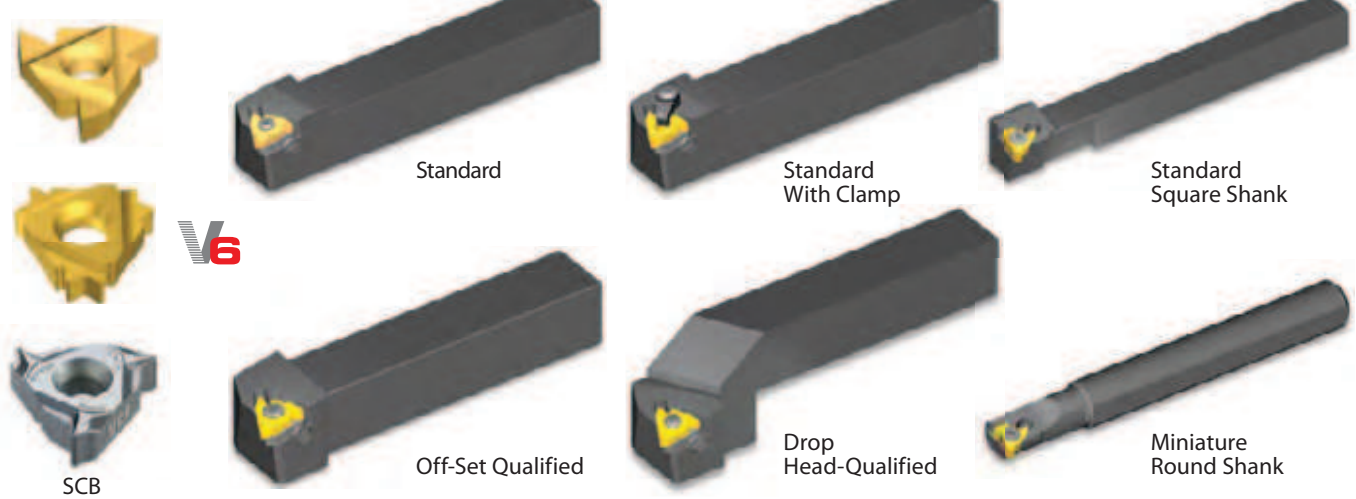




# Thread Turning System - External

## Standard



## U Style



## V Style



## M+ Style



## Z+ Style



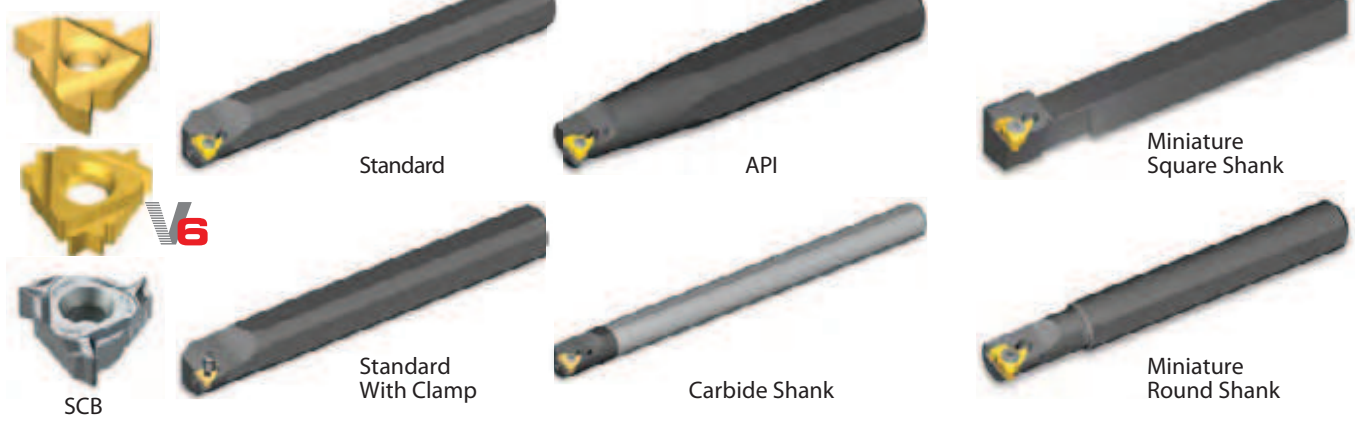
## T+ Style





# Thread Turning System - Internal

## Standard



## U Style



## V Style



## M+ Style

**Multiplus**



## T+ Style

**Multiplus**



## Z+ Style

**Multiplus**



## Mini-3

**MINI PRO**



## Mini-L

**MINI PRO**



## Micro

**MINI PRO**

**microscope**



# Tooling recommendation for a given Internal thread specification

TT Gen Software  
and updated versions  
can be downloaded from  
[www.vargus.com](http://www.vargus.com)



## 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	-
	8	Micro 6.0	6.0SIR1.0ISO	SMC..-6	-
1.00	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	-
	M8	Micro 6.0	6.0SIR1.25ISO	SMC..-6.0	-
1.25	10	IC 5.0 L	5LIR1.25ISO	.NVR10.-5L	-
	12-14	IC 6.0	6.0IR1.25ISO	.NVR1..-6.0	-
	M10	IC 5.0 L	5LIR1.5ISO	.NVR10.-5L	-
1.50	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	Y13
	30-36	IC 3/8"	3IR1.5ISO	AVR20-3	Y13-1N
	38-45	IC 3/8"	3IR1.5ISO	AVR32-3	Y13-1N
	48-68	IC 3/8"	3IR1.5ISO	AVR40-3	Y13-1N
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	Y13
	33-36	IC 3/8"	3IR2.0ISO	AVR25-3	Y13
	39-45	IC 3/8"	3IR2.0ISO	AVR32-3	Y13-1N
	48-68	IC 3/8"	3IR2.0ISO	AVR40-3	Y13-1N
	M18	IC 1/4"	2IR2.5ISO	NVR10-2	-
2.50	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
3.50	48-68	IC 3/8"	3IR3.0ISO	AVR40-3	Y13
	M30-M33	IC 3/8"	3IR3.5ISO	NVR16-3	-
4.00	M36	IC 1/2"	4IR4.0ISO	NVR20-4	-
	M39	IC 1/2"	4IR4.0ISO	AVR25-4	Y14
4.50	56-68	IC 1/2"	4IR4.0ISO	AVR40-4	Y14
	M42	IC 1/2"	4IR4.5ISO	AVR25-4	Y14-1P
5.00	M45	IC 1/2"	4IR4.5ISO	AVR32-4	Y14
	M48	IC 1/2"	4IR5.0ISO	AVR32-4	Y14-1P
5.50	M52	IC 1/2"	4IR5.0ISO	AVR32-4	Y14
	M56-60	IC 5/8"	5IR5.5ISO	AVR40-5	Y15
6.00	M64-68	IC 5/8"	5IR6.0ISO	AVR40-5	Y15

# Tooling recommendation for a given Internal thread specification

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## American UN

Pitch tpi	Thread	Insert Size	Ordering Code		
			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	-
	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	-
32	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	Y13 - 1N
	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	-
28	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	Y13 - 1N
	1 3/16	IC 3/8"	3IR28UN	AVR25-3	Y13 - 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	-
27	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	-
	1	IC 3/8"	3IR27UN	AVR20-3	Y13 - 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	-
24	9/16 - 11/16	IC 1/4"	2IR24UN	NVR10-2	-
	3/4	IC 3/8"	3IR24UN	NVR13-3	-
	7/8	IC 3/8"	3IR24UN	NVR16-3	-
	1 - 1 1/8	IC 3/8"	3IR24UN	AVR20-3	Y13 - 1N
	1 1/4 - 1 1/2	IC 3/8"	3IR24UN	AVR25-3	Y13 - 1N
	1 5/8 - 24	IC 3/8"	3IR24UN	AVR32-3	Y13 - 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	-
20	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	Y13 - 1N
	1 1/4 - 1 1/2	IC 3/8"	3IR20UN	AVR25-3	Y13 - 1N
	1 9/16 - 1 13/16	IC 3/8"	3IR20UN	AVR32-3	Y13 - 1N
	1 7/8 - 2 1/8	IC 3/8"	3IR20UN	AVR40-3	Y13 - 1N

# Tooling recommendation for a given Internal thread specification

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## American UN (con't)

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	Y13 - 1N
	1 1/4 - 1 1/2	IC 3/8"	3IR18UN	AVR25-3	Y13 - 1N
	1 9/16 - 1 3/4	IC 3/8"	3IR18UN	AVR32-3	Y13 - 1N
16	1 7/8 - 2	IC 3/8"	3IR18UN	AVR40-3	Y13 - 1N
	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	Y13
	1 3/16	IC 3/8"	3IR16UN	AVR20-3	Y13 - 1N
14	1 1/4 - 1 1/2	IC 3/8"	3IR16UN	AVR25-3	Y13 - 1N
	1 9/16 - 1 13/16	IC 3/8"	3IR16UN	AVR32-3	Y13 - 1N
	1 7/8 - 2 1/8	IC 3/8"	3IR16UN	AVR40-3	Y13 - 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	Y13
12	1 1/4	IC 3/8"	3IR14UN	AVR25-3	Y13
	1 3/8 - 1 1/2	IC 3/8"	3IR14UN	AVR25-3	Y13 - 1N
	1 5/8 - 1 3/4	IC 3/8"	3IR14UN	AVR32-3	Y13 - 1N
	1 7/8 - 2	IC 3/8"	3IR14UN	AVR40-3	Y13 - 1N
	1/2 - 13	IC 6.0	6.0I13UN...158/001	BNVR 10S-6.0	-
	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	Y13
10	1 1/4 - 1 1/2	IC 3/8"	3IR12UN	AVR25-3	Y13
	1 9/16 - 1 13/16	IC 3/8"	3IR12UN	AVR32-3	Y13
	1 7/8 - 2 1/8	IC 3/8"	3IR12UN	AVR40-3	Y13 - 1N
	5/8 - 11	IC 1/4U"	2UIR11UN...158/003	NVRC11-2U 156/002	-
	7/8	IC 3/8"	3IR10UN	NVR13-3	-
	1 - 10	IC 3/8"	3IR10UN	NVR16-3	-
	1 1/8 - 10	IC 3/8"	3IR10UN	AVR20-3	Y13
	1 1/4 - 1 1/2	IC 3/8"	3IR10UN	AVR25-3	Y13
	1 5/8 - 1 3/4	IC 3/8"	3IR10UN	AVR32-3	Y13
1 7/8 - 2	IC 3/8"	3IR10UN	AVR40-3	Y13	

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

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### 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	Y13 - 1P
	1 1/4	IC 3/8"	3IR8UN	AVR20-3	Y13
	1 5/16 - 1 1/2	IC 3/8"	3IR8UN	AVR25-3	Y13
	1 9/16 - 1 13/16	IC 3/8"	3IR8UN	AVR32-3	Y13
	1 7/8 - 2 1/8	IC 3/8"	3IR8UN	AVR40-3	Y13
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	-
	1 1/2 - 1 5/8	IC 1/2"	4IR6UN	AVR25-4	Y14 - 1P
6	1 11/16	IC 1/2"	4IR6UN	AVR25-4	Y14
	1 3/4 - 2	IC 1/2"	4IR6UN	AVR32-4	Y14
	2 1/8 - 6	IC 1/2"	4IR6UN	AVR40-4	Y14
	1 3/4 - 5	IC 1/2"	4IR5UN	AVR25-4	Y14 - 1P
4.5	2 - 4 1/2	IC 5/8"	5IR4.5UN	AVR32-5	Y15 - 1P

# Tooling recommendation for a given Internal thread specification

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## 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
22	1 7/8 - 2	IC 3/8"	3IR26W	AVR40-3	YI3 - 1N
	5/16	Micro 6.0	6.0SIR22W	SMC..-6.0	-
	3/8 - 9/16	Micro 6.0	6.0SIR20W	SMC..-6.0	-
	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
20	1 7/8 - 3	IC 3/8"	3IR20W	AVR40-3	YI3 - 1N
	11/16	IC 1/4"	2IR16W	NVR10-2	-
	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
16	4 3/4 - 7	IC 3/8"	3IR16W	AVR40-3	YI3 - 1.5N
	7/16	IC 5.0 L	5LIR14W	.NVR10.-5L	-
	5/8 - 11/16	IC 1/4"	2IR14W	NVR10-2	-
	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
12	6 1/4 - 7	IC 3/8"	3IR12W	AVR40-3	YI3 - 1.5N
	7/8	IC 3/8"	3IR11W	NVR13-3	-
	10	1	IC 3/8"	3IR10W	NVR16-3

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

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### Whitworth (con't)

Pitch tpi	Thread	Insert Size	Ordering Code		Anvil
			Insert	Holder	
9	7/8	IC 3/8"	3IR9W	NVR13-3	-
	1 1/8 - 1 1/4	IC 3/8"	3IR9W	AVR20-3	Y13
8	1	IC 3/8"	3IR8W	NVR16-3	-
	1 3/16	IC 3/8"	3IR8W	AVR20-3	Y13 - 1P
	1 5/16 - 1 1/2	IC 3/8"	3IR8W	AVR25-3	Y13
	1.6 - 1 7/8	IC 3/8"	3IR8W	AVR32-3	Y13
	1.9 - 2 1/4	IC 3/8"	3IR8W	AVR40-3	Y13
	2.4 - 7	IC 3/8"	3IR8W	AVR40-3	Y13 - 1N
7	1 1/4	IC 1/2"	4IR7W	NVR20-4	-
	1 3/4 - 2	IC 1/2"	4IR7W	AVR32-4	Y14
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	Y14 - 1P
	1 7/8 - 1.9	IC 1/2"	4IR6W	AVR32-4	Y14
	2.1 - 3.1	IC 1/2"	4IR6W	AVR40-4	Y14
	3 1/4 - 7	IC 1/2"	4IR6W	AVR40-4	Y14 - 1N
5	1 3/4	IC 1/2"	4IR5W	AVR25-4	Y14 - 1P
	3 - 3 1/4	IC 1/2"	4IR5W	AVR40-4	Y14
4.5	2	IC 5/8"	5IR4.5W	AVR32-5	Y15 - 1P
	3 1/2 - 4	IC 5/8"	5IR4.5W	AVR60-5	Y15
4	2 1/4	IC 5/8"	5IR4W	AVR40-5	Y15 - 1P
	2 1/2	IC 5/8"	5IR4W	AVR40-5	Y15
	4 1/4 - 4 3/4	IC 5/8"	5IR4W	AVR60-5	Y15
	4 7/8 - 7	IC 5/8"	5IR4W	AVR60-5	Y15 - 1N
3.5	2 3/4	IC 5/8" U	5UEI3.5W	AVR40-5U	Y15U - 1P
	3	IC 5/8" U	5UEI3.5W	AVR50-5U	Y15U
3.25	3 1/4	IC 5/8" U	5UEI3.25W	AVR50-5U	Y15U
	3 1/2	IC 5/8" U	5UEI3.25W	AVR60-5U	Y15U
3	3 3/4 - 4	IC 5/8" U	5UEI3W	AVR60-5U	Y15U
2.75	5	IC 5/8" U	5UEI2.75W	AVR60-5U	Y15U
2.5	6	IC 5/8" V	5VIR2.5W	NVR60-5V	-



# Tooling recommendation for a given Internal thread specification

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## 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.-5L	-
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
11	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

TT Gen Software  
and updated versions  
can be downloaded from  
[www.vargus.com](http://www.vargus.com)



### NPT

Pitch tpi	Thread	Insert Size	Ordering Code		
			Insert	Holder	Anvil
27	1/16	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	Y13
	1 1/4	IC 3/8"	3IR11.5NPT	AVR32-3	Y13
	1 1/2	IC 3/8"	3IR11.5NPT	AVR32-3	Y13 - 1N
	2	IC 3/8"	3IR11.5NPT	AVR40-3	Y13 - 1N
8	2 1/2	IC 3/8"	3IR8NPT	AVR40-3	Y13 - 1N
	3	IC 3/8"	3IR8NPT	AVR40-3	Y13 - 1N
	3 1/2	IC 3/8"	3IR8NPT	AVR40-3	Y13 - 1N
	4	IC 3/8"	3IR8NPT	AVR40-3	Y13 - 1N
	5	IC 3/8"	3IR8NPT	AVR40-3	Y13 - 1N
	6	IC 3/8"	3IR8NPT	AVR40-3	Y13 - 1N
	8	IC 3/8"	3IR8NPT	AVR40-3	Y13 - 1N
	10	IC 3/8"	3IR8NPT	AVR40-3	Y13 - 1N
	12	IC 3/8"	3IR8NPT	AVR40-3	Y13 - 1N

### NPTF

Pitch tpi	Thread	Insert Size	Ordering Code		
			Insert	Holder	Anvil
27	1/8	IC 5.0 L	5LIR27NPTF	.NVR1...-5L	-
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	Y13
	1 1/4	IC 3/8"	3IR11.5NPTF	AVR32-3	Y13
	1 1/2	IC 3/8"	3IR11.5NPTF	AVR32-3	Y13 - 1N
8	2	IC 3/8"	3IR11.5NPTF	AVR40-3	Y13 - 1N
	2 1/2	IC 3/8"	3IR8NPTF	AVR40-3	Y13 - 1N
	3	IC 3/8"	3IR8NPTF	AVR40-3	Y13 - 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	Y13
	Pg 29	IC 3/8"	3IR16PG	AVR25-3	Y13 - 1N
	Pg 36 & Pg 42 & Pg 48	IC 3/8"	3IR16PG	AVR40-3	Y13 - 1N





# Thread Turning



[> Inserts](#)





# THREAD TURNING INSERTS

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## microscope Inserts Ordering Code System

### Micro Threading Inserts - Single Ended

<b>M</b>	<b>5</b>	<b>42</b>	<b>TH</b>	<b>0.5</b>	<b>ISO</b>	<b>L16</b>	<b>R/L</b>	<b>VBX</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>

<b>1 - Product Line</b>	<b>2 - Insert Size</b>	<b>3 - Min. Bore Dia.</b>
M - Microscope	4, 5, 6, 7	3.2, 4.2, ...

<b>4 - Type of Application</b>	<b>5 - Pitch (for Threading)</b>	<b>6 - Threading Standard</b>																												
TH - Threading	<table border="1"> <tr> <th colspan="4">Full Profile - Pitch Range</th> </tr> <tr> <td colspan="2">mm</td> <td colspan="2">tpi</td> </tr> <tr> <td colspan="2">0.5-1.5</td> <td colspan="2">28-18</td> </tr> <tr> <th colspan="4">Partial Profile - Pitch Range</th> </tr> <tr> <td colspan="2">mm</td> <td colspan="2">tpi</td> </tr> <tr> <td>A</td> <td>0.5 - 1.5</td> <td>A</td> <td>48 - 16</td> </tr> <tr> <td>F</td> <td>0.5 - 1.0</td> <td>F</td> <td>48 - 24</td> </tr> </table>	Full Profile - Pitch Range				mm		tpi		0.5-1.5		28-18		Partial Profile - Pitch Range				mm		tpi		A	0.5 - 1.5	A	48 - 16	F	0.5 - 1.0	F	48 - 24	ISO - ISO Metric UN - American UN W - Whitworth for BSW, BSP NPT - NPT 60° - Partial Profile 60° 55° - Partial Profile 55°
Full Profile - Pitch Range																														
mm		tpi																												
0.5-1.5		28-18																												
Partial Profile - Pitch Range																														
mm		tpi																												
A	0.5 - 1.5	A	48 - 16																											
F	0.5 - 1.0	F	48 - 24																											

<b>7 - Overhang</b>	<b>8 - LH or RH</b>	<b>9 - Carbide Grades</b>
L16	R - RH L - LH	VBX

# Vardex Ordering Code System

## Threading Inserts (Not Including Micro and Microscope Systems)



<b>3</b>		<b>E</b>	<b>R</b>	<b>1.5</b>	<b>ISO</b>					<b>VTX</b>	
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>

**1 - Insert Size**

5L - IC5.0L mm  
 4.0K - IC4.0 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 Insert

**5 - Pitch**

Full Profile - Pitch Range	
mm	tpi
0.35-12.0	72-2
Partial Profile - Pitch Range	
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	4½ - 3½
Q 5.5 - 6.0	4½ - 4
U 6.5 - 9.0	4 - 2¾
V 6.0 - 10.0	4 - 2½

**6 - Standard**

60° - Partial Profile 60°	STACME - Stub ACME
55° - Partial Profile 55°	UNJ - UNJ
ISO - ISO Metric	MJ - ISO 5855
UN - American UN	ABOUT - American Butters
W - Whitworth for BSW, BSP	BBUT - British Buttress
BSPT - British Standard Pipe Thread	SAGE - Metric Buttress DIN 513
NPT - NPT	API - API
NPTF - NPTF	BUT - API Buttress Casing
NPS - NPS	APPIRD - API Round Casing & Tubing
RD - Round DIN 405	VAM - VAM
RD20400 - Round DIN 20400	EL - Extreme Line Casing
TR - Tarpez DIN 103	H90 - H90
ACME - ACME	PG - Pg DIN 40430

**7 - No. of Cutting Corners**

6C - V6 Cutting Corners  
 None - All Others

**8 - API Form**

382	2
383	3
403	15
502	75
503	125

**9 - No. of Teeth**

(for multitooth Style)  
 2, 3, 5, 6, 8

**10 - Multi tooth Style**

M+ T+   
 Z+ **Multiplus**

**11 - Carbide Grade**

VKX, VTX, VCB, VM7, VK2, VK2P, VKP, VHx, VBX

**12 - Coarse Pitch Inserts**

158/...

## Micro Threading Inserts - Double Ended

<b>3</b>	<b>S</b>	<b>I</b>	<b>R</b>	<b>0.5</b>	<b>ISO</b>	<b>VMX</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

**1 - Insert Dia.**

3.0 - 3.0 mm  
 4.0 - 4.0 mm  
 6.0 - 6.0 mm  
 8.0 - 8.0 mm  
 10.0 - 10.0 mm

**2 - Insert Style**

S - Micro Insert

**3 - Type of Insert**

I - Internal

**4 - RH/LH Insert**

R - Right Hand Insert  
 L - Left Hand Insert

**5 - Pitch**

Full Profile - Pitch Range	
mm	tpi
0.30-1.5	40-16
Partial Profile - Pitch Range	
mm	tpi
A 0.5 - 1.5	A 48 - 16
F 0.5 - 3.0	F 48 - 24

**6 - Standard**

60° - Partial Profile 60°  
 55° - Partial Profile 55°  
 ISO - ISO Metric  
 MJ - ISO 5855  
 NPT - NPT  
 NPTF - NPTF  
 UN - American UN  
 W - Whitworth for BSW, BSP

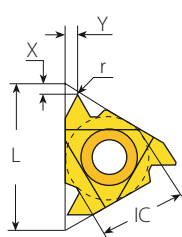
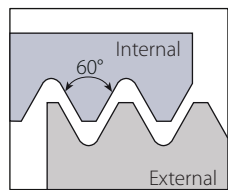
**7 - Carbide Grades**

VMX

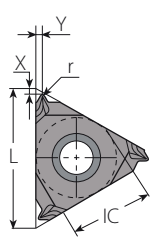


# Partial Profile 60°

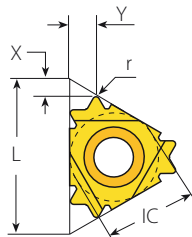
## External



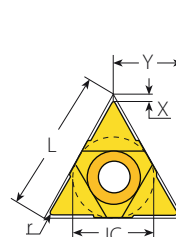
Standard



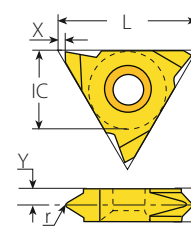
SCB  
Sintered  
Chipbreaker



V6



U Style



V Style / Slim Throat

## Standard



Insert Size	Pitch			Ordering Code		Dimensions mm			Anvil		Toolholder
	IC	L mm	mm tpi	RH	LH	r	X	Y	RH	LH	
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			
		1.75-3.0	14-8	3JERG60...		0.27	1.1	1.5	YE3	-	AL..-3
		0.5-3.0	48-8	3JERAG60...		0.08	0.9	1.5			
3/8" V6	16	0.5-2.0	48-13	3ERS60-6C...		0.06	1.9	3.0	YE3-6C	-	AL..-3
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		Toolholder
	IC	L mm	mm tpi	RH+LH		r	X	Y	RH	LH	
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



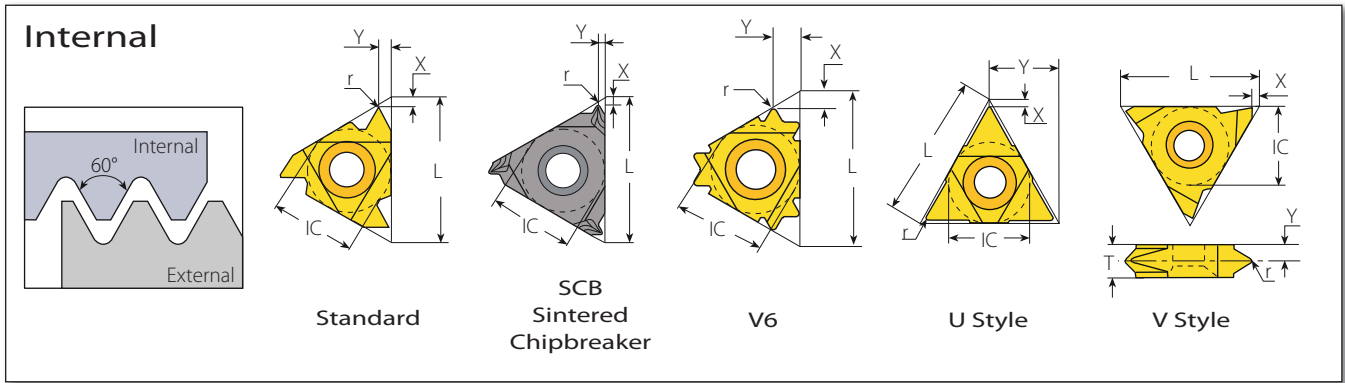
Insert Size	Pitch			Ordering Code		Dimensions mm				Toolholder
	IC	L mm	mm tpi	RH	LH	r	X	Y	T	
1/4"V	11	0.5-1.5	48-16	2VERA60...	2VELA60...	0.05	0.69	2.3	3.2	NL..-2V (LH)
		0.5-1.5	48-16	3VERA60...	3VELA60...	0.05	1.10	2.7	3.6	
3/8"V	16	1.75-3.0	14-8	3VERG60...	3VELG60...	0.27	1.10	1.9	3.6	NL..-3V (LH)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



## Standard



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			
3/8" V6	16		0.5-2.0	48-14	3IRS60-6C...		0.03	1.6	2.6	YI3-6C	-	AVR..-3 NVRC..-3 206/..
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					
	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)

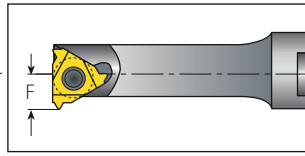
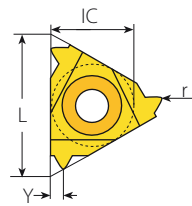
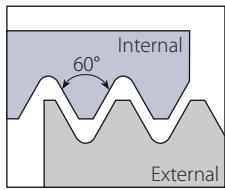




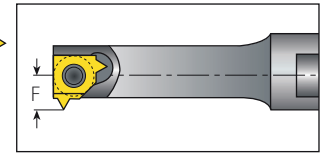
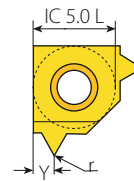
# Partial Profile 60° (con't)



## Internal



Mini-3



Mini-L

### Mini-3



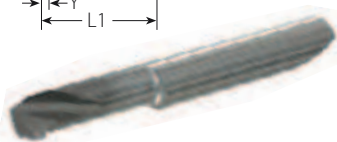
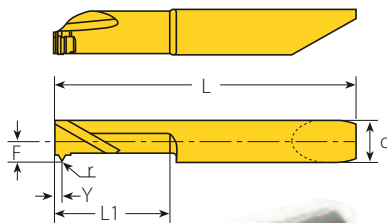
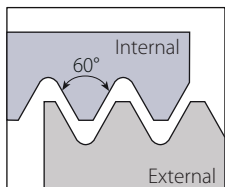
Insert Size		Pitch		Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC	L mm	mm	tpi	RH	r	Y	F	mm	
4.0	6	0.5-1.25	48-20	4.0KIRA60...	0.05	0.6	3.7	6.35	.NVR.5-4.0K
6.0	10	0.5-1.5	48-16	6.0IRA60...	0.05	0.9	5.3	10.00	.NVR 1.-6.0

### Mini-L

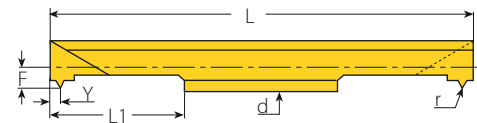


Insert Size	Pitch	Ordering Code	Dimensions mm	Min. Bore dia.	Toolholder			
IC	mm	tpi	RH	r	Y	F	mm	
5.0L	0.5-1.5	48-16	5LIRA60...	0.05	0.9	4.65	8.0	.NVR 10.-5L

## Internal



RH-Single Ended



RH-Double Ended

### Micro - Double Ended

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

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

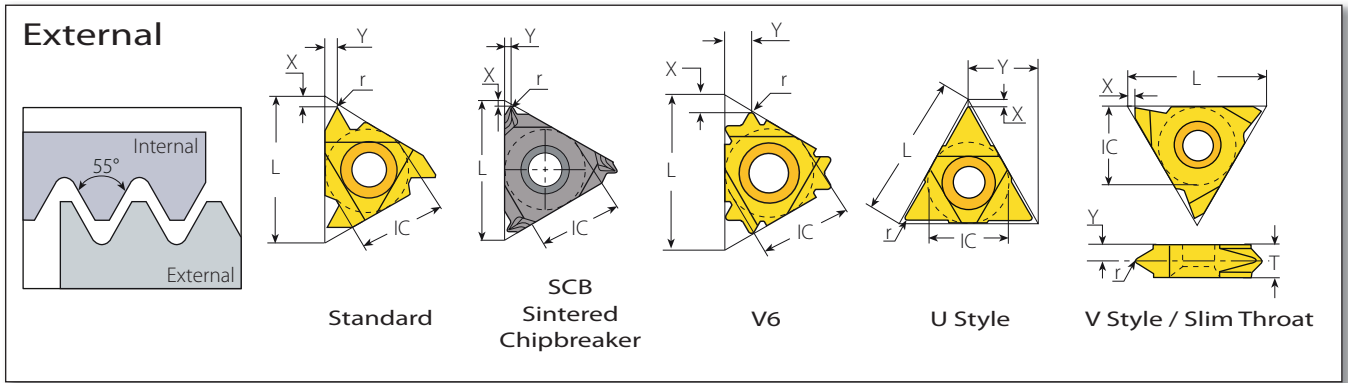
### Micro - Single Ended



Insert dia.		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder		
d mm	mm	tpi	RH/LH	r	L1	L	F	Y	mm	
4.0	0.5-1.0	48-24	M429THF60L16R/L	0.05	16	33	0.9	0.9	3.2	MHC.-4
4.0	0.5-1.0	48-24	M439THF60L16R/L	0.05	16	33	1.9	0.9	4.2	MHC.-4
6.0	0.5-1.5	48-16	M659THA60L16R/L	0.05	16	42	2.9	0.9	6.2	MHC.-6

Left Handed Tool Supplied by Request. (Example: M429THF60L16L)

# Partial Profile 55°



## Standard



Insert Size	Pitch		Ordering Code		Dimensions mm			Anvil		Toolholder	
	IC	L mm	mm	tpi	RH	LH	r	X	Y		RH
1/4"	11	0.5-1.5	48-16	2ERA55...	2ELA55...	0.05	0.8	0.9	-	-	NL...-2 (LH)
			48-16	3ERA55...	3ELA55...	0.05	0.8	0.9	-	-	-
3/8"	16	1.75-3.0	14-8	3ERG55...	3ELG55...	0.21	1.2	1.7	YE3	YI3	AL...-3 (LH)
		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	-	-	-
		1.75-3.0	14-8	3JERG55...	-	0.21	1.1	1.5	YE3	-	AL...-3
		0.5-3.0	48-8	3JERAG55...	-	0.07	0.9	1.5	-	-	-
3/8"V6	16	-	48-14	3ERS55-6C...	-	0.05	1.8	2.8	YE3-6C	-	AL...-3
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		Toolholder	
	IC	L mm	mm	tpi	RH+LH	r	X	Y	RH		LH
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



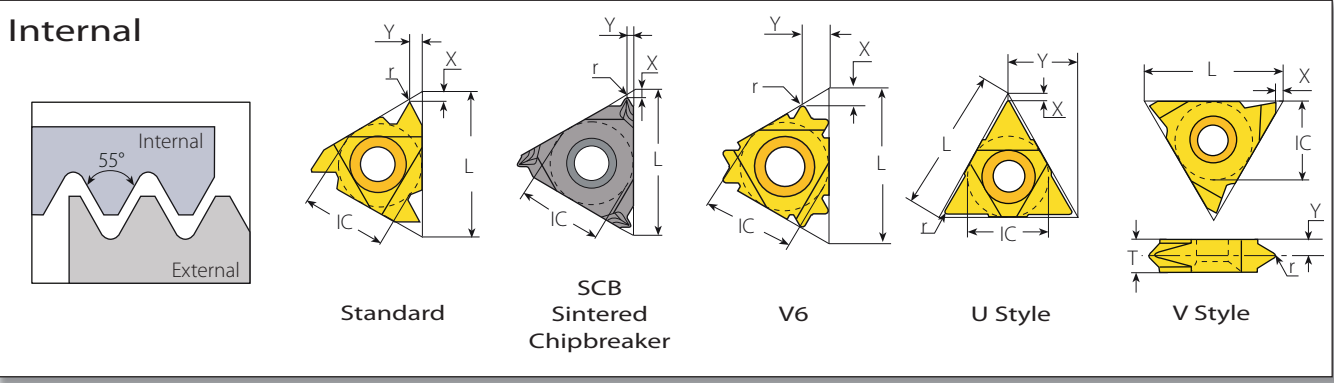
Insert Size	Pitch		Ordering Code		Dimensions mm				Toolholder	
	IC	L mm	mm	tpi	RH	LH	r	X		Y
1/4"V	11	0.5-1.5	48-16	2VERA55...	2VELA55...	0.05	0.8	2.7	3.2	NL...-2V (LH)
			48-16	3VERA55...	3VELA55...	0.05	1.1	2.7	3.6	-
3/8"V	16	1.75-3.0	14-8	3VERG55...	3VELG55...	0.21	1.1	1.9	3.6	NL...-3V (LH)
		0.5-3.0	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
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)



