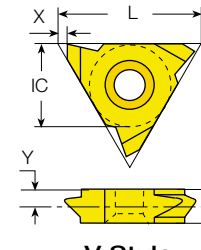
Defined by: ANSI B1.9.1973
Tolerance class: Class 2



Standard



U Style



V Style

Standard



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	11	20	2ER20ABUT...	2EL20ABUT...	0.84	1.0	1.4	-	-	NL...-2 (LH)
		16	2ER16ABUT...	2EL16ABUT...	1.05	1.3	1.9			
3/8"	16	20	3ER20ABUT...	3EL20ABUT...	0.84	1.0	1.4	YE3	YI3	AL...-3 (LH)
		16	3ER16ABUT...	3EL16ABUT...	1.05	1.3	1.9			
		12	3ER12ABUT...	3EL12ABUT...	1.40	1.4	2.0			
		10	3ER10ABUT...	3EL10ABUT...	1.68	1.5	2.3			
1/2"	22	8	4ER8ABUT...	4EL8ABUT...	2.10	2.0	3.2	YE4	YI4	AL...-4 (LH)
		6	4ER6ABUT...	4EL6ABUT...	2.80	2.2	3.5			

U Style



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
1/2"U	22	4	4UER4ABUT...	4UEL4ABUT...	4.21	2.4	9.8	YE4U-BUT4	YI4U-BUT4	AL...-4U (LH)
5/8"U	27	3	5UER3ABUT...	5UEL3ABUT...	5.61	3.1	12.1	YE5U-BUT3	YI5U-BUT3	AL...-5U (LH)

V Style

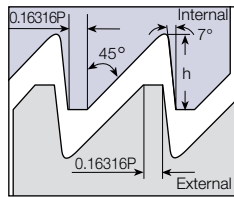


Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	T		
5/8"V	27	4	5VER4ABUT...	5VEL4ABUT...	4.21	0.6	1.8	6		NL...-5V-6 (LH)
		3	5VER3ABUT...	5VEL3ABUT...	5.61	0.6	2.2	8		NL...-5V-8 (LH)
		2.5	5VER2.5ABUT...	5VEL2.5ABUT...	6.73	0.6	2.7	10		NL...-5V-10 (LH)

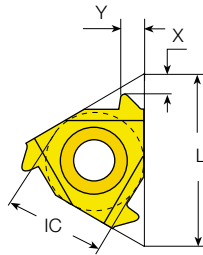


American Buttress (con't)

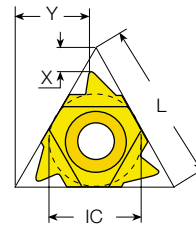
Internal



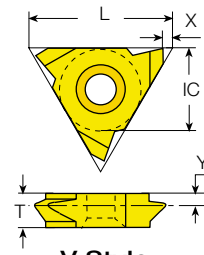
Defined by: ANSI B1.9.1973
Tolerance class: Class 2



Standard



U Style



V Style

Standard



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	11	20	2IR20ABUT...	2IL20ABUT...	0.84	1.0	1.4	-	-	NVR...-2 (LH)
		16	2IR16ABUT...	2IL16ABUT...	1.05	1.3	1.9			
3/8"	16	20	3IR20ABUT...	3IL20ABUT...	0.84	1.0	1.4	YI3	YE3	AVR...-3 (LH)
		16	3IR16ABUT...	3IL16ABUT...	1.05	1.3	1.9			
		12	3IR12ABUT...	3IL12ABUT...	1.40	1.4	2.0			
		10	3IR10ABUT...	3IL10ABUT...	1.68	1.5	2.3			
1/2"	22	8	4IR8ABUT...	4IL8ABUT...	2.10	2.0	3.2	YI4	YE4	AVR...-4 (LH)
		6	4IR6ABUT...	4IL6ABUT...	2.80	2.2	3.5			

U Style



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
1/2"U	22	4	4UIR4ABUT...	4UIL4ABUT...	4.21	2.4	9.8	YI4U-4B	YE4U-4B	AVR...-4U (LH)
5/8"U	27	3	5UIR3ABUT...	5UIL3ABUT...	5.61	3.1	12.1	YI5U-3B	YE5U-3B	AVR...-5U (LH)

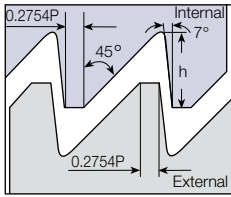
V Style



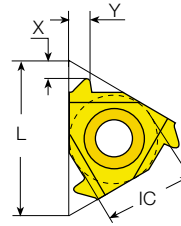
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	T		
5/8"V	27	4	5VIR4ABUT...	5VIL4ABUT...	4.21	0.6	1.8	6		NVR...-5V (LH)
		3	5VIR3ABUT...	5VIL3ABUT...	5.61	0.6	2.2	8		
		2.5	5VIR2.5ABUT...	5VIL2.5ABUT...	6.73	0.6	2.7	10		

British Buttress

External



Defined by: B.S. 1657: 1950
Tolerance class: Medium Class



Standard

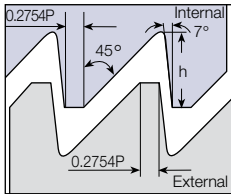
Standard



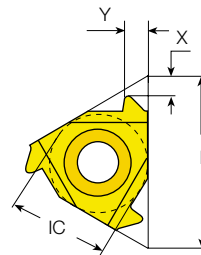
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
3/8"	16	16	3ER16BBUT...	3EL16BBUT...	0.80	1.1	1.6	YE3	YI3	AL...-3 (LH)
		12	3ER12BBUT...	3EL12BBUT...	1.07	1.4	2.1			
		10	3ER10BBUT...	3EL10BBUT...	1.28	1.4	2.2			
		8	3ER8BBUT...	3EL8BBUT...	1.61	1.6	2.5			
1/2"	22	8	4ER8BBUT...	4EL8BBUT...	1.61	1.6	2.5	YE4	YI4	AL...-4 (LH)

British Buttress

Internal



Defined by: B.S. 1657: 1950
Tolerance class: Medium Class



Standard

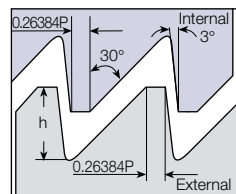
Standard



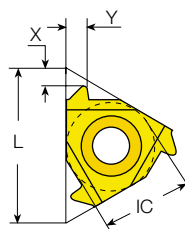
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
3/8"	16	16	3IR16BBUT...	3IL16BBUT...	0.80	1.1	1.6	YI3	YE3	AVR...-3 (LH)
		12	3IR12BBUT...	3IL12BBUT...	1.07	1.4	2.1			
		10	3IR10BBUT...	3IL10BBUT...	1.28	1.4	2.2			
		8	3IR8BBUT...	3IL8BBUT...	1.61	1.6	2.5			
1/2"	22	8	4IR8BBUT...	4IL8BBUT...	1.61	1.6	2.5	YI4	YE4	AVR...-4 (LH)



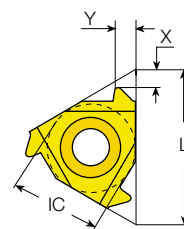
Metric Buttress (Sägewinde)



Defined by: DIN 513
Tolerance class: Medium Class



External - Standard



Internal - Standard

External

Standard



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	mm	RH	LH	h min	X	Y	RH	LH	Toolholder
3/8"	16	2.0	3ER2.0SAGE...	3EL2.0SAGE...	1.74	1.47	2.08	YE3	YI3	AL...-3 (LH)
1/2"	22	2.0	4ER2.0SAGE...	4EL2.0SAGE...	1.74	1.47	2.08	YE4	YI4	AL...-4 (LH)
		3.0	4ER3.0SAGE...	4EL3.0SAGE...	2.60	1.79	2.60			
5/8"	27	4.0	5ER4.0SAGE...	5EL4.0SAGE...	3.55	1.93	3.20	YE5 082/038	YI5 082/039	AL...-5 (LH)

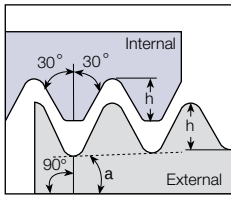
Internal

Standard



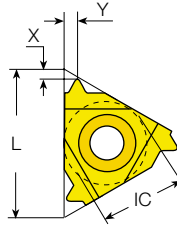
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		
IC	L mm	mm	RH	LH	h min	X	Y	RH	LH	Toolholder
3/8"	16	2.0	3IR2.0SAGE...	3IL2.0SAGE...	1.50	1.52	2.2	YI3	YE3	AVR...-3 (LH)
1/2"	22	3.0	4IR3.0SAGE...	4IL3.0SAGE...	2.25	1.66	2.9	YI4	YE4	AVR...-4 (LH)
		4.0	5IR4.0SAGE...	5IL4.0SAGE...	3.09	2.12	3.2	YI5 082/039	YE5 082/038	AVR...-5 (LH)

API

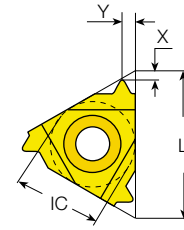


$$a = \arctg (IPF/24)$$

Defined by: API SPEC. 7:1990
Tolerance class: Standard API



External - Standard



Internal - Standard

External

Standard



Insert Size	Pitch	Thread	Taper	Ordering Code	Size	Dimensions mm			Anvil		
IC	L mm	tpi	IPF	RH		h min	X	Y	RH	Toolholder	
1/2"	22	4	V-0.38R	2	4ER4API382...	NC23-NC50	3.09	2.1	2.8	YE4	AL...-4 (LH)
		4	V-0.38R	3	4ER4API383...	NC56-NC77	3.08	2.1	2.8		
		4	V-0.050	2	4ER4API502...	6 5/8" REG	3.75	2.0	2.9		
		4	V-0.050	3	4ER4API503...	5 1/2", 7 5/8", 8 5/8" REG	3.74	2.0	2.9		
		5	V-0.040	3	4ER5API403...	2 3/8"-4 1/2" REG	2.99	1.8	2.6		
		6	V-0.055	1.5	4ER6API551...	NC10-NC16	1.41	2.6	2.0		
5/8"	27	4	V-0.038R	2	5ER4API382...	NC23-NC50	3.09	2.1	2.8	YE50IL	AL...-5 OIL (LH)
		4	V-0.038R	3	5ER4API383...	NC56-NC77	3.08	2.1	2.8		
		4	V-0.050	2	5ER4API502...	6 5/8" REG	3.75	2.1	3.1		
		4	V-0.050	3	5ER4API503...	5 1/2", 7 5/8", 8 5/8" REG	3.74	2.1	3.1		
		5	V-0.040	3	5ER5API403...	2 3/8"-4 1/2" REG	2.99	1.9	2.7		

Internal

Standard

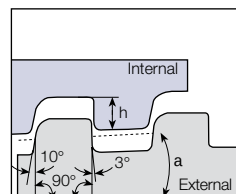


Insert Size	Pitch	Thread	Taper	Ordering Code	Size	Dimensions mm			Anvil		
IC	L mm	tpi	IPF	RH		h min	X	Y	RH	Toolholder	
1/2"	22	4	V-0.38R	2	4IR4API382...	NC23-NC50	3.09	2.1	2.8	YI4	AVR...-4 (LH)
		4	V-0.38R	3	4IR4API383...	NC56-NC77	3.08	2.1	2.8		
		4	V-0.050	2	4IR4API502...	6 5/8" REG	3.75	2.1	3.1		
		4	V-0.050	3	4IR4API503...	5 1/2", 7 5/8", 8 5/8" REG	3.74	2.0	2.9		
		5	V-0.040	3	4IR5API403...	2 3/8"-4 1/2" REG	2.99	1.8	2.6		
		6	V-0.055	1.5	4IR6API551...	NC10-NC16	1.41	2.6	2.0		
5/8"	27	4	V-0.038R	2	5IR4API382...	NC23-NC50	3.09	2.1	2.8	YI50IL	AVR...-5 OIL (LH)
		4	V-0.038R	3	5IR4API383...	NC56-NC77	3.08	2.1	2.8		
		4	V-0.050	2	5IR4API502...	6 5/8" REG	3.75	2.1	3.1		
		4	V-0.050	3	5IR4API503...	5 1/2", 7 5/8", 8 5/8" REG	3.74	2.1	3.1		
		5	V-0.040	3	5IR5API403...	2 3/8"-4 1/2" REG	2.99	1.9	2.7		



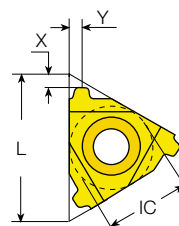
API Buttress Casing

External

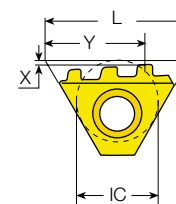


$$a = \arctg (IPF/24)$$

Defined by: STD.5B.1979
Tolerance class: Standard API



Standard



T Style

Standard



Insert Size		Pitch	Taper	Ordering Code	Size	Dimensions mm			Anvil	
IC	L mm	tpi	IPF	RH		h min	X	Y	RH	Toolholder
1/2"	22	5	0.75	4ER5BUT75...	4 1/2"-13 3/8"	1.55	3.1	1.9	YE4	AL...-4
		5	1	4ER5BUT1...	16"-20"	1.55	3.1	1.9		

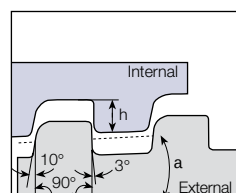
T Style



Insert Size		Pitch	Taper	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi	IPF		RH	h min	X	Y	RH	Toolholder
1/2"T	22	5	0.75	3	4ER5BUT753T...	1.55	0.1	16.1	Y4T	AL...-4T

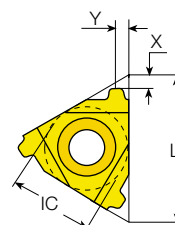
API Buttress Casing

Internal

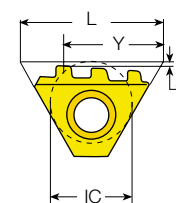


$$a = \arctg (IPF/24)$$

Defined by: STD.5B.1979
Tolerance class: Standard API



Standard



T Style

Standard



Insert Size		Pitch	Taper	Ordering Code	Size	Dimensions mm			Anvil	
IC	L mm	tpi	IPF	RH		h min	X	Y	RH	Toolholder
1/2"	22	5	0.75	4IR5BUT75...	4 1/2"-13 3/8"	1.55	2.8	1.9	YI4	AVR...-4
		5	1	4IR5BUT1...	16"-20"	1.55	2.8	1.9		

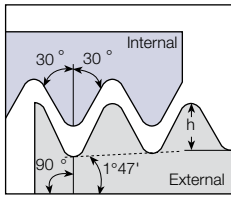
T Style



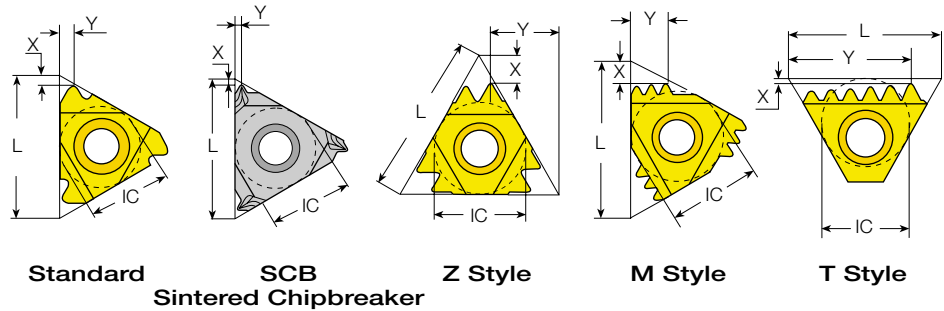
Insert Size		Pitch	Taper	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi	IPF		RH	h min	X	Y	RH	Toolholder
1/2"T	22	5	0.75	3	4IR5BUT753T...	1.55	0.1	16.1	Y4T	AVR...-4T

API Round Casing & Tubing

External



Defined by: API STD. 5B:1979
Tolerance class: Standard API RD



Standard



SCB

Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil	
IC	L mm	tpi	RH		h min	X	Y	RH	Toolholder
3/8"	16	10	3ER10APIRD...		1.41	1.2	1.4	YE3	AL...-3
		8	3ER8APIRD...		1.81	1.3	1.5		
3/8"	16	10	3JER10APIRD...		1.41	1.2	1.5	YE3	AL...-3
		8	3JER8APIRD...		1.81	1.3	1.5		

Z Style



Insert Size		Pitch	Teeth	Ordering Code		Dimensions mm			Anvil	
IC	L mm	tpi		RH		h min	X	Y	RH	Toolholder
1/2"	22	10	2	4ER10APIRD2Z...		1.41	3.1	9.9	YE4Z	AL...-4Z
		8	2	4ER8APIRD2Z...		1.81	3.7	9.6		

M Style



Insert Size		Pitch	Teeth	Ordering Code		Dimensions mm			Anvil	
IC	L mm	tpi		RH		h min	X	Y	RH	Toolholder
1/2"	22	10	2	4ER10APIRD2M...		1.41	2.4	3.7	YE4M	AL...-4
5/8"	27	10	3	5ER10APIRD3M...		1.41	3.8	6.2		
		8	2	5ER8APIRD2M...		1.81	2.9	4.5	YE5M	AL...-5M