## Standard



Insert Size		Pitch		Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	mm	tpi	RH	LH	r	X	Y	RH	LH	
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			
3/8" V6	16	-	48-16	3IRS55-6C...		0.05	1.6	2.6	YI3-6C	-	AVR...-3 NVR...-3 206/...
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		Toolholder
IC	L mm	mm	tpi	RH+LH		r	X	Y	RH	LH	
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



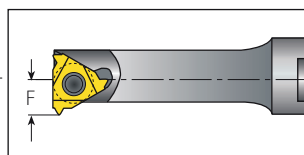
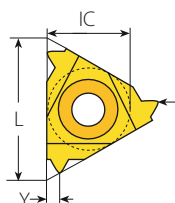
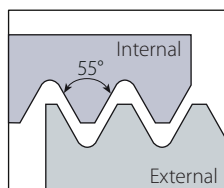
Insert Size		Pitch		Ordering Code		Dimensions mm				Toolholder
IC	L mm	mm	tpi	RH	LH	r	X	Y	T	
5/8"V	27	6.0-9.0	4-2.75	5VIRV55...	5VILV55...	0.70	1.0	4.3	8	NVR...-5V (LH)



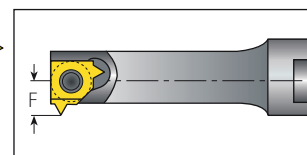
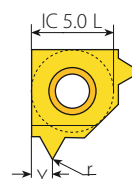
## Partial Profile 55° (con't)



### Internal



Mini-3



Mini-L

### Mini-3



Insert Size		Pitch		Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC	L mm	mm	tpi	RH	r	Y	F	mm	
4.0	6	0.5-1.25	48-20	4.0KIRA55...	0.05	0.6	3.8	6.45	.NVR.5-4.0K
6.0	10	0.5-1.50	48-16	6.0IRA55...	0.05	0.9	5.3	10.00	.NVR 1..-6.0

### Mini-L

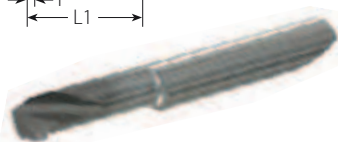
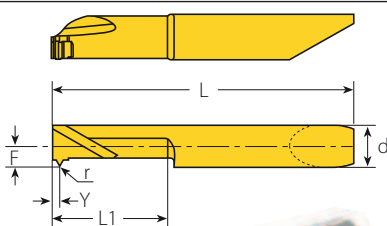
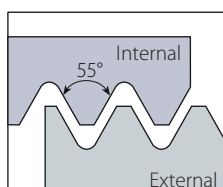


Insert Size		Pitch		Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC	mm	mm	tpi	RH	r	Y	F	mm	
5.0L	0.5-1.5	48-16	5LIRA55...	0.05	0.9	4.65	8.0	.NVR 10-5L	

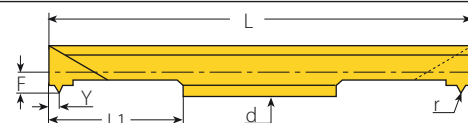
## Partial Profile 55°



### Internal



RH-Single Ended



RH-Double Ended

### Micro - Double Ended

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

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

### Micro - Single Ended

**microscope**

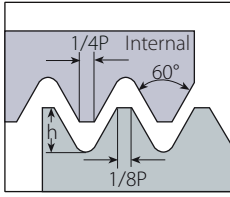
Insert dia.		Pitch		Ordering Code	Dimensions mm					Min. Bore dia.	Toolholder
d mm	mm	mm	tpi	RH/LH	r	L1	L	F	Y	mm	
4.0	0.5-1.0	48-24	M429TH F55 L16R/L		0.05	16	33	0.9	0.75	3.2	MHC..-4
4.0	0.5-1.0	48-24	M439TH F55 L16R/L		0.05	16	33	1.9	0.75	4.2	MHC..-4
6.0	0.5-1.5	48-16	M659TH A55 L16R/L		0.05	16	42	2.9	0.9	6.2	MHC..-6

Left Handed Tool Supplied by Request. (Example: M429TH F55 L16L)

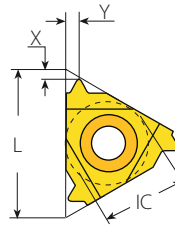


# ISO Metric

## External



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



Standard

## 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	0.25	2ER0.25ISO...	2EL0.25ISO...	0.14	0.4	0.2	-	-	NL..-2 (LH)
		0.3	2ER0.3ISO...	2EL0.3ISO...	0.19	0.7	0.3			
		0.35	2ER0.35ISO...	2EL0.35ISO...	0.21	0.8	0.4			
		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	0.25	3ER0.25ISO...	3EL0.25ISO...	0.14	0.4	0.2	YE3	YI3	AL..-3 (LH)
		0.35	3ER0.35ISO...	3EL0.35ISO...	0.21	0.8	0.4			
		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					
3.0	3ER3.0ISO...	3EL3.0ISO...	1.84	1.2	1.6					
3.5	3ER3.5ISO...	3EL3.5ISO...	2.15	1.6	1.9					



continued on next page ▶



**External**

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

**SCB**  
Sintered  
Chipbreaker

**V6**

**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	
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			
3/8" V6	16	0.5	3ER0.5ISO-6C...		0.31	2.2	1.8	YE3-6C	-	AL..-3
		0.75	3ER0.75ISO-6C...		0.46	2.0	1.8			
		0.8	3ER0.8ISO-6C...		0.49	2.0	1.9			
		1.0	3ER1.0ISO-6C...		0.61	1.9	2.0			
		1.25	3ER1.25ISO-6C...		0.77	1.8	2.1			
		1.5	3ER1.5ISO-6C...		0.92	1.9	2.4			
		1.75	3ER1.75ISO-6C...		1.07	1.8	2.6			
		2.0	3ER2.0ISO-6C...		1.23	1.9	2.8			
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			
		6.0	4ER6.0ISO...	4EL6.0ISO...	3.68	2.0	2.9			
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**

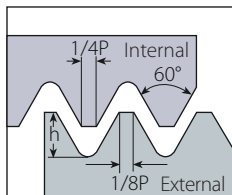


Insert Size		Pitch	Ordering Code	Dimensions mm			Anvil		Toolholder
IC	L mm	mm	RH+LH	h min	X	Y	RH	LH	
1/2"U	22	5.0	4UE5.0ISO...	3.07	2.2	11.0	YE4U	YI4U	AL..-4U (LH)
		5.5	4UE5.5ISO...	3.37	2.3	11.0			
		6.0	4UE6.0ISO...	3.68	2.6	11.0			
5/8"U	27	8.0	5UE8.0ISO...	4.91	2.4	13.7	YE5U	YI5U	AL..-5U (LH)

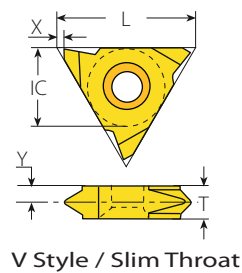


## ISO Metric (con't)

### External



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



### 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	0.7	2.6	3.2	NL...-2V (LH)
		1.0	2VER1.0ISO...	2VEL1.0ISO...	0.61	0.7	2.5	3.2	
		1.5	2VER1.5ISO...	2VEL1.5ISO...	0.92	0.7	2.2	3.2	
		1.75	2VER1.75ISO...	2VEL1.75ISO...	1.07	0.7	2.1	3.2	
		2.0	2VER2.0ISO...	2VEL2.0ISO...	1.23	0.7	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	
		0.8	3VER0.8ISO...	3VEL0.8ISO...	0.49	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

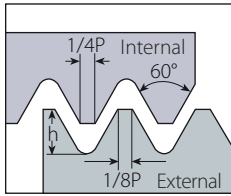
Insert Size		Pitch	Ordering Code			Dimensions mm			Toolholder
IC	L mm	mm	RH	LH	h min	X	Y	T	
5/8"V	27	5.5	5VER5.5ISO...	5VEL5.5ISO...	3.37	1.0	3.3	6	NL...-5V-6 (LH)
		6.0	5VER6.0ISO...	5VEL6.0ISO...	3.68	1.0	3.3	6	
		8.0	5VER8.0ISO...	5VEL8.0ISO...	4.91	1.0	4.3	8	
		10.0	5VER10.0ISO...	5VEL10.0ISO...	6.13	1.0	5.2	10	



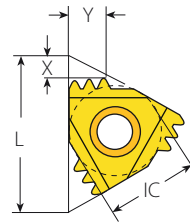
# ISO Metric (con't)



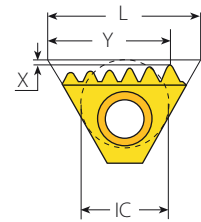
## External



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		
		1.5	2	3ER1.5ISO2M+...	0.92	1.6	2.4	YE3M	AL..-3
		2.0	2	3ER2.0ISO2M+...	1.23	2.1	3.1		
1/2"	22	1.5	3	4ER1.5ISO3M+...	0.92	2.5	3.8		
		2.0	2	4ER2.0ISO2M+...	1.23	2.1	3.1	YE4M	AL..-4
		2.0	3	4ER2.0ISO3M+...	1.23	3.2	5.1		
		2.5	2	4ER2.5ISO2M+...	1.53	2.5	3.9		
5/8"	27	3.0	2	5ER3.0ISO2M+...	1.84	3.0	4.7	YE5M	AL..-5M

## T+ Style



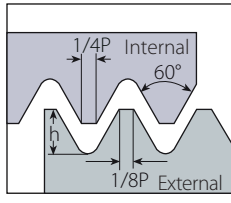
Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	mm		RH	h min	X	Y	RH	Toolholder
1/2"	22	1.5	8	4ER1.5ISO8T+...	0.92	0.2	12.4	Y4T	AL..-4T
		2.0	8	4ER2.0ISO8T+...	1.23	0.2	17.5		



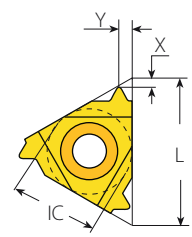


# ISO Metric (con't)

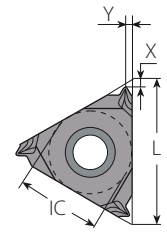
## Internal



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






Standard



SCB  
Sintered  
Chipbreaker

## Standard

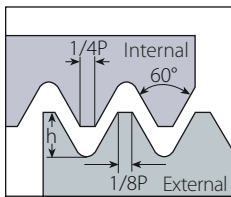
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder	
IC	L mm	mm	RH	LH	h min	X	Y	RH	LH		
	1/4"	11	0.35	2IR0.35ISO...	2IL0.35ISO...	0.20	0.8	0.3	-	-	NVR..-2 (LH)
			0.4	2IR0.4ISO...	2IL0.4ISO...	0.23	0.8	0.4			
			0.45	2IR0.45ISO...	2IL0.45ISO...	0.26	0.8	0.4			
			0.5	2IR0.5ISO...	2IL0.5ISO...	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						
2.5	2IR2.5ISO...	2IL2.5ISO...	1.44	0.8	1.1						
	1/4" SCB	11	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	Y13	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			
3.5	3IR3.5ISO...	3IL3.5ISO...	2.02	1.2	1.5						

continued on next page ▶

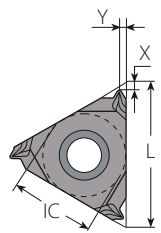
# ISO Metric (con't)



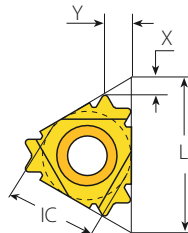
## Internal



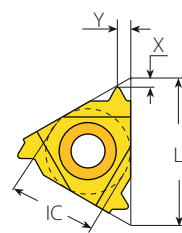
Defined by: R262 (DIN 13)  
Tolerance class: 6g/6H



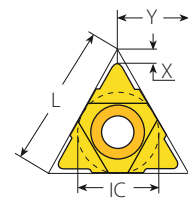
**SCB**  
Sintered  
Chipbreaker



**V6**



**Standard**



**U Style**

## Standard (con't)



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder	
IC	L mm	mm	RH	LH	h min	X	Y	RH	LH		
3/8"	SCB	16	1.0	3JIR1.0ISO...		0.58	0.7	0.8	Y13	-	AVR..-3
			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			
			3.0	3JIR3.0ISO...		1.73	1.1	1.5			
3/8"	V6	16	0.5	3IR0.5ISO-6C...		0.29	2.1	1.7	Y13-6C	-	AVR..-3 NVRC..-3 206/
			0.75	3IR0.75ISO-6C...		0.43	2.0	1.8			
			0.8	3IR0.8ISO-6C...		0.46	1.9	1.8			
			1.0	3IR1.0ISO-6C...		0.58	1.9	1.6			
			1.25	3IR1.25ISO-6C...		0.72	1.7	2.0			
			1.5	3IR1.5ISO-6C...		0.87	1.5	2.1			
			1.75	3IR1.75ISO-6C...		1.01	1.6	2.4			
1/2"		22	3.5	4IR3.5ISO...	4IL3.5ISO...	2.02	1.6	2.3	Y14	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			
			6.0	4IR6.0ISO...	4IL6.0ISO...	3.46	1.8	2.5			
5/8"		27	4.5	5IR4.5ISO...	5IL4.5ISO...	2.60	1.6	2.4	Y15	YE5	AVR..-5 (LH)
			5.0	5IR5.0ISO...	5IL5.0ISO...	2.89	1.6	2.3			
			5.5	5IR5.5ISO...	5IL5.5ISO...	3.17	1.6	2.3			
			6.0	5IR6.0ISO...	5IL6.0ISO...	3.46	1.8	2.5			

## U Style

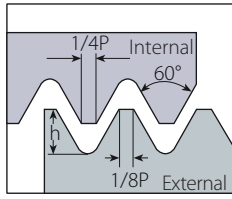


Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	mm	RH+LH	h min.	X	Y	RH	LH		
1/2"U	22	5.5	4UI5.5ISO...	3.17	2.4	11.0	Y14U	YE4U	AVR..-4U (LH)	
		6.0	4UI6.0ISO...	3.46	2.1	11.0				
5/8"U	27	8.0	5UI8.0ISO...	4.62	2.4	13.7	Y15U	YE5U	AVR..-5U (LH)	

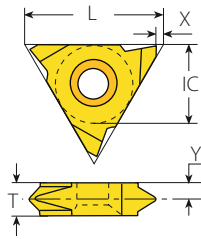


# ISO Metric (con't)

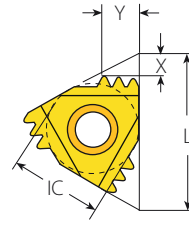
## Internal



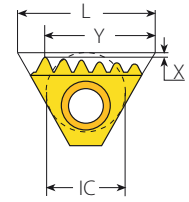
Defined by: R262 (DIN 13)  
Tolerance class: 6g/6H



V Style



M+ Style



T+ 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	

## M+ Style



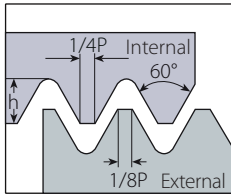
Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	Toolholder
IC	L mm	mm		RH	h min	X	Y	RH	
3/8"	16	1.0	3	3IR1.0ISO3M+...	0.58	1.7	2.6	Y13M	AVR..-3
		1.5	2	3IR1.5ISO2M+...	0.87	1.6	2.4		
		2.0	2	3IR2.0ISO2M+...	1.15	2.0	3.1		
1/2"	22	1.5	3	4IR1.5ISO3M+...	0.87	2.5	3.8	Y14M	AVR..-4
		2.0	2	4IR2.0ISO2M+...	1.15	2.0	3.1		
		2.0	3	4IR2.0ISO3M+...	1.15	3.2	5.1		
5/8"	27	3.0	2	5IR3.0ISO2M+...	1.73	3.0	4.7	Y15M	AVR..-5M

## T+ Style

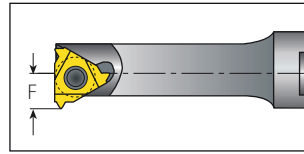
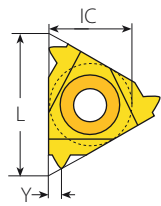


Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	Toolholder
IC	L mm	mm		RH	h min	X	Y	RH	
1/2"	22	1.5	8	4IR1.5ISO8T+...	0.87	0.2	12.4	Y4T	AVR..-4T
		2.0	8	4IR2.0ISO8T+...	1.15	0.2	17.5		

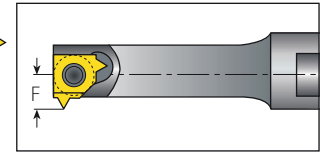
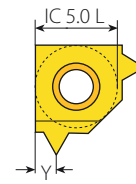
Internal



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	
4.0	6	0.25	4.0KIR0.25ISO...	0.15	0.25	3.3	5.95	.NVR.5-4.0K
		0.5	4.0KIR0.5ISO...	0.29	0.5	3.4	6.05	
		0.75	4.0KIR0.75ISO...	0.43	0.5	3.5	6.15	
		1.0	4.0KIR1.0ISO...	0.58	0.7	3.6	6.25	
		1.25	4.0KIR1.25ISO...	0.72	0.6	3.7	6.35	
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

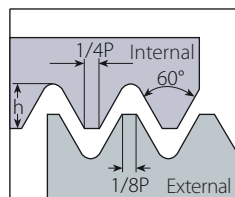


Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC mm		mm	RH	h min	Y	F	mm	
5.0L		0.35	5LIR0.35ISO...	0.20	0.3	3.75	7.3	.NVR10.-5L
		0.5	5LIR0.5ISO...	0.29	0.4	3.75	7.3	
		0.75	5LIR0.75ISO...	0.43	0.6	3.91	7.5	
		1.0	5LIR1.0ISO...	0.58	0.7	4.06	7.7	
		1.25	5LIR1.25ISO...	0.72	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	

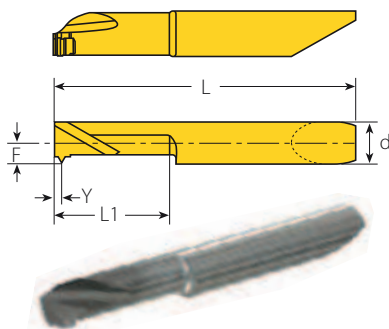


## ISO Metric (con't)

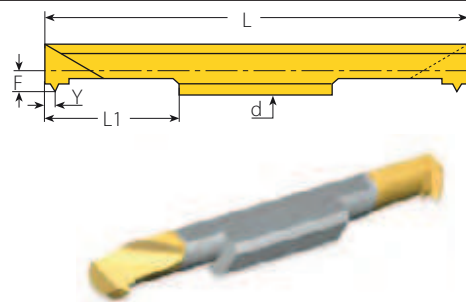
### Internal



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



RH-Single Ended



RH-Double Ended

### Micro - Double Ended

Thread	Insert dia.		Ordering Code	Dimensions mm					Min. Bore dia.		Toolholder
	d mm	mm		RH/LH	L1	L	F	Y	h min	mm	
M4 x 0.3	3.0	0.3	3.0SIR0.3ISO...	16	50	1.31	0.20	0.17	3.2	SMC...-3.0	
M4 x 0.4		0.4	3.0SIR0.4ISO...	16	50	1.31	0.35	0.22	3.2		
M4 x 0.5		0.5	3.0SIR0.5ISO...	16	50	1.31	0.40	0.29	3.2		
M4 x 0.6		0.6	3.0SIR0.6ISO...	16	50	1.34	0.60	0.35	3.2		
M4.5 x 0.7		0.7	3.0SIR0.7ISO...	16	50	1.43	0.60	0.40	3.3		
M4.5 x 0.75	4.0	0.75	3.0SIR0.75ISO...	16	50	1.45	0.60	0.43	3.3	SMC...-4.0	
M5 x 0.8		0.8	3.0SIR0.8ISO...	16	50	1.46	0.60	0.46	3.3		
M5 x 0.4		0.4	4.0SIR0.4ISO...	16	50	1.65	0.35	0.22	4.0		
M5 x 0.5		0.5	4.0SIR0.5ISO...	16	50	1.65	0.40	0.29	4.0		
M5 x 0.6		0.6	4.0SIR0.6ISO...	16	50	1.68	0.60	0.35	4.0		
M5 x 0.7	6.0	0.7	4.0SIR0.7ISO...	16	50	1.77	0.60	0.40	4.1	SMC...-6.0	
M5.5 x 0.75		0.75	4.0SIR0.75ISO...	16	50	1.81	0.60	0.43	4.2		
M5.5 x 0.8		0.8	4.0SIR0.8ISO...	16	50	1.80	0.60	0.46	4.2		
M6 x 1		1.0	4.0SIR1.0ISO...	16	50	1.96	0.90	0.58	4.3		
M6 x 0.5		0.5	6.0SIR0.5ISO...	16	50	1.90	0.60	0.29	5.4		
M6.5 x 0.75	6.0	0.75	6.0SIR0.75ISO...	16	50	2.06	0.60	0.43	5.6	SMC...-6.0	
M7 x 1		1.0	6.0SIR1.0ISO...	16	50	2.21	0.70	0.58	5.7		
M8 x 1.25		1.25	6.0SIR1.25ISO...	16	50	2.36	0.90	0.72	5.9		
M10.5 x 1.5		1.5	6.0SIR1.5ISO...	16	50	2.50	1.00	0.87	6.0		

Left Handed Tool Supplied by Request. (Example: 3.0SIL0.3ISO...)

### Micro - Single Ended



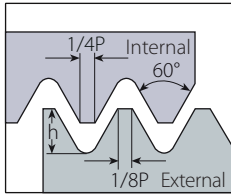
Thread	Insert dia.		Ordering Code	Dimensions mm					Min. Bore dia.		Toolholder
	d mm	mm		RH/LH	L1	L	F	Y	h min	mm	
M4x0.5	4.0	0.5	M429TH 0.50ISO L16R/L	16	33	0.9	0.4	0.29	3.4	MHC...-4	
M5x0.5		0.5	M439TH 0.50ISO L16R/L	16	33	1.9	0.4	0.29	4.4		
M4x0.7		0.7	M429TH 0.70ISO L16R/L	16	33	0.9	0.5	0.41	3.2		
M5x0.8		0.8	M429TH 0.80ISO L16R/L	16	33	0.9	0.6	0.46	4.0		
M6x1		1.0	M439TH 1.00ISO L16R/L	16	33	1.9	0.7	0.58	4.8		
M5.5x0.5	5.0	0.5	M542TH 0.50ISO L16R/L	16	41	1.7	0.4	0.29	4.9	MHC...-5	
M5.5x0.75		0.75	M542TH 0.75ISO L16R/L	16	41	1.7	0.6	0.43	4.6		
M7x1		1.0	M549TH 1.00ISO L16R/L	16	41	2.4	0.7	0.58	5.8		
M6x0.5		0.5	M649TH 0.50ISO L16R/L	16	42	1.9	0.4	0.29	5.4		
M6.5x0.75		0.75	M649TH 0.75ISO L16R/L	16	42	1.9	0.6	0.43	5.6		
M7.5x1	6.0	1.0	M659TH 1.00ISO L16R/L	16	42	2.9	0.7	0.58	6.3	MHC...-6	
M8x1.25		1.25	M659TH 1.25ISO L16R/L	16	42	2.9	0.9	0.72	6.5		
M10x1.5		1.5	M659TH 1.50ISO L16R/L	16	42	2.9	1.0	0.87	8.3		

Left Handed Tool Supplied by Request. (Example: M429TH 0.50ISO L16L)

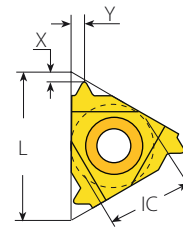
# American UN - UNC, UNF, UNEF, UNS



## 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			
		14	2ER14UN...	2EL14UN...	1.11	0.9	1.1			
		3/8"	16	80	3ER80UN...	3EL80UN...	0.18			
72	3ER72UN...			3EL72UN...	0.22	0.8	0.4			
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					

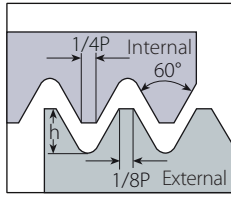


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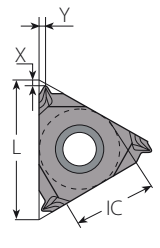


# American UN - UNC, UNF, UNEF, UNS (con't)

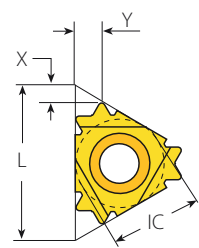
## External



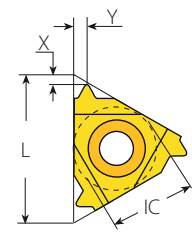
Defined by: ANSI B1.1:74  
Tolerance class: 2A/2B



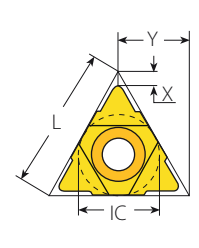
**SCB**  
Sintered  
Chipbreaker



**V6**







**Standard**



**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"	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			
8	3JER8UN...		1.95	1.3	1.5						
 V6	3/8"	16	32	3ER32UN-6C...		0.49	2.0	1.9	YE3-6C	-	AL..-3
			28	3ER28UN-6C...		0.56	2.0	2.0			
			24	3ER24UN-6C...		0.65	1.9	2.0			
			20	3ER20UN-6C...		0.78	1.8	2.1			
			18	3ER18UN-6C...		0.87	1.9	2.3			
			16	3ER16UN-6C...		0.97	1.8	2.4			
			14	3ER14UN-6C...		1.11	1.8	2.7			
			13	3ER13UN-6C...		1.20	1.9	2.9			
 Standard	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			
 U Style	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			

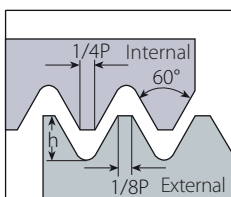
## U Style

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)	

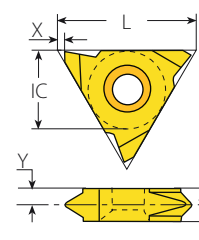
# American UN - UNC, UNF, UNEF, UNS (con't)



## 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...	2.22	1.1	2.5	4.8	NL...-4V (LH)



## 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)

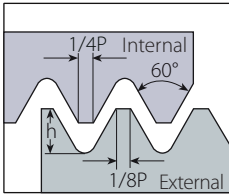




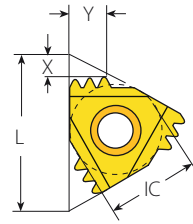


# American UN - UNC, UNF, UNEF, UNS (con't)

## External



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



M+ Style

## M+ Style

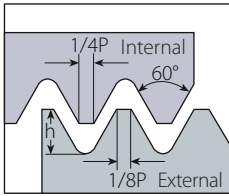


Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
3/8"	16	20	3	3ER20UN3M+...	0.78	2.2	3.3	YE3M	AL..-3
		18	2	3ER18UN2M+...	0.87	1.5	2.2		
		18	3	3ER18UN3M+...	0.87	2.3	3.6		
		16	2	3ER16UN2M+...	0.97	1.7	2.5		
		14	2	3ER14UN2M+...	1.11	1.9	2.8		
		12	2	3ER12UN2M+...	1.3	2.2	3.3		
1/2"	22	16	3	4ER16UN3M+...	0.97	2.6	4.1	YE4M	AL..-4
		14	2	4ER14UN2M+...	1.11	1.9	2.8		
		12	2	4ER12UN2M+...	1.3	2.2	3.3		
		12	3	4ER12UN3M+...	1.3	3.4	5.4		
		11	2	4ER11UN2M+...	1.42	2.3	3.6		
5/8"	27	8	2	5ER8UN2M+...	1.95	3.1	4.9	YE5M	AL..-5M

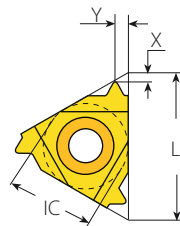
# American UN - UNC, UNF, UNEF, UNS (con't)



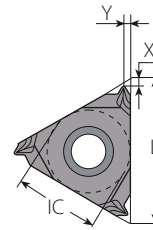
## Internal



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



Standard



SCB  
Sintered  
Chipbreaker

## Standard (con't)



SCB



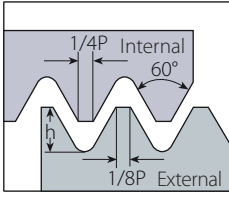
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	11	72	2IR72UN...	2IL72UN...	0.20	0.8	0.3	-	-	NVR..-2 (LH)
		64	2IR64UN...	2IL64UN...	0.23	0.8	0.4			
		56	2IR56UN...	2IL56UN...	0.26	0.7	0.4			
		48	2IR48UN...	2IL48UN...	0.31	0.6	0.6			
		44	2IR44UN...	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	11	36	2JIR36UN...		0.41	1.1	0.5	-	-	NVR..-2
		32	2JIR32UN...		0.46	1.2	0.5			
		28	2JIR28UN...		0.52	0.6	0.8			
		24	2JIR24UN...		0.61	0.7	0.8			
		20	2JIR20UN...		0.73	0.6	0.8			
		18	2JIR18UN...		0.81	0.6	0.8			
3/8"	16	72	3IR72UN...	3IL72UN...	0.20	0.8	0.3	Y13	YE3	AVR..-3 (LH)
		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			

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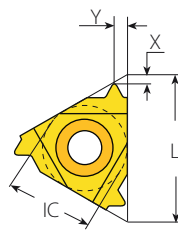


# American UN - UNC, UNF, UNEF, UNS (con't)

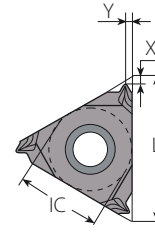
## Internal



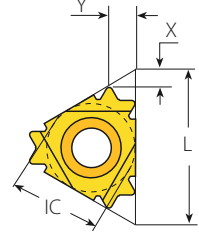
Defined by: ANSI B1.1:74  
Tolerance class: 2A/2B



Standard







SCB  
Sintered  
Chipbreaker



V6

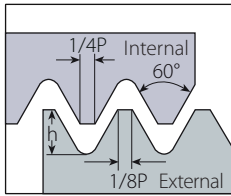
## Standard (con't)

Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder	
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH		
	3/8"	16	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	28	3JIR28UN...		0.52	0.6	0.8	YI3	-	AVR..-3
			24	3JIR24UN...		0.61	0.7	0.8			
			20	3JIR20UN...		0.73	0.6	0.8			
			18	3JIR18UN...		0.81	0.6	0.8			
			16	3JIR16UN...		0.92	0.7	0.8			
			14	3JIR14UN...		1.05	1.1	1.5			
			13	3JIR13UN...		1.13	1.1	1.5			
			12	3JIR12UN...		1.22	1.1	1.5			
			10	3JIR10UN...		1.47	1.1	1.5			
9	3JIR9UN...		1.63	1.0	1.5						
8	3JIR8UN...		1.83	1.1	1.5						
	3/8" V6	16	32	3IR32UN-6C...		0.51	2.0	1.8	YI3-6C	-	AVR..-3 NVRC..-3 206/..
			28	3IR28UN-6C...		0.52	1.9	1.9			
			24	3IR24UN-6C...		0.61	1.9	1.9			
			20	3IR20UN-6C...		0.73	1.8	2.1			
			18	3IR18UN-6C...		0.81	1.7	2.1			
			16	3IR16UN-6C...		0.92	1.6	2.2			
			14	3IR14UN-6C...		1.05	1.7	2.5			
			13	3IR13UN-6C...		1.13	1.8	2.7			
12	3IR12UN-6C...		1.22	1.6	2.5						
	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				

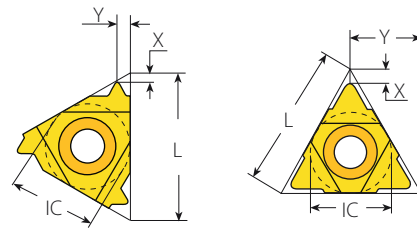
# American UNC



## Internal



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



Standard

U+ Style

## Coarse Pitch



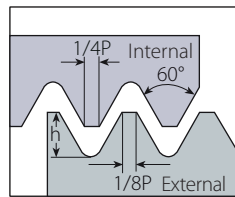
Thread	Insert Size		Ordering Code	Dimensions mm			Toolholder	Min Bore dia. mm	
	IC	L mm		RH/LH	h min	X			Y
1/2 x 13UN	6.0	10	6.0IR13UN...158/001		1.13	0.8	0.9	BNVR10S-6.0	10.6
9/16 x 12UN	1/4"	11	2IR12UN...158/002		1.22	0.9	1.0	NVRC10-2 156/001	12.0
5/8 x 11UN	1/4"U		2UIR11UN...158/003		1.33	1.2	5.5	NVRC11-2U 156/002	13.4
3/4 x 10UN	3/8"	16	3IR10UN...		1.47	1.1	1.5	NVRC13-3 156/016	16.3
7/8 x 9UN			3IR9UN...		1.63	1.2	1.7	NVRC13-3 156/016	19.2
1 x 8UN			3IR8UN...		1.83	1.1	1.5	NVRC16-3	22.0
1 1/8 x 7UN	1/2"	22	4IR7UN...		2.09	1.6	2.3	NVRC20-4	24.6
1 1/4 x 7UN			4IR7UN...		2.09	1.6	2.3	NVRC20-4	27.8
1 3/8 x 6UN			4IR6UN...		2.44	1.6	2.3	NVRC20-4	30.3

Left Handed Tool Supplied by Request.  
U Type Inserts Can Be Used for Both LH and RH Applications.