T Style

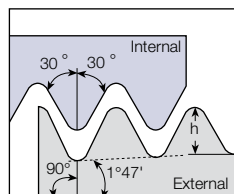


Insert Size		Pitch	Teeth	Ordering Code		Dimensions mm			Anvil	
IC	L mm	tpi		RH		h min	X	Y	RH	Toolholder
1/2"	22	10	6	4ER10APIRD6T...		1.41	0.1	16.3	Y4T	AL...-4T
		8	3	4ER8APIRD3T...		1.81	0.1	14.2		
		8	5	4ER8APIRD5T...		1.81	0.1	16.7		



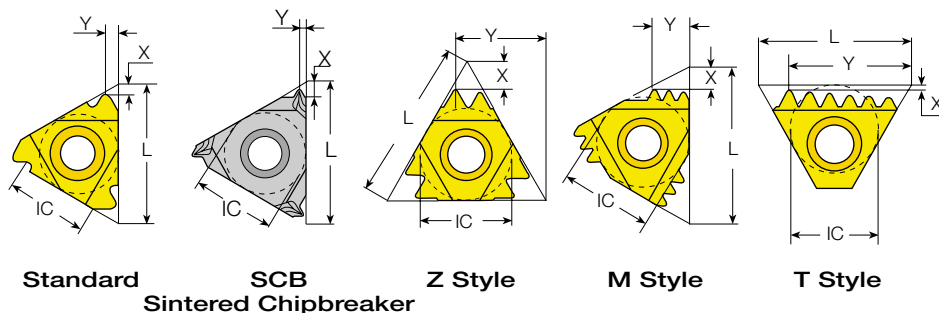
API Round Casing & Tubing (con't)

Internal



Defined by: API STD. 5B:1979

Tolerance class: Standard API RD



Standard



SCB

Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil	
IC	L mm	tpi	RH		h min	X	Y	RH	Toolholder
3/8"	16	10	3IR10APIRD...		1.41	1.2	1.4	YI3	AVR...-3
		8	3IR8APIRD...		1.81	1.3	1.5		
3/8"	16	10	3JIR10APIRD...		1.41	1.2	1.5	YI3	AVR...-3
		8	3JIR8APIRD...		1.81	1.3	1.5		

Z Style



Insert Size		Pitch	Teeth	Ordering Code		Dimensions mm			Anvil	
IC	L mm	tpi		RH		h min	X	Y	RH	Toolholder
1/2"	22	10	2	4IR10APIRD2Z...		1.41	3.1	9.9	YI4Z	AVR...-4Z
		8	2	4IR8APIRD2Z...		1.81	3.7	9.6		

M Style



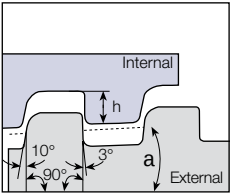
Insert Size		Pitch	Teeth	Ordering Code		Dimensions mm			Anvil	
IC	L mm	tpi		RH		h min	X	Y	RH	Toolholder
1/2"	22	10	2	4IR10APIRD2M...		1.41	2.4	3.7	YI4M	AVR...-4
5/8"	27	10	3	5IR10APIRD3M...		1.41	3.8	6.2		
		8	2	5IR8APIRD2M...		1.81	2.9	4.5		

T Style



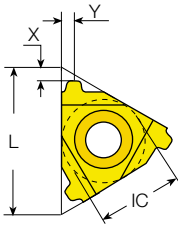
Insert Size		Pitch	Teeth	Ordering Code		Dimensions mm			Anvil	
IC	L mm	tpi		RH		h min	X	Y	RH	Toolholder
1/2"T	22	10	6	4IR10APIRD6T...		1.41	0.1	16.3	Y4T	AVR...-4T
		8	3	4IR8APIRD3T...		1.81	0.1	14.2		
		8	5	4IR8APIRD5T...		1.81	0.1	16.7		

VAM

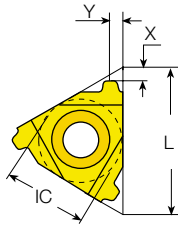


$a = \arctg (IPF/24)$

Defined by: API STD. 5B:1979
Tolerance class: Standard API RD



External - Standard



Internal - Standard

External

Standard



Insert Size		Pitch	Taper	Ordering Code	Size	Dimensions mm			Anvil	
IC	L mm	tpi	IPF	RH		h min	X	Y	RH	Toolholder
3/8"	16	8	0.75	3ER8VAM...	2 3/8" ,2 7/8"	0.97	1.7	1.8	YE3	AL...-3
1/2"	22	6	0.75	4ER6VAM...	3 1/2"	0.97	2.4	2.4	YE4	AL...-4
		5	0.75	4ER5VAM...	5"-9 5/8"	1.54	2.4	2.7		

Internal

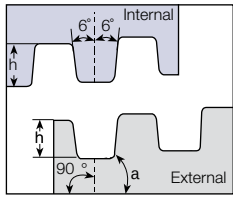
Standard



Insert Size		Pitch	Taper	Ordering Code	Size	Dimensions mm			Anvil	
IC	L mm	tpi	IPF	RH		h min	X	Y	RH	Toolholder
3/8"	16	8	0.75	3IR8VAM...	2 3/8" ,2 7/8"	0.97	1.7	1.8	YI3	AVR...-3
1/2"	22	6	0.75	4IR6VAM...	3 1/2"	0.97	2.5	2.5	YI4	AVR...-4
		5	0.75	4IR5VAM...	5"-9 5/8"	1.54	2.4	2.5		

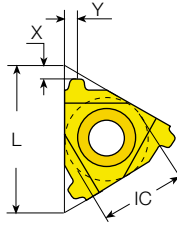


EL-Extreme Line

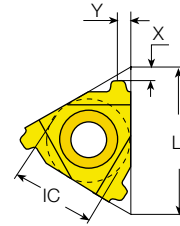


$$a = \arctg (IPF/24)$$

Defined by: API STD,5B:1979
Tolerance class: Standard



External - Standard



Internal - Standard

External

Standard



Insert Size	Pitch	Taper	Ordering Code	Connection No. or Size	Dimensions mm	Anvil	
IC L mm	tpi	IPF	RH		h min X Y	RH	Toolholder
1/2"	22	6	1.5	4ER6EL15...	5"-7 5/8"	1.21 1.9 1.9	YE4 AL..-4 (LH)
		5	1.25	4ER5EL125...	8 5/8"-10 3/4"	1.71 2.3 2.4	

Internal

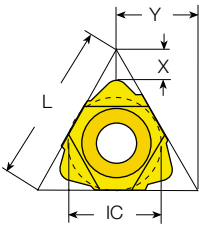
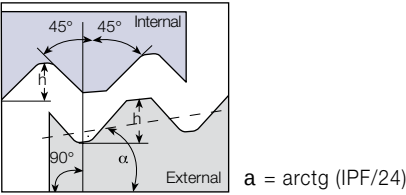
Standard



Insert Size	Pitch	Taper	Ordering Code	Connection No. or Size	Dimensions mm	Anvil	
IC L mm	tpi	IPF	RH		h min X Y	RH	Toolholder
1/2"	22	6	1.5	4IR6EL15...	5"-7 5/8"	1.39 1.8 1.9	YI4 AVR..-4 (LH)
		5	1.25	4IR5EL125...	8 5/8"-10 3/4"	1.91 2.2 2.4	

Hughes H-90

Internal



U Style

External

U Style



Insert Size		Pitch	Taper	Ordering Code	Size	Dimensions mm			Anvil	
IC	L mm	tpi	IPF	RH		h min	X	Y	RH	Toolholder
1/2" U	22	3.5	2	4UER3.5H902...	3 1/2"-6 5/8"	2.50	4.2	11	YE4U-H90	AL...-4U (LH)
		3.5	3	4UER3.5H903...	7"-8 5/8"	2.50	4.2	11		
5/8" U	27	3	1.25*	5UER3H90SL...	2 3/8"-3 1/2"	2.24	5.5	13.7	YE5U-H90	AL...-5U (LH)

* H-90 Slimline

Internal

U Style



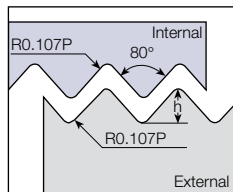
Insert Size		Pitch	Taper	Ordering Code	Size	Dimensions mm			Anvil	
IC	L mm	tpi	IPF	RH		h min	X	Y	RH	Toolholder
1/2" U	22	3.5	2	4UIR3.5H902...	3 1/2"-6 5/8"	2.50	4.2	11	YI4U-H90	AVR...-4U (LH)
		3.5	3	4UIR3.5H903...	7"-8 5/8"	2.50	4.2	11		
5/8" U	27	3	1.25*	5UIR3H90SL...	2 3/8"-3 1/2"	2.24	5.5	13.7	YI5U-H90	AVR...-5U (LH)

* H-90 Slimline

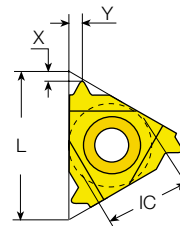


Pg

External



Defined by: DIN 40430
Tolerance class: Standard



Standard

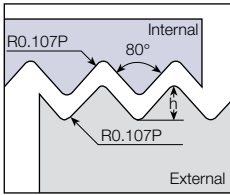
Standard



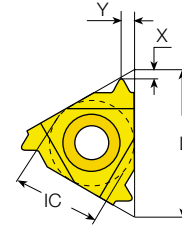
Insert Size		Pitch	Thread	Ordering Code		Dimensions mm			Anvil		
IC	L mm	tpi		RH	LH	h min	X	Y	RH	LH	Toolholder
1/4"	11	20	Pg7	2ER20PG...	2EL20PG...	0.61	0.8	0.9	-	-	NL...-2 (LH)
		18	Pg9/11/13.5/16	2ER18PG...	2EL18PG...	0.67	0.8	1.0			
		16	Pg21/29/36/42/48	2ER16PG...	2EL16PG...	0.76	0.9	1.1			
3/8"	16	20	Pg7	3ER20PG...	3EL20PG...	0.61	0.8	0.9	YE3	YI3	AL...-3 (LH)
		18	Pg9/11/13.5/16	3ER18PG...	3EL18PG...	0.67	0.8	1.0			
		16	Pg21/29/36/42/48	3ER16PG...	3EL16PG...	0.76	0.9	1.1			

Pg (con't)

Internal



Defined by: DIN 40430
Tolerance class: Standard



Standard

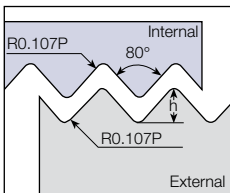
Standard



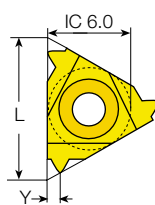
Insert Size		Pitch	Thread	Ordering Code		Dimensions mm			Anvil		
IC	L mm	tpi		RH	LH	h min	X	Y	RH	LH	Toolholder
1/4"	11	20	Pg7	2IR20PG...	2IL20PG...	0.64	0.8	0.9	-	-	NVR...-2 (LH)
		18	Pg9/11/13.5/16	2IR18PG...	2IL18PG...	0.67	0.8	1.0			
		16	Pg21/29/36/42/48	2IR16PG...	2IL16PG...	0.76	0.9	1.1			
3/8"	16	20	Pg7	3IR20PG...	3IL20PG...	0.64	0.8	0.9	YI3	YE3	AVR...-3 (LH)
		18	Pg9/11/13.5/16	3IR18PG...	3IL18PG...	0.67	0.8	1.0			
		16	Pg21/29/36/42/48	3IR16PG...	3IL16PG...	0.76	0.8	1.1			

Pg

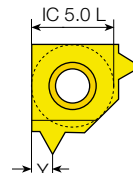
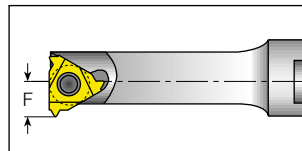
Internal



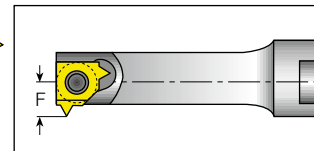
Defined by: DIN 40430
Tolerance class: Standard



Mini-3



Mini-L



Mini-3



Insert Size		Pitch	Ordering Code	Ordering Code	Dimensions mm			Min. Bore dia.	
IC	L mm	tpi		RH	h min	Y	F	mm	Toolholder
6.0	10	20	Pg7	6.0IR20PG...	0.61	0.8	5.3	10.0	.NVR1...-6.0
		18	Pg9/11/13.5/16	6.0IR18PG...	0.67	0.9	5.3		

Mini-L



Insert Size	Pitch	Ordering Code	Ordering Code	Dimensions mm			Min. Bore dia.	
IC	tpi		RH	h min	Y	F	mm	Toolholder
5.0L	20	Pg7	5LIR20PG...	0.61	0.8	4.65	8.0	.NVR10...-5L
	18	Pg9/11/13.5/16	5LIR18PG...	0.67	0.9	4.65		



TURNING TOOLHOLDERS

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Vardex Ordering Code System

External Toolholders

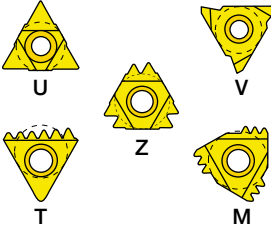
A	L	32	-	4	U	C			
1	2	3		4	5	6	7	8	9

1 - Anvil
A - Anvil required
N - No Anvil required
O - Miniature holder

2 - Holder Type
L - External
V - Miniature Square Shank
VR - Miniature Round Shank

3 - Shank Square[mm]
 8, 10, 12, 16, 20, 25, 32, 40
 50, 60

4 - Insert Size
2 - IC1/4"
3 - IC3/8"
4 - IC1/2"
5 - IC5/8"

5 - Insert Style


6 - Clamping
C - with Clamping

7 - Insert Width
 (for IC5/8"V)
 6, 8, 10

8 - Holder Type
CQ - Drop Head
FQ - Off-Set
Oil - For API Inserts

9 - RH / LH Holder
None - Right Hand
LH - Left Hand

Internal Toolholders

C	A	VR	C	20		-	3					
1	2	3	4	5	6		7	8	9	10	11	12

1 - Shank Type
B - Anti Vibration System
C - Carbide Shank
S - Mini Holders

2 - Anvil
A - Anvil required
N - No Anvil required
O - Miniature holder

3 - Tool Type
VR - Internal Round Shank
4 - Cooling
C - with Coolant Channel

5 - Shank Front Dia
 10, 12, 13, 16, 20
 25, 32, 40, 50
 6.2 (Mini Adjust)
 8.0 (Mini Adjust)

6 - Holder Length
(Mini Holders)
U - Ultra Short
S - Short
M - Medium
L - Long
T - Adjustable

7 - Insert Size
5L - IC5.0L
6.0 - IC6.0
2 - IC1/4"
3 - IC3/8"
4 - IC1/2"
5 - IC5/8"

8 - Insert Style
U
V
T
M
Z
L

9 - Clamping
C - with Clamp
10 - Oil Field
OIL - For API Inserts

11 - RH / LH Holder
None - Right Hand
LH - Left Hand

12 - Coarse Pitch Holder
156/...

Micro & Adjustable Toolholders (Sleeves)

S	M	C	16	-	3
1	2	3	4		5

1 - Holder Shape
S - Sleeve

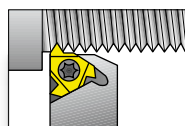
2 - Holder Type
V - Adjustable Holders for Mini
M - Micro

3 - Cooling
C - with Coolant Channel

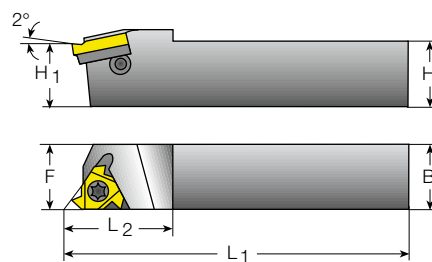
4 - Holder Dia.
 10, 12, 16, 20

5 - Holder Bore Size
Micro Size
 3, 4, 6, 8, 10
Adjustable Holders (for Mini)
 6.2
 8





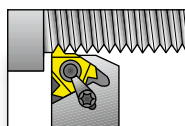
External Toolholders



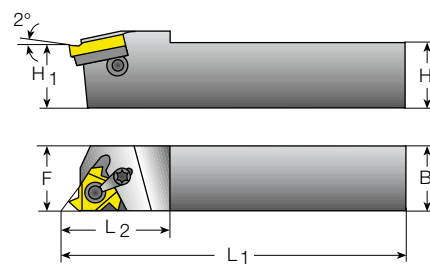
Standard

Standard						Spare Parts				
Insert Size	Ordering Code	Dimensions mm								
IC		H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
1/4"	NL8-2	8	11	136.4	17.5	SN2T	-	K2T	-	-
	NL10-2	10	11	70.0	17.5					
	NL12-2	12	12	80.0	17.5					
3/8"	NL12-3	12	16	83.2	22	SA3T	SY3T	K3T	YE3	YI3
	AL3/8-3	9.52	16	63.6	20.5					
	AL12-3	12	16	83.2	22					
	AL16-3	16	16	100.0	20.5					
	AL20-3	20	20	128.6	30					
	AL25-3	25	25	153.6	30					
	AL32-3	32	32	173.6	30					
1/2"	AL25-4	25	25	155.7	36	SA4T	SY4T	K4T	YE4	YI4
	AL32-4	32	32	175.7	36					
	AL40-4	40	40	205.7	36					
5/8"	AL25-5	25	32	151.6	35	SA5T	SY5T	K5T	YE5	YI5
	AL32-5	32	32	176.6	40					
	AL40-5	40	40	206.6	40					
	AL50-5	50	50	256.6	40					

The above toolholders have a 1.5° helix angle. For other helix angles, see page 122.
Toolholders with prefix "N" cannot be used with an anvil.



External Toolholders

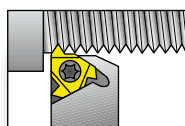


Standard with Clamp

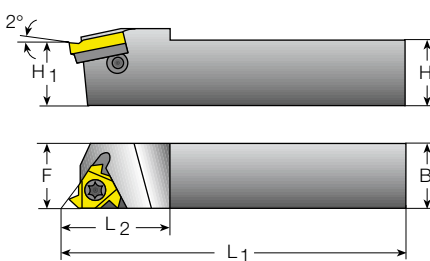
(Dual System, Screw or Clamp)

Insert Size		Ordering Code		Dimensions mm		Spare Parts					
IC		H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Clamp	Torx Key	Anvil RH	Anvil LH
3/8"	AL20-3C	20	20	128.6	30	SA3T	SY3T	C3	K3CT	YE3	YI3
	AL25-3C	25	25	153.6	30						
	AL32-3C	32	32	173.6	30						
1/2"	AL25-4C	25	25	155.7	36	SA4T	SY4T	C4	K4T	YE4	YI4
	AL32-4C	32	32	175.7	36						
	AL40-4C	40	40	205.7	36						
5/8"	AL25-5C	25	32	151.6	35	SA5T	SY5T	C5	K5T	YE5	YI5
	AL32-5C	32	32	176.6	40						
	AL40-5C	40	40	206.6	40						
	AL50-5C	50	50	256.6	40						

The above toolholders have a 1.5° helix angle. For other helix angles, see page 122.



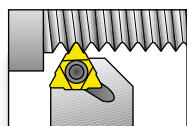
External Toolholders



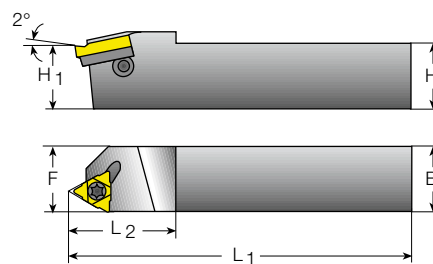
Standard for API

Insert Size		Ordering Code		Thread Form		Connection no. or size		Dimensions mm		Spare Parts					
IC		H=H1=B=F	L1	L2						Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH	
5/8"	AL32-5OIL	V0.038R	V0.050	NC23-NC77 all sizes	32	175.9	40	SA5T	SY5T	K5T	YE5OIL	YI5OIL			
	AL40-5OIL	V0.038R	V0.050	NC23-NC77 all sizes	40	205.9	40								

The above toolholders have a 1.5° helix angle. For other helix angles, see page 122.



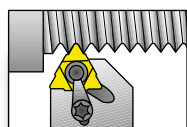
External Toolholders



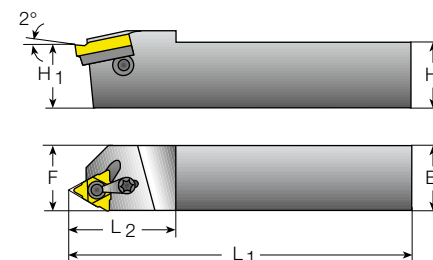
U Style

Insert Size		Ordering Code		Dimensions mm		Spare Parts				
IC		H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
1/2"U	AL32-4U	32	32	178.4	38	SA4T	SY4T	K4T	YE4U	YI4U
	AL40-4U	40	40	208.4	38					
	AL32-5U	32	32	179.1	40					
5/8"U	AL40-5U	40	40	209.1	40	SA5T	SY5T	K5T	YE5U	YI5U
	AL50-5U	50	50	259.1	40					

All U Style Toolholders have a 1.5° helix angle. For other helix angles see page 122.



External Toolholders



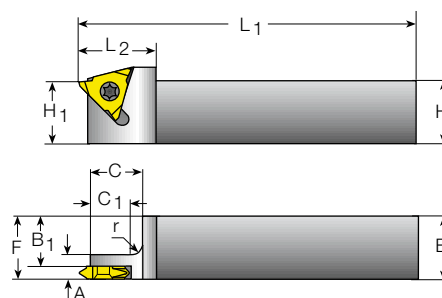
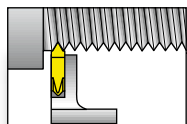
U Style with Clamp

Insert Size		Ordering Code		Dimensions mm		Spare Parts					
IC		H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Clamp	Torx Key	Anvil RH	Anvil LH
1/2"U	AL32-4UC	32	32	178.4	38	SA4T	SY4T	C4	K4T	YE4U	YI4U
	AL40-4UC	40	40	208.4	38						
	AL32-5UC	32	32	179.1	40						
5/8"U	AL40-5UC	40	40	209.1	40	SA5T	SY5T	C5	K5T	YE5U	YI5U
	AL50-5UC	50	50	259.1	40						

All U Style Toolholders have a 1.5° helix angle. For other helix angles see page 122.



External Toolholders

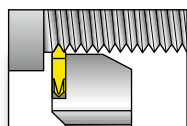


Slim Throat

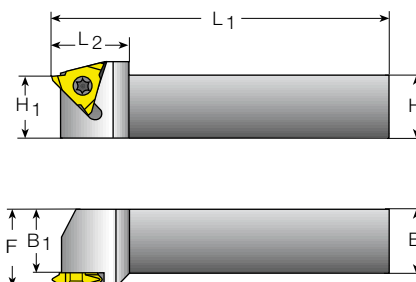
Slim Throat											Spare Parts	
Insert Size	Ordering Code	Dimensions mm										
IC		H=B=F	H1	A	B1	C	C1	L1	L2	r	Insert Screw	Torx Key
1/4"V	NL8-2V	8	10	7	4.8	12.5	11.5	60	14.0	1	SN2T	K2T
	NL10-2V	10	10	7	6.8	12.5	11.5	70	14.0	1		
	NL12-2V	12	12	7	8.8	14.5	11.5	80	14.0	3		
	NL16-2V	16	16	7	12.8	14.5	11.5	100	14.0	3		
3/8"V	NL10-3V	10	14	7	6.4	14.5	11.5	70	18.5	3	SN3T	K3T
	NL12-3V	12	14	7	8.4	14.5	11.5	80	18.5	3		
	NL16-3V	16	16	7	12.4	14.5	11.5	100	25.0	3		
	NL20-3V	20	20	7	16.4	16.5	11.5	125	30.0	3		
	NL25-3V	25	25	7	21.4	16.5	11.5	150	30.0	5		
	NL32-3V	32	32	7	28.4	16.5	11.5	170	30.0	5		
1/2"V	NL40-3V	40	40	7	36.4	16.5	11.5	200	30.0	5	SN4T	K4T
	NL25-4V	25	25	12	20.2	16.5	11.5	150	30.0	5		
	NL32-4V	32	32	12	27.2	16.5	11.5	170	30.0	5		
	NL40-4V	40	40	12	35.2	16.5	11.5	200	30.0	5		

All Slim Throat toolholders have a 1.5° helix angle.





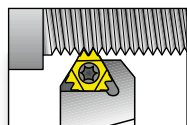
External Toolholders



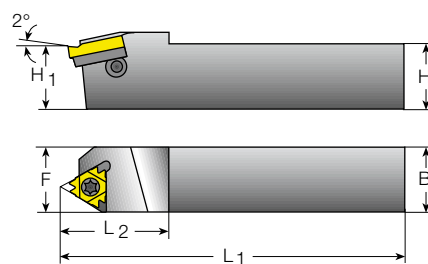
V Style

Insert Size		Ordering Code		Dimensions mm			Spare Parts	
IC		H=H1=B	B1	F	L1	L2	Insert Screw	Torx key
5/8"V	NL32-5V-6	32	25.5	32.0	170	40	SN6T	K6T
	NL32-5V-8	32	25.5	34.1	170	40		
	NL32-5V-10	32	25.5	35.8	170	40		
	NL40-5V-6	40	33.5	40.0	200	40		
	NL40-5V-8	40	33.5	42.1	200	40		
	NL40-5V-10	40	33.5	43.8	200	40		

All V Style toolholders have a 1° helix angle.



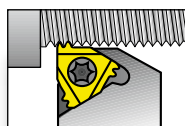
External Toolholders



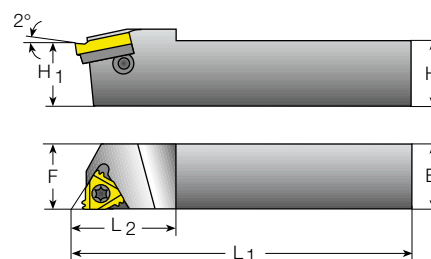
Z Style

Insert Size		Ordering Code		Dimensions mm			Spare Parts				
IC		H=H1=B	F	L1	L2		Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
1/2"Z	AL32-4Z	32	32	178.4	38		SA4T	SY4T	K4T	YE4Z	YI4Z
	AL40-4Z	40	40	208.4	38						
5/8"Z	AL32-5Z	32	32	179.1	40		SA5T	SY5T	K5T	YE5Z	YI5Z
	AL40-5Z	40	40	209.1	40						
	AL50-5Z	50	50	259.1	40						

All Z Style toolholders have a 1.5° helix angle.



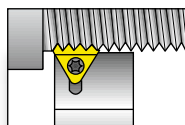
External Toolholders



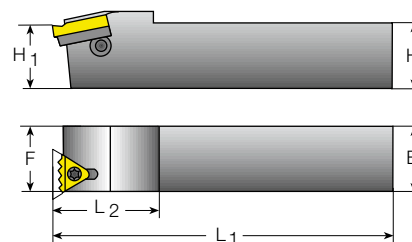
M Style

Insert Size		Ordering Code		Dimensions mm		Spare Parts				
IC		H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
5/8" M	AL32-5M	32	32	176.6	40	SA5T	SY5T	K5T	YE5M	YI5M
	AL40-5M	40	40	206.6	40					
	AL50-5M	50	50	256.6	40					

All M Style toolholders have a 1.5° helix angle.



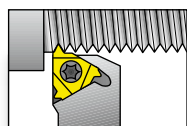
External Toolholders



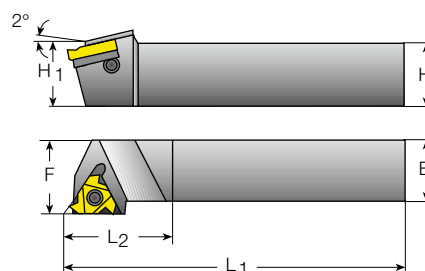
T Style

Insert Size		Ordering Code		Dimensions mm		Spare Parts				
IC		H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Insert Torx Key	Anvil Torx Key	Anvil RH/LH
1/2" T	AL25-4T	25	27	150	30	SA4T	SY4K2	K4T	K2	Y4T
	AL32-4T	32	34	170	30					
	AL40-4T	40	42	200	30					

All T Style toolholders have a 0° helix angle.



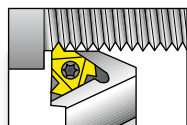
External Toolholders



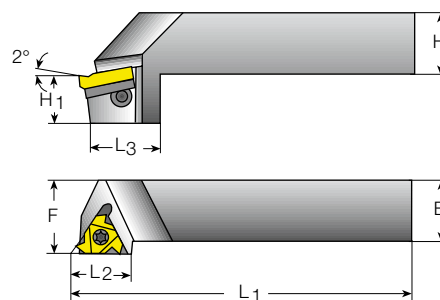
Off-Set Qualified (FQ)

Off-Set Qualified (FQ)						Spare Parts				
Insert Size	Ordering Code	Dimensions mm								
IC		H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
3/8"	AL20-3FQ	20	25	125	25	SA3T	SY3T	K3T	YE3	YI3
	AL25-3FQ	25	32	150	25					
	AL32-3FQ	32	40	170	32					
1/2"	AL25-4FQ	25	32	150	30	SA4T	SY4T	K4T	YE4	YI4
	AL32-4FQ	32	40	170	30					
5/8"	AL32-5FQ	32	40	170	35	SA5T	SY5T	K5T	YE5	YI5

The above toolholders have a 1.5° helix angle.



External Toolholders



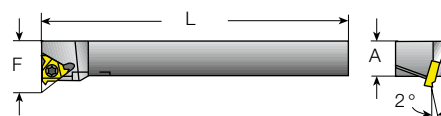
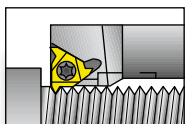
Drop Head-Qualified (CQ)

Drop Head-Qualified (CQ)								Spare Parts				
Insert Size	Ordering Code	Dimensions mm										
IC		H=H1=B	F	L1	L2	L3	H1	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
3/8"	AL20-3CQ	20	25	125	24	38	17.5	SA3T	SY3T	K3T	YE3	YI3
	AL25-3CQ	25	32	150	24	38	22.2					
	AL32-3CQ	32	40	170	24	38	22.2					
1/2"	AL25-4CQ	25	32	150	30	38	22.2	SA4T	SY4T	K4T	YE4	YI4
	AL32-4CQ	32	40	170	30	38	22.2					
5/8"	AL32-5CQ	32	40	170	33	43	25.4	SA5T	SY5T	K5T	YE5	YI5

The above toolholders have a 1.5° helix angle.



External + Internal Toolholders

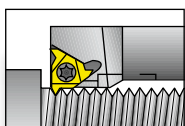


Miniature Square Shank*

Dimensions mm					Spare Parts	
Insert Size	Ordering Code					
IC	A	L	F		Insert Screw	Torx Key
1/4"	OV 8-2	8	100	12	SN2T	K2T
	OV 10-2	10	100	14		

Miniature toolholders have a 0.5° helix angle.

External + Internal Toolholders



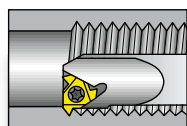
Miniature Round Shank*

Dimensions mm							Spare Parts	
Insert Size	Ordering Code							
IC	L	L1	D	D1	F		Insert Screw	Torx Key
1/4"	OVR 12-2	100	25	12	10	7.4	SN2T	K2T
	OVR 15-2	100	32	15	13	8.9		
	OVR 16D-2	100	32	16	13	8.9		

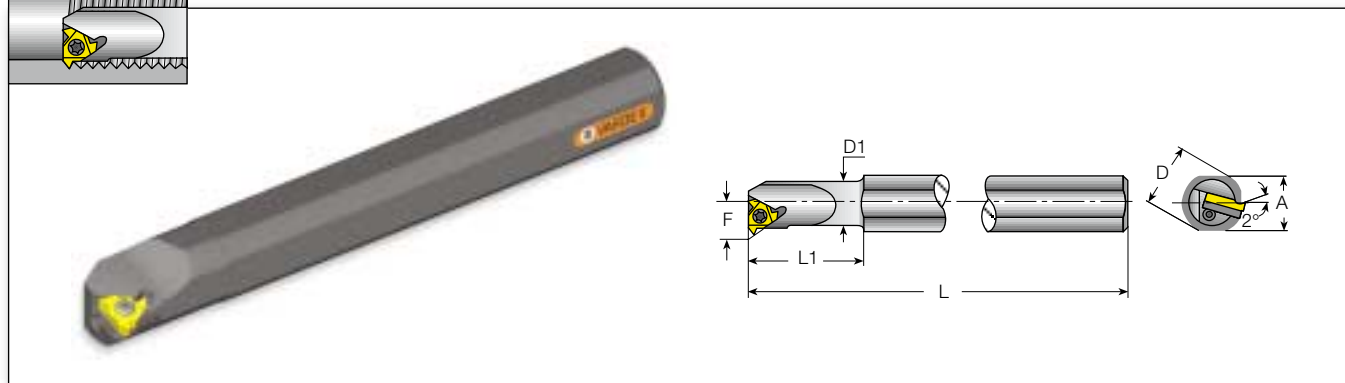
Miniature toolholders have a 0.5° helix angle.
Toolholders shown are RH. For LH toolholders, add LH to ordering code.