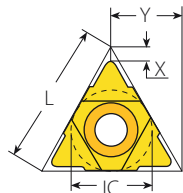


# American UN - UNC, UNF, UNEF, UNS (con't)

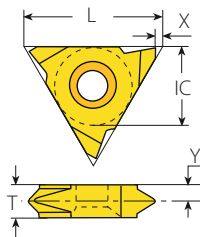
## Internal



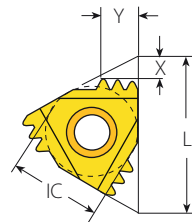
Defined by: ANSI B1.1:74  
Tolerance class: 2A/2B



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	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				Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	T	
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	

## M+ Style

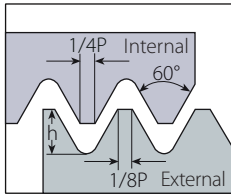


Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	Toolholder
IC	L mm	tpi		RH	h min	X	Y	RH	
3/8"	16	12	2	3IR12UN2M+...	1.22	2.2	3.3	YI3M	AVR...-3
		14	2	3IR14UN2M+...	1.05	1.9	2.8		
		16	2	3IR16UN2M+...	0.92	1.7	2.5		
1/2"	22	16	3	4IR16UN3M+...	0.92	2.6	4.1	YI4M	AVR...-4
		14	2	4IR14UN2M+...	1.05	1.9	2.8		
		12	2	4IR12UN2M+...	1.22	2.2	3.3		
		12	3	4IR12UN3M+...	1.22	3.4	5.4		
5/8"	27	8	2	5IR8UN2M+...	1.83	3.1	4.9	YI5M	AVR...-5M

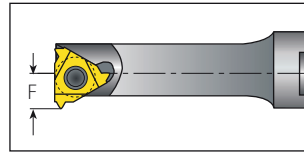
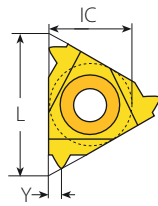


# American UN - UNC, UNF, UNEF, UNS (con't)

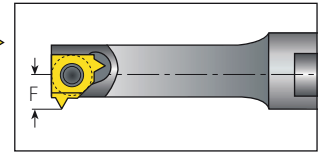
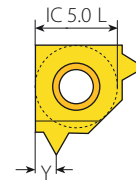
## Internal



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	
4.0	6	32	4.0KIR32UN...	0.46	0.5	3.50	6.15	.NVR.5-4.0K
		28	4.0KIR28UN...	0.52	0.6	3.50	6.15	
		24	4.0KIR24UN...	0.61	0.6	3.60	6.25	
		20	4.0KIR20UN...	0.73	0.6	3.70	6.35	
		18	4.0KIR18UN...	0.81	0.7	3.70	6.35	
6.0	10	40	6.0IR40UN...	0.37	0.6	4.50	9.5	.NVR1.-6.0
		32	6.0IR32UN...	0.46	0.6	4.60	9.5	
		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

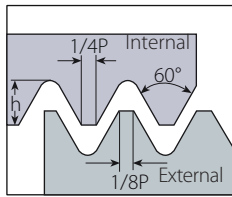


Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC mm		tpi	RH	h min	Y	F	mm	
5.0L		32	5LIR32UN...	0.46	0.6	3.92	7.5	.NVR10.-5L
		28	5LIR28UN...	0.52	0.65	3.99	7.6	
		24	5LIR24UN...	0.61	0.75	4.09	7.7	
		20	5LIR20UN...	0.73	0.9	4.21	7.8	
		18	5LIR18UN...	0.81	1.0	4.30	7.9	
	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

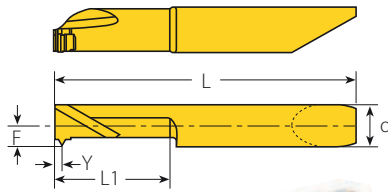


## American UN - UNC, UNF, UNEF, UNS (con't)

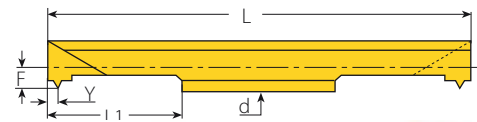
### Internal



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



RH-Single Ended



RH-Double Ended

### Micro - Double Ended

Thread	Insert dia.		Ordering Code	Dimensions mm					Min. Bore dia.		Toolholder
	d mm	mm		RH/LH	L1	L	F	Y	h min	mm	
10-40UNS	3.0	40	3.0SIR40UN...	16	50	1.35	0.60	0.37	3.2	SMC...-3.0	
8-36UNF		36	3.0SIR36UN...	16	50	1.46	0.60	0.41	3.2		
8-32UNF		32	3.0SIR32UN...	16	50	1.40	0.60	0.46	3.3		
10-40UNS	4.0	40	4.0SIR40UN...	16	50	1.65	0.60	0.37	4.0	SMC...-4.0	
10-36UNS		36	4.0SIR36UN...	16	50	1.70	0.60	0.41	4.1		
12-32UNEF		32	4.0SIR32UN...	16	50	1.76	0.60	0.46	4.1		
12-28UNF		28	4.0SIR28UN...	16	50	1.83	0.65	0.52	4.2		
1/4"-27UNS	6.0	27	4.0SIR27UN...	16	50	1.85	0.75	0.54	4.2	SMC...-6.0	
12-24UNC		24	4.0SIR24UN...	16	50	1.93	0.75	0.61	4.3		
1/4"-20UNC		20	4.0SIR20UN...	16	50	2.03	0.76	0.73	4.3		
1/4"-32UNEF	6.0	32	6.0SIR32UN...	16	50	2.01	0.60	0.46	5.5	SMC...-6.0	
5/16"-28UN		28	6.0SIR28UN...	16	50	2.08	0.65	0.52	5.6		
5/16"-27UNS		27	6.0SIR27UN...	16	50	2.10	0.75	0.54	5.6		
5/16"-24UNF		24	6.0SIR24UN...	16	50	2.18	0.75	0.61	5.7		
5/16"-20UN		20	6.0SIR20UN...	16	50	2.30	0.90	0.73	5.8		
5/16"-18UNC	18	6.0SIR18UN...	16	50	2.39	1.00	0.81	5.9	SMC...-6.0		
3/8"-16UNC	16	6.0SIR16UN...	16	50	2.50	1.05	0.92	6.0			

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

### Micro - Single Ended

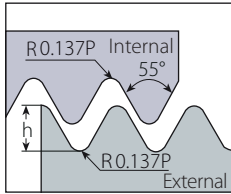


Thread	Insert dia.		Ordering Code	Dimensions mm					Min. Bore dia.		Toolholder
	d mm	mm		RH/LH	L1	L	F	Y	h min	mm	
8-32UNC	4.0	32	M429TH 32UN L16R/L	16	33	0.9	0.6	0.46	3.3	MHC...-4	
10-28UNS		28	M429TH 28UN L16R/L	16	33	0.9	0.65	0.52	3.6		
1/4"-27UNS	5.0	27	M549TH 27UN L16R/L	16	41	2.4	0.75	0.54	5.3	MHC...-5	
1/4"-24UNS		24	M542TH 24UN L16R/L	16	41	1.7	0.75	0.61	5.1		
1/4"-20UNC		20	M542TH 20UN L16R/L	16	41	1.7	0.9	0.73	4.6		
5/16"-18UNC	6.0	18	M659TH 18UN L16R/L	16	42	2.9	1.05	0.81	6.3	MHC...-6	
3/8"-16UNC		16	M659TH 16UN L16R/L	16	42	2.9	1.0	0.92	7.7		

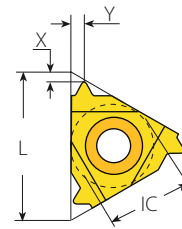
Left Handed Tool Supplied by Request. (Example: M429TH 32UN L16L)



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		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
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	72	3ER72W...	3EL72W...	0.23	0.7	0.4	YE3	YI3	AL...-3 (LH)
		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					



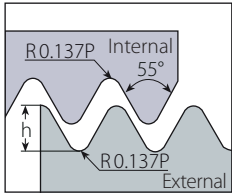
continued on next page ▶



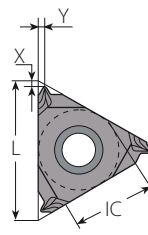


# Whitworth - BSW, BSP, BSF, BSB (con't)

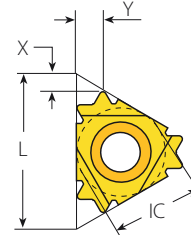
## External



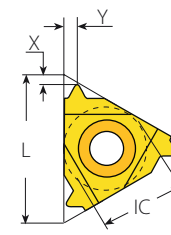
Defined by: B.S.84:1956, DIN 259, ISO228/1:1982  
Tolerance class: Medium class A



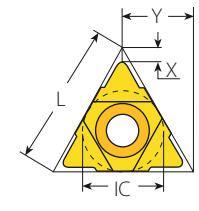
**SCB**  
Sintered  
Chipbreaker



**V6**







**Standard**





**U Style**

## Standard (con't)

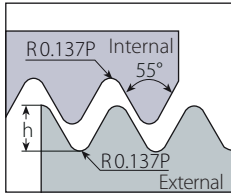
IC	Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
	L mm	tpi	RH	LH	h min	X	Y	RH	LH		
 SCB	3/8"	16	36	3JER36W...		0.45	1.2	0.5	YE3	-	AL..-3
			32	3JER32W...		0.51	1.2	0.5			
			28	3JER28W...		0.58	0.7	0.8			
			24	3JER24W...		0.68	0.7	0.8			
			20	3JER20W...		0.81	0.7	0.8			
			19	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			
 V6	3/8"	16	19	3ER19W-6C...		0.86	1.8	2.2	YE3-6C	-	AL..-3
			16	3ER16W-6C...		1.02	1.6	2.4			
			14	3ER14W-6C...		1.16	1.8	2.7			
			12	3ER12W-6C...		1.36	1.9	3.0			
 Standard	1/2"	22	7	4ER7W...	4EL7W...	2.41	1.6	2.3	YE4	YI4	AL..-4 (LH)
			6	4ER6W...	4EL6W...	2.71	1.6	2.3			
 U Style	5/8"	27	4.5	5ER4.5W...	5EL4.5W...	3.61	1.8	2.6	YE5	YI5	AL..-5 (LH)
			4	5ER4W...	5EL4W...	4.07	2.0	2.9			

## U Style

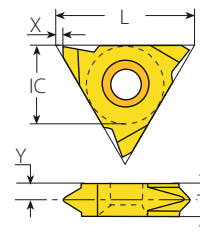
IC	Insert Size		Pitch	Ordering Code	Dimensions mm			Anvil		Toolholder
	L mm	tpi	RH+LH	h min	X	Y	RH	LH		
 U Style	1/2"U	22	4.5	4UEI4.5W...	3.61	2.3	11.0	YE4U	YI4U	AL..-4U (LH)
			4	4UEI4W...	4.07	1.8	11.0			
			3.5	4UEI3.5W...	4.65	2.1	11.0			
			3.25	4UEI3.25W...	5.00	2.0	11.0			
 U Style	5/8"U	27	3.5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



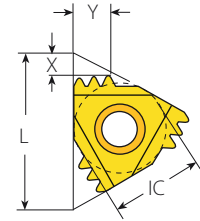
## External



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



V Style / Slim Throat



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

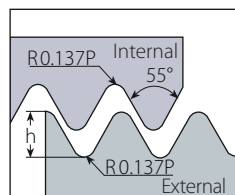


Insert Size		Pitch	Teeth	Ordering Code		Dimensions mm			Anvil	Toolholder
IC	L mm	tpi		RH	h min	X	Y	RH		
3/8"	16	28	2	3ER28W2M+...	0.58	1.2	1.6	YE3M	AL..-3	
		19	2	3ER19W2M+...	0.86	1.6	2.3			
		19	3	3ER19W3M+...	0.86	2.2	3.4			
		14	2	3ER14W2M+...	1.16	2.0	3.0			
1/2"	22	14	3	4ER14W3M+...	1.16	2.9	4.6	YE4M	AL..-4	
		11	2	4ER11W2M+...	1.48	2.3	3.5			

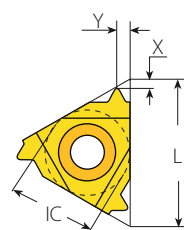
# Whitworth - BSW, BSP, BSF, BSB (con't)



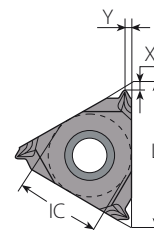
## Internal



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






Standard



SCB  
Sintered  
Chipbreaker

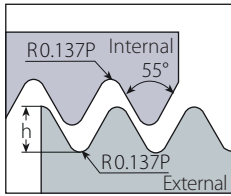
## Standard

Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder	
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH		
	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			
	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			
	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			

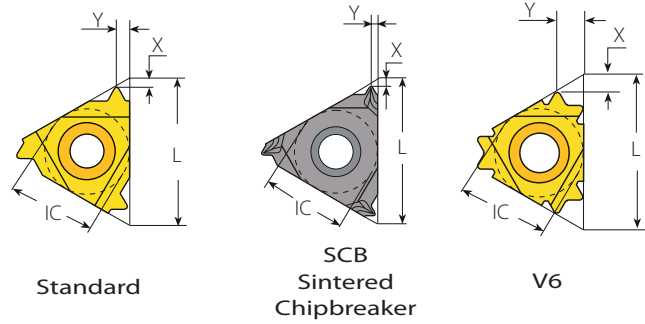
continued on next page ▶







## Internal



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



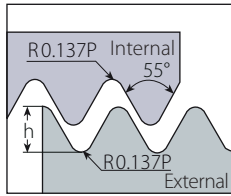
## Standard (con't)

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	Y13	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			
9	3IR9W...	3IL9W...	1.81	1.2	1.7						
8	3IR8W...	3IL8W...	2.03	1.2	1.5						
	3/8" SCB	16	28	3JIR28W...		0.58	0.7	0.8	Y13	-	AVR...-3
			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			
	3/8" V6	16	19	3IR19W-6C...		0.86	1.7	2.2	Y13-6C	-	AVR..-3 NVRC..-3 206/...
			16	3IR16W-6C...		1.02	1.6	2.6			
			14	3IR14W-6C...		1.16	1.8	2.7			
			12	3IR12W-6C...		1.36	1.7	2.6			
	1/2"	22	7	4IR7W...	4IL7W...	2.41	1.6	2.3	Y14	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	Y15	YE5	AVR..-5 (LH)
			4	5IR4W...	5IL4W...	4.07	2.0	2.9			

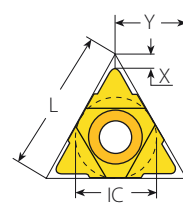


# Whitworth - BSW, BSP, BSF, BSB (con't)

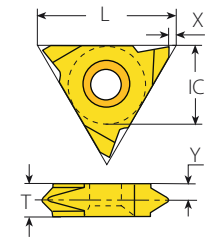
## Internal



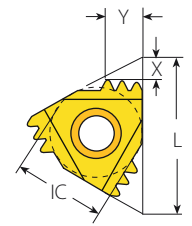
Defined by: B.S.84:1956, DIN 259, ISO228/1:1982  
Tolerance class: Medium class A



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

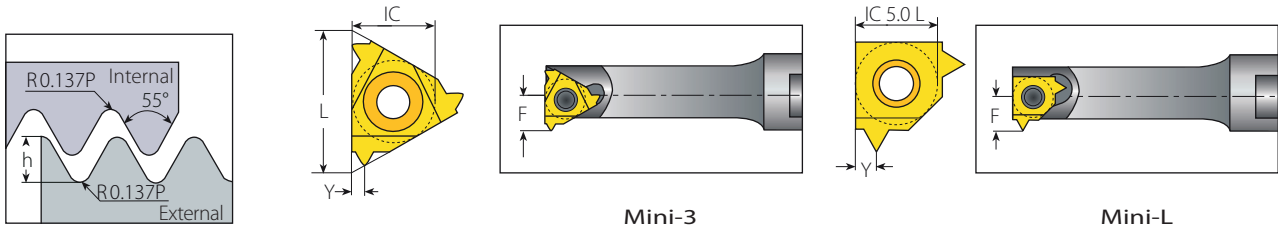


Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	Toolholder
IC	L mm	tpi	RH	h min	X	Y	RH		
3/8"	16	14	2	3IR14W2M+...	1.16	2.0	3.0	YI3M	AVR..-3
1/2"	22	11	2	4IR11W2M+...	1.48	2.3	3.5	YI4M	AVR..-4

# Whitworth - BSW, BSP, BSF, BSB (con't)



## Internal



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	
4.0	6	26	4.0KIR26W...	0.63	0.6	3.6	6.25	.NVR.5-4.0K
		22	4.0KIR22W...	0.74	0.6	3.7	6.35	
		20	4.0KIR20W...	0.81	0.7	3.7	6.35	
		19	4.0KIR19W...	0.86	0.7	3.7	6.35	
		18	4.0KIR18W...	0.90	0.7	3.7	6.35	
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

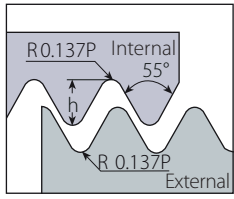


Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC mm		tpi	RH	h min	Y	F	mm	
5.0 L		28	5LIR28W...	0.58	0.7	4.05	7.6	.NVR 10. -5L
		19	5LIR19W...	0.86	1.0	4.35	7.9	
		14	5LIR14W...	1.16	1.1	4.68	8.0	

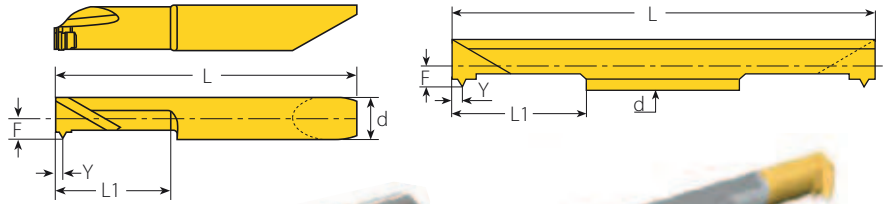


# Whitworth - BSW, BSP, BSF, BSB (con't)

## Internal



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



RH-Single Ended



RH-Double Ended

## Micro - Double Ended

Thread	Insert dia.		Ordering Code	Dimensions mm					Min. Bore dia.		Toolholder
	d mm	tpi		RH/LH	L1	L	F	Y	h min	mm	
1/16"-28BSP	4.0	28	4.0SIR28W...	16	50	1.86	0.65	0.58	4.2	SMC...-4.0	
1/4"-26BSF		26	4.0SIR26W...	16	50	1.93	0.75	0.63	4.2		
1/4"-24BSW		24	4.0SIR24W...	16	50	1.96	0.75	0.68	4.3		
1/16"-28BSP	6.0	28	6.0SIR28W...	16	50	2.50	0.65	0.58	6.0	SMC...-6.0	
5/16"-28BSW		26	6.0SIR26W...	16	50	2.50	0.75	0.63	6.0		
5/16"-24BSW		24	6.0SIR24W...	16	50	2.50	0.75	0.68	6.0		
5/16"-22BSW		22	6.0SIR22W...	16	50	2.50	0.90	0.74	6.0		
3/8"-20BSF		20	6.0SIR20W...	16	50	2.50	0.90	0.81	6.0		
1/4"-19BSP	19	6.0SIR19W...	16	50	2.50	0.95	0.86	6.0			

Left Handed Tool Supplied by Request. (Example: 6.0SIL19W...)

## Micro - Single Ended



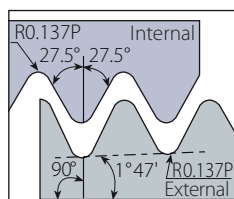
Thread	Insert dia.		Ordering Code	Dimensions mm					Min. Bore dia.		Toolholder
	d mm	tpi		RH/LH	L1	L	F	Y	h min	mm	
1/16"-28BSP	6.0	28	M659TH 28W L16R/L	16	42	2.90	0.65	0.58	6.5	MHC...-6	
1/4"-19BSP		19	M659TH 19W L16R/L	16	42	2.90	0.95	0.86	11.4		

Left Handed Tool Supplied by Request. (Example: M659TH 28W L16L)

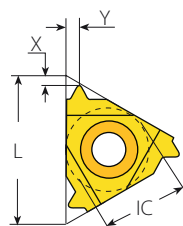
# BSPT



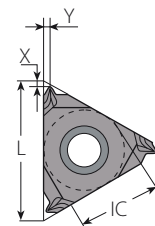
## External



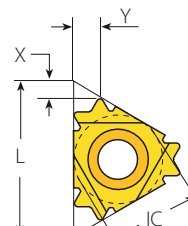
Defined by: B.S. 21:1985  
Tolerance class: Standard BSPT



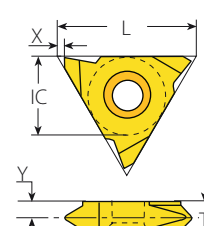
Standard



SCB  
Sintered  
Chipbreaker



V6



Slim Throat

## Standard



SCB



V6

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			
3/8" V6	16	19	3ER19BSPT-6C...		0.86	1.7	2.2	YE3-6C	-	AL...-3
		14	3ER14BSPT-6C...		1.16	1.9	2.8			

## Slim Throat



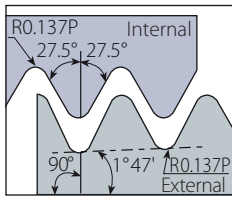
Insert Size		Pitch	Ordering Code		Dimensions mm				Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	T	
3/8"V	16	28	3VER28BSPT...	3VEL28BSPT...	0.58	1.1	3.0	3.6	NL...-3V (LH)
		19	3VER19BSPT...	3VEL19BSPT...	0.86	1.1	2.7	3.6	
		14	3VER14BSPT...	3VEL14BSPT...	1.16	1.1	2.4	3.6	
		11	3VER11BSPT...	3VEL11BSPT...	1.48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



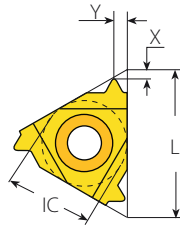


# BSPT (con't)

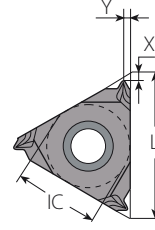
## Internal



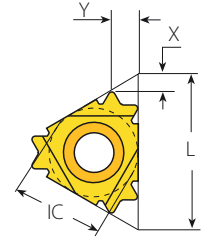
Defined by: B.S. 21:1985  
Tolerance class: Standard BSPT



Standard



SCB  
Sintered  
Chipbreaker



V6

## Standard



SCB



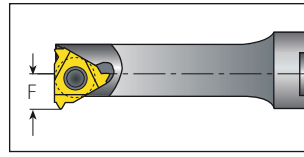
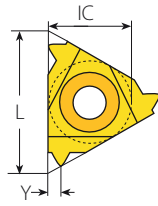
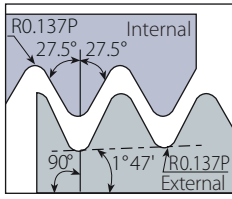
V6

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			
3/8" V6	16	19	3IR19BSPT-6C...		0.86	1.8	2.3	YI3-6C	-	AVR..-3 NVRC..-3 206/..
		14	3IR14BSPT-6C...		1.16	1.9	2.7			

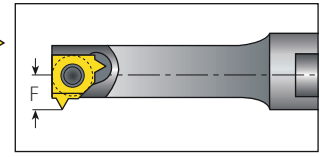
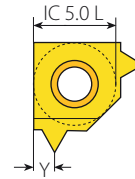


## BSPT (con't)

### Internal



Mini-3



Mini-L

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

### Mini-3



Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC	L mm	tpi	RH	h min	Y	F	mm	
4.0	6	28	4.0KIR28BSPT...	0.58	0.6	3.6	6.25	.NVR.5-4.0K
		28	6.0IR28BSPT...	0.58	0.6	4.7	9.6	
6.0	10	19	6.0IR19BSPT...	0.86	0.9	5.0	9.9	.NVR1...-6.0
		14	6.0IR14BSPT...	1.16	1.2	5.3	10.0	

### Mini-L

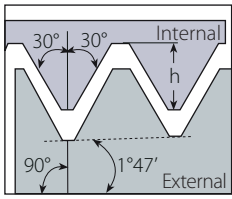


Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC mm		tpi	RH	h min	Y	F	mm	
5.0L		28	5LIR28BSPT...	0.58	0.6	4.05	7.6	
		19	5LIR19BSPT...	0.86	0.9	4.35	7.9	.NVR10. -5L
		14	5LIR14BSPT...	1.16	1.2	4.68	8.0	

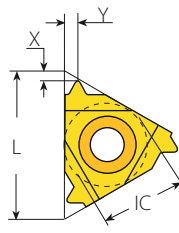


# NPT

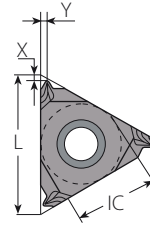
## External



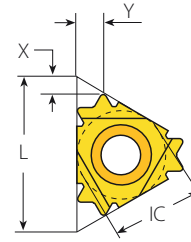
Defined by: USAS B2.1:1968  
Tolerance class: Standard NPT



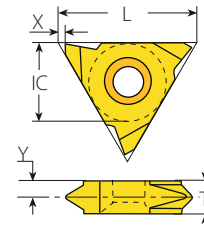
Standard



SCB  
Sintered  
Chipbreaker







V6




Slim Throat

## 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	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			
	3/8" SCB	16	8	3ER8NPT...	3EL8NPT...	2.42	1.3	1.8	YE3	-	AL...-3
			27	3JER27NPT...		0.66	0.6	0.8			
			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			
	3/8" V6	16	14	3ER14NPT-6C...		1.33	1.9	3.0	YE3-6C	-	AL...-3

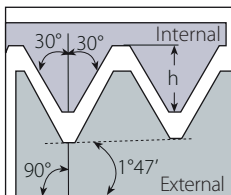
## Slim Throat

Insert Size		Pitch	Ordering Code		Dimensions mm				Toolholder	
IC	L mm	tpi	RH	LH	h min	X	Y	T		
	1/4"V	11	27	2VER27NPT...	2VEL27NPT...	0.66	0.7	2.0	3.2	NL...-2V (LH)
			18	2VER18NPT...	2VEL18NPT...	1.01	0.7	1.8	3.2	
			14	2VER14NPT...	2VEL14NPT...	1.33	0.7	1.8	3.2	
			11.5	2VER11.5NPT...	2VEL11.5NPT...	1.64	0.7	2.1	3.2	
3/8"V	16	27	3VER27NPT...	3VEL27NPT...	0.66	1.1	2.9	3.6	NL...-3V (LH)	
		18	3VER18NPT...	3VEL18NPT...	1.01	1.1	2.6	3.6		
		11.5	3VER11.5NPT...	3VEL11.5 NPT...	1.64	1.1	2.1	3.6		

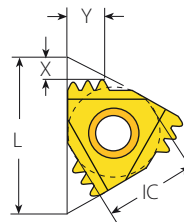
# NPT (con't)



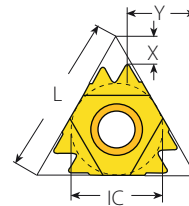
## External



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



M+ Style



Z+ Style

## 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	3ER14NPT2M+...	1.33	2.0	3.0	YE3M	AL..-3
1/2"	22	11.5	2	4ER11.5NPT2M+...	1.64	2.2	3.4	YE4M	AL..-4
5/8"	27	11.5	3	5ER11.5NPT3M+...	1.64	3.5	5.6	YE5M	AL..-5M
		8	2	5ER8NPT2M+...	2.42	3.1	4.9		

## Z+ Style

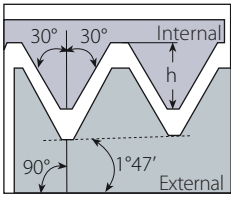


Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi	RH		h min	X	Y	RH	Toolholder
1/2"	22	11.5	2	4ER11.5NPT2Z+...	1.64	2.7	10.0	YE4Z	AL..-4Z
		8	2	4ER8NPT2Z+...	2.42	3.4	9.6		

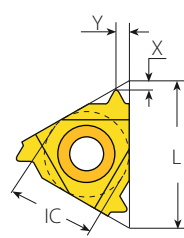


# NPT (con't)

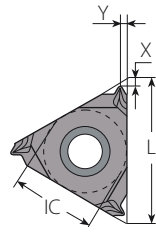
## Internal



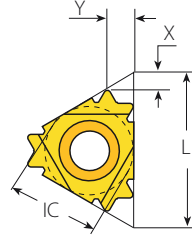
Defined by: USAS B2.1:1968  
Tolerance class: Standard NPT



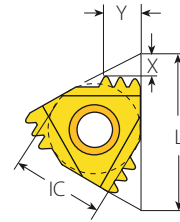
Standard



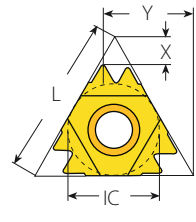
SCB  
Sintered  
Chipbreaker



V6



M+ Style



Z+ 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	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			
	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			
	3/8" V6	16	14	3IR14NPT-6C...		1.33	1.9	2.8	YI3-6C	-	AVR..-3 NVRC...-3 206/...

## M+ Style



Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil		Toolholder
IC	L mm	tpi		RH	h min	X	Y	RH		
	3/8"	16	14	2	3IR14NPT2M+...	1.33	2.0	3.0	YI3M	AVR..-3
			11.5	2	4IR11.5NPT2M+...	1.64	2.2	3.4	YI4M	AVR..-4
			5/8"	27	11.5	3	5IR11.5NPT3M+...	1.64	3.5	5.6
8	2	5IR8NPT2M+...			2.42	3.1	4.9			

## Z+ Style

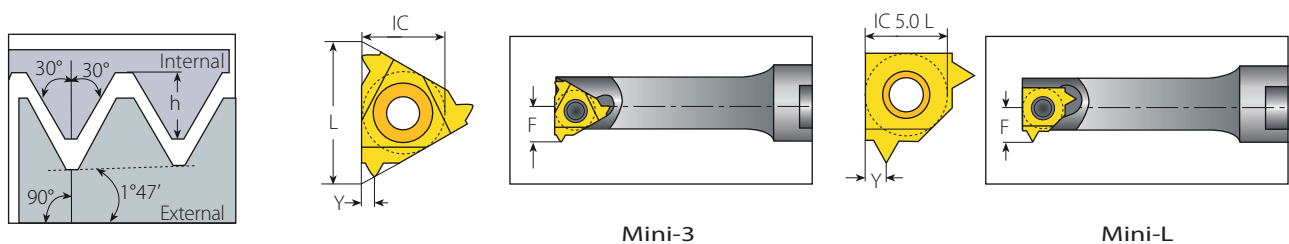


Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil		Toolholder
IC	L mm	tpi		RH	h min	X	Y	RH		
	1/2"	22	11.5	2	4IR11.5NPT2Z+...	1.64	2.7	10.0	YI4Z	AVR..-4Z
			8	2	4IR8NPT2Z+...	2.42	3.4	9.6		



## NPT (con't)

### Internal



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

### Mini-3



Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC	L mm	tpi	RH	h min	Y	F	mm	
4.0	6.0	27	4.0KIR27NPT...	0.66	0.6	3.7	6.35	.NVR.5-4.0K
		27	6.0IR27NPT...	0.66	0.8	5.3		
6.0	10	18	6.0IR18NPT...	1.01	1.0	5.3	10.0	.NVR1..-6.0
		14	6.0IR14NPT...	1.33	1.1	5.3		

### Mini-L

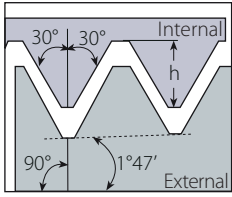


Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC mm		tpi	RH	h min	Y	F	mm	
5.0L		27	5LIR27NPT...	0.66	0.8	4.65	8.0	.NVR10.-5L
		18	5LIR18NPT...	1.01	1.0	4.65		
		14	5LIR14NPT...	1.33	1.1	4.65		

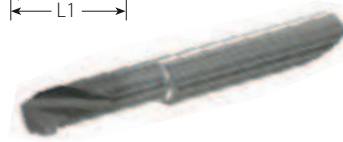
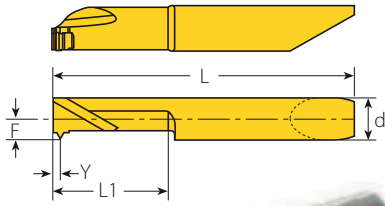


# NPT

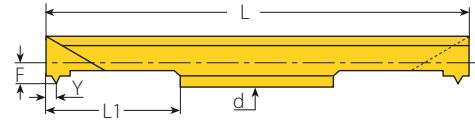
## Internal



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



RH-Single Ended



RH-Double Ended

## Micro - Double Ended

Thread	Insert dia.	Pitch	Ordering Code	Dimensions mm					Min. Bore dia.	Toolholder
	d mm	mm	RH/LH	L1	L	F	Y	h min	mm	
1/16"-27NPT	6.0	27	6.0SIR27NPT...	16	50	2.50	1.00	0.66	5.9	SMC..-6.0
1/4"-18NPT		18	6.0SIR18NPT...	16	50	2.50	0.80	1.01	6.0	

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

## Micro - Single Ended

**microscope**

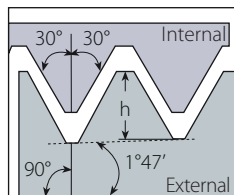
Thread	Insert dia.	Pitch	Ordering Code	Dimensions mm					Min. Bore dia.	Toolholder
	d mm	mm	RH/LH	L1	L	F	Y	h min	mm	
1/16"-27NPT	6.0	27	M659TH 27NPT L16R/L	16	42	2.90	0.75	0.66	6.1	MHC..-6
1/4"-18NPT		18	M659TH 18NPT L16R/L	16	42	2.90	1.00	1.01	10.7	

Left Handed Tool Supplied by Request. (Example: M659TH 27NPT L16L)

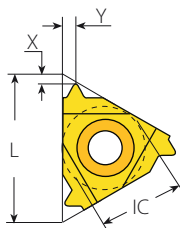
# NPTF



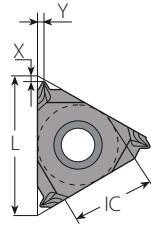
## External



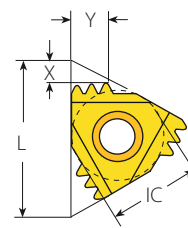
Defined by: ANSI B1.20.3-1976  
Tolerance class: Class 2



Standard



SCB  
Sintered  
Chipbreaker



M+ 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	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			
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	1.3	1.8			

## M+ Style



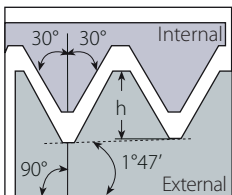
Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil		Toolholder
IC	L mm	tpi		RH	h min	X	Y	RH		
3/8"	16	14	2	3ER14NPTF2M+...	1.35	2.0	3.0	YE3M	AL..-3	



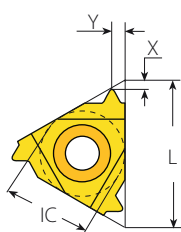


# NPTF (con't)

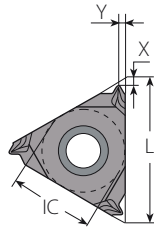
## Internal



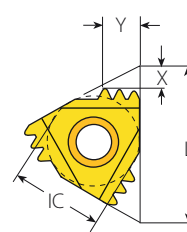
Defined by: ANSI B1.20.3-1976  
Tolerance class: Class 2



Standard




SCB  
Sintered  
Chipbreaker



M+ 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	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				

SCB

## M+ Style

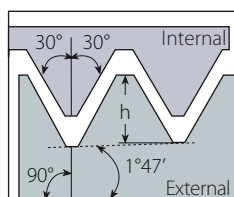


Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil		Toolholder
IC	L mm	tpi		RH	h min	X	Y	RH		
3/8"	16	14	2	3IR14NPTF2M+...		1.35	2.0	3.0	YI3M	AVR..-3

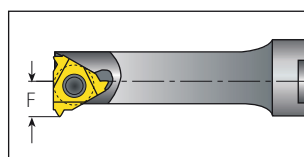
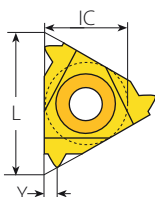


# NPTF (con't)

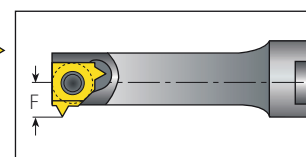
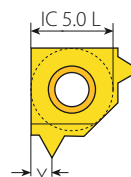
## Internal



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.	Toolholder
IC	L mm	tpi	RH	h min	Y	F	mm	
4.0	6	27	4.0KIR27NPTF...	0.64	0.6	3.6	6.25	.NVR.5-4.0K
		27	6.0IR27NPTF...	0.64	0.8	5.3		
6.0	10	18	6.0IR18NPTF...	1.00	1.0	5.3	10.0	.NVR1.-6.0
		14	6.0IR14NPTF...	1.35	1.1	5.3		

## Mini-L

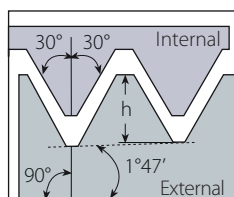


Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC mm		tpi	RH	h min	Y	F	mm	
5.0L		27	5LIR27NPTF...	0.64	0.8	4.65	8.0	.NVR 10.-5L
		18	5LIR18NPTF...	1.00	1.0	4.65		
		14	5LIR14NPTF...	1.35	1.1	4.65		

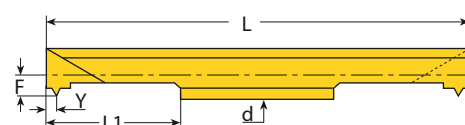
# NPTF



## Internal



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



RH-Double Ended

## Micro - Double Ended

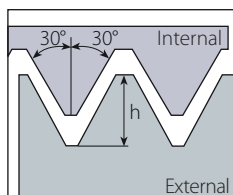
Insert dia.		Pitch	Ordering Code	Dimensions mm					Min. Bore dia.	Toolholder
Thread	d mm	tpi	RH/LH	L1	L	F	Y	h min	mm	
1/16"-27NPTF	6.0	27	6.0SIR27NPTF...	16	50	2.50	0.80	0.64	6.0	SMC.-6.0
1/4"-18NPTF		18	6.0SIR18NPTF...	16	50	2.50	1.00	1.00		

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

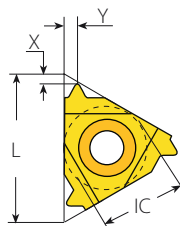


# NPS

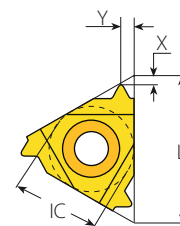
## External / Internal



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	24	3ER24NPS...	3EL24NPS...	0.79	0.7	0.8	YE3	YI3	AL...-3 (LH)
		16	3ER16NPS...	3EL16NPS...	1.21	0.8	1.1			
		14	3ER14NPS...	3EL14NPS...	1.33	0.9	1.2			
		12	3ER12NPS...	3EL12NPS...	1.63	1.1	1.4			
		11.5	3ER11.5NPS...	3EL11.5NPS...	1.71	1.1	1.5			
1/2"	22	8	4ER8NPS...	4EL8NPS...	2.46	1.3	1.9	YE4	YI4	AL...-4 (LH)
		7	4ER7NPS...	4EL7NPS...	2.82	1.6	2.3			
		6	4ER6NPS...	4EL6NPS...	3.31	1.6	2.3			
5/8"	27	5	5ER5NPS...	5EL5NPS...	3.98	1.9	2.8	YE5	YI5	AL...-5 (LH)

## Internal

### Standard

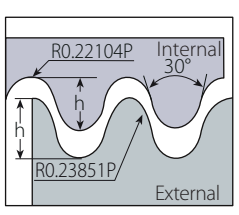


Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
3/8"	16	24	3IR24NPS...	3IL24NPS...	0.79	0.7	0.8	YI3	YE3	AVR...-3 (LH)
		14	3IR14NPS...	3IL14NPS...	1.33	0.9	1.2			
		12	3IR12NPS...	3IL12NPS...	1.63	1.1	1.4			
		11.5	3IR11.5NPS...	3IL11.5NPS...	1.71	1.1	1.5			
1/2"	22	8	4IR8NPS...	4IL8NPS...	2.46	1.3	1.9	YI4	YE4	AVR...-4 (LH)
		7	4IR7NPS...	4IL7NPS...	2.82	1.6	2.3			
		6	4IR6NPS...	4IL6NPS...	3.31	1.6	2.3			
5/8"	27	5	5IR5NPS...	5IL5NPS...	3.98	1.9	2.8	YI5	YE5	AVR...-5 (LH)

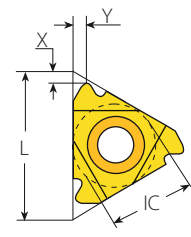


# Round (DIN 405)

## External



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



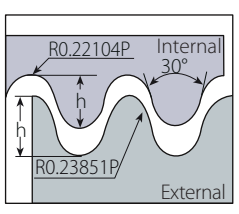
Standard

## Standard

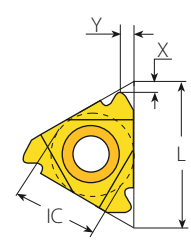


Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
3/8"	16	10	3ER10RD...	3EL10RD...	1.27	1.1	1.2	YE3	YI3	AL..-3 (LH)
		8	3ER8RD...	3EL8RD...	1.59	1.4	1.3			
		6	3ER6RD...	3EL6RD...	2.12	1.5	1.7			
1/2"	22	6	4ER6RD...	4EL6RD...	2.12	1.5	1.7	YE4	YI4	AL..-4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

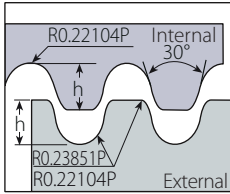


Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
3/8"	16	10	3IR10RD...	3IL10RD...	1.27	1.1	1.2	YI3	YE3	AVR..-3 (LH)
		8	3IR8RD...	3IL8RD...	1.59	1.4	1.4			
		6	3IR6RD...	3IL6RD...	2.12	1.4	1.5			
1/2"	22	6	4IR6RD...	4IL6RD...	2.12	1.5	1.7	YI4	YE4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

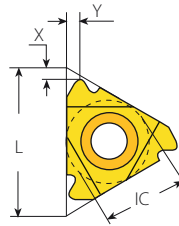


## Round (DIN 20400)

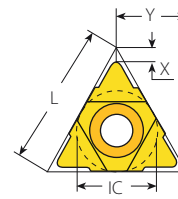
### External



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	1.3	1.7	YE4	YI4	AL...-4 (LH)
		4.0	4ER4.0RD20400...	4EL4.0RD20400...	2.20	1.6	2.2			
		5.0	4ER5.0RD20400...	4EL5.0RD20400...	2.75	1.4	1.7			
		6.0	4ER6.0RD20400...	4EL6.0RD20400...	3.30	1.7	2.1			

### U Style

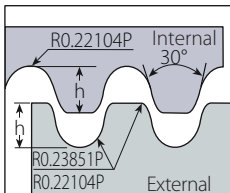


Insert Size		Pitch	Ordering Code	Dimensions mm			Anvil		Toolholder
IC	L mm	mm	RH+LH	h min	X	Y	RH	LH	
5/8"U	27	8.0	5UEI8.0RD20400...	4.4	2.9	13.5	YE5U	YI5U	AL...-5U (LH)

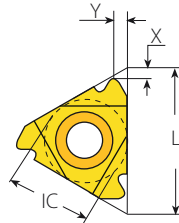
## Round (DIN 20400)



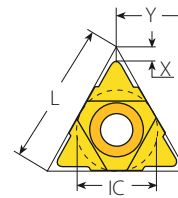
### Internal



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	1.3	1.7	YI4	YE4	AVR...-4 (LH)
		4.0	4IR4.0RD20400...	4IL4.0RD20400...	2.20	1.6	2.2			
		5.0	4IR5.0RD20400...	4IL5.0RD20400...	2.75	1.4	1.7			
		6.0	4IR6.0RD20400...	4IL6.0RD20400...	3.30	1.7	2.1			

### U Style

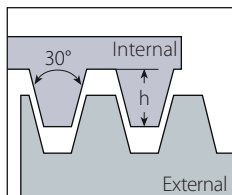


Insert Size		Pitch	Ordering Code	Dimensions mm			Anvil		Toolholder
IC	L mm	mm	RH+LH	h min	X	Y	RH	LH	
5/8"U	27	8.0	5UEI8.0RD20400...	4.4	2.9	13.5	YI5U	YE5U	AVR...-5U (LH)

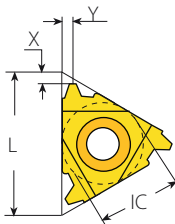
# Trapez



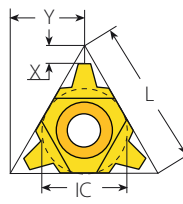
## External



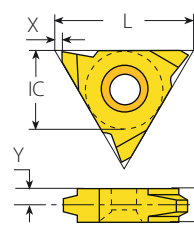
Defined by: DIN 103  
 Tolerance class: 7e/7H



Standard



U Style



V Style

## Standard



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	mm	RH	LH	h min	X	Y	RH	LH	
1/4"	11	1.5	2ER1.5TR...	2EL1.5TR...	0.90	0.8	0.9	-	-	NL..-2 (LH)
		1.5	3ER1.5TR...	3EL1.5TR...	0.90	1.0	1.1			
3/8"	16	2.0	3ER2.0TR...	3EL2.0TR...	1.25	1.1	1.3	YE3	YI3	AL..-3 (LH)
		2.5	3ER2.5TR...	3EL2.5TR...	1.55	1.2	1.4			
		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		Toolholder
IC	L mm	mm	RH+LH		h min	X	Y	RH	LH	
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

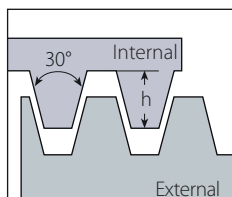


Insert Size		Pitch	Ordering Code		Dimensions mm				Toolholder
IC	L mm	mm	RH	LH	h min	X	Y	T	
5/8"V	27	6.0	5VER6.0TR...	5VEL6.0TR...	3.50	1.0	3.3	6	NL..-5V-6 (LH)
		7.0	5VER7.0TR...	5VEL7.0TR...	4.00	1.0	3.3	6	
		8.0	5VER8.0TR...	5VEL8.0TR...	4.50	1.0	3.3	6	NL..-5V-8 (LH)
		9.0	5VER9.0TR...	5VEL9.0TR...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

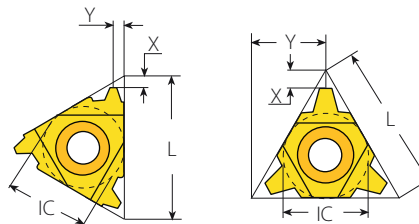


# Trapez (con't)

## 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)
		1.5	3IR1.5TR...	3IL1.5TR...	0.90	1.0	1.1			
3/8"	16	2.0	3IR2.0TR...	3IL2.0TR...	1.25	1.1	1.3	YI3	YE3	AVR.-3 (LH)
		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			
		6.0	4IR6.0TR...	4IL6.0TR...	3.50	2.3	2.7			
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			Toolholder	Min Bore dia. mm	
	IC	L mm		h min	X	Y			
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			3UIR5.0TR...158/011	2.75	1.56	8.0	NVRC15-3U	156/019	19.0
TR26x5			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

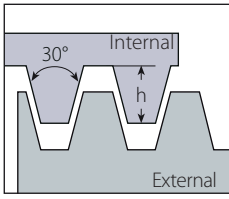
Left Handed Tool Supplied by Request.

U Type Inserts Can be Used for Both LH and RH Applications.

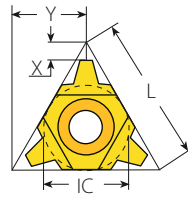
# Trapez (con't)



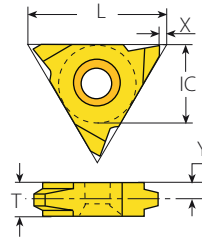
## Internal



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



U Style



V Style

## U Style



Insert Size		Pitch	Ordering Code	Dimensions mm			Anvil		Toolholder
IC	L mm	mm	RH+LH	h min	X	Y	RH	LH	
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			

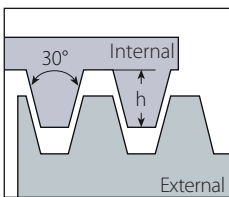
## V Style



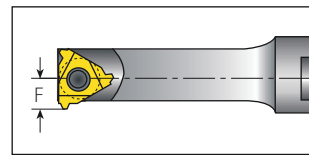
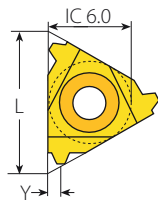
Insert Size		Pitch	Ordering Code		Dimensions mm					Toolholder
IC	L mm	mm	RH	LH	h min	X	Y	T		
5/8"V	27	6.0	5VIR6.0TR...	5VIL6.0TR...	3.50	1.0	3.3	6	NVR...-5V (LH)	
		7.0	5VIR7.0TR...	5VIL7.0TR...	4.00	1.0	3.3	6		
		8.0	5VIR8.0TR...	5VIL8.0TR...	4.50	1.0	3.3	6		
		9.0	5VIR9.0TR...	5VIL9.0TR...	5.00	1.0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



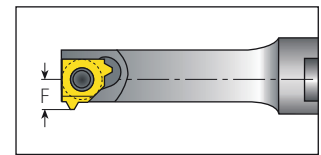
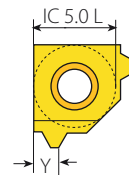
## Internal



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



Mini-3



Mini-L

## Mini-3



Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC	L mm	mm	RH	h min	Y	F	mm	
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.	Toolholder
IC mm	mm	mm	RH	h min	Y	F	mm	
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	

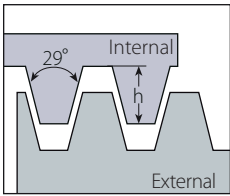
Left Handed Tool Supplied by Request. (Example: 6.0IL2.0TR...)



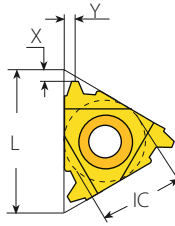


# American ACME

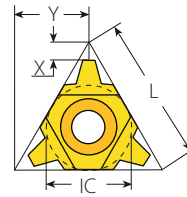
## External



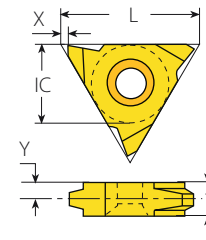
Defined by: ANSI B1.5:1988  
Tolerance class: 3G



Standard



U Style



V Style

## Standard



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	11	16	2ER16ACME...	2EL16ACME...	0.92	1.0	1.1	-	-	NL...-2 (LH)
		16	3ER16ACME...	3EL16ACME...	0.92	1.0	1.1	YE3	YI3	AL...-3 (LH)
		14	3ER14ACME...	3EL14ACME...	1.03	1.0	1.2			
		12	3ER12ACME...	3EL12ACME...	1.19	1.1	1.2			
		10	3ER10ACME...	3EL10ACME...	1.52	1.3	1.4			
		8	3ER8ACME...	3EL8ACME...	1.84	1.4	1.5			
3/8"	16	7	3ER7ACME...	3EL7ACME...	2.08	1.9	2.2	YE3AC6	YI3AC6	AL...-4 (LH)
		6	3ER6ACME...	3EL6ACME...	2.37	1.7	1.9			
		7	4ER7ACME...	4EL7ACME...	2.08	1.9	2.2			
1/2"	22	6	4ER6ACME...	4EL6ACME...	2.37	1.8	2.1	YE4	YI4	AL...-4 (LH)
		5	4ER5ACME...	4EL5ACME...	2.79	2.0	2.3			
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		Toolholder
IC	L mm	tpi	RH+LH		h min	X	Y	RH	LH	
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

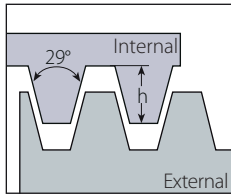


Insert Size		Pitch	Ordering Code		Dimensions mm				Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	T	
5/8"V	27	4	5VER4ACME...	5VEL4ACME...	3.43	1.0	3.3	6	NL...-5V-6 (LH)
		3.5	5VER3.5ACME...	5VEL3.5ACME...	3.85	1.0	3.3	6	
		3	5VER3ACME...	5VEL3ACME...	4.49	1.0	3.3	6	
		2	5VER2ACME...	5VEL2ACME...	6.60	1.0	5.2	10	

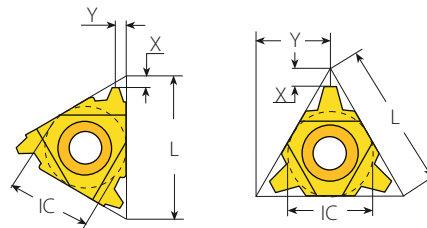
# American ACME (con't)



## 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 / LH	h min	X	Y	RH	Toolholder	mm
1/2"x10	6.0U	10	6.0UIR10ACME...158/005	1.52	1.0	5.2	-	NVRC 8-6.0U 156/003	10.16
5/8"x8	1/4"U	11	2UIR8ACME...158/006	1.84	1.0	5.5	-	NVRC 10-2U 156/004	12.70
3/4"x6	3/8"	16	3IR6ACME...	2.37	1.7	1.8	-	NVRC 11-3 156/005	14.82
7/8"x6			3IR6ACME...	2.37	1.7	1.8	-	NVRC 13-3 156/006	18.42
1"x5	1/2"	22	4IR5ACME...	2.79	2.0	2.3	-	NVRC 17-4 156/007	20.32
1 1/8"x5			4IR5ACME...	2.79	2.0	2.3	-	NVRC 20-4 156/008	24.00
1 1/4"x5			4IR5ACME...	2.79	2.0	2.3	-	NVRC 20-4 156/009	27.18
1 1/2"x4	5/8"	27	5IR4ACME...	3.43	2.3	2.6	-	NVRC 28-5 156/010	32.38
1 3/4"x4			5IR4ACME...	3.43	2.3	2.6	YI5-1P	AVRC 32-5	38.74

Left Handed Tool Supplied by Request.

U Type Inserts Can Be Used for Both LH and RH Applications.

## U Style

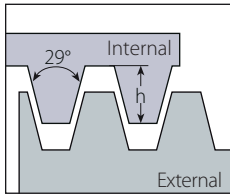


Insert Size		Pitch	Ordering Code	Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH+LH	h min	X	Y	RH	LH	
1/2"U	22	4	4UI4ACME...	3.43	2.3	11.0	YI4U	YE4U	AVR..-4U (LH)
		3	4UI3ACME...	4.49	2.9	11.0			
5/8"U	27	3	5UI3ACME...	4.49	2.9	13.7	YI5U	YE5U	AVR..-5U(LH)

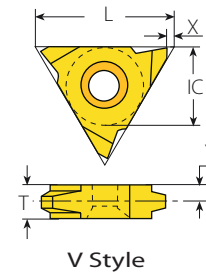


# American ACME (con't)

## Internal



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



V Style

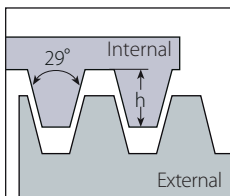
## V Style



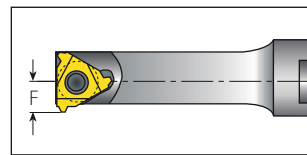
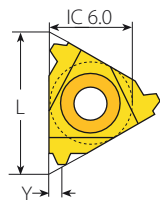
Insert Size		Pitch	Ordering Code		Dimensions mm			Toolholder	
IC	L mm	tpi	RH	LH	h min	X	Y		T
5/8"V	27	4	5VIR4ACME...	5VIL4ACME...	3.43	1.0	3.3	6	NVR..-5V (LH)
		3.5	5VIR3.5ACME...	5VIL3.5ACME...	3.85	1.0	3.3	6	
		3	5VIR3ACME...	5VIL3ACME...	4.49	1.0	3.3	6	
		2	5VIR2ACME...	5VIL2ACME...	6.60	1.0	5.2	10	



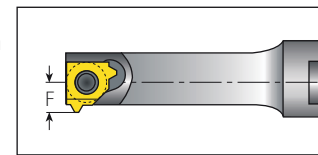
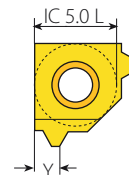
## Internal



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	LH	h min	Y	F	mm	
6.0	10	12	6.0IR12ACME...		1.19	1.1	5.1	10.0	.NVR1..-6.0

## Mini-L



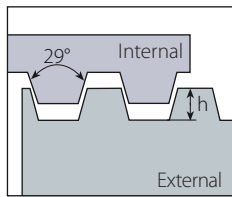
Insert Size		Pitch	Ordering Code		Dimensions mm			Min. Bore dia.	Toolholder
IC mm		tpi	RH	LH	h min	Y	F	mm	
5.0L		12	5LIR12ACME...		1.19	1.1	4.42	8.0	.NVR10..-5L

Left Handed Tool Supplied by Request. (Example: 6.0IL12ACME...)

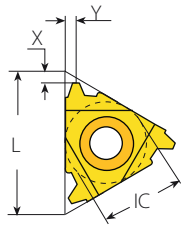
# Stub ACME



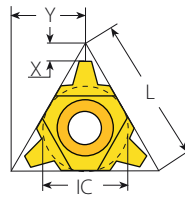
## External



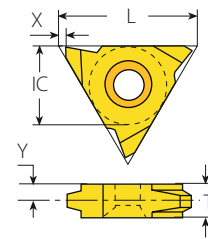
Defined by: ANSI B1.8:1988  
Tolerance class: 2G



Standard



U Style



V Style

## Standard



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	11	16	2ER16STACME...	2EL16STACME...	0.60	1.0	1.0	-	-	NL..-2 (LH)
		16	3ER16STACME...	3EL16STACME...	0.60	1.0	1.0			
		14	3ER14STACME...	3EL14STACME...	0.67	1.1	1.1			
		12	3ER12STACME...	3EL12STACME...	0.76	1.2	1.2	YE3	YI3	AL..-3 (LH)
		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			
		5	4ER5STACME...	4EL5STACME...	1.78	2.1	2.3	YE4	YI4	AL..-4 (LH)
		4	4ER4STACME...	4EL4STACME...	2.16	2.3	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		Toolholder
IC	L mm	tpi	RH+LH	h min	X	Y	RH	LH		
1/2"U	22	4	4UE4STACME...	2.16	2.6	11.0				
		3	4UE3STACME...	2.79	3.4	11.0	YE4U	YI4U	AL..-4U (LH)	

## V Style

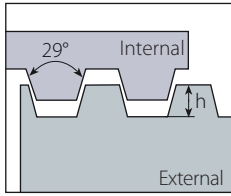


Insert Size		Pitch	Ordering Code		Dimensions mm				Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	T	
5/8"V	27	4	5VER4STACME...	5VEL4STACME...	2.16	1.0	3.3	6	NL..-5V-6 (LH)
		3	5VER3STACME...	5VEL3STACME...	2.79	1.0	3.3	6	
		2	5VER2STACME...	5VEL2STACME...	4.06	1.0	4.3	8	NL..-5V-8 (LH)

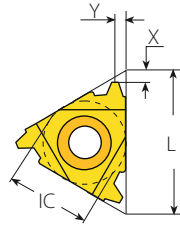


# Stub ACME (con't)

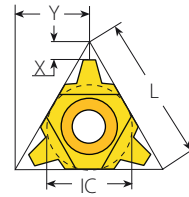
## Internal



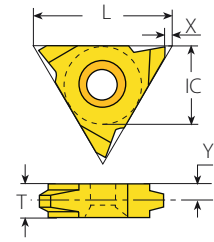
Defined by: ANSI B1.8:1988  
Tolerance class: 2G



Standard



U Style



V Style

## Standard



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

## 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	4UI4STACME...		2.16	2.5	11.0			
		3	4UI3STACME...		2.79	3.3	11.0	YI4U	YE4U	AVR..-4U (LH)

## V Style



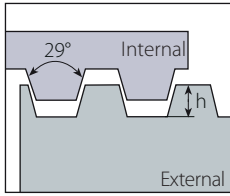
Insert Size		Pitch	Ordering Code		Dimensions mm				Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	T	
5/8"V	27	4	5VIR4STACME...	5VIL4STACME...	2.16	1.0	3.3	6	
		3	5VIR3STACME...	5VIL3STACME...	2.79	1.0	3.3	6	NVR..-5V (LH)
		2	5VIR2STACME...	5VIL2STACME...	4.06	1.0	4.3	8	



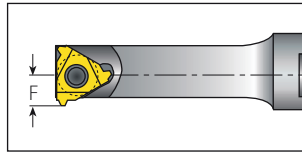
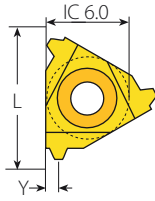
# Stub ACME (con't)



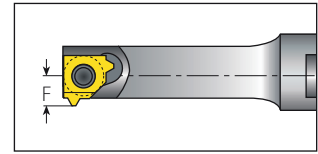
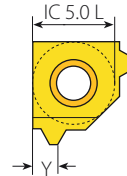
## Internal



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



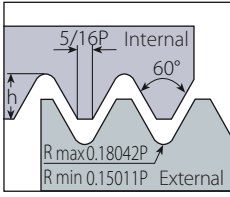
Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	
IC mm	tpi	RH	h min	Y	F	mm	Toolholder	
5.0L	12	5LIR12STACME...	0.76	1.2	4.42	8.0	.NVR 10. -5L	

Left Handed Tool Supplied by Request. (Example: 6.0IL12STACME...)

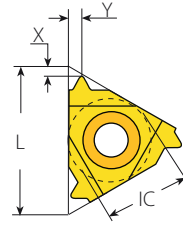


# UNJ - UNJC, UNJF, UNJEF, UNJS

## 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	Y13	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 - UNJC, UNJF, UNJEF, UNJS (con't)

### External

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

**SCB**  
Sintered  
Chipbreaker

**Standard**

**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	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	Y14	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	Y15	AL..-5 (LH)
		4	5ER4UNJ... 5EL4UNJ...	3.67	2.2	3.1				

## U Style

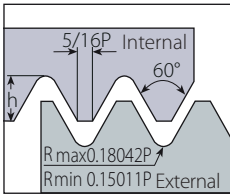
Insert Size		Pitch	Ordering Code	Dimensions mm			Anvil		Toolholder	
IC	L mm	tpi	RH+LH	h min	X	Y	RH	LH		
	1/2"U	22	4.5	4UE4.5UNJ...	3.26	2.1	11.0	YE4U	Y14U	AL..-4U (LH)
		4	4UE4UNJ...	3.67	2.2	11.0				



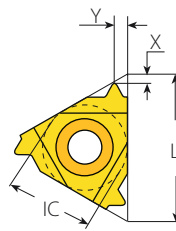


# UNJ - UNJC, UNJF, UNJEF, UNJS (con't)

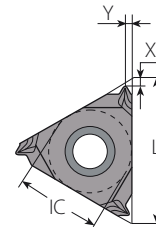
## Internal



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



Standard



SCB  
Sintered  
Chipbreaker

## Standard



SCB

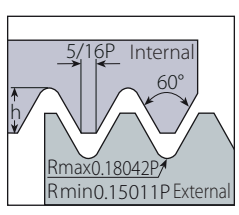
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	11	48	2IR48UNJ...	2IL48UNJ...	0.28	0.6	0.5	-	-	NVR..-2 (LH)
		44	2IR44UNJ...	2IL44UNJ...	0.30	0.6	0.6			
		40	2IR40UNJ...	2IL40UNJ...	0.33	0.6	0.6			
		36	2IR36UNJ...	2IL36UNJ...	0.37	0.6	0.6			
		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			
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			
		14	2JIR14UNJ...		0.95	0.6	0.8			

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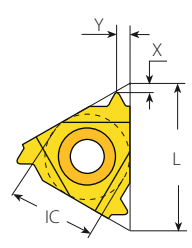
# UNJ - UNJC, UNJF, UNJEF, UNJS (con't)



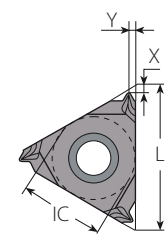
## Internal



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






Standard



SCB  
Sintered  
Chipbreaker

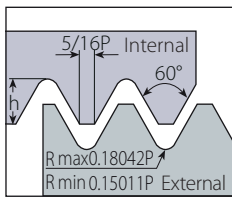
## Standard (con't)

Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder	
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH		
	3/8"	16	48	3IR48UNJ...	3IL48UNJ...	0.28	0.6	0.5	Y13	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	28	3JIR28UNJ...		0.47	0.6	0.8	Y13	-	AVR..-3
			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	Y14	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	Y15	YE5	AVR..-5 (LH)	
		4	5IR4UNJ...	5IL4UNJ...	3.32	2.2	2.4				

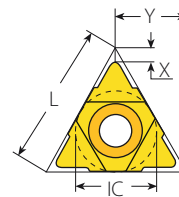


## UNJ - UNJC, UNJF, UNJEF, UNJS (con't)

### Internal



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



U Style

### U Style



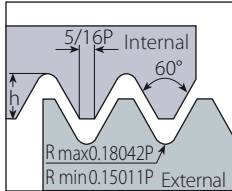
Insert Size		Pitch	Ordering Code	Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH+LH	h min	X	Y	RH	LH	
1/2"U	22	4.5	4UI4.5UNJ...	2.95	2.1	11.0	YI4U	YE4U	AVR..-4U (LH)
		4	4UI4UNJ...	3.32	2.2	11.0			



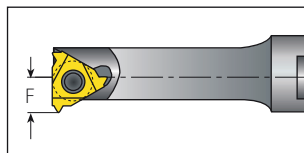
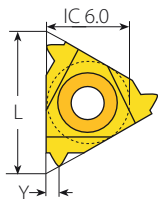
## UNJ - UNJC, UNJF, UNJEF, UNJS (con't)



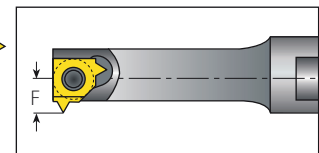
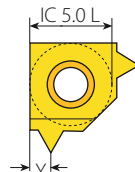
### Internal



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.	Toolholder
IC	L mm	tpi	RH	h min	Y	F	mm	
6.0	10	20	6.0IR20UNJ...	0.66	0.9	4.90	9.8	.NVR1..-6.0

### Mini-L



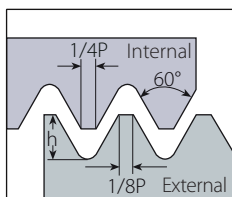
Insert Size		Pitch	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC mm		tpi	RH	h min	Y	F	mm	
5.0L		32	5LIR32UNJ...	0.42	0.6	3.92	7.5	.NVR 10. -5L
		28	5LIR28UNJ...	0.47	0.6	3.99	7.6	
		20	5LIR20UNJ...	0.66	0.9	4.21	7.8	
		18	5LIR18UNJ...	0.74	1.0	4.30	7.9	
		16	5LIR16UNJ...	0.83	1.0	4.41	8.0	
	14	5LIR14UNJ...	0.95	1.0	4.54	8.0		

Left Handed Tool Supplied by Request. (Example: 6.0IL20UNJ...)