* Miniature square and round toolholders are designed for use on automatic lathes for the optical and other precision industries. They can be used for both external and internal threading, as follows:

Thread	ER	EL	IR	IL
Insert	ER	EL	IR	IL
Holder	LH	RH	RH	LH



Internal Toolholders



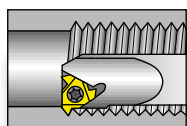
Standard

Spare Parts

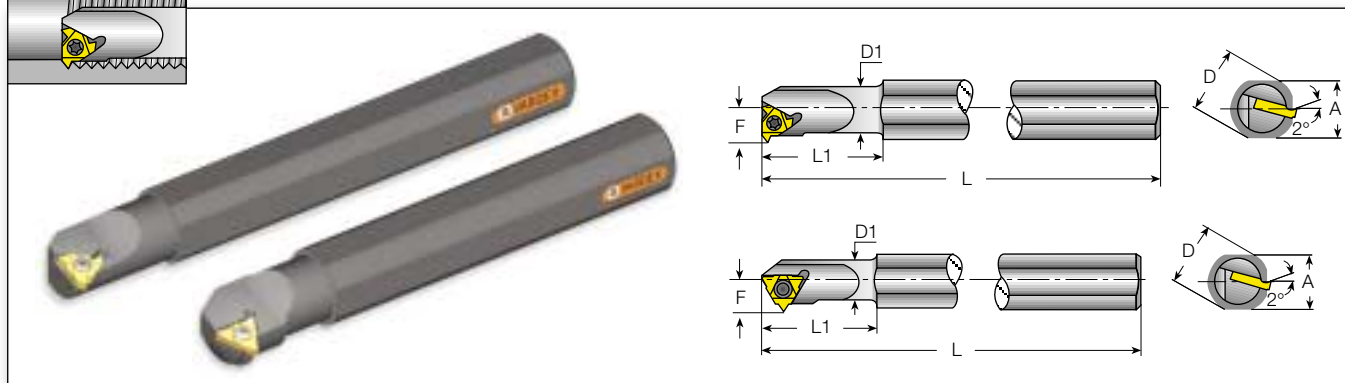
Insert Size	Ordering Code	Dimensions mm						Min. Bore dia.					
IC	A	L	L1	D	D1	F	mm		Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
1/4"	NVR10D-2	100		10	10.0	7.3	13		SN2T	-	K2T	-	-
	NVR10-2	18.0	180	25	20	10.0	7.3	13					
	NVR13-2	18.0	180	32	20	13.0	8.9	16					
3/8"	NVR13-3	18.0	180	32	20	12.7	10.3	17	SN3T	-	K3T	-	-
	NVR16-3	18.0	180	40	20	16.0	11.5	20					
	NVR16D-3	15.2	150	32	16	16.0	11.3	20					
	AVR20-3	18.0	180	40	20	20.0	13.4	24	SA3T	SY3T	K3T	YI3	YE3
	AVR25-3	29.0	250	60	32	25.0	16.3	29					
	AVR25D-3	22.6	200	45	25	24.6	16.1	29					
	AVR32-3	29.0	250	60	32	32.0	19.6	36					
	AVR40-3	36.0	300	60	40	40.0	23.8	44					
1/2"	NVR20-4	18.0	180	50	20	20.0	15.6	27	SN4T	-	K4T	-	-
	AVR25-4	29.0	250	60	32	25.0	17.4	32					
	AVR25D-4	22.6	200	45	25	24.6	17.2	32	SA4T	SY4T	K4T	YI4	YE4
	AVR32-4	29.0	250	60	32	32.0	21.5	39					
	AVR40-4	36.0	300	60	40	40.0	25.8	47					
5/8"	AVR32-5	29.0	250	60	32	32.0	22.4	40	SA5T	SY5T	K5T	YI5	YE5
	AVR40-5	36.0	300	60	40	40.0	26.4	48					
	AVR50-5	45.0	350	75	50	50.0	31.4	58					
	AVR60-5	54.0	400	75	60	60.0	36.4	69					

The above toolholders have a 1.5° helix angle. For other helix angles, see page 122.
Toolholders with prefix "N" cannot be used with an anvil.

Holders with coolant channel are available as standard. For ordering code, see page 95.



Internal Toolholders

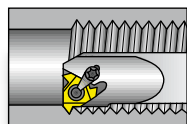


Standard for Coarse Pitch

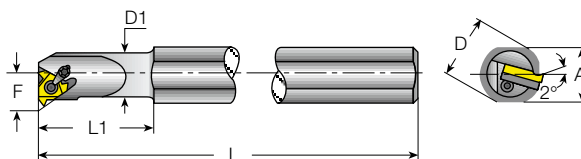
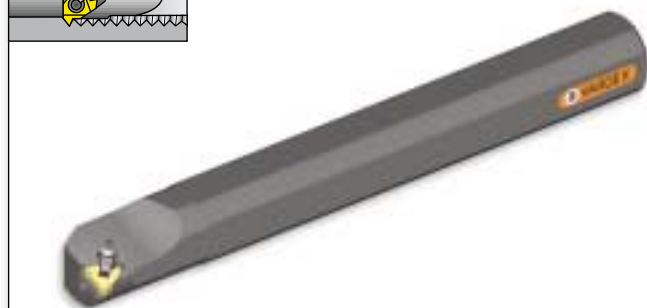
Standard for Coarse Pitch										Spare Parts	
Insert Size		Ordering Code		Dimensions mm				F to Insert	Holder Helix		
IC			A	L	L1	D	D1	mm	Deg.	Insert Screw	Torx Key
1/4"		NVRC10-2 156/001	18.0	180	25.0	20	10.1	6.53	3.0	SN2T	K2T
3/8"	NVRC11-3 156/005		18.0	180	25.4	20	11.2	8.30	4.5	SN2T	K2T
	NVRC13-3 156/006		18.0	180	32.0	20	13.0	9.05	4.0	SN3TM	K3T
	NVRC13-3 156/016		18.0	180	32.0	20	12.7	5.86	2.5	SN3T	K3T
1/2"	NVRC17-4 156/007		18.0	180	40.0	20	16.7	11.45	4.0	SN4TM	K4T
	NVRC20-4 156/008		18.0	180	50.0	20	19.6	12.55	3.5	SN4T	K4T
	NVRC20-4 156/009		18.0	180	50.0	20	19.6	12.55	3.0		
5/8"	NVRC25-5 156/012		29.0	250	60.0	32	25.0	16.78	3.3	SN5TM	K5T
	NVRC28-5 156/010		29.0	250	50.0	32	28.0	17.80	3.5		

U Style for Coarse Pitch

U Style for Coarse Pitch										Spare Parts	
Insert Size		Ordering Code	Dimensions mm					F to Insert	Holder Helix		
IC			A	L	L1	D	D1	mm	Deg.	Insert Screw	Torx Key
6.0U		NVRC8-6.0U 156/003	18.0	180	24.0	20	8.0	5.86	4.0	SN6M7	K6MT
1/4"U	NVRC10-2U 156/004		18.0	180	32.0	20	10.0	7.40	4.0	SM2T8	K2T
	NVRC11-2U 156/002		18.0	180	32.0	20	11.2	7.30	3.0		
3/8"U	NVRC11-3U 156/020		18.0	180	32.0	20	11.0	8.23	4.5	SN3TM	K3T
	NVRC14-3U 156/018		18.0	180	38.0	20	13.4	9.99	4.5		
	NVRC15-3U 156/019		18.0	180	38.0	20	15.4	10.99	4.0		
1/2"U	NVRC20-4U 156/011		18.0	180	40.0	20	19.2	13.68	4.0	SN4T	K4T
	NVRC25-4U 156/013		29.0	250	60.0	32	25.0	17.63	3.5		
	NVRC32-4U 156/014		29.0	250	60.0	32	29.7	18.76	3.3		
5/8"U	NVRC32-5U 156/015		29.0	250	60.0	32	31.6	20.96	3.2	SA5T	K5T

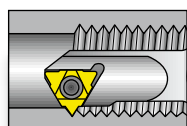


Internal Toolholders

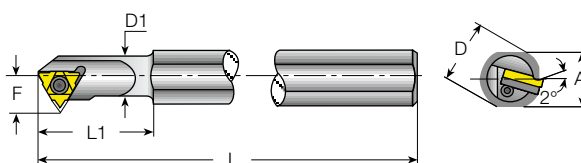


Standard with Clamp

Insert Size	Ordering Code	Dimensions mm							Min. bore dia.	Spare Parts					
IC	A	L	L1	D	D1	F	mm			Insert Screw	Anvil Screw	Clamp	Torx Key	Anvil RH	Anvil LH
3/8"	AVR20-3C	18.0	180	50	20	20.0	13.4	24		SA3T	SY3T	C3	K3CT	YI3	YE3
	AVR25-3C	28.0	250	60	32	25.0	16.3	29							
	AVR25D-3C	22.6	200	45	25	24.6	16.1	29							
	AVR32-3C	29.0	250	60	32	32.0	19.6	36							
	AVR40-3C	36.0	300	60	40	40.0	23.8	44							
1/2"	AVR25-4C	29.0	250	60	32	25.0	17.4	32		SA4T	SY4T	C4	K4T	YI4	YE4
	AVR25D-4C	22.6	200	45	25	24.6	17.2	32							
	AVR32-4C	29.0	250	60	32	32.0	21.5	39							
	AVR40-4C	36.0	300	60	40	40.0	25.8	47							
5/8"	AVR32-5C	29.0	250	60	32	32.0	22.4	40		SA5T	SY5T	C5	K5T	YI5	YE5
	AVR40-5C	36.0	300	60	40	40.0	26.4	48							
	AVR50-5C	45.0	350	75	50	50.0	31.4	58							
	AVR60-5C	54.0	400	75	60	60.0	36.4	69							

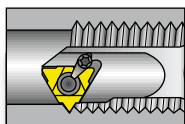


Internal Toolholders

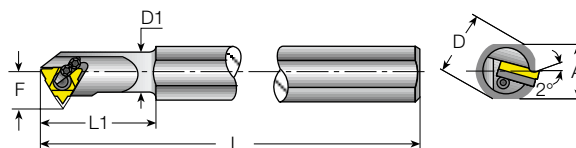


U Style

Insert Size	Ordering Code	Dimensions mm							Min. bore dia.	Spare Parts				
IC	A	L	L1	D	D1	F	mm			Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
1/2"U	AVR32-4U	29	250	60	32	32	25.5	42		SA4T	SY4T	K4T	YI4U	YE4U
	AVR40-4U	36	300	60	40	40	29.5	51						
5/8"U	NVR32-5U	29	250	60	32	32	24.7	42		SA5T	SY5T	K5T	YI5U	YE5U
	AVR40-5U	36	300	60	40	40	29.4	53						
	AVR50-5U	45	350	75	50	50	34.3	63						
	AVR60-5U	54	400	75	60	60	39.3	74						



Internal Toolholders

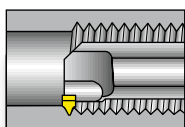


U style with Clamp

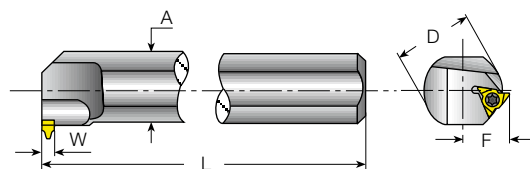
Spare Parts

Insert Size	Ordering Code	Dimensions mm						Min. bore dia.						
IC		A	L	L1	D	D1	F	mm	Insert Screw	Anvil Screw	Clamp	Torx Key	Anvil RH	Anvil LH
1/2"U	AVR32-4UC	29.0	250	60	32	32.0	25.5	42	SA4T	SY4T	C4	K4T	YI4U	YE4U
	AVR40-4UC	36.0	300	60	40	40.0	29.5	51						
	AVR40-5UC	36.0	300	60	40	40.0	29.4	53						
5/8"U	AVR50-5UC	45.0	350	75	50	50.0	34.4	63	SA5T	SY5T	C5	K5T	YI5U	YE5U
	AVR60-5UC	54.0	400	75	60	60.0	39.3	74						

The above toolholders have a 1.5° helix angle. For other helix angles, see page 122.
Holders with coolant channel available as standard. For ordering code see page 95.



Internal Toolholders



V Style

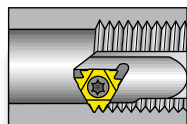
Spare Parts

Insert Size	Ordering Code	Dimensions mm						
IC		A	L	D	F	W	Insert Screw	Torx Key
5/8"V	NVR40-5V	36	300	40	28.4	6.5	SN6T	K6T
	NVR50-5V	45	350	50	33.4	6.5		
	NVR60-5V	54	400	60	38.0	6.5		

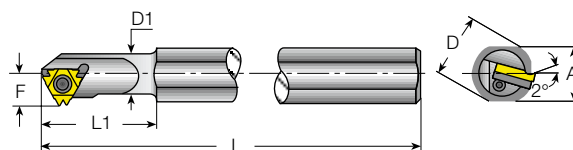
The above toolholders have a 1.0° helix angle.

Minimum Bore Dia - ISO, UN

	Pitch mm	6	8	10
	Pitch tpi	4	3	2.5
NVR40-5V		50	55	70
NVR50-5V		60	60	70
NVR60-5V		70	70	70



Internal Toolholders

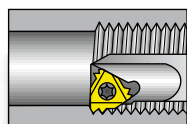


Z Style

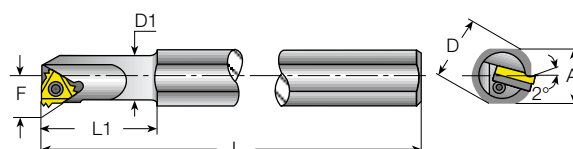
Insert Size	Ordering Code	Dimensions mm							Min. bore dia	Spare Parts				
IC		A	L	L1	D	D1	F	mm		Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
1/2"Z	AVR32-4Z	29	250	60	32	32	25.5	42		SA4T	SY4T	K4T	YI4Z	YE4Z
	AVR40-4Z	36	300	60	40	40	29.5	51						
	NVR32-5Z	29	250	60	32	32	24.7	42						
5/8"Z	AVR40-5Z	36	300	60	40	40	29.4	53		SA5T	SY5T	K5T	YI5Z	YE5Z
	AVR50-5Z	45	350	75	50	50	34.3	63						
	AVR60-5Z	54	400	75	60	60	39.3	74						

All Z style toolholders have a 1.5° helix angle.

Holders with coolant channel available as standard. For ordering code see page 95.



Internal Toolholders

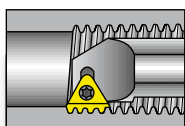


M Style

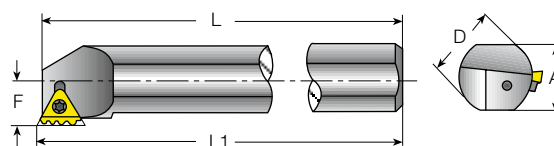
Insert Size	Ordering Code	Dimensions mm							Min. bore dia	Spare Parts				
IC		A	L	L1	D	D1	F	mm		Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
5/8"M	AVR32-5M	29	250	60	32	32	22.4	40		SA5T	SY5T	K5T	YI5M	YE5M
	AVR40-5M	36	300	60	40	40	26.4	48						
	AVR50-5M	45	350	75	50	50	31.4	58						
	AVR60-5M	54	400	75	60	60	36.4	69						

All M style toolholders have a 1.5° helix angle.

Holders with coolant channel available as standard. For ordering code see page 95.



Internal Toolholders



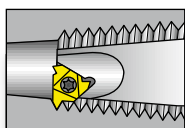
T Style

Spare Parts

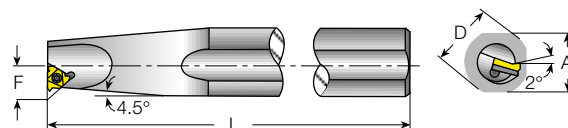
Insert Size	Ordering Code	Dimensions mm				Min. bore dia		    				
IC	A	L	L1	D	F	mm		Insert Screw	Anvil Screw	Torx Key	Anvil Torx Key	Anvil RH/LH
1/2" T	AVR40-4T	36	300	302	40	23.3	60	SA4T	SY4K2	K4T	K2	Y4T
	AVR50-4T	45	350	352	50	28.3	70					
	AVR60-4T	54	400	402	60	33.3	80					

All toolholders have a 0° helix angle.

Holders with coolant channel available as standard. For ordering code, see page 95.



Internal Toolholders



API

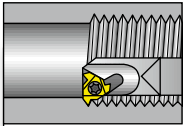
Spare Parts

								    				
Insert Size	Ordering Code	Thread Form	Connection no. or size	Dimensions mm								
IC				A	L	D	F	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
5/8"	AVR50-5OIL	V0.038R	NC23-NC38	45	300	50	22.6	SA5T	SY5T	K5T	YI5OIL	YE5OIL
	AVRC50-5OIL	V0.038R	NC23-NC38									
	AVR80-5OIL	V0.050R	NC40-NC77	72	400	80	39.7					
	AVRC80-5OIL	V0.050R	NC40-NC77									

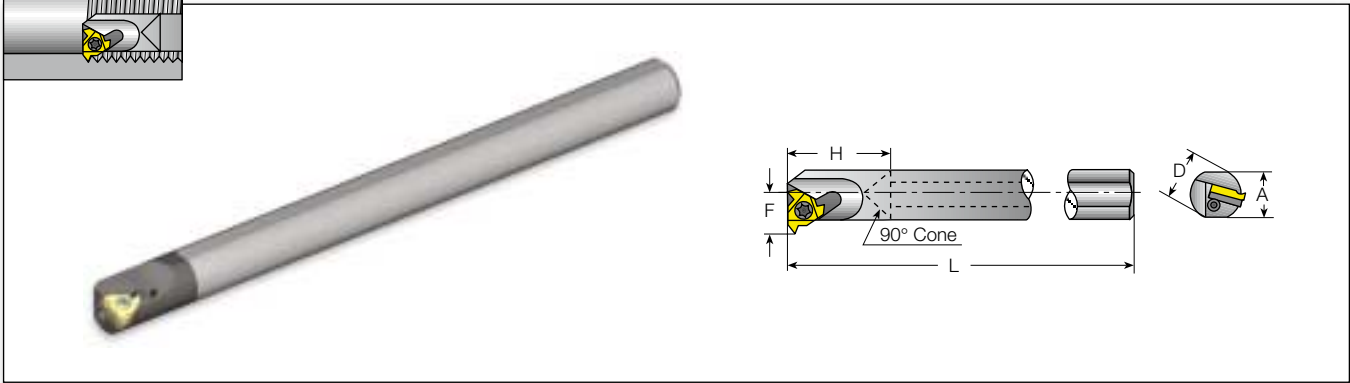
The above toolholders have a 1.5° helix angle.