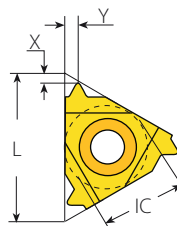
# MJ



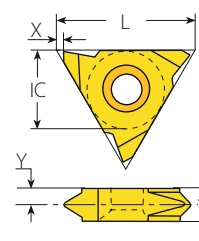
## External



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



External - Standard



Slim Throat

## 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	0.7	0.7	-	-	NL..-2 (LH)
		1.25	2ER1.25MJ...	2EL1.25MJ...	0.72	0.8	0.9			
		1.5	2ER1.5MJ...	2EL1.5MJ...	0.87	0.8	1.0			
3/8"	16	0.7	3ER0.7MJ...	3EL0.7MJ...	0.40	0.6	0.6	YE3	YI3	AL..-3 (LH)
		1.0	3ER1.0MJ...	3EL1.0MJ...	0.58	0.7	0.7			
		1.25	3ER1.25MJ...	3EL1.25MJ...	0.72	0.8	0.9			
		1.5	3ER1.5MJ...	3EL1.5MJ...	0.87	0.8	1.0			
		2.0	3ER2.0MJ...	3EL2.0MJ...	1.15	1.0	1.3			
		2.5	3ER2.5MJ...	3EL2.5MJ...	1.49	1.1	1.5			
3.0	3ER3.0MJ...	3EL3.0MJ...	1.73	1.2	1.6					

## Slim Throat

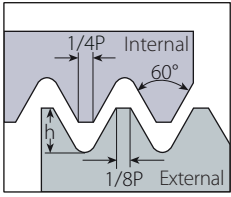


Insert Size		Pitch	Ordering Code		Dimensions mm				Toolholder
IC	L mm	mm	RH	LH	h min	X	Y	T	
1/4"V	11	0.7	2VER0.7MJ	2VEL0.7MJ	0.40	0.7	2.5	3.2	NL..-2V (LH)
		0.8	2VER0.8MJ	2VEL0.8MJ	0.44	0.7	2.5	3.2	
		0.9	2VER0.9MJ	2VEL0.9MJ	0.53	0.7	2.6	3.2	
		1.0	2VER1.0MJ	2VEL1.0MJ	0.58	0.7	2.5	3.2	
		1.25	2VER1.25MJ	2VEL1.25MJ	0.72	0.7	2.3	3.2	
		1.5	2VER1.5MJ	2VEL1.5MJ	0.87	0.7	2.2	3.2	

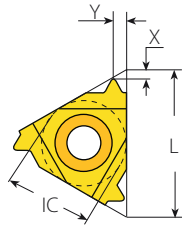


# MJ

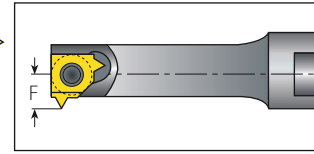
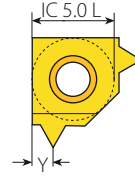
## Internal



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



Internal - Standard



Mini-L

## 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	0.6	0.7	-	-	NVR..-2 (LH)
		1.25	2IR1.25MJ...	2IL1.25MJ...	0.61	0.8	0.9			
		1.5	2IR1.5MJ...	2IL1.5MJ...	0.73	0.8	1.0			
		2.0	2IR2.0MJ...	2IL2.0MJ...	0.97	0.8	1.0			
3/8"	16	0.75	3IR0.75MJ...	3IL0.75MJ...	0.37	0.6	0.6	Y13	YE3	AVR..-3 (LH)
		1.0	3IR1.0MJ...	3IL1.0MJ...	0.49	0.6	0.7			
		1.25	3IR1.25MJ...	3IL1.25MJ...	0.61	0.8	0.9			
		1.5	3IR1.5MJ...	3IL1.5MJ...	0.73	0.8	1.0			
		2.0	3IR2.0MJ...	3IL2.0MJ...	0.97	0.8	1.3			
		2.5	3IR2.5MJ...	3IL2.5MJ...	1.23	1.1	1.5			
3.0	3IR3.0MJ...	3IL3.0MJ...	1.46	1.2	1.6					

## Mini - L

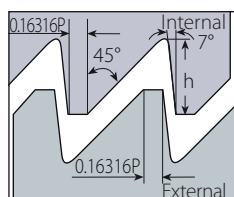


Insert Size		Pitch	Ordering Code		Dimensions mm			Min. Bore Dia.	Toolholder
IC mm		mm	RH	h min	Y	F	mm		
5.0L		1.0	5LIR1.0MJ...	0.49	0.7	4.06	7.7	.NVR 10.-5L	
		1.25	5LIR1.25MJ...	0.61	0.9	4.21	7.8		
		1.5	5LIR1.50MJ...	0.73	1.0	4.35	7.9		

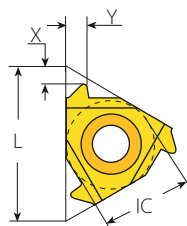
# American Buttress



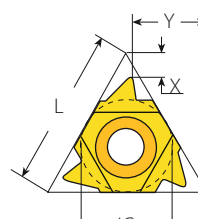
## External



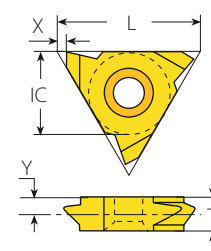
Defined by: ANSI B1.9.1973  
 Tolerance class: Class 2



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

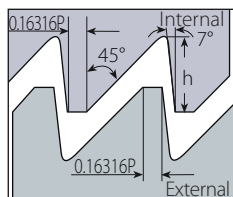


Insert Size		Pitch	Ordering Code		Dimensions mm			Toolholder	
IC	L mm	tpi	RH	LH	h min	X	Y		T
5/8"V	27	4	5VER4ABUT...	5VEL4ABUT...	4.21	0.6	1.8	6	NL..-5V-6 (LH)
		3	5VER3ABUT...	5VEL3ABUT...	5.61	0.6	2.2	8	NL..-5V-8 (LH)
		2.5	5VER2.5ABUT...	5VEL2.5ABUT...	6.73	0.6	2.7	10	NL..-5V-10ABUT (LH)

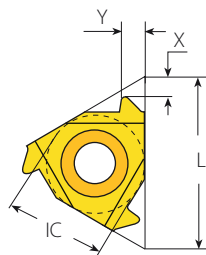


# American Buttress (con't)

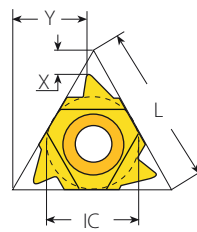
## Internal



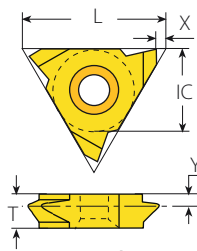
Defined by: ANSI B1.9.1973  
Tolerance class: Class 2



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

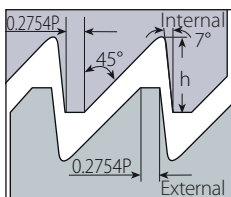


Insert Size		Pitch	Ordering Code		Dimensions mm			Toolholder	
IC	L mm	tpi	RH	LH	h min	X	Y		T
5/8"V	27	4	5VIR4ABUT...	5VIL4ABUT...	4.21	0.6	1.8	6	NVR..-5V (LH)
		3	5VIR3ABUT...	5VIL3ABUT...	5.61	0.6	2.2	8	
		2.5	5VIR2.5ABUT...	5VIL2.5ABUT...	6.73	0.6	2.7	10	

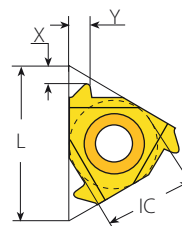
# British Buttress



## External



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



Standard

## Standard

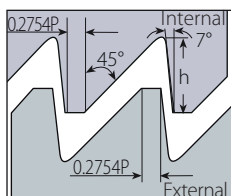


Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
3/8"	16	16	3ER16BBUT...	3EL16BBUT...	0.80	1.1	1.6	YE3	YI3	AL..-3 (LH)
		12	3ER12BBUT...	3EL12BBUT...	1.07	1.4	2.1			
		10	3ER10BBUT...	3EL10BBUT...	1.28	1.4	2.2			
		8	3ER8BBUT...	3EL8BBUT...	1.61	1.6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

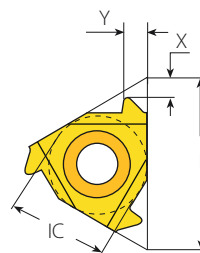
# British Buttress



## Internal



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



Standard

## Standard



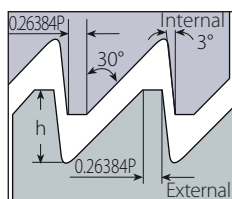
Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi	RH	LH	h min	X	Y	RH	LH	
3/8"	16	16	3IR16BBUT...	3IL16BBUT...	0.80	1.1	1.6	YI3	YE3	AVR..-3 (LH)
		12	3IR12BBUT...	3IL12BBUT...	1.07	1.4	2.1			
		10	3IR10BBUT...	3IL10BBUT...	1.28	1.4	2.2			
		8	3IR8BBUT...	3IL8BBUT...	1.61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



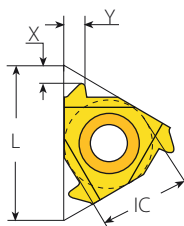


# Metric Buttress (Sägewinde)

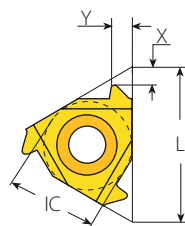
## External / Internal



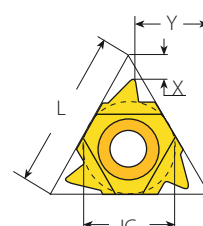
Defined by: DIN 513  
Tolerance class: Medium Class



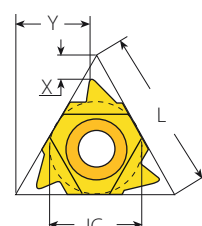
External Standard



Internal Standard



External U Style



Internal U Style

## Standard - External



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	mm	RH	LH	h min	X	Y	RH	LH	
3/8"	16	2.0	3ER2.0SAGE...	3EL2.0SAGE...	1.74	1.5	2.1	YE3	YI3	AL..-3 (LH)
		2.0	4ER2.0SAGE...	4EL2.0SAGE...	1.74	1.5	2.1			
1/2"	22	3.0	4ER3.0SAGE...	4EL3.0SAGE...	2.60	1.8	2.6	YE4	YI4	AL..-4 (LH)
		4.0	4ER4.0SAGE...	4EL4.0SAGE...	3.55	1.75	3.1			
5/8"	27	4.0	5ER4.0SAGE...	5EL4.0SAGE...	3.55	1.9	3.2	YE5 082/038	YI5 082/039	AL..-5 (LH)

## U Style - External



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	mm	RH	LH	h min	X	Y	RH	LH	
1/2"U	22	5	4UER5.0SAGE...	4UEL5.0SAGE...	4.41	1.27	10.35	YE4U-SAGE5	YI4U-SAGE5	AL..-4U (LH)
		6	4UER6.0SAGE...	4UEL6.0SAGE...	5.29	1.25	10.28	YE4U-SAGE6	YI4U-SAGE6	

## Standard - Internal



Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	mm	RH	LH	h min	X	Y	RH	LH	
3/8"	16	2.0	3IR2.0SAGE...	3IL2.0SAGE...	1.50	1.5	2.2	YI3	YE3	AVR..-3 (LH)
		3.0	4IR3.0SAGE...	4IL3.0SAGE...	2.25	1.7	2.9	YI4	YE4	AVR..-4 (LH)
1/2"	22	4.0	4IR4.0SAGE...	4IL4.0SAGE...	3.09	2.03	3.25			
		4.0	5IR4.0SAGE...	5IL4.0SAGE...	3.09	2.1	3.2	YI5 082/039	YE5 082/038	AVR..-5 (LH)

## U Style - Internal

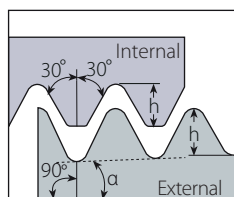


Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	mm	RH	LH	h min	X	Y	RH	LH	
1/2"U	22	5	4UIR5.0SAGE...	4UIL5.0SAGE...	3.76	1.8	10.3	YI4U-5S	YE4U-5S	AVR..-4U (LH)
		6	4UIR6.0SAGE...	4UIL6.0SAGE...	4.54	1.9	10.15	YI4U-6S	YE4U-6S	

# API

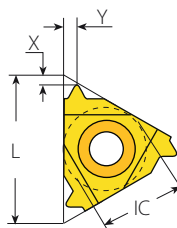


## External / Internal

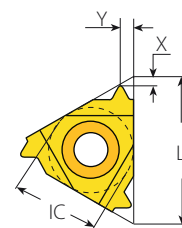


$$\alpha = \arctg (IPF/24)$$

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



External - Standard



Internal - Standard

## Standard - External



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-0.038R	2	4ER4API382...	NC23-NC50	3.09	2.1	2.8	YE4	AL..-4 (LH)
		4	V-0.038R	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	YE5OIL	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		

## Standard - Internal

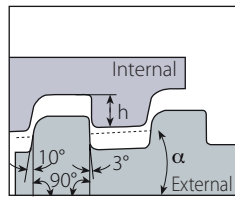


Insert Size		Pitch	Thread	Taper	Ordering Code	Size	Dimensions mm			Anvil	
IC	L mm	tpi		IPF	RH		h min	X	Y	RH	Toolholder
1/2"	22	4	V-0.038R	2	4IR4API382...	NC23-NC50	3.09	2.1	2.8	YI4	AVR..-4 (LH)
		4	V-0.038R	3	4IR4API383...	NC56-NC77	3.08	2.1	2.8		
		4	V-0.050	2	4IR4API502...	6 5/8" REG	3.75	2.1	3.1		
		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	YI5OIL	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		



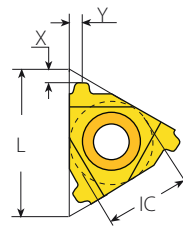
# API Buttress Casing

## External

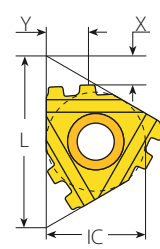


$$\alpha = \arctg (IPF/24)$$

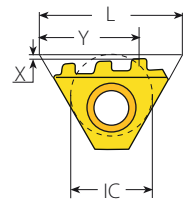
Defined by: STD.5B:1979  
Tolerance class: Standard API



Standard



M+ Style



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		

## M+ Style



Insert Size		Pitch	Taper	Teeth	Ordering Code	Size	Dimensions mm			Anvil	
IC	L mm	tpi	IPF		RH		h min	X	Y	RH	Toolholder
5/8"	27	5	0.75	2	5ER5BUT752M+...	4 1/2"-13 3/8"	1.55	4.8	6.8	YE5M	AL...-5M

## T+ Style

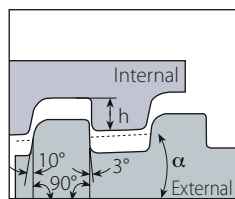


Insert Size		Pitch	Taper	Teeth	Ordering Code	Size	Dimensions mm			Anvil	
IC	L mm	tpi	IPF		RH		h min	X	Y	RH	Toolholder
1/2" T	22	5	0.75	3	4ER5BUT753T+...	4 1/2"-13 3/8"	1.55	0.1	16.1	Y4T	AL...-4T

# API Buttress Casing

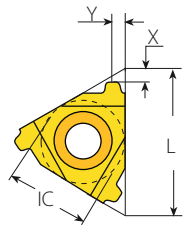


## Internal

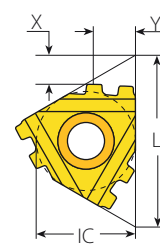


$$\alpha = \arctg (IPF/24)$$

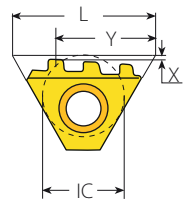
Defined by: STD.5B:1979  
Tolerance class: Standard API



Standard

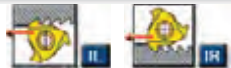


M+ Style



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		

## M+ Style



Insert Size		Pitch	Taper	Teeth	Ordering Code	Size	Dimensions mm			Anvil	
IC	L mm	tpi	IPF		RH		h min	X	Y	RH	Toolholder
5/8"	27	5	0.75	2	5IR5BUT752M+...	4 1/2"-13 3/8"	1.55	4.8	6.7	YI5M	AVR...-5M

## T+ Style

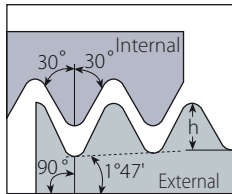


Insert Size		Pitch	Taper	Teeth	Ordering Code	Size	Dimensions mm			Anvil	
IC	L mm	tpi	IPF		RH		h min	X	Y	RH	Toolholder
1/2" T	22	5	0.75	3	4IR5BUT753T+...	4 1/2"-13 3/8"	1.55	0.1	16.1	Y4T	AVR...-4T

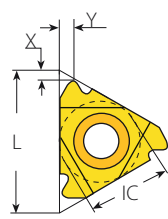
# API Round Casing & Tubing



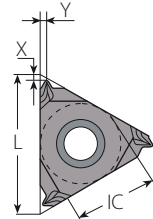
## External



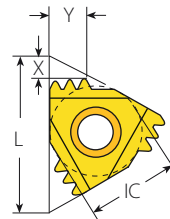
Defined by: API STD. 5B:1979  
Tolerance class: Standard API RD



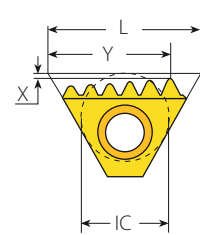
Standard



SCB  
Sintered  
Chipbreaker



M+ Style



T+ Style

## Standard



SCB

Insert Size		Pitch	Ordering Code	Dimensions mm			Anvil	Toolholder
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" SCB	16	10	3JER10APIRD...	1.41	1.2	1.5	YE3	AL..-3
		8	3JER8APIRD...	1.81	1.3	1.5		

## M+ Style

Multiplus



Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	Toolholder
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
5/8"	27	10	3	5ER10APIRD3M+...	1.41	3.9	6.3	YE5M	AL..-5M
		8	2	5ER8APIRD2M+...	1.81	2.9	4.5		

## T+ Style

Multiplus

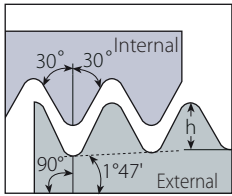


Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	Toolholder
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
1/2*T	22	10	6	4ER10APIRD6T+...	1.41	0.2	16.2	Y4T	AL..-4T
		8	3	4ER8APIRD3T+...	1.81	0.2	14.2		
		8	5	4ER8APIRD5T+...	1.81	0.2	16.7		

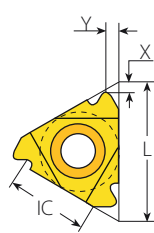


# API Round Casing & Tubing (con't)

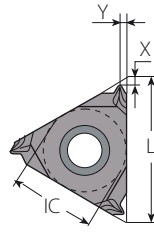
## Internal



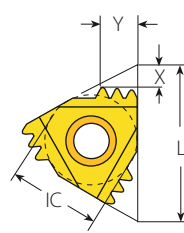
Defined by: API STD. 5B:1979  
Tolerance class: Standard API RD



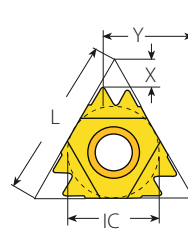
Standard



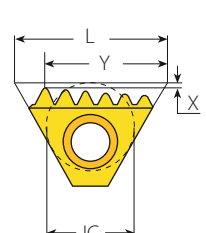
SCB  
Sintered  
Chipbreaker



M+ Style



Z+ Style



T+ Style

## Standard



SCB

Insert Size		Pitch	Ordering Code		Dimensions mm			Anvil	Toolholder
IC	L mm	tpi	RH		h min	X	Y	RH	Toolholder
3/8"	16	10	3IR10APIRD...		1.41	1.2	1.4	Y13	AVR..-3
		8	3IR8APIRD...		1.81	1.3	1.5		
3/8" SCB	16	10	3JIR10APIRD...		1.41	1.2	1.5	Y13	AVR..-3
		8	3JIR8APIRD...		1.81	1.3	1.5		

## M+ Style



Insert Size		Pitch	Teeth	Ordering Code		Dimensions mm			Anvil	Toolholder
IC	L mm	tpi		RH		h min	X	Y	RH	Toolholder
1/2"	22	10	2	4IR10APIRD2M+...		1.41	2.4	3.7	Y14M	AVR..-4
		8	2	4IR8APIRD2M+...		1.81	2.9	4.5		
5/8"	27	10	3	5IR10APIRD3M+...		1.41	3.9	6.3	Y15M	AVR..-5M
		8	2	5IR8APIRD2M+...		1.81	2.9	4.5		

## Z+ Style



Insert Size		Pitch	Teeth	Ordering Code		Dimensions mm			Anvil	Toolholder
IC	L mm	tpi		RH		h min	X	Y	RH	Toolholder
1/2"	22	8	2	4IR8APIRD2Z+...		1.81	3.7	9.6	Y14Z	AVR..-4Z

## T+ Style

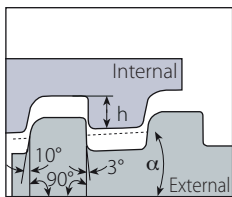


Insert Size		Pitch	Teeth	Ordering Code		Dimensions mm			Anvil	Toolholder
IC	L mm	tpi		RH		h min	X	Y	RH	Toolholder
1/2" T	22	10	6	4IR10APIRD6T+...		1.43	0.2	16.8	Y4T	AVR..-4T
		8	3	4IR8APIRD3T+...		1.81	0.2	14.2		
		8	5	4IR8APIRD5T+...		1.81	0.2	16.7		

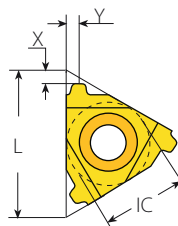
# VAM



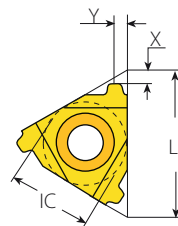
## External / Internal



Defined by: VAM  
Tolerance class: Standard VAM



External - Standard



Internal - Standard

## Standard - External



Insert Size		Pitch	Taper	Ordering Code	Size	Dimensions mm			Anvil	Toolholder
IC	L mm	tpi	IPF	RH		h min	X	Y	RH	
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		

## Standard - Internal

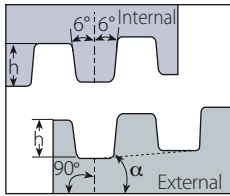


Insert Size		Pitch	Taper	Ordering Code	Size	Dimensions mm			Anvil	Toolholder
IC	L mm	tpi	IPF	RH		h min	X	Y	RH	
3/8"	16	8	0.75	3IR8VAM...	2 3/8", 2 7/8"	0.97	1.7	1.8	YI3	AVR...-3
1/2"	22	6	0.75	4IR6VAM...	3 1/2"	0.97	2.5	2.5	YI4	AVR...-4
		5	0.75	4IR5VAM...	5"-9 5/8"	1.54	2.4	2.5		



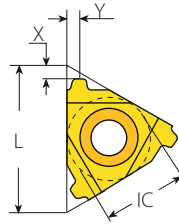
# EL-Extreme Line

## External / Internal

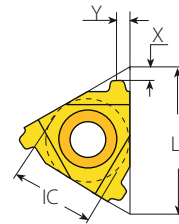


$\alpha = \arctg (IPF/24)$

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



External - Standard



Internal - Standard

## Standard - External



Insert Size		Pitch	Taper	Ordering Code	Connection No. or Size	Dimensions mm			Anvil	Toolholder
IC	L mm	tpi	IPF	RH		h min	X	Y	RH	
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		

## Standard - Internal

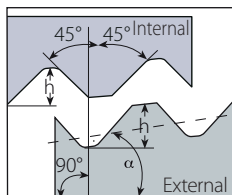


Insert Size		Pitch	Taper	Ordering Code	Connection No. or Size	Dimensions mm			Anvil	Toolholder
IC	L mm	tpi	IPF	RH		h min	X	Y	RH	
1/2"	22	6	1.5	4IR6EL15...	5"-7 5/8"	1.39	1.8	1.9	YI4	AVR...-4 (LH)
		5	1.25	4IR5EL125...	8 5/8"-10 3/4"	1.91	2.2	2.4		

# Hughes H-90

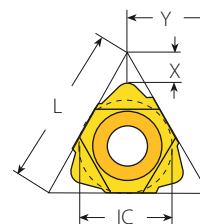


## External / Internal



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

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



U Style

## U Style - External



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

## U Style - Internal



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)

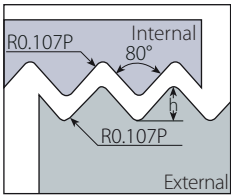
\* H-90 Slimline



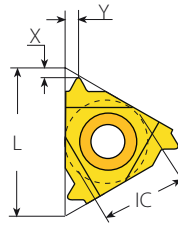


# Pg

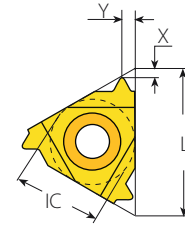
## External / Internal



Defined by: DIN 40430  
Tolerance class: Standard



Standard External



Standard Internal

### Standard - External



Insert Size		Pitch	Thread	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi		RH	LH	h min	X	Y	RH	LH	
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	YE3	YI3	
		16	Pg21/29/36/42/48	3ER16PG...	3EL16PG...	0.76	0.9	1.1	YE3	YI3	

### Standard - Internal

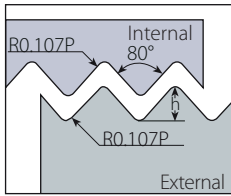


Insert Size		Pitch	Thread	Ordering Code		Dimensions mm			Anvil		Toolholder
IC	L mm	tpi		RH	LH	h min	X	Y	RH	LH	
1/4"	11	20	Pg7	2IR20PG...	2IL20PG...	0.64	0.8	0.9	-	-	NVR..-2 (LH)
		18	Pg9/11/13.5/16	2IR18PG...	2IL18PG...	0.67	0.8	1.0	-	-	
		16	Pg21/29/36/42/48	2IR16PG...	2IL16PG...	0.76	0.9	1.1	-	-	
3/8"	16	20	Pg7	3IR20PG...	3IL20PG...	0.64	0.8	0.9	YI3	YE3	AVR..-3 (LH)
		18	Pg11/13.5/16	3IR18PG...	3IL18PG...	0.67	0.8	1.0	YI3	YE3	
		16	Pg21/29/36/42/48	3IR16PG...	3IL16PG...	0.76	0.8	1.1	YI3	YE3	

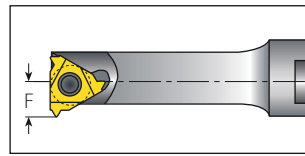
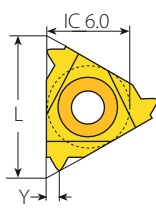


# Pg

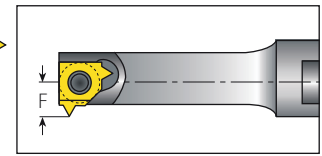
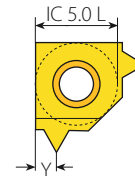
## Internal



Defined by: DIN 40430  
Tolerance class: Standard



Mini-3



Mini-L

### Mini-3



Insert Size		Pitch	Thread	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC	L mm	tpi		RH	h min	Y	F	mm	
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	Thread	Ordering Code	Dimensions mm			Min. Bore dia.	Toolholder
IC		tpi		RH	h min	Y	F	mm	
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		





# Thread Turning



> Toolholders



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## Internal Toolholders

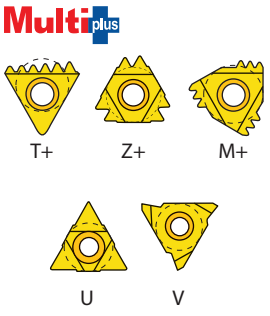
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# Vardex Ordering Code System

## External Toolholders



<b>A</b>	<b>L</b>	<b>32</b>	<b>-</b>	<b>4</b>	<b>U</b>	<b>C</b>			
<b>1</b>	<b>2</b>	<b>3</b>		<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>

<b>1 - Anvil</b> A - Anvil required N - No Anvil required O - Miniature holder	<b>2 - Holder Style</b> L - External V - Miniature Square Shank VR - Miniature Round Shank	<b>3 - Shank Square [mm]</b> 8, 10, 12, 16, 20, 25, 32, 40, 50, 60	<b>4 - Insert Size</b> 2 - IC1/4" 3 - IC3/8" 4 - IC1/2" 5 - IC5/8"
<b>5 - Insert Style</b> 	<b>6 - Clamping</b> C - with Clamping	<b>7 - Insert Width</b> (for IC5/8"V) 6, 8, 10	
<b>8 - Tool Type</b> CQ - Drop Head FQ - Off-Set Oil - For API Inserts	<b>9 - RH/LH Holder</b> None - Right Hand LH - Left Hand		

## Internal Toolholders

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

<b>1 - Shank Type</b> B - Anti Vibration System C - Carbide Shank S - Mini Holders	<b>2 - Anvil</b> A - Anvil required N - No Anvil required O - Miniature holder	<b>3 - Tool Type</b> VR - Internal Round shank	<b>4 - Cooling</b> C - With Coolant Channel	<b>5 - Shank front Dia</b> 10, 10D, 12, 13, 16 16D, 20, 25, 25D, 32, 40, 50 6.2 (Mini Adjust) 8.0 (Mini Adjust)	<b>6 - Holder Length</b> (Mini Holders) U - Ultra Short S - Short M - Medium L - Long T - Adjustable
<b>7 - Insert Size</b> 5L - IC5.0L mm 4.0K - IC4.0 mm 6.0 - IC6.0 mm 2 - IC1/4" 3 - IC3/8" 4 - IC1/2" 5 - IC5/8"	<b>8 - Insert style</b> U V T M Z L	<b>9 - Clamping</b> C - with Clamp	<b>10 - Oil Field</b> OIL - For API Inserts	<b>11 - RH/LH Holder</b> None - Right Hand LH - Left Hand	<b>12 - Serial No.</b> 156/... (Coarse Pitch Holder) 206/... (V6 Holder)

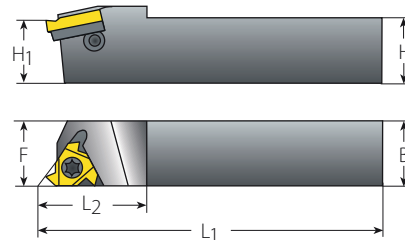
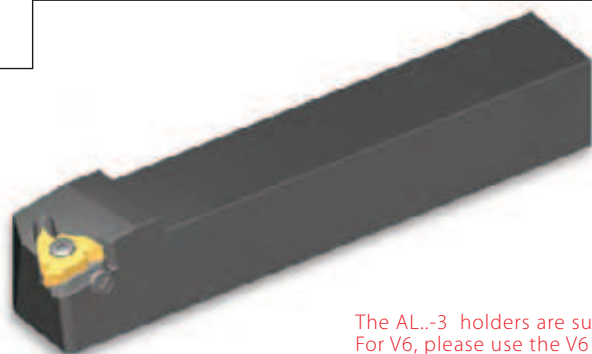
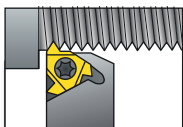
## Micro, Microscope & Adjustable Toolholders (Sleeves)

<b>S</b>	<b>M</b>	<b>C</b>	<b>16</b>	<b>-</b>	<b>3</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>		<b>5</b>

<b>1 - Holder Shape</b> S - Sleeve (Double Ended) M - Microscope (Single Ended)	<b>2 - Holder Type</b> V - Adjustable Holders for Mini M - Micro (Double Ended) H - Microscope Holder (Single Ended)	<b>3 - Cooling</b> C - Coolant Channel	<b>4 - Holder Dia.</b> 10, 12, 16, 20	<b>5 - Holder Bore Size</b> Micro Size 3, 4, 5, 6, 7, 8, 10 Adjustable Holders (for Mini) 6.2 8
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## External Toolholders



The AL..-3 holders are supplied with standard anvil (see spare parts table below). For V6, please use the V6 anvil YE3-6C. For more info see page 131.

### Standard

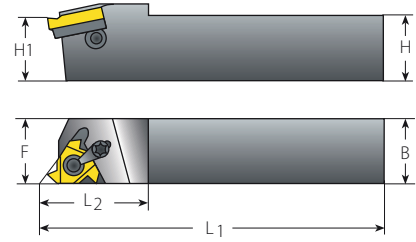
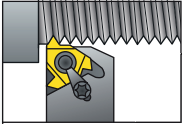
### Spare Parts

Insert Size	Ordering Code	Dimensions mm				Spare Parts				
		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	17.5					
	NL12-2	12	12	80	17.5					
3/8"	NL12-3	12	16	83.2	22	SA3T	-	K3T	-	-
	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 131. Toolholders with prefix "N" cannot be used with an anvil.



## External Toolholders



The AL.-3 holders are supplied with standard anvil (see spare parts table below). For V6, please use the V6 anvil YE3-6C. For more info see page 131.

### Standard with Clamp

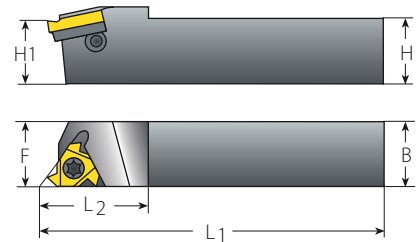
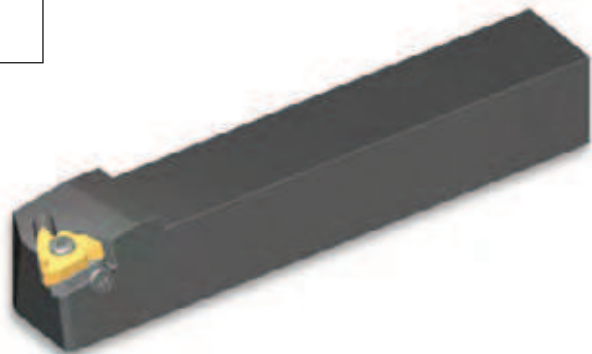
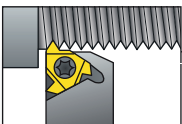
(Dual System, Screw or Clamp)

#### Spare Parts

Insert Size	Ordering Code		Dimensions mm									
	IC	RH/LH	H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Clamp	Torx Key	Anvil RH	Anvil LH
3/8"	AL16-3C		16	16	100.0	20.5	SA3T	SY3T	C3	K3CT	YE3	YI3
	AL20-3C		20	20	128.6	30						
	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						



## External Toolholders

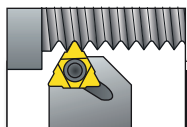


### Standard for API

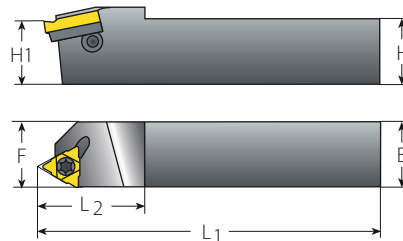
#### Spare Parts

Insert Size	Ordering Code		Thread Form		Connection no. or size		Dimensions mm							
	IC	RH/LH					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					





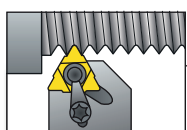
## External Toolholders



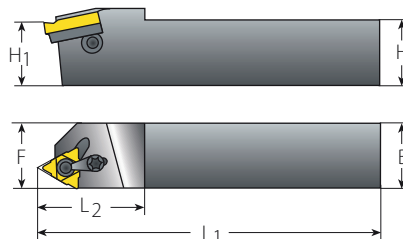
### U Style

#### Spare Parts

Insert Size	Ordering Code	Dimensions mm								
		IC	RH/LH	H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Torx Key
1/2"U	AL25-4U	25	25	178.4	38	SA4T	SY4T	K4T	YE4U	YI4U
	AL32-4U	32	32	178.4	38					
	AL40-4U	40	40	208.4	38					
5/8"U	AL25-5U	25	25	179.1	40	SA5T	SY5T	K5T	YE5U	YI5U
	AL32-5U	32	32	179.1	40					
	AL40-5U	40	40	209.1	40					
	AL50-5U	50	50	259.1	40					



## External Toolholders



### U Style with Clamp

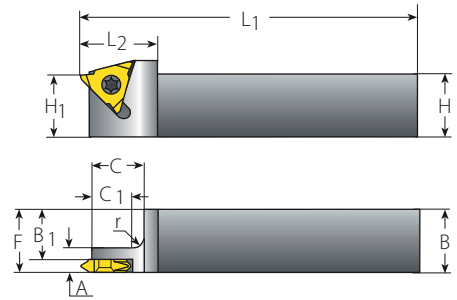
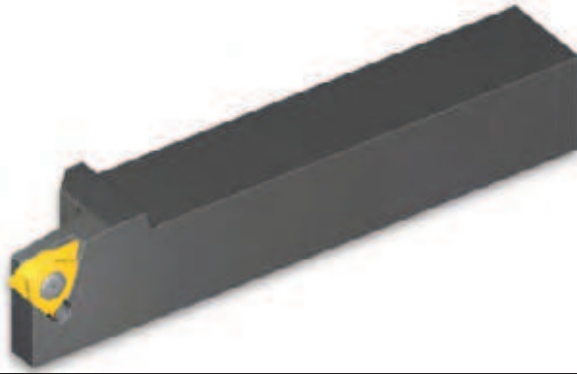
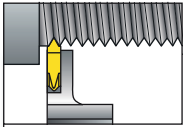
(Dual System, Screw or Clamp)

#### Spare Parts

Insert Size	Ordering Code	Dimensions mm									
		IC	RH/LH	H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Clamp	Torx Key
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						



# External Toolholders

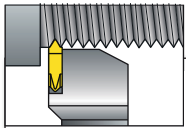


## Slim Throat

Spare Parts

Insert Size		Ordering Code	Dimensions mm								Spare Parts	
IC	RH/LH	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	SN3TV	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

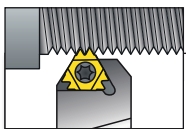
#### Spare Parts

Insert Size		Ordering Code		Dimensions mm			Spare Parts	
IC	RH/LH	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		
	NL32-5V-10ABUT*	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		
	NL40-5V-10ABUT*	40	33.5	43.8	200	40		

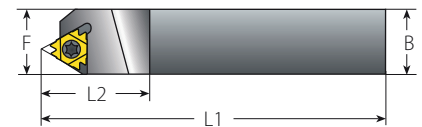
All V Style toolholders have a 1° helix angle.

The above toolholders are for RH inserts. For LH inserts, add LH to the toolholder's ordering code. (Example NL32-5V-6 **LH**)

\* To be used only with inserts 5VR2.5ABUT...



## External Toolholders



### Z+ Style

#### Spare Parts

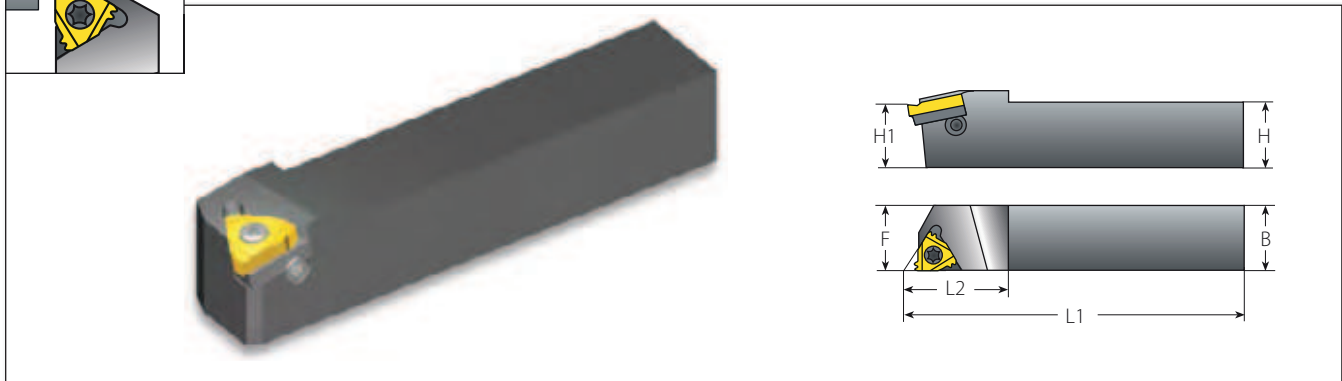


Insert Size		Ordering Code		Dimensions mm			Spare Parts				
IC	RH	H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH	
1/2"Z	AL32-4Z	32	32	178.4	38	SA4T	SY4T	K4T	YE4Z	YI4Z	
	AL40-4Z	40	40	208.4	38						
5/8"Z	AL32-5Z	32	32	179.1	40	SA5T	SY5T	K5T	YE5Z	YI5Z	
	AL40-5Z	40	40	209.1	40					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

All Z Style toolholders have a 1.5° helix angle.



## External Toolholders



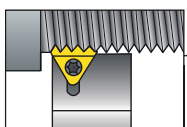
### M+ Style

### Spare Parts

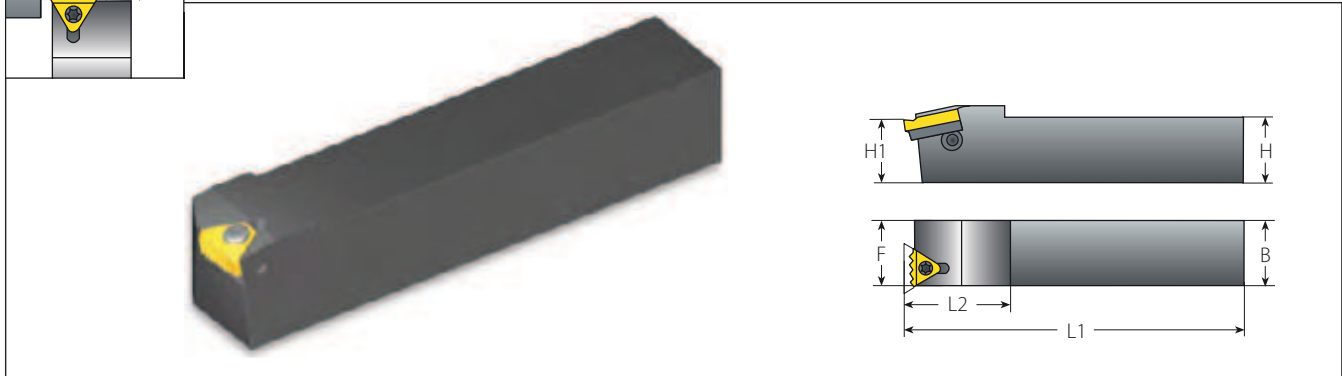


Insert Size		Ordering Code		Dimensions mm							
IC	RH	H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH	
5/8" M	AL32-5M	32	32	176.6	40	SA5T	SY5T	K5T	YE5M	YI5M	
	AL40-5M	40	40	206.6	40						
	AL50-5M	50	50	256.6	40						

All M Style toolholders have a 1.5° helix angle.



## External Toolholders



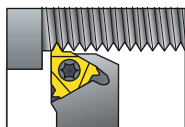
### T+ Style

### Spare Parts

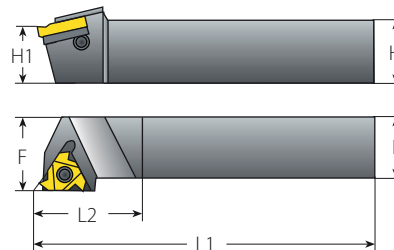
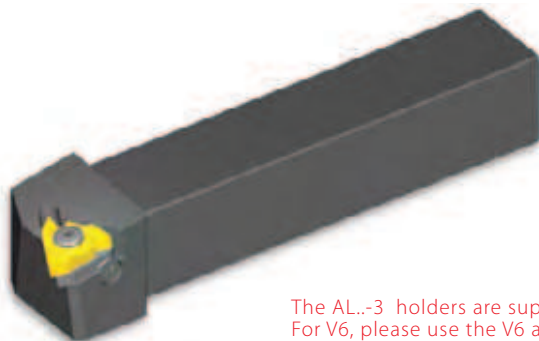


Insert Size		Ordering Code		Dimensions mm							
IC	RH	H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Insert Torx Key	Anvil Torx Key	Anvil RH/LH	
1/2" T	AL25-4T	25	27	150	30	SA4T	SY4K2	K4T	K2	Y4T	
	AL32-4T	32	34	170	30						
	AL40-4T	40	42	200	30						

All T Style toolholders have a 0° helix angle.



## External Toolholders

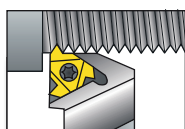


The AL..-3 holders are supplied with standard anvil (see spare parts table below). For V6, please use the V6 anvil YE3-6C. For more info see page 131.

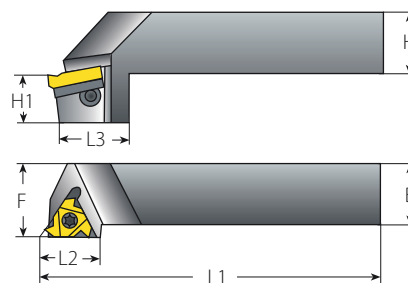
### Off-Set Qualified (FQ)

#### Spare Parts

Insert Size		Ordering Code		Dimensions mm			Spare Parts				
IC	RH/LH	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	



## External Toolholders



The AL..-3 holders are supplied with standard anvil (see spare parts table below). For V6, please use the V6 anvil YE3-6C. For more info see page 131.

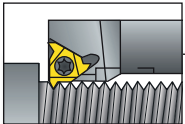
### Drop Head-Qualified (CQ)

#### Spare Parts

Insert Size		Ordering Code		Dimensions mm				Spare Parts				
IC	RH/LH	H=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



## External + Internal Toolholders



### Miniature Square Shank\*

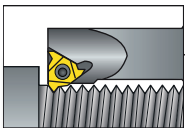
Spare Parts

Insert Size	Ordering Code	Dimensions mm				Min. Bore dia.		
IC	RH/LH	A	L	F	mm			
1/4"	OV 8-2	8	100	12	14	Insert Screw	Torx Key	
	OV 10-2	10	100	14	19			SN2T

Miniature toolholders have a 0.5° helix angle.



## External + Internal Toolholders



### Miniature Round Shank\*

Spare Parts

Insert Size	Ordering Code	Dimensions mm						Min. Bore dia.		
IC	RH/LH	A	L	L1	D	D1	F	mm		
1/4"	OVR 12-2	11.4	100	25	12	10	7.4	13	Insert Screw	Torx Key
	OVR 15-2	14.3	100	32	15	13	8.9	16		
	OVR 16D-2	15.3	100	32	16	13	8.9	16		

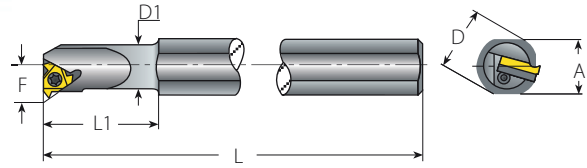
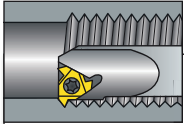
Miniature toolholders have a 0.5° helix angle.

\* 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



The AVR...-3 holders are supplied with standard anvil (see spare parts table below). For V6, please use the V6 anvil Y13-6C. For more info see page 131.

Thread Turning Toolholders

## Standard

## Spare Parts

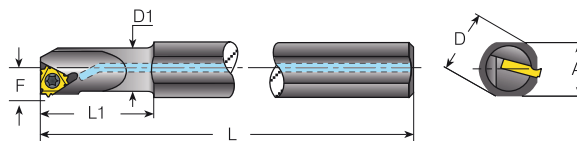
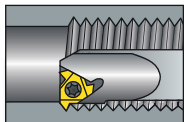
Insert Size	Ordering Code	Dimensions mm							Min. Bore dia.					
IC	RH/LH	A	L	L1	D	D1	F	mm	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH	
1/4"	NVR10D-2	100			10	10.0	7.3	13						
	NVR10-2	18.0	180	25	20	10.0	7.3	13	SN2T	-	K2T	-	-	
	NVR13-2	18.0	180	32	20	13.0	8.9	16						
3/8"	NVR13-3	18.0	180	32	20	12.7	10.3	17						
	NVR16-3	18.0	180	40	20	16.0	11.5	20	SN3T	-	K3T	-	-	
	NVR16D-3	15.2	150	32	16	16.0	11.3	20						
	AVR20-3	18.0	180	40	20	20.0	13.4	24						
	AVR25-3	29.0	250	60	32	25.0	16.3	29						
	AVR25D-3	22.6	200	45	25	24.6	16.1	29	SA3T	SY3T	K3T	Y13	YE3	
1/2"	AVR32-3	29.0	250	60	32	32.0	19.6	36						
	AVR40-3	36.0	300	60	40	40.0	23.8	44						
	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						
	AVR32-4	29.0	250	60	32	32.0	21.5	39	SA4T	SY4T	K4T	Y14	YE4	
5/8"	AVR40-4	36.0	300	60	40	40.0	25.8	47						
	AVR50-4	45.0	350	75	50	50.0	30.8	57						
	AVR32-5	29.0	250	60	32	32.0	22.4	40	SN5T	SY5T	K5T	Y15	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	SA5T	SY5T	K5T	Y15	YE5	
	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 131. Toolholders with prefix "N" cannot be used with an anvil.

Holders with coolant channel are available as standard. (Example NVRC 10D-2)



## Internal Toolholders for V6 (without anvil)\*



Specially designed for V6 inserts

### V6 Style

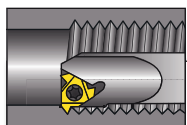
Spare Parts

Insert Size	IC	RH	Ordering Code	Dimensions mm					Min. Bore dia. mm	Spare Parts		
				A	L	L1	D	D1		F		
3/8" V6			NVRC 13-3 206/001	18	180	32	20	12.7	10.3	17	SN3TM	Torx Key
			NVRC 16-3 206/002	18	180	40	20	16	11.5	20	SN3T	
			NVRC 16D-3 206/003	15.2	150	40	16	16	11.3	20		K3T

The above toolholders have 1.5° helix angle.

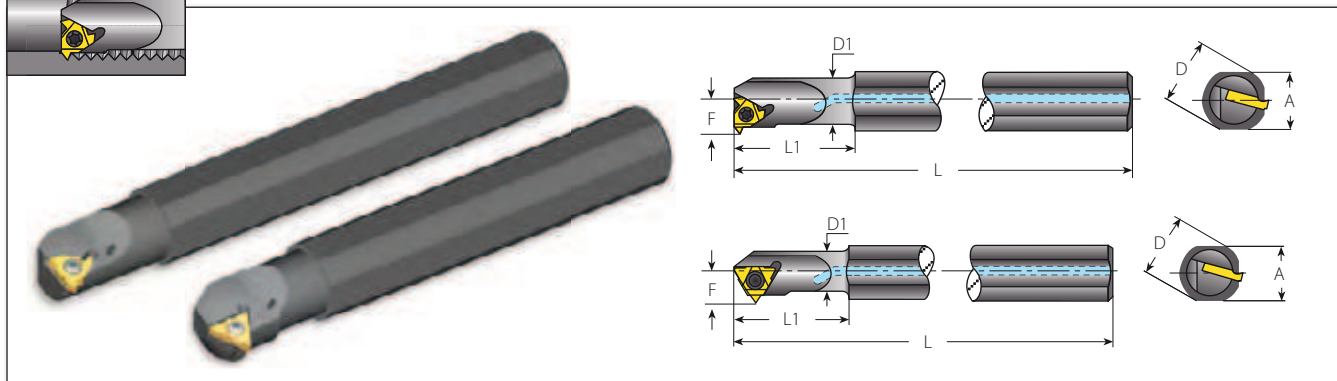
\* V6 inserts cannot be used on standard internal toolholders without anvil. For this purpose you must use one of these special V6 toolholders.





## Internal Toolholders

Thread Turning  
Toolholders



### Standard for Coarse Pitch

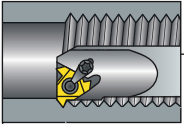
Spare Parts

Insert Size	Ordering Code	Dimensions mm				F to insert		Holder Helix	Insert Screw	Torx Key
		A	L	L1	D	D1	mm	Deg.		
1/4"	NVRC10-2 156/001	18.0	180	25.0	20	10.1	6.53	3.0	SN2T	K2T
	NVRC11-3 156/005	18.0	180	25.4	20	11.2	8.30	4.5	SN3TM	K3T
3/8"	NVRC13-3 156/006	18.0	180	32.0	20	13.0	9.05	4.0	SN3T	K3T
	NVRC13-3 156/016	18.0	180	34.0	20	13.8	8.90	2.5		
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		

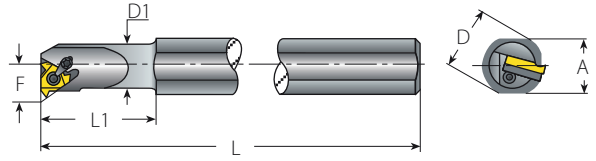
### U Style for Coarse Pitch

Spare Parts

Insert Size	Ordering Code	Dimensions mm				F to insert		Holder Helix	Insert Screw	Torx Key
		A	L	L1	D	D1	mm	Deg.		
6.0U	NVRC8-6.0U 156/003	18.0	180	24.0	20	8.0	5.86	4.0	SN6MT	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



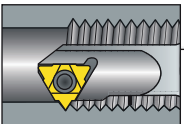
The AVR.-3C holders are supplied with standard anvil (see spare parts table below). For V6, please use the V6 anvil YE3-6C. For more info see page 131.

### Standard with Clamp

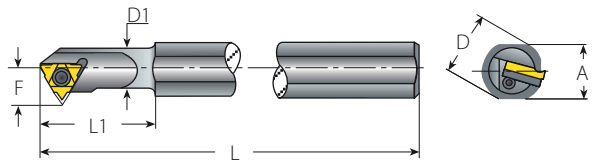
(Dual System, Screw or Clamp)

#### Spare Parts

Insert Size	Ordering Code	Dimensions mm						Min. bore dia.						
		IC	RH/LH	A	L	L1	D		D1	F	mm	Insert Screw	Anvil Screw	Clamp
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						



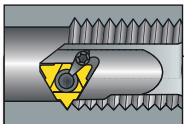
## Internal Toolholders



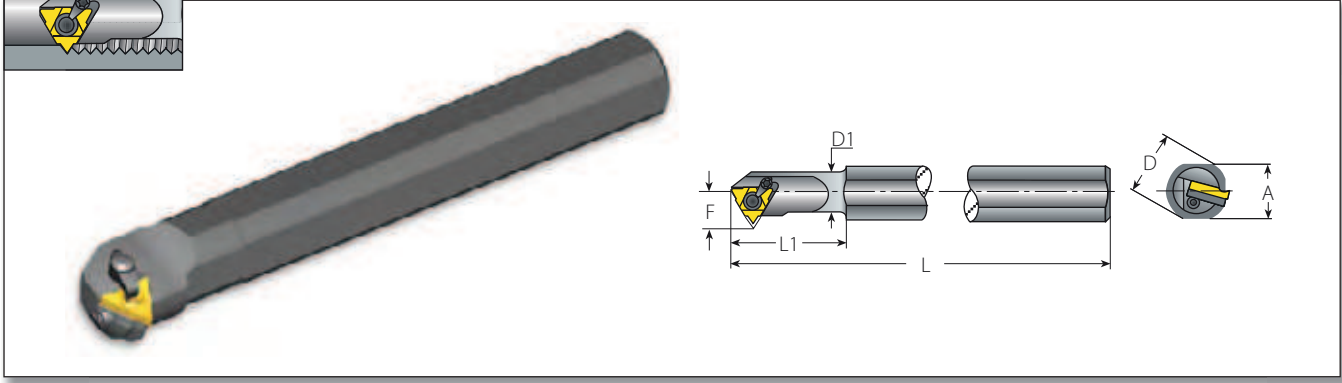
### U Style

#### Spare Parts

Insert Size	Ordering Code	Dimensions mm						Min. bore dia.					
		IC	RH/LH	A	L	L1	D		D1	F	mm	Insert Screw	Anvil Screw
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	SN5T	-	K5T	-	-
	AVR40-5U	36	300	60	40	40	29.4	53	SA5T	SY5T	K5T	YI5U	YE5U
	AVR50-5U	45	350	75	50	50	34.3	63					
	AVR60-5U	54	400	75	60	60	39.3	74					



## Internal Toolholders

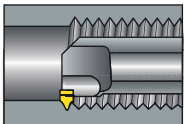


### U style with Clamp (Dual System, Screw or Clamp)

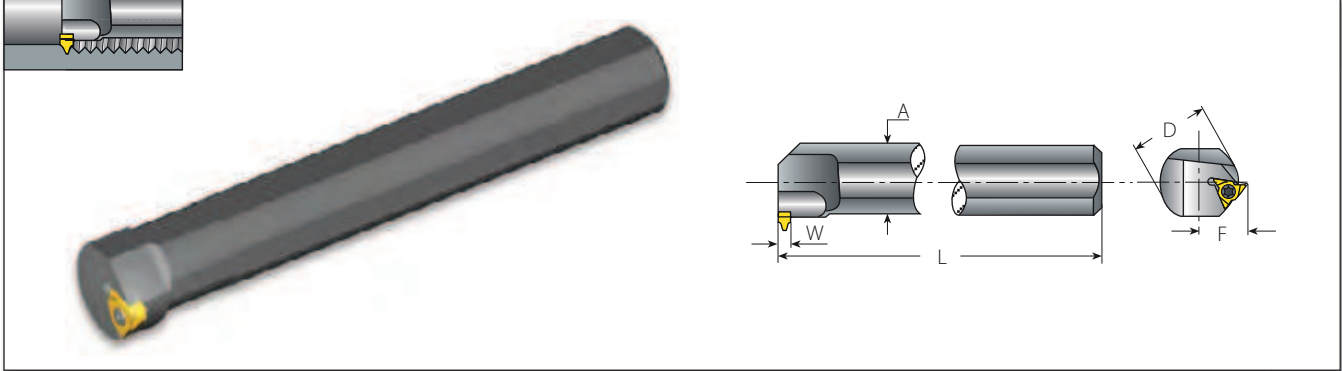
#### Spare Parts

Insert Size	Ordering Code	Dimensions mm							Min. bore dia.	Spare Parts					
		IC	RH/LH	A	L	L1	D	D1		F	mm	Insert Screw	Anvil Screw	Clamp	Torx Key
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	
	AVR55-5UC	45.0	350	75	50	50.0	34.4	63							
	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 131.



## Internal Toolholders



### V Style

#### Spare Parts

Insert Size	Ordering Code	Dimensions mm					Spare Parts	
		IC	RH/LH	A	L	D	F	W
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		

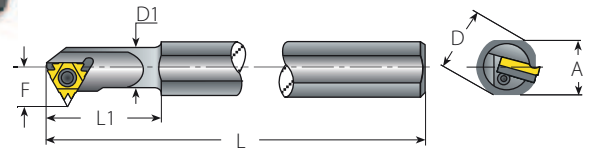
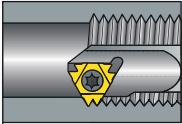
The above toolholders have a 1.0° helix angle.

### Minimum Bore Dia

	Pitch mm	6.0 ISO	8.0 ISO	10.0 ISO	
	Pitch tpi	4 UN	3 UN		2.5 W
NVR40-5V		48	54	62	68
NVR50-5V		58	58	62	68
NVR60-5V		68	68	68	68



## Internal Toolholders



### Z+ Style

#### Spare Parts

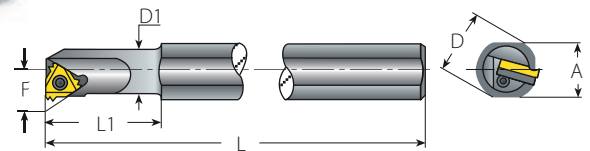
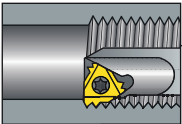


Insert Size	Ordering Code	Dimensions mm							Min. bore dia	Spare Parts				
		A	L	L1	D	D1	F	mm		Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
1/2"Z	AVR32-4Z	29	250	60	32	32	25.5	42	SA4T	SY4T	K4T	YI4Z	YE4Z	
	AVR40-4Z	36	300	60	40	40	29.5	51						
5/8"Z	NVR32-5Z	29	250	60	32	32	24.7	42	SN5T	-	K5T	-	-	
	AVR40-5Z	36	300	60	40	40	29.4	53						
	AVR50-5Z	45	350	75	50	50	34.3	63	SA5T	SY5T	K5T	YI5Z	YE5Z	
	AVR60-5Z	54	400	75	60	60	39.3	74						

All Z style toolholders have a 1.5° helix angle.



## Internal Toolholders



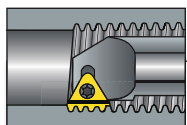
### M+ Style

#### Spare Parts

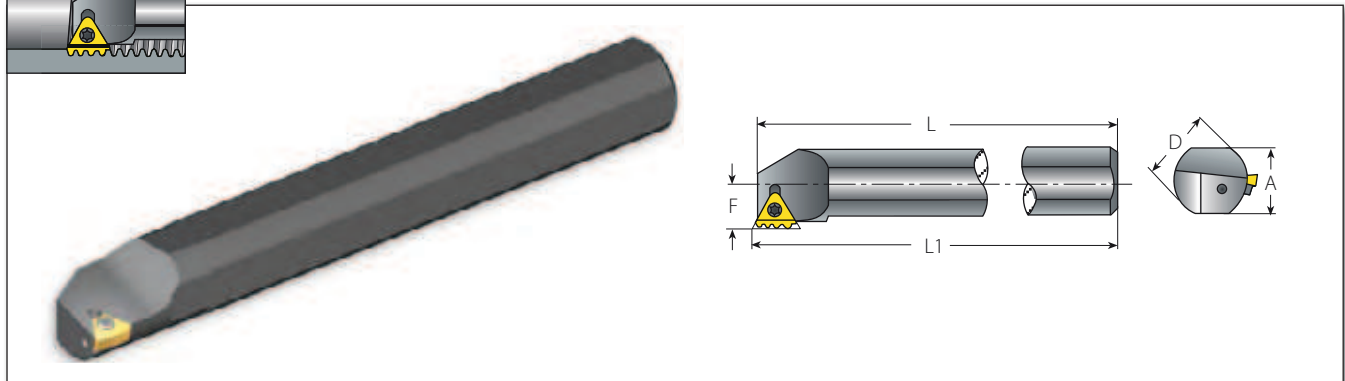


Insert Size	Ordering Code	Dimensions mm							Min. bore dia	Spare Parts				
		A	L	L1	D	D1	F	mm		Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
5/8"M	AVR32-5M	29	250	60	32	32	22.4	40	SN5T	SY5T	K5T	YI5M	YE5M	
	AVR40-5M	36	300	60	40	40	26.4	48						
	AVR50-5M	45	350	75	50	50	31.4	58	SA5T	SY5T	K5T	YI5M	YE5M	
	AVR60-5M	54	400	75	60	60	36.4	69						

All M style toolholders have a 1.5° helix angle.




## Internal Toolholders



### T+ Style

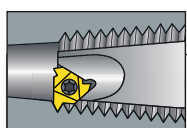
#### Spare Parts



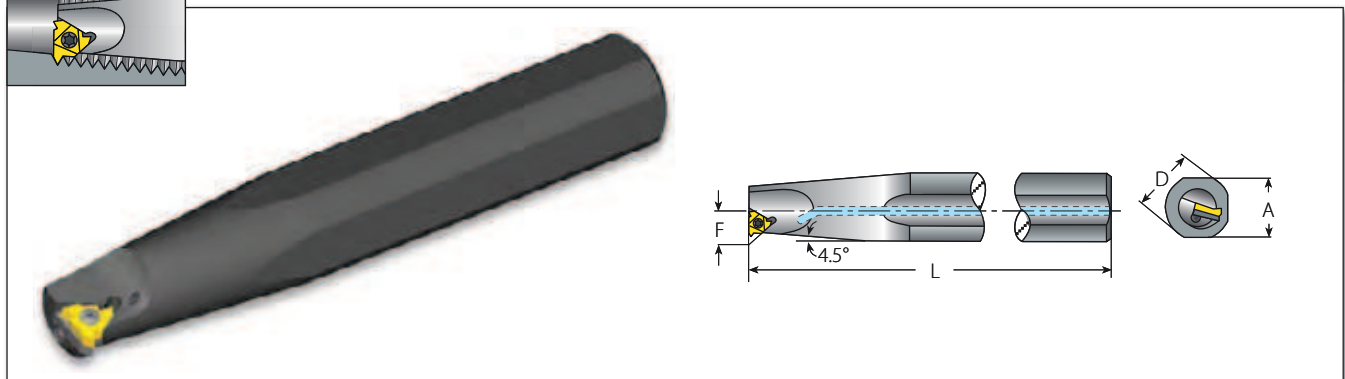
Insert Size	Ordering Code	Dimensions mm					Min. bore dia					
IC		A	L	L1	D	F	mm	Insert Screw	Anvil Screw	Torx Key	Anvil Torx Key	Anvil RH/LH
1/2" T	AVR40-4T	36	300	302	40	23.3	60	SA4T	SY4K2	K4T	K2	Y4T
	AVR50-4T	45	350	352	50	28.3	70					
	AVR60-4T	54	400	402	60	33.3	80					

All toolholders have a 0° helix angle.

Holders with coolant channel available as standard. (Example: AVRC-4T)




## Internal Toolholders



### API

#### Spare Parts



Insert Size	Ordering Code	Thread Form	Connection no. or size	Dimensions mm								
IC	RH/LH			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	SAST	SY5T	K5T	Y15OIL	YE5OIL
	AVRC50-5OIL	V0.038R	NC23-NC38									
	AVR80-5OIL	V0.050R	NC40-NC77	72	400	80	39.7					
	AVRC80-5OIL	V0.050R	NC40-NC77									

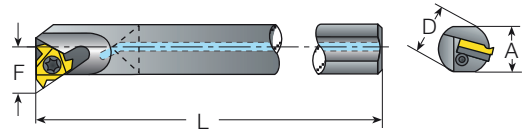
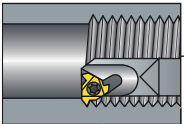
The above toolholders have a 1.5° helix angle.

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

The above toolholders are for RH inserts. For LH inserts, add LH to the toolholder's ordering code. (Example AVR50-5OIL **LH**)



# Internal Toolholders



The CAVRC...-3 holders are supplied with standard anvil (see spare parts table below). For V6, please use the V6 anvil YI3-6C. For more info see page 131.

Thread Turning Toolholders

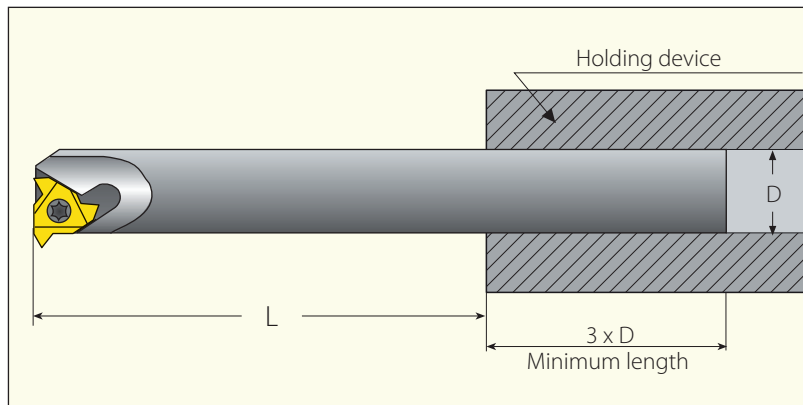
## Standard with Carbide Shank

### Spare Parts

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

The above toolholders have 1.5° helix angle. For other helix angles see page 131.  
 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.

# Thread Turning Kits\*



Thread Turning  
KITS



TT External +Internal Kit

TT External Kit

TT Internal Kit

## TT External + Internal Kit

Ordering Code		Content		
KHTT3EI- ...	Holder External+Internal	10 x External Inserts	10 x Internal Inserts	Torx Key
	AL 20-3 AVRC 20-3	3ERA60...	3IRA60...	K3T
		3ERG60...	3IRG60...	
		3ER11W...	3IR11W...	
		3ER14W...	3IR14W...	
		3ER1.0ISO...	3IR1.0ISO...	
		3ER1.25ISO...	3IR1.25ISO...	
		3ER1.5ISO...	3IR1.5ISO...	
		3ER2.0ISO...	3IR2.0ISO...	
		3ER2.5ISO...	3IR2.5ISO...	
3ER3.0ISO...	3IR3.0ISO...			

## TT External Kit

Ordering Code		Content	
KHTT3E- ...	Holder External	10 x External Inserts	Torx Key
	AL 20-3	3ERA60...	K3T
		3ERG60...	
		3ER11W...	
		3ER14W...	
		3ER1.0ISO...	
		3ER1.25ISO...	
		3ER1.5ISO...	
		3ER2.0ISO...	
		3ER2.5ISO...	
3ER3.0ISO...			

## TT Internal Kit

Ordering Code		Content	
KHTT3I- ...	Holder Internal	10 x Internal Inserts	Torx Key
	AVRC 20-3	3IRA60...	K3T
		3IRG60...	
		3IR11W...	
		3IR14W...	
		3IR1.0ISO...	
		3IR1.25ISO...	
		3IR1.5ISO...	
		3IR2.0ISO...	
		3IR2.5ISO...	
3IR3.0ISO...			

# Thread Turning Inserts Kits\*





Thread Turning  
KITS





TT Inserts Kit

## TT External Insert Kit



Ordering Code	Content		Torx Key 	Insert Screw 
KITT3E- ...	10 x External Inserts		K3T	SA3T
	3ERA60...			
	3ERG60...			
	3ER11W...			
	3ER14W...			
	3ER1.0ISO...			
	3ER1.25ISO...			
	3ER1.5ISO...			
	3ER2.0ISO...			
	3ER2.5ISO...			
3ER3.0ISO...				

## TT Internal Insert Kit

Ordering Code	Content		Torx Key 	Insert Screw 
KITT3I- ...	10 x External Inserts		K3T	SA3T
	3IRA60...			
	3IRG60...			
	3IR11W...			
	3IR14W...			
	3IR1.0ISO...			
	3IR1.25ISO...			
	3IR1.5ISO...			
	3IR2.0ISO...			
	3IR2.5ISO...			
3IR3.0ISO...				

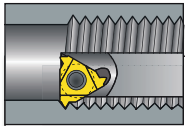
## TT External+Internal V6 Insert Kit



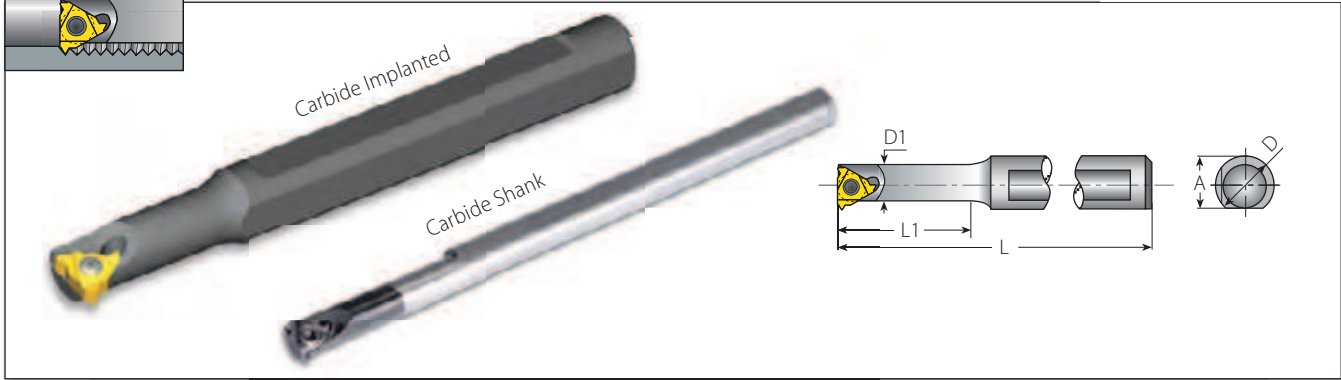
Ordering Code	Content		Torx Key 	Insert Screw 
KITT3V6EI- ...	5 x Internal Inserts	5 x External Inserts	K3T	SA3T
	3IRS60-6C...	3ERS60-6C...		
	3IR1.0ISO-6C...	3ER1.0ISO-6C...		
	3IR1.25ISO-6C...	3ER1.25ISO-6C...		
	3IR1.5ISO-6C...	3ER1.5ISO-6C...		
	3IR2.0ISO-6C...	3ER2.0ISO-6C...		