Toolholders ordered with an internal coolant channel have an internal BSP 1/2" thread for connection to the flexible coolant pipe.

Holders with coolant channel available as standard. For ordering code, see page 95.



Internal Toolholders

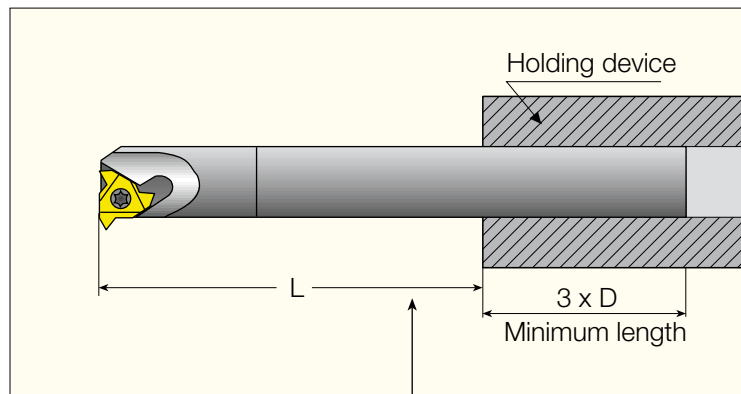


Standard with Carbide Shank

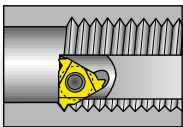
Standard with Carbide Shank								Spare Parts				
Insert Size	Ordering Code	Dimensions mm					Min. Bore Dia.					
IC		H	D	A	F	L	mm	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
1/4"	CNVRC10-2	19	10	9.5	7.3	150	13	SN2T	-	K2T	-	-
	CNVRC12-2	25	12	11.7	8.3	180	15					
3/8"	CNVRC16-3	27	16	15.6	11.5	200	20	SN3T	-	K3T	-	-
	CAVRC20-3	35	20	19.5	13.4	250	24	SA3T	SY3T	K3T	YI3	YE3
1/2"	CNVRC20-4	38	20	19.5	13.8	250	25	SN4T	-	K4T	-	-

The above toolholders have 1.5° helix angle. For other helix angles see page 122.
Toolholders with prefix "CN" cannot be used with an anvil.
The above Toolholders have coolant channel as standard.

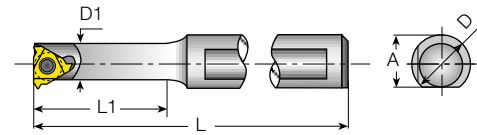
Carbide Shank toolholders should be used when extra accuracy is required or when the bar length to bar diameter ratio exceeds 3:1.



The overhang to bar diameter ratio should be as small as possible to eliminate the chance of chatter (vibration). The minimum length inside a holding device should be 3 times the diameter of the bar shank.

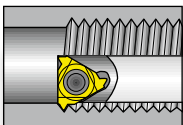


Internal Toolholders

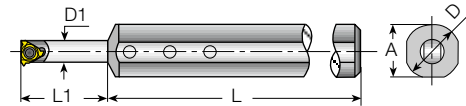


Mini-3

								Spare Parts	
Insert Size	Ordering Code	Dimensions mm				Anti-Vibration System			
IC	A	L	L1	D	D1			Insert Screw	Torx Key
6.0	SNVR 12U-6.0	11.4	82	16	12	8	No	SN6MT	K6MT
	BNVR 10S-6.0	9.4	89	22	10	8	Yes		
	BNVR 10M-6.0	9.4	98	31	10	8	Yes		
	BNVR 10L-6.0	9.4	110	43	10	8	Yes		



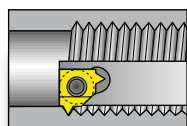
Internal Toolholders



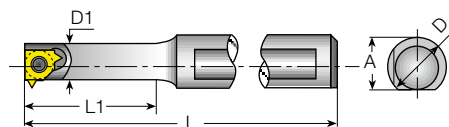
Mini-3-Adjustable

								Spare Parts			
Insert Size	Ordering Code		Dimensions mm								
IC	Sleeve	Holder	A	L	L1	D	D1	Insert Screw	Torx Key for Insert Screw	Holder Screw x3	Key for Holder Screw
6.0	SV16-8.0	BNVR8.0T-6.0	15.6	100	8-56	16	8	SN6MT	K6MT	S4.0	K4.0



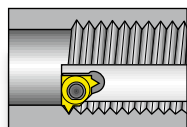


Internal Toolholders

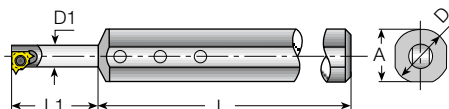


Mini-L

Spare Parts							
Insert Size	Ordering Code	Dimensions mm				Anti-Vibration System	
IC	A	L	L1	D	D1		
5.0L	SNVR 10U-5L	9.4	81	16	10	6.2	No
	BNVR 10S-5L	9.4	87	22	10	6.2	Yes
	BNVR 10M-5L	9.4	97	31	10	6.2	Yes
	BNVR 10L-5L	9.4	109	43	10	6.2	Yes
 							
Insert Screw Torx Key							
SN5LT K5LT							



Internal Toolholders



Mini-L-Adjustable

Spare Parts								
Insert Size	Ordering Code	Dimensions mm						
IC	Sleeve	Holder	A	L	L1	D	D1	
5.0L	SV16-6.2	BNVR6.2T-5L	15.6	100	8-44	16	6.2	
   								
Insert Screw Torx Key for Insert Screw Holder Screw x3 Key for Holder Screw								
SN5LT K5LT S4.0 K4.0								



Spare Parts

External and Internal Toolholders (not including Micro)

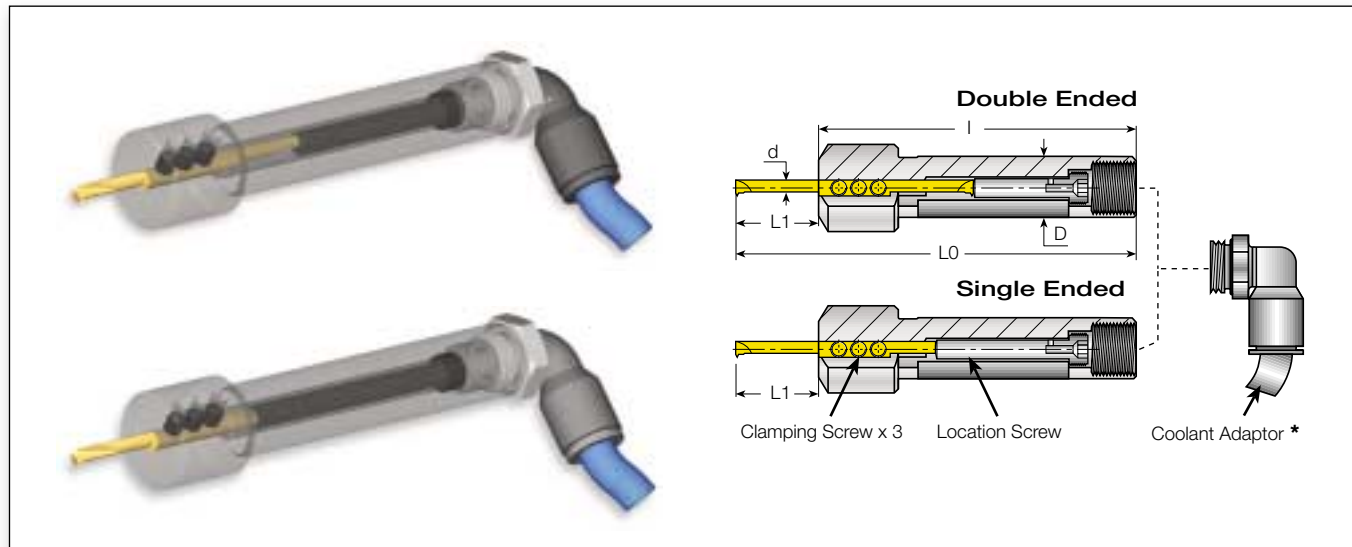


Toolholder	IC	Designation	Thread	Designation	Thread	Key	EX RH / IN LH	IN RH / EX LH
Standard	1/4"	SN2T	M2.6x0.45x6.5	-	-	K2T	-	-
	3/8"	SA3T	UNC5x12.0	SY3T	UNC5x7.3	K3T	YE3	YI3
	1/2"	SA4T	UNC8x15.2	SY4T	UNC8x9.3	K4T	YE4	YI4
	5/8"	SA5T	M5x0.8x22.0	SY5T	M5x0.8x9.5	K5T	YE5	YI5
Standard with Clamp	3/8"	SA3T/C3	UNC5x12.0/M5x0.8x22.0	SY3T	UNC5x7.3	K3CT	YE3	YI3
	1/2"	SA4T/C4	UNC8x15.2/M6x1.0x29.5	SY4T	UNC8x9.3	K4T	YE4	YI4
	5/8"	SA5T/C5	M5x0.8x22.0/M8x1.25x28.0	SY5T	M5x0.8x9.5	K5T	YE5	YI5
U Style	1/2"U	SA4T	UNC8x15.2	SY4T	UNC8x9.3	K4T	YE4U	YI4U
	5/8"U	SA5T	M5x0.8x22.0	SY5T	M5x0.8x9.5	K5T	YE5U	YI5U
U Style with clamp	1/2"	SA4T/C4	UNC8x15.2/M6x1.0x29.5	SY4T	UNC8x9.3	K4T	YE4U	YI4U
	5/8"	SA5T/C5	M5x0.8x22.0/M8x1.25x28.0	SY5T	M5x0.8x9.5	K5T	YE5U	YI5U
V Style	1/4"V	SN2T	M2.6x0.45x6.5	-	-	K2T	-	-
	3/8"V	SN3T	UNC5x9.9	-	-	K3T	-	-
	1/2"V	SN4T	UNC8x15.2	-	-	K4T	-	-
	5/8"V	SN6T	M6x1.0x29.5	-	-	K6T	-	-
Z Style	1/2"Z	SA4T	UNC8x15.2	SY4T	UNC8x9.3	K4T	YE4Z	YI4Z
	5/8"Z	SA5T	M5x0.8x22.0	SY5T	M5x0.8x9.5	K5T	YE5Z	YI5Z
M Style	3/8"M	SA3T	UNC5x12.0	SY3T	UNC5x7.3	K3T	YE3M	YI3M
	1/2"M	SA4T	UNC8x15.2	SY4T	UNC8x9.3	K4T	YE4M	YI4M
	5/8"M	SA5T	M5x0.8x22.0	SY5T	M5x0.8x9.5	K5T	YE5M	YI5M
T Style	1/2"T	SA4T	UNC8x15.2	SY4K2	UNC8x7.3	K4T/K2	Y4T	Y4T
API	5/8"	SA5T/C5	M5x0.8x22.0/M8x1.25x28.0	SY5T	M5x0.8x9.5	K5T	YE5OIL	YI5OIL
Mini-L-Thread	5.0L	SN5LT	M2x0.4x4.1	-	-	K5LT	-	-
Mini-3-Thread	6.0mm	SN6MT	M1.8x0.35x4.5	-	-	K6MT	-	-
Mini Adjustable Holder	-	S4.0	M4x0.7x4.0	-	-	K4.0	-	-

* NVR16-3 requires insert screw SN3T ** NVR20-4 requires insert screw SN4T

For Micro Toolholders see next page ►

Internal Toolholders



Micro

Micro				Spare Parts			
Micro Insert Dia.	Ordering Code	Dimensions		Coolant Adaptor	Location Screw		Clamping Screw x 3
d (mm)		D	I				 
3.0	SMC10-3.0	10	80	-	see on next page	K4.0	M4X0.7X4.0 K2.0
	SMC12-3.0	12		-			
	SMC16-3.0	16	95	G1/4A			
	SMC20-3.0	20		G1/4A			
4.0	SMC10-4.0	10	80	-	see on next page	K4.0	M4X0.7X4.0 K2.0
	SMC12-4.0	12		-			
	SMC16-4.0	16	95	G1/4A			
	SMC20-4.0	20		G1/4A			
6.0	SMC12-6.0	12	80	-	see on next page	K4.0	M4X0.7X4.0 K2.0
	SMC16-6.0	16	95	G1/4A			
	SMC20-6.0	20		G1/4A			

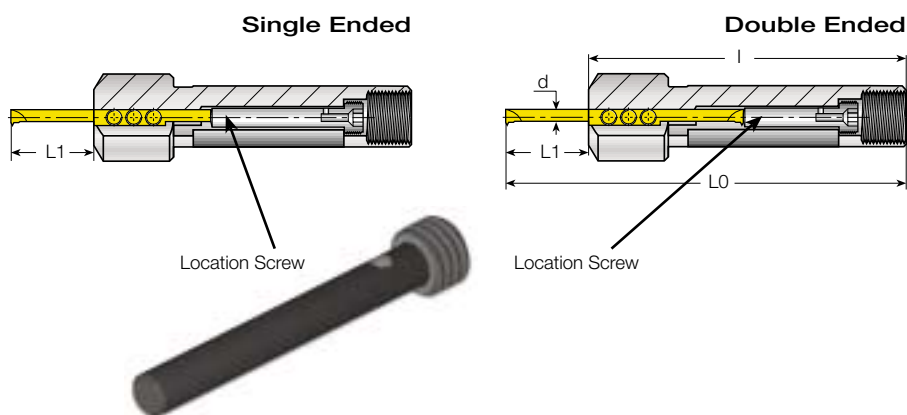
* Coolant Adaptor is optional

continued on next page ▶

NOTE: All Holders can be used for all single ended and double ended.



Internal Toolholders (con't)



Spare Parts - Location Screws for Micro Toolholders*

Micro Insert Dia.	Toolholder	Dimensions mm			Location Screw		M	
d [mm]		I	L1	L0	Single Ended	M	Double Ended	M
3	SMC10-3.0	80	9 - Short	89	4GISM8X28	28	4GISM8X28	28
	SMC12-3.0	80	16 - Medium	96			4GISM8X21	21
	SMC16-3.0	95	9 - Short	104	4GISM8X49	49	4GISM8X49	49
	SMC20-3.0	95	16 - Medium	111			4GISM8X42	42
4	SMC10-4.0 SMC12-4.0	80	9 - Short	89	4GISM8X28	28	4GISM8X28	28
		80	16 - Medium	96			4GISM8X21	21
		80	21 - Long	101			4GISM8X16	16
	SMC16-4.0 SMC20-4.0	95	9 - Short	104	4GISM8X49	49	4GISM8X49	49
		95	16 - Medium	111			4GISM8X42	42
		95	21 - Long	116			4GISM8X37	37
6	SMC12-6.0	80	9 - Short	89	4GISM8X28	28	4GISM8X28	28
		80	16 - Medium	96			4GISM8X21	21
		80	21 - Long	101			4GISM8X16	16
	SMC16-6.0 SMC20-6.0	95	9 - Short	104	4GISM8X49	49	4GISM8X49	49
		95	16 - Medium	111			4GISM8X42	42
		95	21 - Long	116			4GISM8X37	37

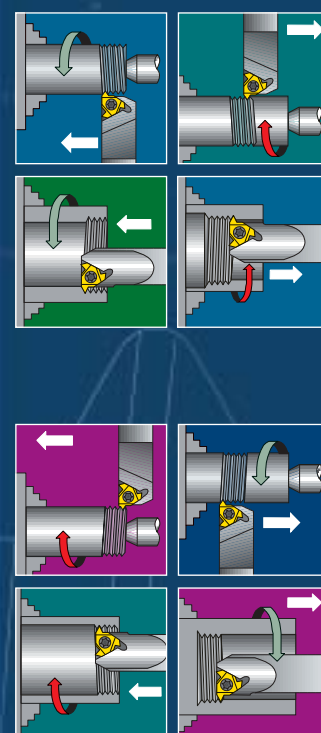
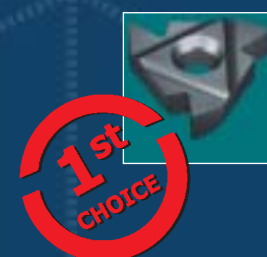
* Every toolholder package contains the full range of location screws needed.



THRAED TURNING TECHNICAL DATA

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● Thread Terminology	Page	119
● Machining a Multi-Start Thread	Page	120
● Insert Profile Styles	Page	120
● Thread Turning Methods	Page	121
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● Anvils and Anvil Kits	Page	123
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● Troubleshooting	Page	134





Thread Terminology

External Thread

A thread on the external surface of a cylinder screw or cone

Depth of Thread

The distance between crest and root measured normal to the axis.

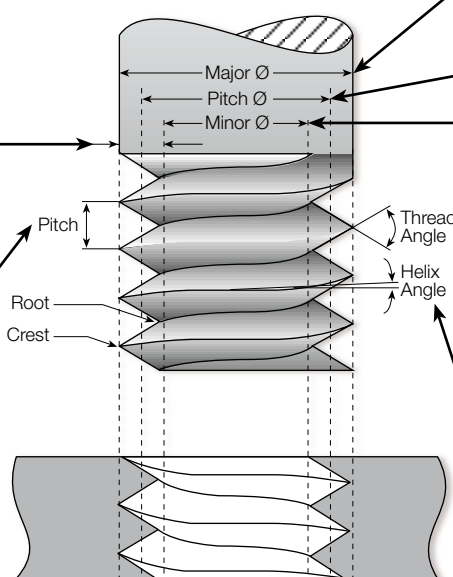
Pitch

The distance between corresponding points on adjacent thread forms measured parallel to the axis. This distance can be defined in millimeters or by the tpi (threads per inch), which is the reciprocal of the pitch.

Nominal Diameter

The diameter from which the diameter limits are derived by the application of deviation allowances and tolerances.

External Thread



Major Diameter

The largest diameter of a screw thread.

Pitch Diameter

On a straight thread, the diameter of an imaginary cylinder, the surface of which cuts the thread forms where the width of the thread and groove are equal.

Minor Diameter

The smallest diameter of a screw thread.

Helix Angle

For a straight thread, where the lead of the thread and the pitch diameter circle circumference form a right angled triangle, the helix angle is the angle opposite the lead.

Internal Thread

A thread on the internal surface of a cylinder or cone.

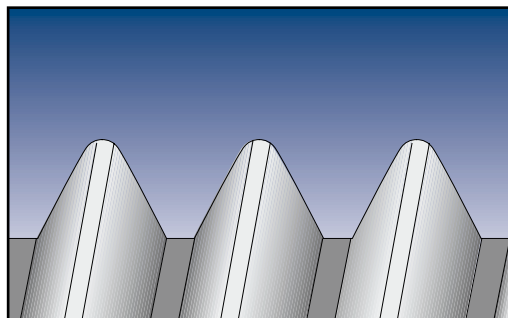
Straight Thread

A thread formed on a cylinder

Taper Thread

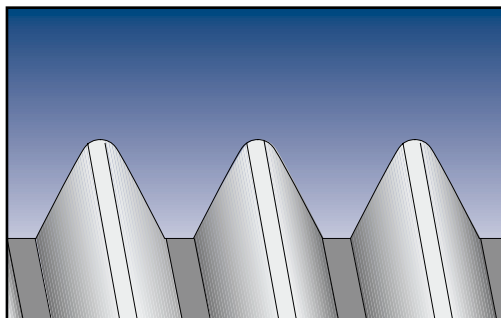
A thread formed on a cone

Left-hand thread



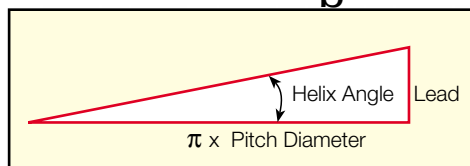
A thread which, when viewed axially, winds in a counterclockwise and receding direction. All left-hand threads are designated LH.

Right-hand thread



A thread which, when viewed axially, winds in a clockwise and receding direction. Threads are always right-hand unless otherwise specified.

The Helix Angle ϕ



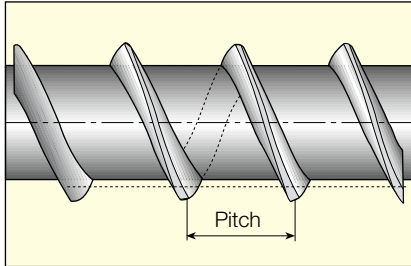
Lead

The distance a threaded part moves axially, with respect to a fixed mating part, in one complete revolution. The lead is equal to the pitch multiplied by the number of thread starts.

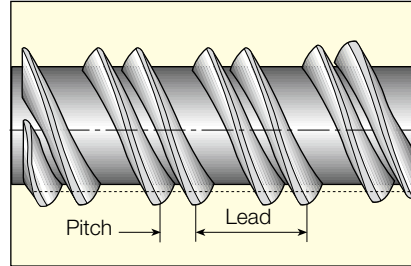
Machining a Multi-Start Thread

A thread in which the lead is an integral multiple, greater than one, of the pitch. A multi-start thread permits a more rapid advance without a coarser (larger) thread form.

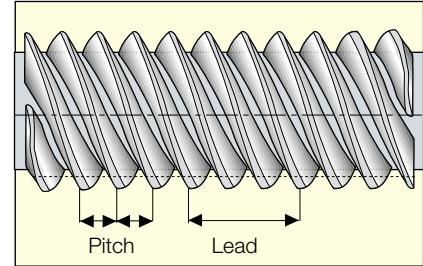
First Start Machined



Second Start Machined



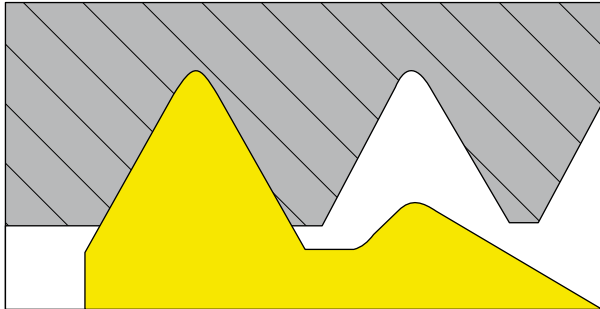
**Third Start Machined
(Final, 3 Starts Thread)**



$$\text{Lead} = 3 \times \text{Pitch}$$

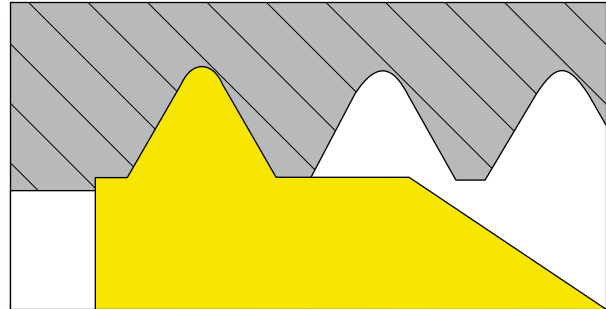
Insert Profile Styles

Partial Profile



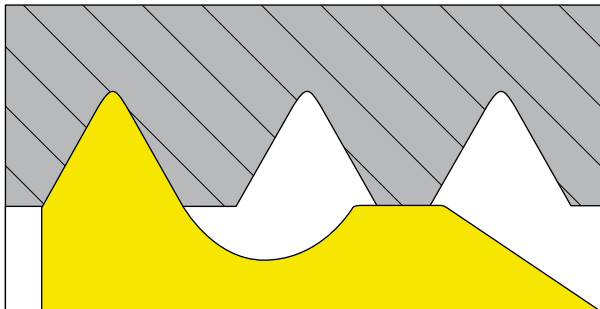
The V partial profile insert cuts without topping the outer diameter of the thread. The same insert can be used for a range of different thread pitches which have a common thread angle.

Full Profile



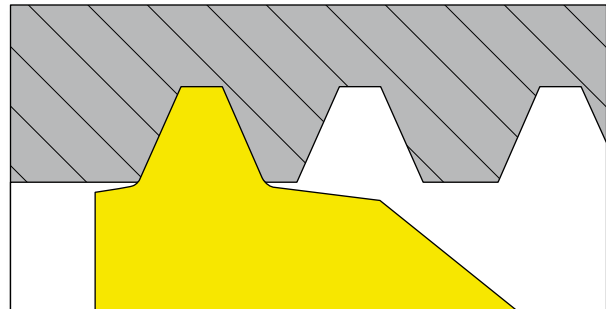
The full profile insert will form a complete thread profile including the crest. For every thread pitch and standard, a separate insert is required.

Full Profile for Fine Pitches



The full profile for Fine Pitches will form a complete thread. The topping of the outer diameter is generated by second tooth.

Semi Full



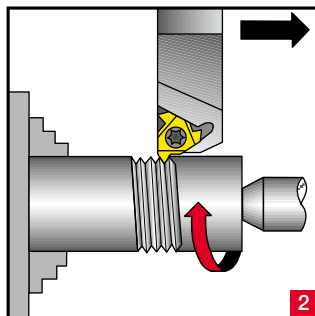
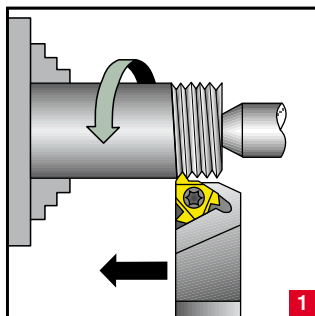
The Semi profile insert will form a complete thread including crest radius but without topping the outer diameter. Mainly used for trapezoidal profiles.



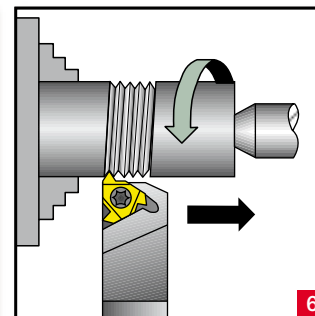
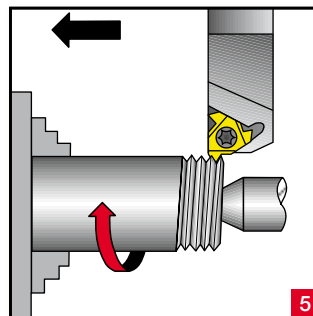
Thread Turning Methods

Thread	Inserts & Toolholder	Rotation	Feed Direction	Helix Method	Drawing No.
Right Hand External	EX RH	Anticlockwise	Towards chuck	Regular	1
	EX LH	Clockwise	From chuck	Reversed	2
Right Hand Internal	IN RH	Anticlockwise	Towards chuck	Regular	3
	IN LH	Clockwise	From chuck	Reversed	4
Left Hand External	EX LH	Clockwise	Towards chuck	Regular	5
	EX RH	Anticlockwise	From chuck	Reversed	6
Left Hand Internal	IN LH	Clockwise	Towards chuck	Regular	7
	IN RH	Anticlockwise	From chuck	Reversed	8

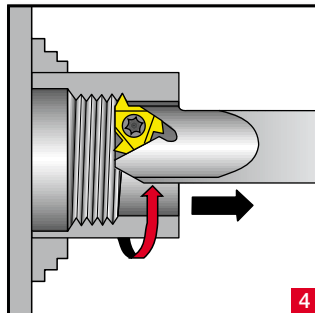
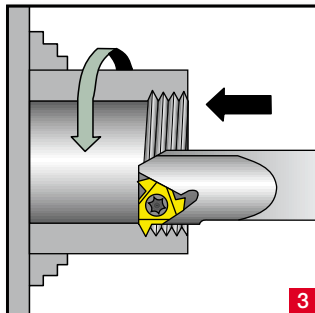
External RH Thread



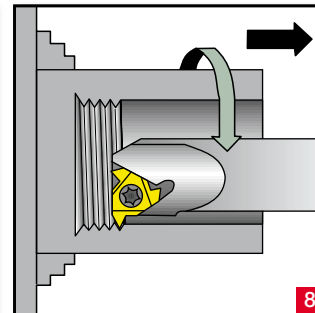
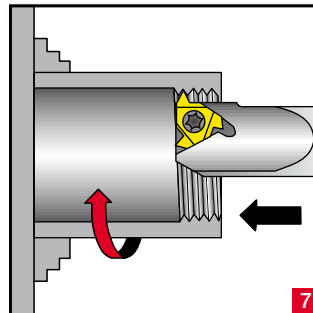
External LH Thread



Internal RH Thread

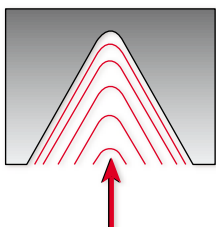


Internal LH Thread



Thread Infeed Methods

Radial Infeed



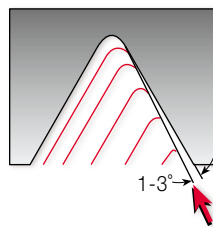
Radial infeed is the simplest and quickest method.

The feed is perpendicular to the turning axis, and both flanks of the insert perform the cutting operation.

Radial infeed is recommended in 3 cases:

- when the pitch is smaller than 16 tpi
- for material with short chips
- for work with hardened material

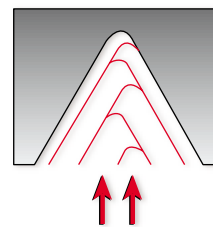
Flank Infeed (modified)



Flank infeed is recommended in the following cases:

- when the thread pitch is greater than 16 tpi., using the radial method, the effective cutting edge length is too large, resulting in chatter.
- for TRAPEZ and ACME. The radial method result in three cutting edges, making chip flow very difficult.

Alternate Flank Infeed

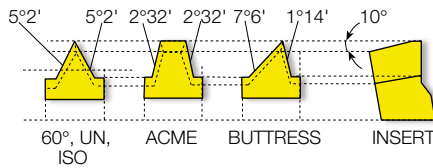


Use of the alternate flank method is recommended especially in large pitches and for materials with long chips.

This method divides the load equally on both flanks, resulting in equal wear along the cutting edges. Alternate flank infeed requires more complicated programming, and is not available on all lathes.

Calculating the Helix Angle and Choosing The Right Anvil

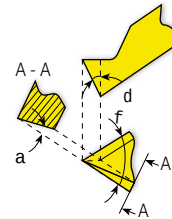
Flank Clearance Angle a



Vardex toolholders are designed to tilt the insert when seated in the toolholder (10° for external, 15° for internal tooling).

This results in the differing flank clearance angles, based on the geometry of insert.

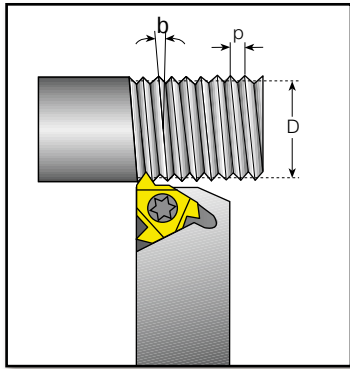
To ensure that the side of the insert cutting edge will not rub on the workpiece, it is most important that the insert helix angle be correct - especially in profiles with small enclosed flank angles. This correction is provided by Vardex anvils.



$$a = \arctan(\tan \frac{\varnothing}{2} \times \tan d)$$

Where:
 a - Flank clearance angle
 d - Tilt angle
 $\varnothing$ - Enclosed flank angle

Calculating the Helix Angle b



The helix angle is calculated by the following formula:

$$b = \arctan \frac{P \times N}{\pi \times D}$$

b - Helix angle [°]

P - Pitch [mm]

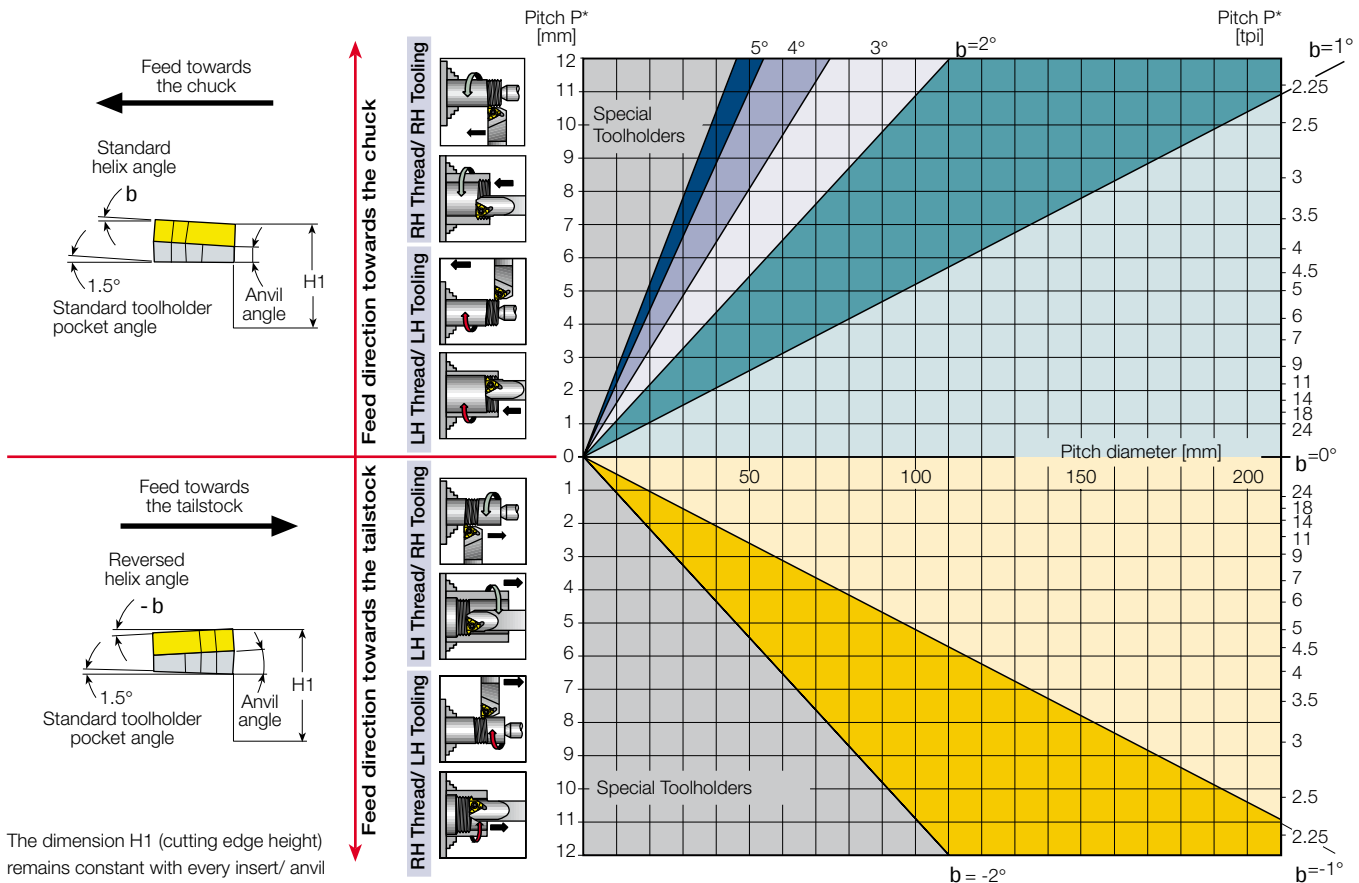
N - No. of starts

D - Pitch diameter [mm]

Lead = $P \times N$

The helix angle can also be found from the diagram below.