Ordering Code Example: KITT3E-VKX  
\* Additional kits are available by request.





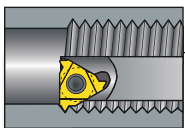
### Internal Toolholders



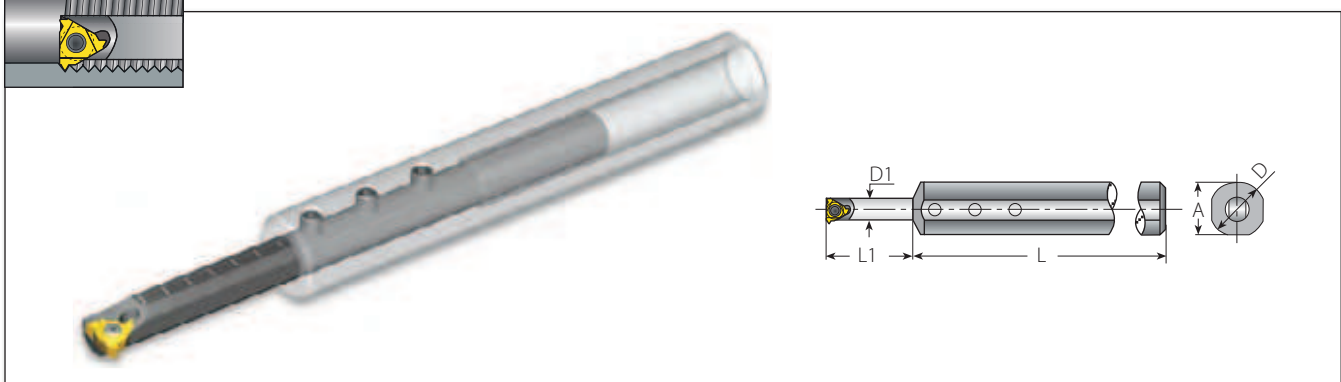
#### Mini-3

#### Spare Parts

Insert Size	Ordering Code	Dimensions mm					Anti-Vibration System	Spare Parts	
		A	L	L1	D	D1			
4.0	CNVR 5-4.0K	5.2	100	26	6	5.1	Carbide Shank	SN4MT	K6MT
	SNVR 5-4.0K	11.0	100	12	12	5.1	No		
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	Carbide Implanted		
	BNVR 10M-6.0	9.4	98	31	10	8	Carbide Implanted		
	BNVR 10L-6.0	9.4	110	43	10	8	Carbide Implanted		



### Internal Toolholders

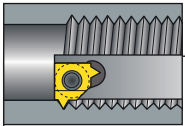


#### Mini-3 Adjustable

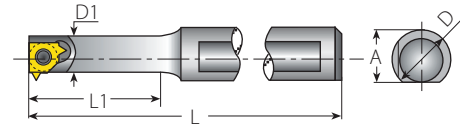
#### Spare Parts

Insert Size	Ordering Code		Dimensions mm					Spare Parts			
	Sleeve	Holder LH/RH	A	L	L1	D	D1				
6.0	SV16-8.0	BNVR8.0T-6.0	15.6	100	8-56	16	8	SN6MT	K6MT	S4.0	K2.0





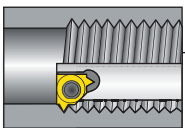
## Internal Toolholders



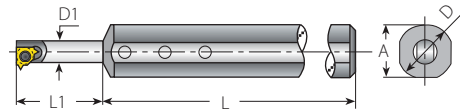
Thread Turning  
Toolholders

### Mini-L

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



## Internal Toolholders



### Mini-L-Adjustable

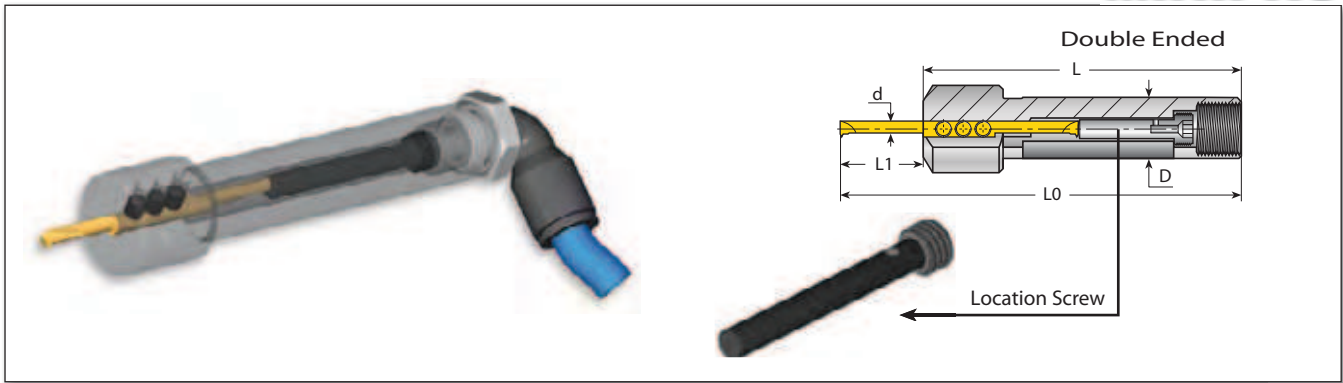
Insert Size		Ordering Code	Dimensions mm					Spare Parts			
IC	Sleeve	Holder LH/RH	A	L	L1	D	D1	Insert Screw	Torx Key for Insert Screw	Holder Screw x3	Key for Holder Screw
5.0L	SV16-6.2	BNVR6.2T-5L	15.6	100	8-44	16	6.2	SN5LT	K5LT	S4.0	K2.0





# Internal Toolholders

Thread Turning Toolholders



### Spare Parts



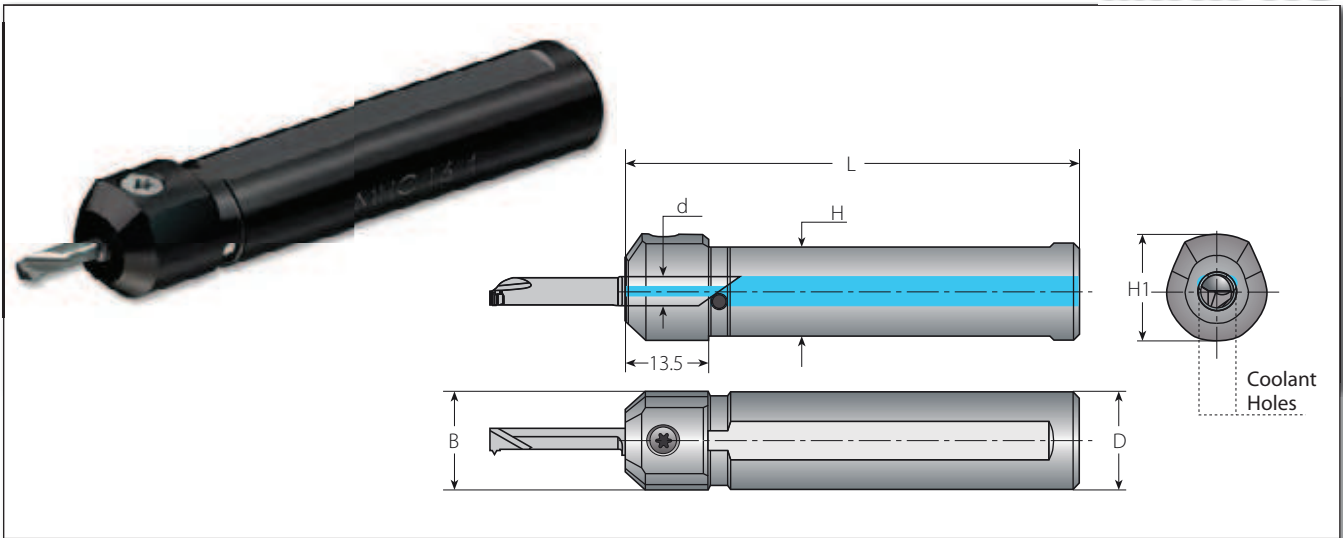
## Micro - Double Ended

Micro Insert Dia.	Shank Dia.	Ordering Code	Dimensions mm			Location Screw*			Clamping Screw x 3	
			d [mm]	D	L	L1	L0	Screw	M	Key
3	10	SMC10-3.0	80	9- Short	89	4GISM8X28	28	K4.0	M4X0.7X4.0	K2.0
	12	SMC12-3.0		16- Medium	96	4GISM8X21	21			
	16	SMC16-3.0	95	9- Short	104	4GISM8X49	49			
	20	SMC20-3.0		16- Medium	111	4GISM8X42	42			
4	10	SMC10-4.0	80	9- Short	89	4GISM8X28	28			
	12	SMC12-4.0		16- Medium	96	4GISM8X21	21			
				21- Long	101	4GISM8X16	16			
	16	SMC16-4.0	95	9- Short	104	4GISM8X49	49			
	20	SMC20-4.0		16- Medium	111	4GISM8X42	42			
			21- Long	116	4GISM8X37	37				
6	12	SMC12-6.0	80	9- Short	89	4GISM8X28	28			
				16- Medium	96	4GISM8X21	21			
				21- Long	101	4GISM8X16	16			
	16	SMC16-6.0	95	9- Short	104	4GISM8X49	49			
				16- Medium	111	4GISM8X42	42			
				21- Long	116	4GISM8X37	37			

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





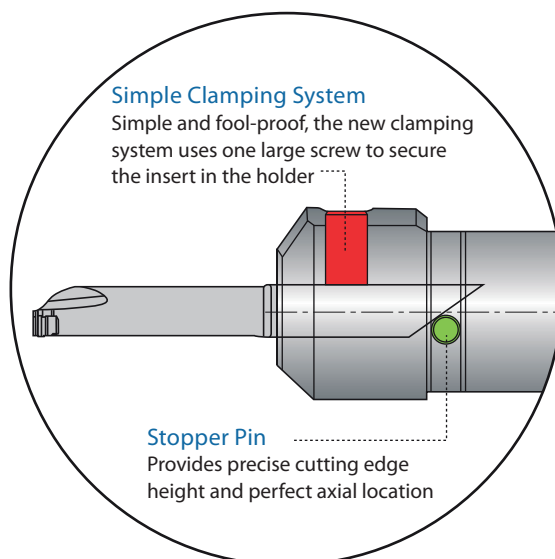
# Internal Toolholders



## Micro - Single Ended


Spare Parts **microscope**

Micro Insert Dia.	Ordering Code	Dimensions (mm)					
d [mm]		D=B	H1	H	L	Clamping Screw	Key
4.0	MHC 10-4	10	14	8.8	65	SL7DT15	KT15
	MHC 12-4	12	16	10.8	70		
	MHC 16-4	16	17.6	14.8	75		
	MHC 20-4	20	22	18.8	84		
5.0	MHC 10-5	10	14	8.8	65		
	MHC 12-5	12	16	10.8	70		
	MHC 16-5	16	18.6	14.8	75		
	MHC 20-5	20	22	18.8	84		
6.0	MHC 12-6	12	16	10.8	70		
	MHC 16-6	16	18.6	14.8	75		
	MHC 20-6	20	22	18.8	84		
7.0	MHC 16-7	16	18.6	14.8	75		
	MHC 20-7	20	22	18.8	84		







**microscope Kit 4**

Ordering Code	Content			
	Holder	Inserts	Torx Key 	
KMS4-...	MHC16-4	M429TH F55 L16R...	Threading	KT15
		M429TH F60 L16R...		
		M432BC R15 L16R...	Boring	
		M422BC R10 L09R...		
		M442CL R15 L16R...	Copy Long Nose	
		M442GS W100 L15R...	Grooving Square	

**microscope Kit 5**

Ordering Code	Content			
	Holder	Inserts	Torx Key 	
KMS5-...	MHC16-5	M542TH 0.75ISO L16R...	Threading	KT15
		M549TH 1.00ISO L16R...		
		M552BC R20 L16R...	Boring	
		M552BC R20 L26R...		
		M552CL R20 L25R...	Copy Long Nose	
		M552GS W100 L15R...	Grooving Square	

**microscope Kit 6**

Ordering Code	Content			
	Holder	Inserts	Torx Key 	
KMS6-...	MHC16-6	M659TH A60 L16R...	Threading	KT15
		M659TH A55 L16R...		
		M662BC R20 L21R...	Boring	
		M662BC R20 L30R...		
		M662CL R20 L30R...	Copy Long Nose	
		M662GS W100 L15R...	Grooving Square	

## Spare Parts

### External and Internal Toolholders (not including Micro and Microscope)



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", 3/8"V6*	SA3T	UNC5x12.0	SY3T	UNC5x7.3	K3T	YE3/YE3-6C	Y13/Y13-6C
	1/2"***	SA4T	UNC8x15.2	SY4T	UNC8x9.3	K4T	YE4	Y14
	5/8"	SA5T	M5x0.8x22.0	SY5T	M5x0.8x9.5	K5T	YE5	Y15
Standard with clamp	3/8"	SA3T/C3	UNC5x12.0/M5x0.8x22.0	SY3T	UNC5x7.3	K3CT	YE3	Y13
	1/2"	SA4T/C4	UNC8x15.2/M6x1.0x29.5	SY4T	UNC8x9.3	K4T	YE4	Y14
	5/8"	SA5T/C5	M5x0.8x22.0/M8x1.25x28.0	SY5T	M5x0.8x9.5	K5T	YE5	Y15
U Style	1/2"U	SA4T	UNC8x15.2	SY4T	UNC8x9.3	K4T	YE4U	Y14U
	5/8"U	SA5T	M5x0.8x22.0	SY5T	M5x0.8x9.5	K5T	YE5U	Y15U
U Style with clamp	1/2"	SA4T/C4	UNC8x15.2/M6x1.0x29.5	SY4T	UNC8x9.3	K4T	YE4U	Y14U
	5/8"	SA5T/C5	M5x0.8x22.0/M8x1.25x28.0	SY5T	M5x0.8x9.5	K5T	YE5U	Y15U
V Style	1/4"V	SN2T	M2.6x0.45x6.5	-	-	K2T	-	-
	3/8"V	SN3TV	UNC5x7.5	-	-	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	Y14Z
	5/8"Z	SA5T	M5x0.8x22.0	SY5T	M5x0.8x9.5	K5T	YE5Z	Y15Z
M+ Style	3/8"M	SA3T	UNC5x12.0	SY3T	UNC5x7.3	K3T	YE3M	Y13M
	1/2"M	SA4T	UNC8x15.2	SY4T	UNC8x9.3	K4T	YE4M	Y14M
	5/8"M	SA5T	M5x0.8x22.0	SY5T	M5x0.8x9.5	K5T	YE5M	Y15M
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	Y15OIL
Mini-L	5.0L	SN5LT	M2x0.4x4.1	-	-	K5LT	-	-
Mini-3	4.0mm	SN4MT	M2x0.4x4.0	-	-	K6MT	-	-
	6.0mm	SN6MT	M1.8x0.35x4.5	-	-	K6MT	-	-
Mini Adjustable Holder	-	S4.0	M4x0.7x4.0	-	-	K2.0	-	-

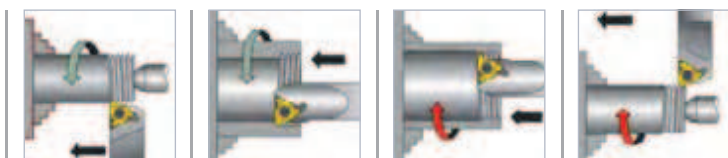
\* NVR16-3 requires insert screw SN3T (UNC5x9.5) \*\* NVR20-4 requires insert screw SN4T (UNC8x12.0)  
SN5T (M5x0.8x18) for holders A/NVR32-5...

For Micro and Microscope Toolholders see pages 120-121.





# Thread Turning



[> Technical Data](#)



**THREAD TURNING TECHNICAL DATA**

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# Thread Terminology

## External Thread

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

## Depth of Thread

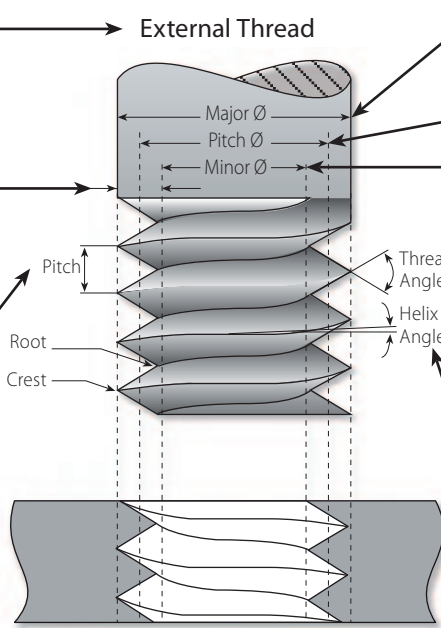
The distance between crest and root measured normal to the axis.

## 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.



## Internal Thread

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

## 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.

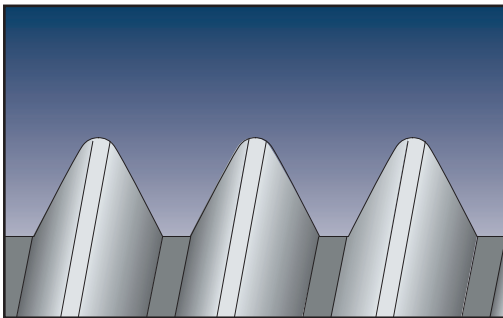
## Straight Thread

A thread formed on a cylinder

## Taper Thread

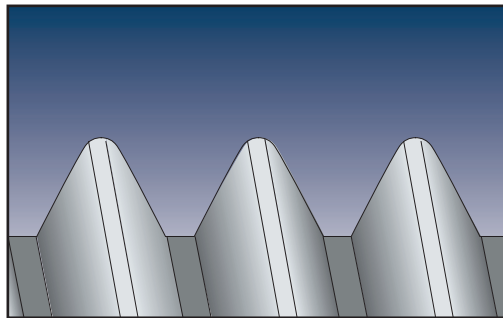
A thread formed on a cone

## Left-hand thread



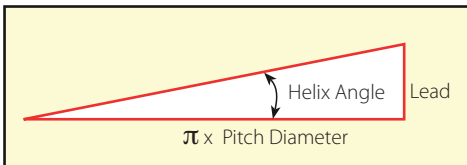
A thread which, when viewed axially, winds in a counterclockwise and receding direction. All left-hand threads are designated LH.

## 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 $\beta$



## Lead

The distance a threaded part moves axially, with respect to a fixed mating part, in one complete revolution.

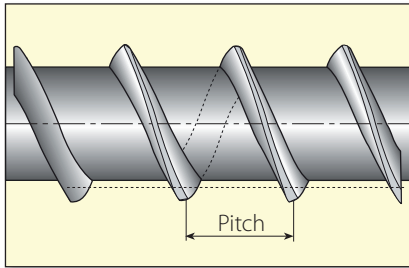
The lead is equal to the pitch multiplied by the number of thread starts.

# Machining a Multi-Start Thread

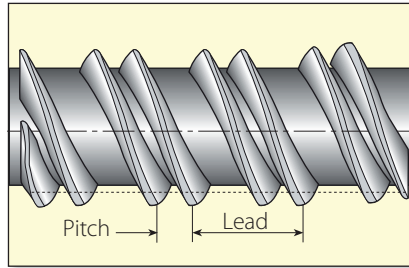


A thread in which the lead is an integral multiple, greater than one, of the pitch.  
 A multi-start thread permits a more rapid advance without a coarser (larger) thread form.

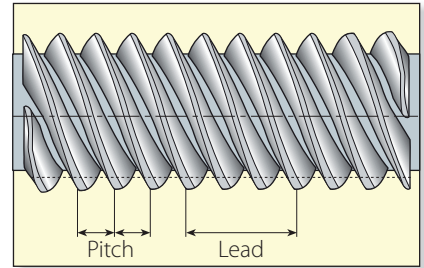
First Start Machined



Second Start Machined



Third Start Machined  
 (Final, 3 Starts Thread)

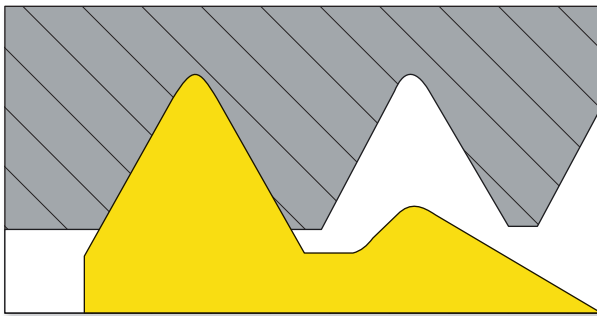


Lead = 3 x Pitch

# Insert Profile Styles

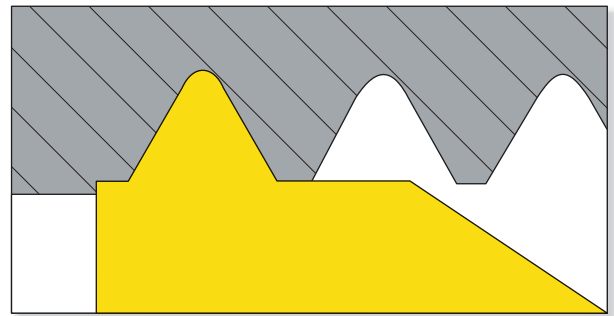


Partial Profile



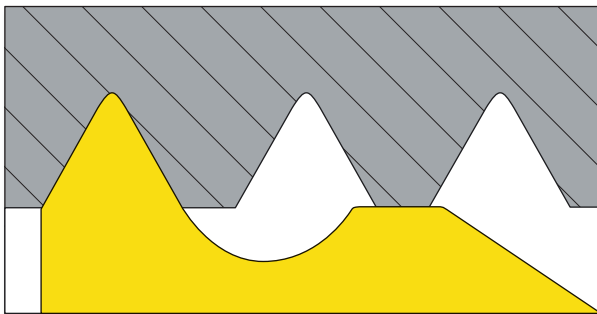
The V partial profile insert cuts without topping the outer diameter of the thread. The same insert can be used for a range of different thread pitches which have a common thread angle.

Full Profile



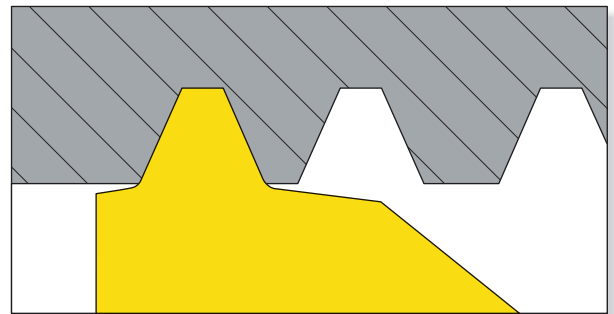
The full profile insert will form a complete thread profile including the crest. For every thread pitch and standard, a separate insert is required.

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 the 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.

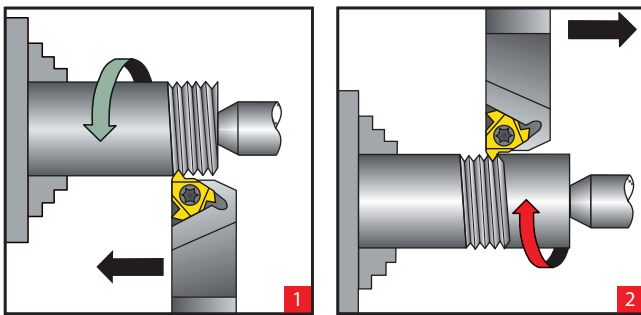
# Thread Turning Methods



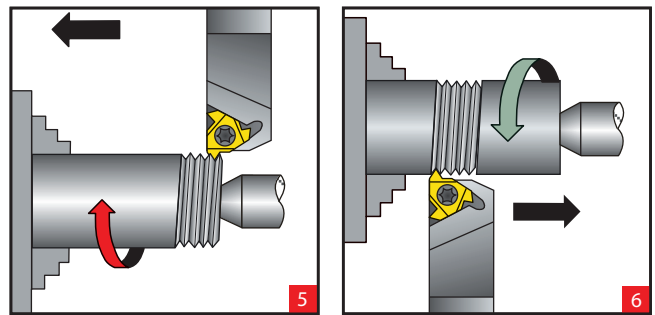
Thread	Inserts & Toolholder	Rotation	Feed Direction	Helix Method	Drawing No.
Right Hand External	EX RH	Counterclockwise	Towards chuck	Regular	1
	EX LH	Clockwise	From chuck	Reversed	2
Right Hand Internal	IN RH	Counterclockwise	Towards chuck	Regular	3
	IN LH	Clockwise	From chuck	Reversed	4
Left Hand External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

Thread Turning Technical Data

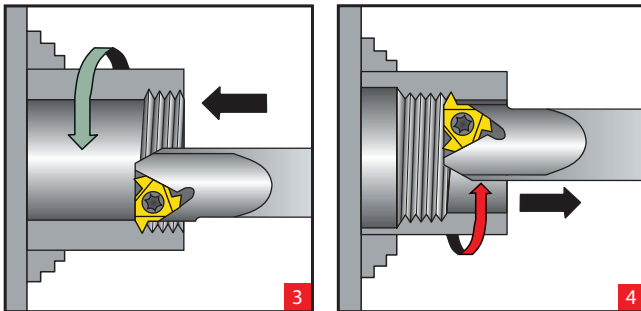
External RH Thread



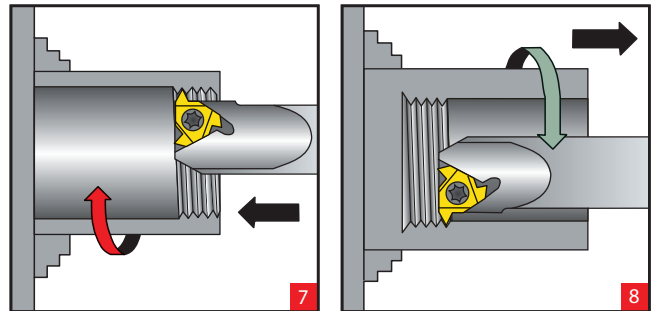
External LH Thread



Internal RH Thread



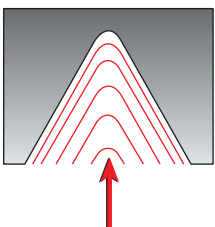
Internal LH Thread



# Thread Infeed Methods



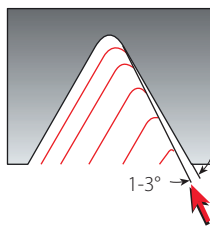
Radial Infeed



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

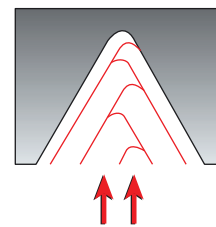
Flank Infeed (modified)



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

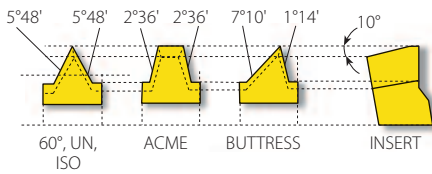


Use of the alternate flank method is recommended especially in large pitches and for materials with long chips.  
 This method divides the load equally on both flanks, resulting in equal wear along the cutting edges. Alternate flank infeed requires more complicated programming, and is not available on all lathes.

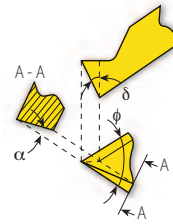


# Calculating the Helix Angle and Choosing The Right Anvil

## Flank Clearance Angle $\alpha$ (For External Inserts)



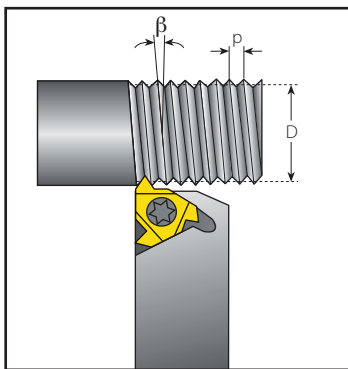
Vardex toolholders are designed to tilt the insert when seated in the toolholder (10° for external, 15° for internal tooling). This results in the differing flank clearance angles, based on the geometry of the insert. To ensure that the side of the insert cutting edge will not rub on the workpiece, it 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.



$$\alpha = \arctan(\tan(\phi/2) \times \tan\delta)$$

Where:  $\alpha$  - Flank clearance angle  
 $\delta$  - Tilt angle  
 $\phi$  - Enclosed flank angle

## Calculating the Helix Angle $\beta$



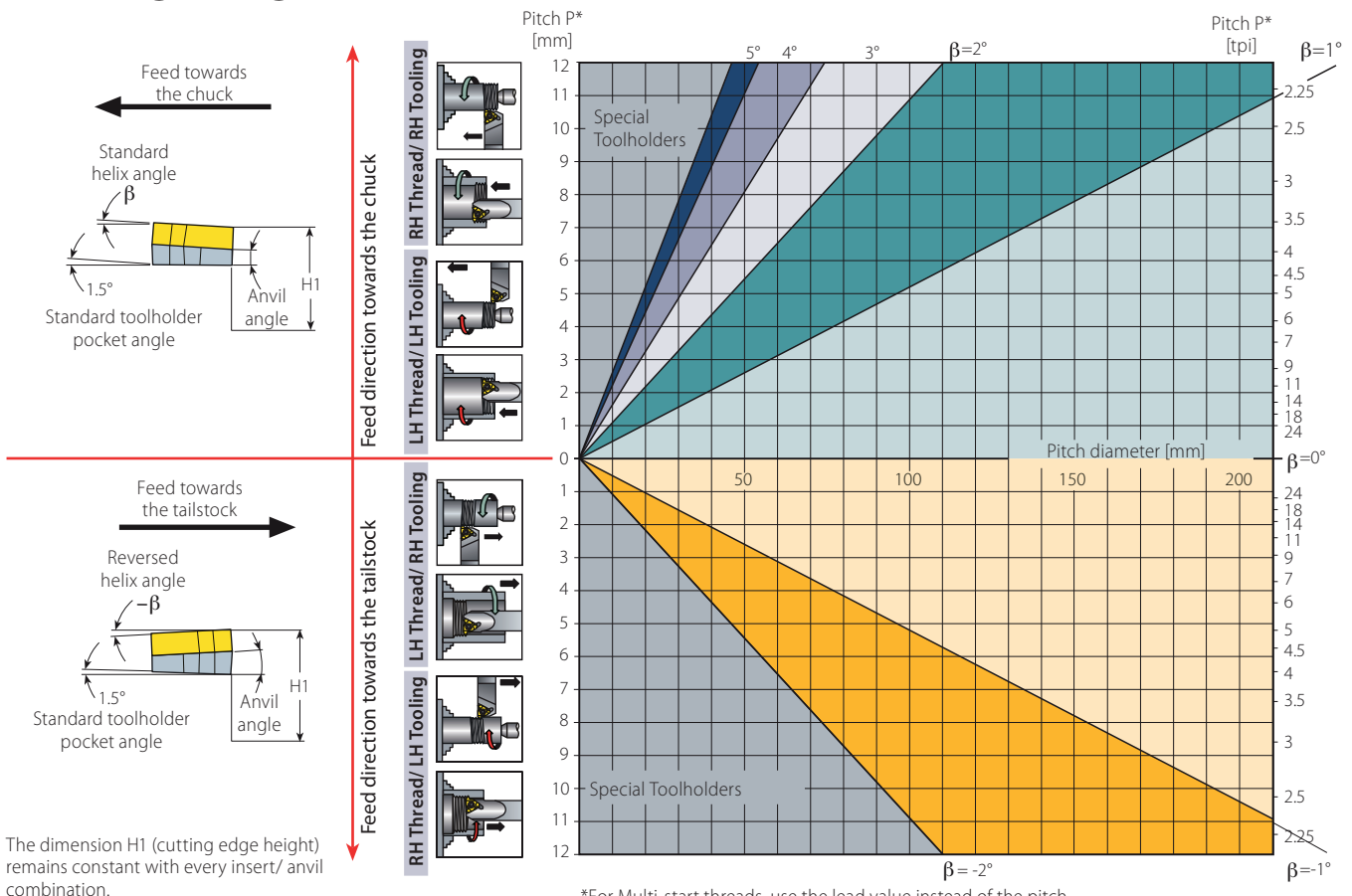
The helix angle is calculated by the following formula:

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

$\beta$  - Helix angle [°]  
 P - Pitch [mm]  
 N - No. of starts  
 D - Pitch diameter [mm]  
 Lead = P x N

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

## Helix Angle Diagram



The dimension H1 (cutting edge height) remains constant with every insert/ anvil combination.

\*For Multi-start threads, use the lead value instead of the pitch

# 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
3/8" V6	16	ER	YE3-6C-3P	YE3-6C-2P	YE3-6C-1P	YE3-6C	YE3-6C-1N	YE3-6C-1.5N	YE3-6C-2N	YE3-6C-3N
		IR	YI3-6C-3P	YI3-6C-2P	YI3-6C-1P	YI3-6C	YI3-6C-1N	YI3-6C-1.5N	YI3-6C-2N	YI3-6C-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			

Thread Turning  
Technical Data

Standard Anvil		V6 Anvil		U Style Anvil		M Style Anvil		Z Style Anvil		T Style Anvil	
ER/IL	EL/IR	ER	IR	ER/IL	EL/IR	ER/IL	EL/IR	ER/IL	EL/IR	ER/IL	EL/IR
		V6 is indicated on the backside								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
		ABY3-6C	YE3-6C-2P, 1P, 1N, 2N, 3N YI3-6C-2P, 1P, 1N, 2N, 3N
1/2"	22	ABY4	YE4-2P, 1P, 1N, 2N, 3N YI4-2P, 1P, 1N, 2N, 3N
		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.

**Important!**

**Use a V6 anvil when using a V6 insert.**




For External RH  
use YE3-6C anvil.




For Internal RH  
use YI3-6C anvil.