Helix Angle Diagram





Anvils

Resultant Helix Angle		4.5° 3.5° 2.5° 1.5° 0.5° 0° -0.5° -1.5°									
Insert Size		Holder	Ordering Code								
IC	L mm										
3/8"	16	ER / IL	YE3-3P	YE3-2P	YE3-1P	YE3	YE3-1N	YE3-1.5N	YE3-2N	YE3-3N	
		EL / IR	YI3-3P	YI3-2P	YI3-1P	YI3	YI3-1N	YI3-1.5N	YI3-2N	YI3-3N	
1/2"	22	ER / IL	YE4-3P	YE4-2P	YE4-1P	YE4	YE4-1N	YE4-1.5N	YE4-2N	YE4-3N	
		EL / IR	YI4-3P	YI4-2P	YI4-1P	YI4	YI4-1N	YI4-1.5N	YI4-2N	YI4-3N	
1/2"U	22	ER / IL	YE4U-3P	YE4U-2P	YE4U-1P	YE4U	YE4U-1N	YE4U-1.5N	YE4U-2N	YE4U-3N	
		EL / IR	YI4U-3P	YI4U-2P	YI4U-1P	YI4U	YI4U-1N	YI4U-1.5N	YI4U-2N	YI4U-3N	
5/8"	27	ER / IL	YE5-3P	YE5-2P	YE5-1P	YE5	YE5-1N	YE5-1.5N	YE5-2N	YE5-3N	
		EL / IR	YI5-3P	YI5-2P	YI5-1P	YI5	YI5-1N	YI5-1.5N	YI5-2N	YI5-3N	
5/8"U	27	ER / IL	YE5U-3P	YE5U-2P	YE5U-1P	YE5U	YE5U-1N	YE5U-1.5N	YE5U-2N	YE5U-3N	
		EL / IR	YI5U-3P	YI5U-2P	YI5U-1P	YI5U	YI5U-1N	YI5U-1.5N	YI5U-2N	YI5U-3N	
3/8"M	16	ER / IL			YE3M-1P	YE3M	YE3M-1N	YE3M-1.5N	YE3M-2N		
		EL / IR			YI3M-1P	YI3M	YI3M-1N	YI3M-1.5N			
1/2"M	22	ER / IL			YE4M-1P	YE4M	YE4M-1N	YE4M-1.5N	YE4M-2N		
		EL / IR			YI4M-1P	YI4M	YI4M-1N	YI4M-1.5N			
5/8"M	27	ER / IL				YE5M	YE5M-1N	YE5M-1.5N			
		EL / IR				YI5M	YI5M-1N	YI5M-1.5N			
1/2"Z	22	ER / IL			YE4Z-1P	YE4Z	YE4Z-1N				
		EL / IR			YI4Z-1P	YI4Z	YI4Z-1N				
5/8"Z	27	ER / IL				YE5Z					
		EL / IR				YI5Z					
1/2"T	22	ER / IL EL / IR				Y4T					

Standard Anvil		U Style Anvil		M Style Anvil		Z Style Anvil		T Style Anvil	
ER/IL	EL/IR	ER/IL	EL/IR	ER/IL	EL/IR	ER/IL	EL/IR	ER/IL	EL/IR Same anvil turned over

Anvil Kits

Anvil Size		Ordering Code	Included Anvils:
IC	L mm		
3/8"	16	ABY3	YE3-2P, 1P, 1N, 2N, 3N
			YI3-2P, 1P, 1N, 2N, 3N
1/2"	22	ABY4	YE4-2P, 1P, 1N, 2N, 3N
			YI4-2P, 1P, 1N, 2N, 3N
1/2"U	22	ABY4U	YE4U-2P, 1P, 1N, 2N, 3N
			YI4U-2P, 1P, 1N, 2N, 3N
5/8"	27	ABYE5	YE5-2P, 1P, 1N, 2N, 3N
		ABYI5	YI5-2P, 1P, 1N, 2N, 3N
5/8"U	27	ABYE5U	YE5U-2P, 1P, 1N, 2N, 3N
		ABYI5U	YI5U-2P, 1P, 1N, 2N, 3N

To ensure that you always have on hand an assortment of anvils for any job, we recommend that anvil kits be readily available.



Grades and their Applications

Grade	Application	Sample
VTX	First Choice grade for general use. A tough sub-micron substrate with TiAlN coating. Provides good fracture toughness and excellent wear resistance.	
VCB	Vardex Sintered chipbreaker for general use. The combination of sintered chipbreaker with ground profile provides excellent chip control and high quality of thread. TiAlN coating.	
VM7	Premium grade for stainless steel. Extra tough coating. Special multi-layer PVD coating guaranteeing higher resistance to wear in Stainless Steel application.	
VKX	High hardness substrate for steels, stainless steel, non ferrous & aluminium. Recommended for rigid machine conditions. TiN coating.	
VSX	For machining steels at low cutting speed. TiN coating.	
VK2	The uncoated grade for nonferrous, aluminium, high temperature and titanium alloys.	
VK2P	The uncoated grade for nonferrous, aluminium, high temperature and titanium alloys. VK2P - with polished chipbreaker for high quality surface finish on aluminium.	
VKP	General use carbide grade for Mini inserts. TiN coated	
VHX	General use HSS grade for Mini inserts. For machining at low cutting speed. TiN coated	
VMX	General use carbide grade for Micro inserts. TiN coated	



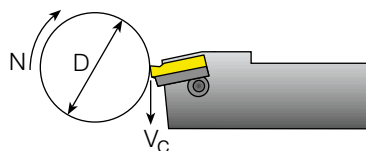
Recommended Grades and Cutting Speeds Vc [m/min] (Not including Mini & Micro)

Material	Hardness Brinell HB	Vc[m/min]						
		1st CHOICE	Coated					Uncoated
			First choice VTX	VCB	VM7	VKX	VSX	VK2 / VK2P
P	Unalloyed steel	Low carbon (C=0.1-0.25 %)	125	115-190	115-190		140-200	80-150
		Medium carbon (C=0.25-0.55 %)	150	100-175	100-165		120-180	80-140
		High carbon (C=0.55-0.85 %)	170	90-165	90-155		110-180	80-140
	Low alloy steel (alloying elements ≤ 5%)	Non hardened	180	85-145	100-180		100-155	70-130
		Hardened	275	75-140	75-140		90-145	70-120
		Hardened	350	70-135	70-135		80-135	70-115
	High alloy steel (alloying elements > 5%)	Annealed	200	70-110	80-120		70-115	60-110
		Hardened	325	50-100	50-100		50-100	50-90
	Cast steel	Low alloy (alloying elements <5%)	200	75-140	70-130			
		High alloy (alloying elements >5%)	225	60-120	60-120			
M	Stainless steel Feritic	Non hardened	200	70-130	70-130	70-150	70-120	
		Hardened	330	60-115	50-95	60-125	60-95	
	Stainless steel Austenitic	Austenitic	180	90-140	80-120	90-160	70-100	
		Super austenitic	200	40-110	30-100	40-120	40-90	
	Stainless steel Cast feritic	Non hardened	200	90-120	90-120	90-150	80-110	
		Hardened	330	65-110	65-110	65-120	65-110	
	Stainless steel Cast austenitic	Austenitic	200	85-110	85-110	85-120	85-100	
		Hardened	330	60-100	60-100	60-110	60-100	
	High temperature alloys	Annealed (Iron based)	200	45-60	45-60			30-50
		Aged (Iron based)	280	30-50	30-50			25-40
		Annealed (Nickel or Cobalt based)	250	20-30	20-30			20-30
		Aged (Nickel or Cobalt based)	350	15-25	15-25			15-25
	Titanium alloys	Pure 99.5 Ti	400Rm	140-170	140-170			60-100
		a+b alloys	1050Rm	50-70	50-70			40-60
K	Extra hard steel	Hardened & tempered	55HRc	45-60	45-60		45-60	
	Malleable cast iron	Ferritic (short chips)	130	70-160	70-120			
		Pearlitic (long chips)	230	60-145	70-120			
	Grey cast iron	Low tensile strength	180	70-130	70-130			
		High tensile strength	260	60-115	60-100			
	Nodular SG iron	Feritic	160	125-160	125-160			
		Pearlitic	260	90-120	90-120			
	Aluminium alloys Wrought	non aging	60	100-365	100-250		100-240	100-250
		Aged	100	80-220	80-180		80-170	80-160
	Aluminium alloys	Cast	75	200-400	200-400			80-120
		Cast & aged	90	200-280	200-280			70-100
	Aluminium alloys	Cast Si 13-22%	130	60-180	60-150			50-120
	Copper and copper alloys	Brass	90	80-225	80-210		80-200	70-170
		Bronze and non leaded copper	100	80-255	80-210		80-200	70-170

Calculation of N [RPM]

$$N = \frac{1000 \times V_c}{p \times D}$$

$$V_c = \frac{N \times D \times D}{1000}$$



N - Revolution Per Minute [RPM]
V_c - Cutting Speed [m/min]
D - Workpiece Diameter [mm]

Recommended Grades and Cutting Speeds Vc [m/min] Mini and Micro

Material			Hardness Brinell HB	Vc[m/min]		
				Coated		
				VMX Micro Inserts	VKP Mini Inserts	VHX Mini Inserts
P	Unalloyed steel	Low carbon (C=0.1-0.25 %)	125	50-120	140-200	20-50
		Medium carbon (C=0.25-0.55 %)	150	40-100	120-180	15-40
		High Carbon (C=0.55-0.85 %)	170	30-80	110-180	15-30
	Low alloy steel (alloying elements ≤ 5%)	Non hardened	180	50-70	100-155	20-45
		Hardened	275	40-60	90-145	10-25
		Hardened	350	30-50	80-135	10-25
	High alloy steel (alloying elements > 5%)	Annealed	200	30-50	65-115	
		Hardened	325	25-40	50-100	
	Cast steel	Low alloy (alloying elements <5%)	200	30-50	30-50	25-50
		High alloy (alloying elements >5%)	225	25-40	25-40	20-40
M	Stainless steel Ferritic	Non hardened	200	60-100	80-120	
		Hardened	330	40-60	55-95	
	Stainless steel Austenitic	Austenitic	180	50-90	60-100	
		Super austenitic	200	40-60	50-90	
	Stainless steel Cast ferritic	Non hardened	200	40-60	60-80	
		Hardened	330	30-50	45-65	
	Stainless steel Cast austenitic	Austenitic	200	40-60	50-70	
		Hardened	330	30-50	40-60	
	High temperature alloys	Annealed (Iron based)	200	25-45	25-45	
		Aged (Iron based)	280	20-30	20-30	
		Annealed (Nickel or Cobalt based)	250	15-20	15-20	
		Aged (Nickel or Cobalt based)	350	10-15	10-15	
	Titanium alloys	Pure 99.5 Ti	400Rm	60-100	60-100	
		a+b alloys	1050Rm	40-50	40-50	
K	Extra hard steel	Hardened & tempered	55HRc	20-40	20-40	
	Malleable cast iron	Ferritic (short chips)	130	50-70	60-80	
		Pearlitic (long chips)	230	50-70	60-80	
	Grey cast iron	Low tensile strength	180	50-70	60-80	
		High tensile strength	260	40-60	40-70	
	Nodular SG iron	Ferritic	160	50-70	60-80	
		Pearlitic	260	60-80	70-90	
	Aluminium alloys Wrought	non aging	60	100-300	80-240	30-60
		Aged	100	100-150	100-170	25-50
	Aluminium alloys	Cast	75	100-150	100-150	25-50
		Cast & aged	90	60-100	60-100	20-40
	Aluminium alloys	Cast Si 13-22%	130	100-150	100-150	15-30
	Copper and copper alloys	Brass	90	60-100	80-200	15-35
		Bronze and non leaded copper	100	60-100	80-200	15-35



Number of Passes

Pitch	mm	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00	8.00
	tpi	48	32	24	20	16	14	12	10	8	7	6	5.5	5	4.5	4	3
No. of passes		4-6	4-7	4-8	5-9	6-10	7-12	7-12	8-14	9-16	10-18	11-18	11-19	12-20	12-20	12-20	15-24
No. of passes (SCB)		3-4	3-4	3-5	4-6	5-6	6-8	6-8	8-10								
No. of passes (Micro&Mini)		6-9	6-11	6-12	8-14	9-15	11-18	11-18									

Cutting Conditions Depends on:

Workpiece	Material Type	
	Material Dimension: Diameter and Length	
	Chipflow Character	
	Material Hardness	
Thread Application	External or Internal	
	Profile Shape	
	Surface Finish	
Machine	Machine Stability	
	Max. RPM	
	Clamping System Stability	
Coolant	Coolant Type	
Holders	Holder Cross Section Area	
	Holder Overhang	
	Through Coolant Option	
	Shank Type: Carbide, Alloy, Carbide Implant	
Insert	Grade	
	Profile Shape: Pitch and Depth	
	Nose Radius	
	Chipbreaker Style	

Number of Passes and Depth of Cut per Pass for Multi Tooth Inserts

Standard	Insert Type	Insert Size		Pitch	Teeth	Ordering Code	Passes	Depth of cut per pass			
		IC	L mm			RH		1	2	3	4
ISO External	M	3/8"	16	1.0 mm	3	3ER1.0ISO3M ...	2	0.38	0.25		
				1.5 mm	2	3ER1.5ISO2M ...	3	0.42	0.30	0.20	
	M	1/2"	22	1.5 mm	3	4ER1.5ISO3M ...	2	0.55	0.37		
				2.0 mm	2	4ER2.0ISO2M ...	3	0.57	0.40	0.28	
				2.0 mm	3	4ER2.0ISO3M ...	2	0.76	0.49		
	M	5/8"	27	3.0 mm	2	5ER3.0ISO2M ...	4	0.59	0.51	0.42	0.32
	T	1/2"T	22	1.5 mm	8	4ER1.5ISO8T ...	1	0.92			
				2.0 mm	6	4ER2.0ISO6T ...	2	1.00	0.23		
				2.0 mm	8	4ER2.0ISO8T ...	1	1.23			
ISO Internal	M	3/8"	16	1.0 mm	3	3IR1.0ISO3M ...	2	0.33	0.25		
				1.5 mm	2	3IR1.5ISO2M ...	3	0.38	0.29	0.20	
	M	1/2"	22	1.5 mm	3	4IR1.5ISO3M ...	2	0.50	0.37		
				2.0 mm	2	4IR2.0ISO2M ...	3	0.52	0.37	0.26	
				2.0 mm	3	4IR2.0ISO3M ...	2	0.70	0.45		
	M	5/8"	27	3.0 mm	2	5IR3.0ISO2M ...	4	0.58	0.46	0.39	0.30
	T	1/2"T	22	1.5 mm	8	4IR1.5ISO8T ...	1	0.87			
				2.0 mm	6	4IR2.0ISO6T ...	2	0.95	0.20		
				2.0 mm	8	4IR2.0ISO8T ...	1	1.15			
UN External	M	3/8"	16	16 tpi	2	3ER16UN2M ...	3	0.44	0.31	0.22	
	M	1/2"	22	16 tpi	3	4ER16UN3M ...	2	0.58	0.39		
				12 tpi	2	4ER12UN2M ...	3	0.58	0.42	0.30	
				12 tpi	3	4ER12UN3M ...	2	0.78	0.52		
	M	5/8"	27	8 tpi	2	5ER8UN2M ...	4	0.62	0.54	0.45	0.35
	Z	1/2"	22	8 tpi	2	4ER8UN2Z ...	4	0.62	0.54	0.45	0.35
UN Internal	M	3/8"	16	16 tpi	2	3IR16UN2M ...	3	0.42	0.28	0.22	
	M	1/2"	22	16 tpi	3	4IR16UN3M ...	2	0.55	0.37		
				12 tpi	2	4IR12UN2M ...	3	0.53	0.38	0.31	
				12 tpi	3	4IR12UN3M ...	2	0.74	0.48		
	M	5/8"	27	8 tpi	2	5IR8UN2M ...	4	0.63	0.50	0.40	0.30
	Z	1/2"	22	8 tpi	2	4IR8UN2Z ...	4	0.63	0.50	0.40	0.30
BSW External	M	3/8"	16	14 tpi	2	3ER14W2M ...	3	0.52	0.37	0.27	
	M	1/2"	22	14 tpi	3	4ER14W3M ...	2	0.70	0.46		
				11 tpi	2	4ER11W2M ...	3	0.67	0.47	0.34	
BSW Internal	M	3/8"	16	14 tpi	2	3IR14W2M ...	3	0.52	0.37	0.27	
	M	1/2"	22	14 tpi	3	4IR14W3M ...	2	0.70	0.46		
				11 tpi	2	4IR11W2M ...	3	0.67	0.47	0.34	



M Style Insert



T Style Insert



Z Style Insert

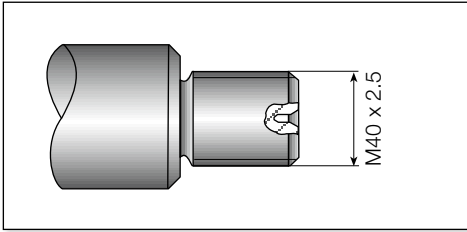


Number of Passes and Depth of Cut per Pass for Multi Tooth Inserts (con't)

Standard	Insert Type	Insert Size		Pitch	Teeth	Ordering Code	Passes	Depth of cut per pass			
		IC	L mm			RH		1	2	3	4
NPT External	M	1/2"	22	11.5 tpi	2	4ER11.5NPT2M ...	4	0.54	0.47	0.37	0.30
	M	5/8"	27	11.5 tpi	3	5 ER11.5NPT3M ...	3	0.76	0.54	0.38	
				8 tpi	2	5ER8NPT2M ...	4	0.81	0.60	0.55	0.45
	Z	1/2"	22	11.5 tpi	2	4ER11.5NPT2Z ...	4	0.54	0.47	0.37	0.30
				8 tpi	2	4ER8NPT2Z ...	4	0.81	0.60	0.55	0.45
	T	1/2"T	22	11.5 tpi	6	4ER11.5NPT6T ...	2	1.00	0.68		
				8 tpi	5	4ER8NPT5T ...	3	1.09	0.77	0.55	
NPT Internal	M	1/2"	22	11.5 tpi	2	4IR11.5NPT2M ...	4	0.54	0.47	0.37	0.30
	M	5/8"	27	11.5 tpi	3	5IR11.5NPT3M ...	3	0.76	0.54	0.38	
				8 tpi	2	5IR8NPT2M ...	4	0.81	0.60	0.55	0.45
	Z	1/2"	22	11.5 tpi	2	4IR11.5NPT2Z ...	4	0.54	0.47	0.37	0.30
				8 tpi	2	4IR8NPT2Z ...	4	0.81	0.60	0.55	0.45
	T	1/2"T	22	11.5 tpi	6	4IR11.5NPT6T ...	2	1.00	0.68		
				8 tpi	5	4IR8NPT5T ...	3	1.09	0.77	0.55	
NPTF External	M	1/2"	22	11.5 tpi	2	4ER11.5NPTF2M ...	4	0.53	0.46	0.37	0.30
NPTF Internal	M	1/2"	22	11.5 tpi	2	4IR11.5NPTF2M ...	4	0.53	0.46	0.37	0.30
	M	5/8"	27	11.5 tpi	3	5IR11.5NPTF3M ...	3	0.75	0.54	0.37	
APIBUT External	M	1/2"	22	5 tpi	3	4ER5BUT753T ...	3	0.80	0.67	0.10	
APIBUT Internal	M	1/2"	22	5 tpi	3	4IR5BUT753T ...	3	0.80	0.67	0.10	
APIRD External	M	1/2"	22	10 tpi	2	4ER10APIRD2M ...	3	0.60	0.50	0.31	
	M	5/8"	27	10 tpi	3	5ER10APIRD3M ...	2	1.00	0.41		
				8 tpi	2	5ER8APIRD2M ...	3	0.80	0.60	0.41	
	Z	1/2"	22	10 tpi	2	4ER8APIRD2Z ...	3	0.60	0.50	0.31	
				8 tpi	2	4ERAPIRD2Z ...	3	0.80	0.60	0.41	
	T	1/2"T	22	10 tpi	6	4ER10APIRD6T ...	1	1.41			
				8 tpi	3	4ER8APIRD3T ...	2	1.10	0.71		
				8 tpi	5	4ER8APIRD5T ...	2	1.30	0.52		
APIRD Internal	M	1/2"	22	10 tpi	2	4IR10APIRD2M ...	3	0.60	0.50	0.31	
	M	5/8"	27	10 tpi	3	5IR10APIRD3M ...	2	1.00	0.41		
				8 tpi	2	5IR8APIRD2M ...	3	0.80	0.60	0.41	
	Z	1/2"	22	10 tpi	2	4IR10APIRD2Z ...	3	0.60	0.50	0.31	
				8 tpi	2	4IR8APIRD2Z ...	3	0.80	0.60	0.41	
	T	1/2"T	22	10 tpi	6	4IR10APIRD6T ...	1	1.41			
				8 tpi	3	4IR8APIRD3T ...	2	1.10	0.71		
				8 tpi	5	4ER8APIRD5T ...	2	1.30	0.52		



Step by Step Thread Turning - Example 1

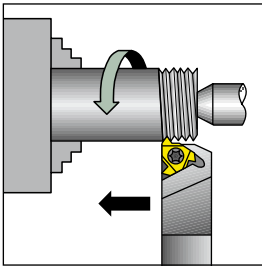


Application:

Thread: External Right Hand
ISO Metric M40x2.5

Material: 4140 (25 HRc)

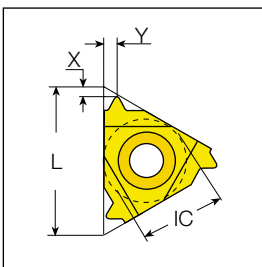
1 Choose the Thread Turning Method (see page 121)



Feed **direction towards the chuck** was chosen.

Therefore an external right hand insert and an external right hand holder will be used.

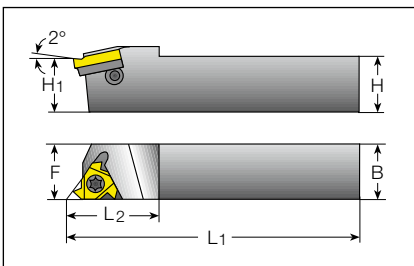
2 Choose the Insert Size (see page 26)



Chosen insert: **3ER2.5ISO**

Insert Size	Pitch	Ordering Code	Anvil	Toolholder
IC	L mm	mm	RH	RH
3/8"	16	2.5	3ER2.5ISO ...	YE3
				AL...-3(LH)

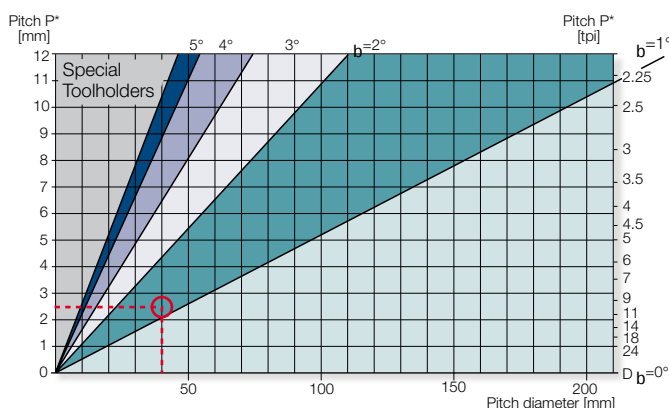
3 Choose the Toolholder (see page 96)



Chosen toolholder: **AL 25-3**

Insert Size	Ordering Code	Dimensions mm			
IC	RH	H=H1=B	F	L1	L2
3/8"	AL 25-3	25	25	153.6	30

4 Determine the Helix Angle (see page 122)



From the table, using a pitch of 2.5 mm (10 tpi) and a workpiece diameter of 40 mm (1.57"), we find the helix angle to be **1.5°**.



5 Choose the Correct Anvil (see page 123)

Anvil chosen: **YE3**

Resultant Helix Angle		3.5	2.5	1.5	0.5
Insert Size	Holder	Ordering Code			
IC	L mm				
3/8"	16	ER/IL	YE3-2P	YE3-1P	YE3 YE3-1N

6 Choose the Carbide Grade and Cutting Speed (see page 125)

Carbide grade chosen: **VTX**

Cutting speed: **140 m/min**

Material:		Hardness Brinell HB	First choice VTX	VCB
P	Low alloy steel (alloying elements ≤ 5%)	Non hardened	180	85-145 100-180
		Hardened	275	75-140 75-140
		Hardened	350	70-135 70-135

7 Determine the Number of Passes (see page 127)

Number of passes: **10**

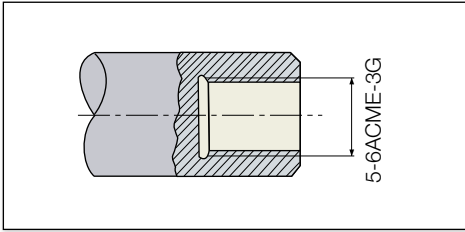
ISO External

Pitch	mm	1.50	1.75	2.00	2.50	3.00	3.50	4.00
	tpi	16	14	12	10	8	7	6
No. of passes	6-10	7-12	7-12	8-14	9-16	10-18	11-18	

Summary

Thread Type		ISO M40x2.5 External Right Hand
1	Feed Direction:	Towards the chuck
2	Insert and Grade:	3ER2.5ISO VTX
3	Toolholder:	AL 25 - 3
4	Helix Angle:	1.5°
5	Anvil	YE3
6	Cutting Speed:	140 m/min
7	Number of Passes:	10

Step by Step Thread Turning - Example 2



Application:

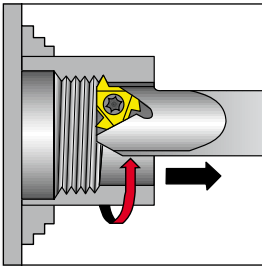
Thread: Internal Right Hand
ACME

Pitch: 6 tpi

Bore dia: 5"

Material: Stainless Steel Austemitic

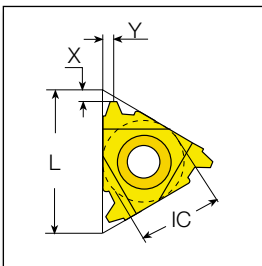
1 Choose the Thread Turning Method (see page 121)



To facilitate the removal of chips from the machined area, we chose a feed direction away from the chuck.

Therefore an internal left hand insert and an internal left hand toolholder are to be used.

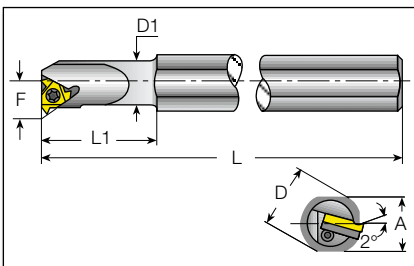
2 Choose the Insert Size (see page 69)



Chosen insert: **4IL6ACME**

Insert Size	Pitch	Ordering Code	Anvil	Toolholder
IC L mm tpi		RH	LH	
1/2" 22 6		4IL6ACME...	YE4	AVR...-4(LH)

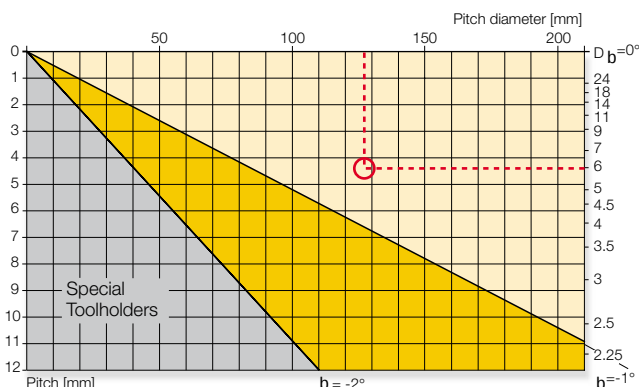
3 Choose the Toolholder (see page 104)



Chosen toolholder: **AVR 40-4LH**

Insert Size	Ordering Code	Dimensions mm						Min Bore
IC	RH	A	L	L1	D	D1	F	mm
1/2"	AVR 40-4	36.0	300	60	40	40.0	25.8	47

4 Determine the Helix Angle (see page 122)



In this case, a right hand thread is being turned with a left hand toolholder. The reverse helix method is used. From the lower part of the table, using a pitch of 6 tpi and a bore diameter of 127mm, we obtain a helix angle of **-0.65°**.



5 Choose the Correct Anvil (see page 123)

Anvil chosen: **YE4-2N**

Resultant Helix Angle		1.5	0.5	0	-0.5	-1.5
Insert Size		Ordering Code				
IC	L mm					
1/2"	22	ER/IL	YE4	YE4-1N	YE4-1.5N	YE4-2N YE4-3N

6 Choose the Carbide Grade and Cutting Speed (see page 125)

Carbide grade chosen: **VTX**

Cutting speed: **140 m/min**

Material:		Hardness Brinell HB	First choice VTX	VCB
M	Stainless steel Austenitic	180	90-140	80-120
	Austenitic Super austenitic	200	40-110	30-100

7 Determine the Number of Passes (see page 127)

Number of passes: **18**

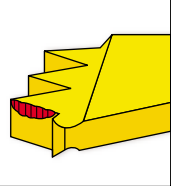
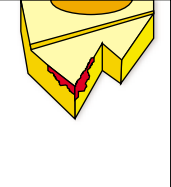
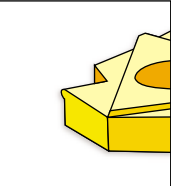
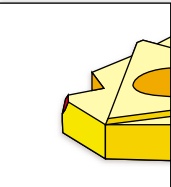
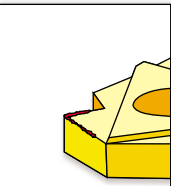
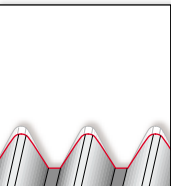
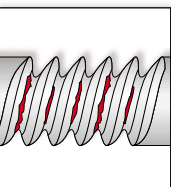
ACME External & Internal

Pitch	mm	3.00	3.50	4.00	4.50	5.00	5.50	6.00
	tpi	8	7	6	5.5	5	4.5	4
No. of passes		9-16	10-18	11-18	11-19	12-20	12-20	12-20

Summary

Thread Type		American AMCE Internal Right Hand
1	Feed Direction:	Away from the chuck
2	Insert and Grade:	4IL6ACME VTX
3	Toolholder:	AVR 40-4LH
4	Helix Angle:	-0.65°
5	Anvil	YE4-2N
6	Cutting Speed:	140 m/min
7	Number of Passes:	18

Troubleshooting

Problem	Possible Cause	Solution
 Increased flank wear	Cutting speed too high -----> Depth of cut too low/ too many passes -----> Unsuitable carbide grade -----> Insufficient cooling ----->	Reduce cutting speed/ use coated insert Increase the depth of cut per pass Use a coated carbide grade Increase coolant flow rate
 Uneven cutting edge wear	Incorrect helix angle -----> Wrong infeed method ----->	Choose the correct anvil Use the Alternating Flank Infeed method
 Extreme plastic deformation	Depth of cut too large -----> Insufficient cooling -----> Cutting speed too high -----> Unsuitable carbide grade -----> Nose radius too small ----->	Decrease depth of cut/ increase number of passes Increase coolant flow rate Reduce cutting speed Use a tougher carbide Use an insert with a larger radius, if possible
 Cutting edge breakage	Depth of cut too large -----> Extreme plastic deformation -----> Insufficient cooling -----> Unsuitable carbide grade -----> Instability ----->	Decrease depth of cut/ increase number of passes Use a tougher carbide Increase flow rate and/ or correct flow direction Use a tougher carbide Check stability of the system
 Built-up edge	Incorrect cutting speed -----> Unsuitable carbide grade ----->	Change the cutting speed Use a coated carbide
 Thread profile is too shallow	The tool is not at the workpiece axis height ----> Insert is not machining the thread crest -----> Worn insert ----->	Change tool height Measure the workpiece diameter Change the cutting edge sooner
 Poor surface quality	Cutting speed too low -----> Wrong anvil -----> Flank infeed method is not appropriate ----->	Increase cutting speed Choose correct anvil Use the alternate flank or radial infeed method