## Grades and Their Applications

General Use		
VKX	VTX	VCB
 <p>Superior general purpose grade, excellent in steels and stainless steels, recommended for rigid cutting conditions, ground or sintered chipbreaker styles. TiN coated.</p>	 <p>General purpose grade with tough submicron substrate. Provides good fracture toughness in non-rigid cutting conditions. TiAlN coated.</p>	 <p>Vardex sintered chipbreaker with ground profile for machining materials with long chips. TiAlN coated.</p>

Stainless Steel	Non Ferrous, High Temperature Alloys and Titanium	
VM7	VK2	VK2P
 <p>Specialty grade for threading stainless steel. Multi-layer PVD coated.</p>	 <p>Uncoated grade for non-ferrous, aluminium, high temperature and titanium alloys.</p>	 <p>Highly-polished version of the VK2 uncoated grade for high quality surface finish in aluminium.</p>

## MINIPRO



Micro & MicroScope	Mini "5L" & Mini IC 6.0	Mini IC 4.0
VMX	VHX	VTX
 <p>General purpose carbide grade for Micro double-ended inserts. TiN coated.</p>	 <p>HSS grade for Mini "L" and Mini 6.0 inserts; for low cutting speeds, TiN coated.</p>	 <p>Carbide grade for Mini 4.0. For machining stainless steel and general use. TiAlN coated.</p>
VBX	VKP	VBX
 <p>General purpose carbide grade for single-ended MicroScope inserts. TiCN coated.</p>	 <p>General purpose carbide grade for Mini "L" and Mini 6.0 inserts, TiN coated.</p>	 <p>Carbide grade for Mini 4.0. For machining steel and general use. TiCN coated.</p>

# Recommended Grades and Cutting Speeds Vc [m/min] not Including MiniPro Line



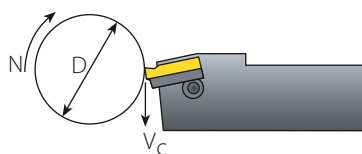
Material Group	Vardex No.	Material	Hardness Brinell HB	Vc [m/min]					
				Coated				Uncoated VK2 / VK2P	
				VKX	VCB	VM7	VTX		
<b>P</b> Steel	1	Unalloyed steel	Low carbon (C=0.1-0.25%)	125	115-190	115-190		115-190	
	2		Medium carbon (C=0.25-0.55%)	150	100-175	100-165		100-175	
	3		High carbon (C=0.55-0.85%)	170	90-165	90-155		90-165	
	4	Low alloy steel (alloying elements ≤5%)	Non hardened	180	100-180	100-180		100-180	
	5		Hardened	275	75-140	75-140		75-140	
	6		Hardened	350	70-135	70-135		70-135	
	7	High alloy steel (alloying elements >5%)	Annealed	200	80-120	80-120		80-120	
	8		Hardened	325	50-100	50-100		50-100	
	9	Cast steel	Low alloy (alloying elements <5%)	200	70-130	70-130		70-130	
	10		High alloy (alloying elements >5%)	225	60-120	60-120		60-120	
<b>M</b> Stainless Steel	11	Stainless steel Ferritic	Non hardened	200	70-130	70-130	70-150	70-130	
	12		Hardened	330	60-115	50-95	60-125	60-115	
	13	Stainless steel Austenitic	Austenitic	180	90-140	80-120	90-160	90-140	
	14		Super Austenitic	200	40-110	30-100	40-120	40-110	
	15	Stainless steel Cast ferritic	Non hardened	200	90-120	90-120	90-150	90-120	
	16		Hardened	330	65-110	65-110	65-120	65-110	
	17	Stainless steel Cast austenitic	Austenitic	200	85-110	85-110	85-120	85-110	
	18		Hardened	330	60-100	60-100	60-110	60-100	
<b>K</b> Cast Iron	28	Malleable Cast iron	Ferritic (short chips)	130	60-70	70-120		60-70	
	29		Pearlitic (long chips)	230	60-145	70-120		60-145	
	30	Grey Cast iron	Low tensile strength	180	70-130	70-130		70-130	
	31		High tensile strength	260	60-115	60-100		60-115	
	32	Nodular SG iron	Ferritic	160	125-160	125-160		125-160	
	33		Pearlitic	260	90-120	90-120		90-120	
<b>N(K)</b> Non-Ferrous Metals	34	Aluminium alloys Wrought	Non aging	60	100-365	100-250		100-365	100-250
	35		Aged	100	80-220	80-180		80-220	80-160
	36	Aluminium alloys	Cast	75	200-400	200-400		200-400	80-120
	37		Cast & aged	90	200-280	200-280		200-280	70-100
	38	Aluminium alloys	Cast Si 13-22%	130	60-180	60-150		60-180	50-120
	39	Copper and copper alloys	Brass	90	80-225	80-210		80-225	70-170
	40		Bronze and non leaded copper	100	80-255	80-210		80-255	70-170
<b>S(M)</b> Heat Resistant Material	19	High temperature alloys	Annealed (Iron based)	200	45-60	45-60		45-60	30-50
	20		Aged (Iron based)	280	30-50	30-50		30-50	25-40
	21		Annealed (Nickel or Cobalt based)	250	20-30	20-30		20-30	20-30
	22		Aged (Nickel or Cobalt based)	350	15-25	15-25		15-25	15-25
	23	Titanium alloys	Pure 99.5 Ti	400Rm	140-170	140-170		140-170	60-100
	24		α+β alloys	1050Rm	50-70	50-70		50-70	40-60
<b>H(K)</b> Hardened Material	25	Extra hard steel	Hardened & tempered	45-50HRc	45-60	45-60		45-60	
	26			51-55HRc	40-50	40-50		40-50	

Thread Turning  
Technical Data

## Calculation of N [RPM]

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

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



N - Revolution Per Minute [RPM]  
V<sub>c</sub> - Cutting Speed [m/min]  
D - Workpiece Diameter [mm]



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



Material Group	Vardex No.	Material	Hardness Brinell HB	Vc [m/min]				
				Coated				
				VMX (Micro)	VKP/VBX (Mini&Microscope)	VTX (Mini)	VHX (Mini)	
<b>P</b> Steel	1	Unalloyed steel	Low carbon (C=0.1-0.25%)	125	50-120	140-200	150-200	20-50
	2		Medium carbon (C=0.25-0.55%)	150	40-100	120-180	130-180	15-40
	3		High Carbon (C=0.55-0.85%)	170	30-80	110-180	120-180	15-30
	4	Low alloy steel (alloying elements ≤5%)	Non hardened	180	50-70	100-155	110-155	20-45
	5		Hardened	275	40-60	90-145	100-145	10-25
	6		Hardened	350	30-50	80-135	90-135	10-25
	7	High alloy steel (alloying elements >5%)	Annealed	200	30-50	65-115	70-115	
	8		Hardened	325	25-40	50-100	60-100	
	9	Cast steel	Low alloy (alloying elements <5%)	200	30-50	30-50	30-50	25-40
	10		High alloy (alloying elements >5%)	225	25-40	25-40	30-40	25-40
<b>M</b> Stainless Steel	11	Stainless steel Ferritic	Non hardened	200	60-100	80-120	90-120	
	12		Hardened	330	40-60	55-95	60-95	
	13	Stainless steel Austenitic	Austenitic	180	50-90	60-100	70-100	
	14		Super Austenitic	200	40-60	50-90	60-90	
	15	Stainless steel Cast Ferritic	Non hardened	200	40-60	60-80	70-80	
	16		Hardened	330	30-50	45-65	50-65	
	17	Stainless steel Cast austenitic	Austenitic	200	40-60	50-70	60-70	
	18		Hardened	330	30-50	40-60	40-60	
<b>K</b> Cast Iron	28	Malleable Cast iron	Ferritic (short chips)	130	50-70	60-80	70-80	
	29		Pearlitic (long chips)	230	50-70	60-80	70-80	
	30	Grey cast iron	Low tensile strength	180	50-70	60-80	70-80	
	31		High tensile strength	260	40-60	40-70	40-70	
	32	Nodular SG iron	Ferritic	160	50-70	60-80	70-80	
	33		Pearlitic	260	60-80	70-90	80-90	
<b>N(K)</b> Non-Ferrous Metals	34	Aluminium alloys Wrought	Non aging	60	100-300	80-240	90-240	30-60
	35		Aged	100	100-150	100-170	110-170	25-50
	36	Aluminium alloys	Cast	75	100-150	100-150	110-150	25-50
	37		Cast & aged	90	60-100	60-100	70-100	20-40
	38	Aluminium alloys	Cast Si 13-22%	130	100-150	100-150	110-150	15-30
	39	Copper and copper alloys	Brass	90	60-100	80-200	90-200	15-35
	40		Bronze and non leaded copper	100	60-100	80-200	90-200	15-35
<b>S(M)</b> Heat Resistant Material	19	High temperature alloys	Annealed (Iron based )	200	25-45	25-45	30-45	
	20		Aged (Iron based)	280	20-30	20-30	20-30	
	21		Annealed (Nickel or Cobalt based)	250	15-20	15-20	15-20	
	22		Aged (Nickel or Cobalt based)	350	10-15	10-15	15-20	
	23	Titanium alloys	Pure 99.5 Ti	400Rm	60-100	60-100	70-100	
	24		α+β alloys	1050Rm	40-50	40-50	40-50	
<b>H(K)</b> Hardened Material	25	Extra hard steel	Hardened & tempered	45-50HRc	20-40	20-40	20-40	
	26			51-55HRc	20-40	20-40	20-40	

Thread Turning Technical Data



## 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	9-12	10-14						
No. of passes (Micro / Scope & Mini)		6-9	6-11	6-12	8-14	9-15	11-18	11-18									

## Cutting Conditions Depends On:



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



# Number of Passes and Depth of Cut per Pass for Multi+ Inserts

Standard	Insert Type		Insert Size		Pitch	Teeth	Ordering Code	Passes	Depth of cut per pass				
	IC	L mm	IC	L mm					RH	1	2	3	4
ISO External	M+	3/8"	16	1.0	mm	3	3ER1.0ISO3M+...	2	0.32	0.30			
				1.5	mm	2	3ER1.5ISO2M+...	3	0.34	0.30	0.29		
				2.0	mm	2	3ER2.0ISO2M+...	3	0.45	0.40	0.38		
		1/2"	22	1.5	mm	3	4ER1.5ISO3M+...	2	0.48	0.45			
				2.0	mm	2	4ER2.0ISO2M+...	3	0.45	0.40	0.38		
				2.0	mm	3	4ER2.0ISO3M+...	2	0.64	0.59			
	2.5	mm	2	4ER2.5ISO2M+...	4	0.46	0.42	0.38	0.36				
	5/8"	27	3.0	mm	2	5ER3.0ISO2M+...	4	0.53	0.47	0.45	0.39		
	T+	1/2"T	22	1.5	mm	8	4ER1.5ISO8T+...	1	0.93				
				2.0	mm	8	4ER2.0ISO8T+...	1	1.23				
	ISO Internal	M+	3/8"	16	1.0	mm	3	3IR1.0ISO3M+...	2	0.30	0.28		
					1.5	mm	2	3IR1.5ISO2M+...	3	0.31	0.28	0.27	
2.0					mm	2	3IR2.0ISO2M+...	3	0.42	0.37	0.36		
1/2"			22	1.5	mm	3	4IR1.5ISO3M+...	2	0.45	0.41			
				2.0	mm	2	4IR2.0ISO2M+...	3	0.42	0.37	0.36		
				2.0	mm	3	4IR2.0ISO3M+...	2	0.59	0.56			
5/8"		27	3.0	mm	2	5IR3.0ISO2M+...	4	0.49	0.45	0.42	0.37		
T+		1/2"	22	1.5	mm	8	4IR1.5ISO8T+...	1	0.86				
				2.0	mm	8	4IR2.0ISO8T+...	1	1.15				
UN External		M+	3/8"	16	20	tpi	3	3ER20UN3M+...	2	0.41	0.38		
					18	tpi	2	3ER18UN2M+...	3	0.32	0.28	0.27	
					18	tpi	3	3ER18UN3M+...	2	0.45	0.42		
	16				tpi	2	3ER16UN2M+...	3	0.36	0.32	0.30		
	14				tpi	2	3ER14UN2M+...	3	0.43	0.38	0.37		
	12				tpi	2	3ER12UN2M+...	3	0.47	0.43	0.40		
	1/2"	22	16	tpi	3	4ER16UN3M+...	2	0.51	0.47				
			14	tpi	2	4ER14UN2M+...	3	0.43	0.38	0.37			
			12	tpi	2	4ER12UN2M+...	3	0.47	0.43	0.40			
			12	tpi	3	4ER12UN3M+...	2	0.67	0.63				
			11	tpi	2	4ER11UN2M+...	4	0.43	0.38	0.36	0.32		
			10	tpi	2	4ER10UN2M+...	4	0.46	0.42	0.40	0.36		
5/8"	27	8	tpi	2	5ER8UN2M+...	4	0.56	0.50	0.48	0.41			
UN Internal	3/8"	16	12	tpi	2	3IR12UN2M+...	3	0.45	0.39	0.38			
			14	tpi	2	3IR14UN2M+...	3	0.41	0.36	0.34			
			16	tpi	2	3IR16UN2M+...	3	0.33	0.30	0.28			
	1/2"	22	16	tpi	3	4IR16UN3M+...	2	0.47	0.44				
			14	tpi	2	4IR14UN2M+...	3	0.41	0.36	0.34			
			12	tpi	2	4IR12UN2M+...	3	0.45	0.39	0.38			
12	tpi	3	4IR12UN3M+...	2	0.63	0.59							
5/8"	27	8	tpi	2	5IR8UN2M+...	4	0.52	0.47	0.44	0.38			
BSW External	M+	3/8"	16	28	tpi	2	3ER28W2M+...	3	0.23	0.20	0.20		
				19	tpi	2	3ER19W2M+...	3	0.33	0.28	0.27		
				19	tpi	3	3ER19W3M+...	2	0.45	0.41			
				14	tpi	2	3ER14W2M+...	3	0.43	0.38	0.35		
		1/2"	22	14	tpi	3	4ER14W3M+...	2	0.60	0.56			
				11	tpi	2	4ER11W2M+...	4	0.44	0.38	0.36	0.30	

Thread Turning Technical Data

# Number of Passes and Depth of Cut per Pass for Multi+ Inserts

Standard	Insert Type	Insert Size		Pitch	Teeth	Ordering Code	Passes	Depth of cut per pass				
		IC	L mm					RH				
								1	2	3	4	
BSW Internal	M+	3/8"	16	14	tpi	2	3IR14W2M+...	3	0.43	0.38	0.35	
		1/2"	22	11	tpi	2	4IR11W2M+...	4	0.44	0.38	0.36	0.30
NPT External	M+	3/8"	16	14	tpi	2	3ER14NPT2M+...	3	0.52	0.45	0.43	
		1/2"	22	11.5	tpi	2	4ER11.5NPT2M+...	4	0.46	0.43	0.42	0.40
		5/8"	27	11.5	tpi	3	5ER11.5NPT3M+...	4	0.48	0.43	0.42	0.38
	Z+	1/2"	22	11.5	tpi	2	4ER11.5NPT2Z+...	4	0.46	0.43	0.42	0.40
				8	tpi	2	4ER8NPT2Z+...	4	0.72	0.64	0.60	0.53
		5/8"	27	11.5	tpi	3	5ER11.5NPT3Z+...	4	0.48	0.43	0.42	0.38
NPT Internal	M+	3/8"	16	14	tpi	2	3IR14NPT2M+...	3	0.52	0.45	0.43	
		1/2"	22	11.5	tpi	2	4IR11.5NPT2M+...	4	0.46	0.43	0.42	0.40
		5/8"	27	11.5	tpi	2	5IR11.5NPT3M+...	4	0.48	0.43	0.42	0.38
	Z+	1/2"	22	11.5	tpi	3	4IR11.5NPT2Z+...	4	0.46	0.43	0.42	0.40
				8	tpi	2	4IR8NPT2Z+...	4	0.72	0.64	0.60	0.53
		5/8"	27	11.5	tpi	3	5IR11.5NPT3Z+...	4	0.48	0.43	0.42	0.38
NPTF External	M+	3/8"	16	14	tpi	2	3ER14NPTF2M+...	3	0.51	0.44	0.42	
NPTF Internal	M+	3/8"	16	14	tpi	2	3IR14NPTF2M+...	3	0.51	0.44	0.42	
API BUT External	M+	5/8"	27	5	tpi	2	5ER5BUT752M+...	4	0.46	0.41	0.39	0.33
	T+	1/2"	22	5	tpi	3	4ER5BUT753T+...	3	0.57	0.52	0.50	
API BUT Internal	M+	5/8"	27	5	tpi	2	5IR5BUT752M+...	4	0.46	0.41	0.39	0.33
	T+	1/2"	22	5	tpi	3	4IR5BUT753T+...	3	0.57	0.52	0.50	
API RD External	M+	5/8"	27	10	tpi	3	5ER10APIRD3M+...	2	0.74	0.69		
				8	tpi	2	5ER8APIRD2M+...	3	0.66	0.60	0.58	
				10	tpi	6	4ER10APIRD6T+...	2	0.71	0.71		
	T+	1/2"	22	8	tpi	3	4ER8APIRD3T+...	2	0.94	0.90		
				8	tpi	5	4ER8APIRD5T+...	2	0.94	0.90		
				10	tpi	2	4IR10APIRD2M+...	3	0.52	0.46	0.45	
API RD Internal	M+	1/2"	22	8	tpi	2	4IR8APIRD2M+...	3	0.66	0.60	0.58	
				10	tpi	3	5IR10APIRD3M+...	3	0.48	0.48	0.47	
				8	tpi	2	5IR8APIRD2M+...	3	0.66	0.60	0.58	
	Z+	1/2"	22	8	tpi	2	4IR8APIRD2Z+...	3	0.66	0.60	0.58	
				10	tpi	6	4IR10APIRD6T+...	2	0.71	0.71		
				8	tpi	3	4IR8APIRD3T+...	2	0.94	0.90		
T+	1/2"	22	8	tpi	5	4IR8APIRD5T+...	2	0.94	0.90			



M+ Style insert

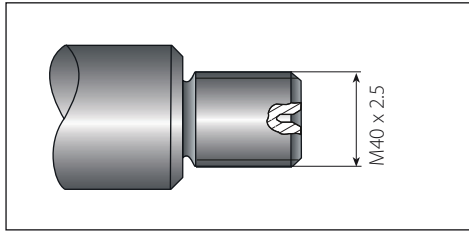


T+ Style insert



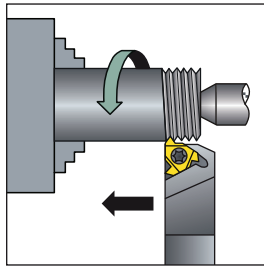
Z+ Style insert

# Step by Step Thread Turning - Example 1



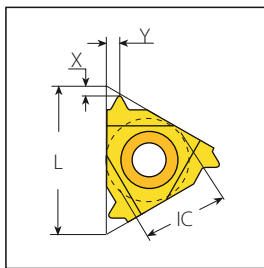
Application:  
 Thread: External Right Hand  
 ISO Metric M40x2.5  
 Material: 4140 (25 HRC)

## U Choose the Thread Turning Method



Feed direction towards the chuck was chosen.  
 Therefore, an external right hand insert and an external right hand holder will be used.

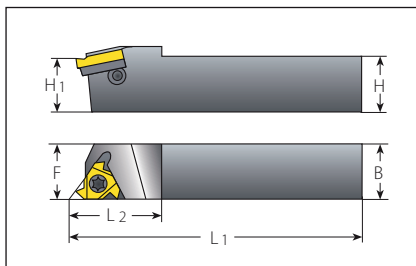
## V Choose the Insert Size



Chosen insert: 3ER2.5ISO

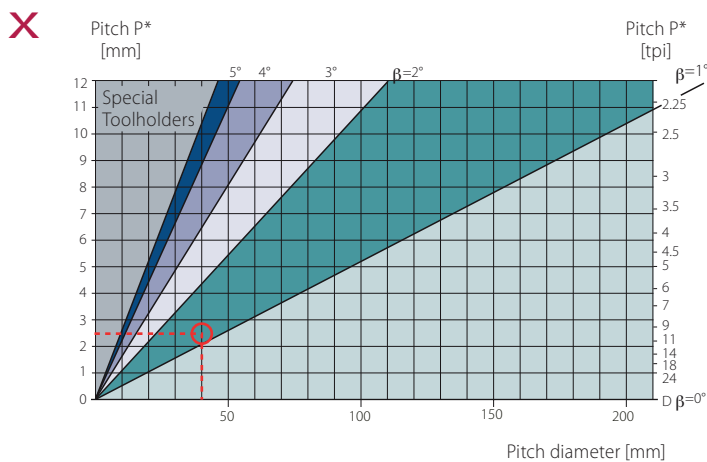
Insert Size	Pitch	Ordering Code	Anvil	Toolholder
IC	L mm	mm	RH	RH
3/8"	16	2.5	3ER2.5ISO ...	YE3 AL.-3(LH)

## W Choose the Toolholder



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



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°.



## Y Choose the Correct Anvil

Anvil chosen: YE3

Resultant Helix Angle

3.5

2.5

**1.5**

0.5

Insert Size	Ordering Code	Holder	Ordering Code	
IC	L mm			
3/8"	16	ER/IL	YE3-2P	YE3-1P <b>YE3</b> YE3-1N

## U Choose the carbide grade and cutting speed

Carbide Grade chosen: VTX

Cutting Speed: 140 m/min

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

## V Determine the Number Of Passes

Numbers of passes: 10

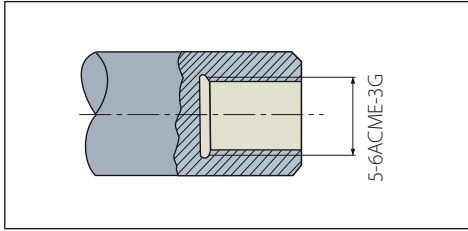
### ISO External

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

## Summary

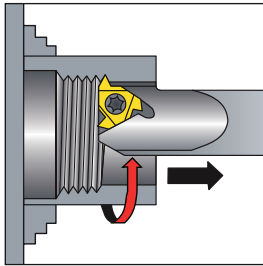
<b>Thread Type</b>	<b>ISO M40x2.5 External Right Hand</b>
<b>U Feed Direction:</b>	<b>Towards the chuck</b>
<b>V Insert and Grade:</b>	<b>3ER2.5ISO VTX</b>
<b>W Toolholder:</b>	<b>AL 25 - 3</b>
<b>X Helix Angle:</b>	<b>1.5°</b>
<b>y Anvil:</b>	<b>YE3</b>
<b>U Cutting Speed:</b>	<b>140 m/min</b>
<b>V Number of Passes:</b>	<b>14</b>

# Step by Step Thread Turning - Example 2



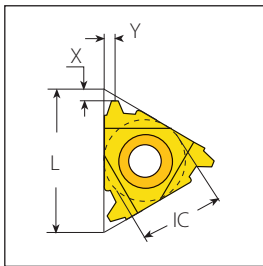
Application:  
 Thread: Internal Right Hand  
 ACME  
 Pitch: 6 tpi  
 Bore dia: 5"  
 Material: Stainless Steel Austemritic

## U Choose the Thread Turning Method



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.

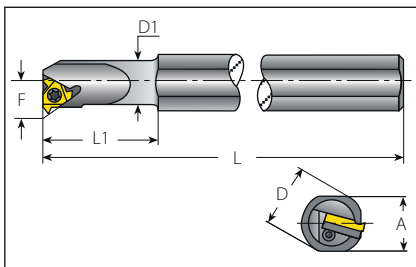
## V Choose the Insert size



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)

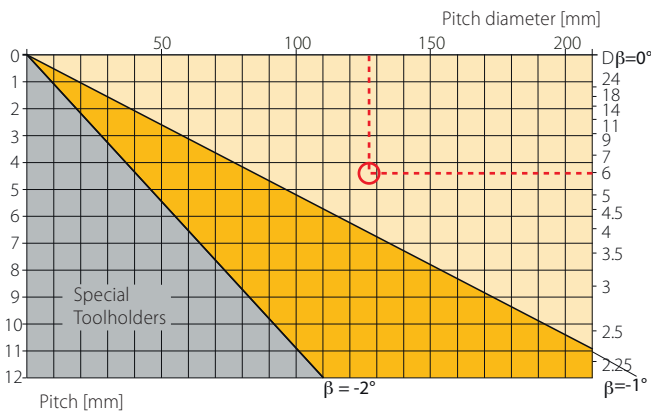
## W Choose the Toolholder



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

## X Determine the Helix Angle



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°**.



## y Choose the Correct Anvil

Anvil chosen: YE4-2N

Resultant Helix Angle 1.5 0.5 0 **-0.5** -1.5

Insert Size		Ordering Code					
IC	L mm	ER/IL	YE4	YE4-1N	YE4-1.5N	<b>YE4-2N</b>	YE4-3N
1/2"	22						

## U Choose the carbide grade and cutting speed

Carbide grade chosen: VTX  
Cutting speed: 140 m/min

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

## V Determine The Number Of Passes

Numbers 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	<b>6</b>	5.5	5	4.5	4
No. of passes		9-16	10-18	<b>11-18</b>	11-19	12-20	12-20	12-20

## Summary

<b>Thread Type</b>	<b>5"x6 ACME Internal Right Hand</b>
<b>U Feed Direction:</b>	<b>Away from the chuck</b>
<b>V Insert and Grade:</b>	<b>4IL6ACME VTX</b>
<b>W Toolholder:</b>	<b>AVR 40-4LH</b>
<b>X Helix Angle:</b>	<b>-0.65°</b>
<b>y Anvil:</b>	<b>YE4-2N</b>
<b>U Cutting Speed:</b>	<b>140 m/min</b>
<b>V Number of Passes:</b>	<b>18</b>





# Material Comparison Table

Material Group	Vardex No.	USA AISI/SAE	Germany W.-Nr.	Germany DIN	Great Britain BS	France AFNOR	Italy UNI
P Steel	1	1015	1.0037	St37-2	Fe360B	E24-2	Fe360 B FU
	1	1020	1.0044	St44-2	Fe430B FN	E28-2	Fe430B FN
	2	ASTM A570Gr.50	1.0050	St50-2	Fe490-2 FN	A50-2	Fe490
	2	-	1.0070	St70-2	Fe690-2 FN	A70-2	Fe690
	1	1015	1.0401	C15	080M15	CC12	C15C16
	1	1020	1.0402	C22	050A20	CC20	C20C21
	2	1035	1.0501	C35	060A35	CC35	C35
	2	1045	1.0503	C45	080M46	CC45	C45
	2	1055	1.0535	C55	070M55	-	C55
	2	1060	1.0601	C60	080A62	CC55	C60
	1	1213	1.0715	9SMn28	230M07	S250	CF9SMn28
	1	12L13	1.0718	9SMnPb28	-	S250Pb	CF9SMnPb28
	1	-	1.0722	10SPb20	-	10PbF2	CF10SPb20
	2	1140	1.0726	35S20	212M36	35MF4	-
	2	1215	1.0736	9SMn36	240M07	S300	CF9SMn36
	2	12L14	1.0737	9SMnPb36	-	S300Pb	CF9SMnPb36
	2	9255	1.0904	55Si7	250A53	55S7	55Si8
	2	9262	1.0961	60SiCr7	-	60SiC7	60SiCr8
	1	1015	1.1141	Ck15	080M15	XC1 2	C16
	2	1039	1.1157	40Mn4	150M36	35M5	-
	2	1025	1.1158	Ck25	-	-	-
	2	1335	1.1167	36Mn5	-	40M5	-
	2	1330	1.1170	28Mn6	150M28	20M5	C28Mn
	2	1035	1.1183	Cf35	060A35	XC38TS	C36
	2	1045	1.1191	Ck45	080M46	XC42	C45
	2	1055	1.1203	Ck55	070M55	XC55	C50
	3	1050	1.1213	Cf53	060A52	XC48TS	C53
	3	1060	1.1221	Ck60	080A62	XC60	C60
	8	1095	1.1274	Ck101	060A96	-	-
	9	-	1.3401	X120Mn12	Z120M12	Z120M12	XG120Mn12
	8	52100	1.3505	100Cr6	534A99	100C6	100Cr6
	8	ASTM A20Gr.A	1.5415	15Mo3	1501-240	15D3	16Mo3KW
	8	4520	1.5423	16Mo5	1503-245-420	-	16Mo5
	4	ASTMA350LF5	1.5622	14Ni6	-	16N6	14Ni6
	8	ASTM A353	1.5662	X8Ni9	1501-509; 510	-	X10Ni9
	8	2515	1.5680	12Ni19	-	Z18N5	-
	5	3135	1.5710	36NiCr6	640A35	35NC6	-
	5	3415	1.5732	14NiCr10	-	14NC11	16NiCr11
	5	3415; 3310	1.5752	14NiCr14	655M13; 655M12	12NC15	-
	5	9840	1.6511	36CrNiMo4	816M40	40NCD3	38NiCrMo4(KB)
	5	8620	1.6523	21NiCrMo2	805M20	20NCD2	20NiCrMo2
	5	8740	1.6546	40NiCrMo22	311-Type7	-	40NiCrMo2(KB)
	5	4340	1.6582	34CrNiMo6	817M40	35NCD6	35NiCrMo6(KB)
	5	-	1.6587	17CrNiMo6	820A16	18NCD6	-
	5	-	1.6657	14NiCrMo134	832M13	-	15NiCrMo13
	2	5015	1.7015	15Cr3	523M15	12C3	-
	5	5132	1.7033	34Cr4	530A32	32C4	34Cr4(KB)
	5	5140	1.7035	41Cr4	530M40	42C4	41Cr4
	5	5140	1.7045	42Cr4	-	-	-
	5	5115	1.7131	16MnCr5	(527M20)	16MC5	16MnCr5
	5	5155	1.7176	55Cr3	527A60	55C3	-
	5	4130	1.7218	25CrMo4	1717CDS110	25CD4	25CrMo4(KB)
	5	4137; 4135	1.7220	34CrMo4	708A37	35CD4	35CrMo4
	5	4140; 4142	1.7223	41CrMo4	708M40	42CD4TS	41CrMo4
	5	4140	1.7225	42CrMo4	708M40	42CD4	42CrMo4
	5	-	1.7262	15CrMo5	-	12CD4	-
	5	ASTM A182; F11; F12	1.7335	13CrMo4 4	1501-620Gr.27	15CD3.5; 15CD4.5	14CrMo4 5
	5	-	1.7361	32CrMo12	722M24	30CD12	32CrMo12
	5	ASTM A182; F22	1.7380	10CrMo9 10	1501-622; Gr.31; 45	12CD9; 10	12CrMo9, 10
	5	-	1.7715	14MoV6 3	1503-660-440	-	-
	5	6150	1.8159	50CrV4	735A50	50CV4	50CrV4
	8	-	1.8509	41CrAlMo7	905M39	40CAD6, 12	41CrAlMo7
	8	-	1.8523	39CrMoV13 9	897M39	-	36CrMoV12
	5	W.110	1.1545	C105W1	-	Y1105	C98KU; C100KU
	5	W.112	1.1663	C125W	-	Y2120	C120KU
	8	L3	1.2067	100Cr6	BL3	Y100C6	-
	10	D3	1.2080	X210Cr12	BD3	Z200Cr12	X210Cr13KU
	10	-	-	-	-	-	X250Cr12KU
	10	-	1.2311	40CrMnMo7	-	-	35CrMo8KU
	10	-	1.2312	40CrMnMoS8-6	-	-	-
	10	H11	1.2343	X38CrMoV5-1	BH11	Z38CDV5	X37CrMoV51 KU
	10	H13	1.2344	X40CrMoV5-1	BH13	Z40CDV5	X35CrMoV05KU
	10	-	-	-	-	-	X40CrMoV511KU
	10	A2	1.2363	X100CrMoV5-1	BA2	Z1 00CDV5	X100CrMoV51KU
	10	-	1.2367	X38CrMoV5-3	-	Z38CDV5-3	-
	10	D2	1.2379	X155CrVMo 12-1	BD2	Z160CDV12	X155CrVMo12 1 KU
	10	-	1.2419	105WCr6	-	105WC13	10WCr6; 107WCr5KU
	10	-	1.2436	X210CrW12	-	-	X215CrW121KU
	10	S1	1.2542	45WCrV17	BS1	-	45WCrV8KU
	10	H21	1.2581	X30WCrV9 3	BH21	Z30WCV9	X30WCrV9 3KU
	10	-	1.2601	X165CrMoV12	-	-	X165CrMoV12KU
	10	L6	1.2713	55NiCrMoV6	-	55NCDV7	-
	10	-	1.2738	40CrMnNiMo8-6-4	-	-	-
	10	W210	1.2833	100V1	BW2	Y1105V; 100V2	-
	10	-	1.3243	S 6-5-2-5	-	Z85WDCV-06-05-04-02	HS 6-5-2-5
	10	T4	1.3255	S 18-1-2-5	BT4	Z80WKCV-18-05-04-01	X78WCo1805KU
	10	M2	1.3343	S 6-5-2	BM2	Z85WDCV-06-05-04-02	X82WCo0605KU
	10	M7	1.3348	S 2-9-2	-	Z100WCV-09-04-02-02	HS 2-9-2
	10	T1	1.3355	S 18-0-1	BT1	Z80WCV-18-04-01	X75W18KU

Thread Turning  
Technical Data



Sweden SS	Japan JIS	Russia GOST	Spain UNE	Vardex No.
1311	STKM 12A;C	–	Fe360B	1
1412	SM400A;B;C	St4ps;sp	Fe430B FN	1
1550	SS490	St5ps;sp	A490-2	2
–	–	–	A690-2	2
1350	–	–	F.111	1
1450	–	20	1 C 22 ; F.112	1
1550	–	30	F. 113	2
1650	–	45	F.114	2
1655	–	55	F.115	2
–	–	60(G)	–	2
1912	SUM22	–	F.2111-11SMn28	1
1914	SUM22L	–	F.2112-11SMnPb28	1
–	–	–	F.2122-10SPb20	1
1957	–	–	F.210.G	2
–	–	–	F.2113-12SMn35	2
1926	–	–	F.2114-12SMnPb35	2
2085	–	55S2	F.1440-56Si7	2
–	–	–	F.1442-60SiCr8	2
1370	S15C	15	F.1110-C15k ; F.1511-C16k	1
–	–	40G	–	2
–	S25C	25	F.1120-C25k	2
2120	SMn438(H)	35G2 ; 35GL	F.1203-36Mn6 ; F.8212-36Mn5	2
–	SCM1	30G	28Mn6	2
1572	S35C	35	–	2
1672	S45C	45	F.1140-C45k ; F.1142-C48k	2
–	S55C	55	F.1150-C55k	2
1674	S50C	50	–	3
1678	S58C	60 ;60G ;60GA	–	3
1870	SUP4	–	–	8
–	SCMnH/1	110G13L	F.8251-AM-X120Mn12	9
2258	SUJ2	SchCh15	F.1310-100Cr6	8
2912	–	–	F.2601-16Mo3	8
–	–	–	F.2602-16Mo5	8
–	–	–	F.2641-15Ni6	4
–	–	–	F.2645-X8Ni09	8
–	–	–	–	8
–	SNC236	–	–	5
–	SNC415(H)	–	F.1540-15NiCr11	5
–	SNC81 5(H)	–	–	5
–	–	40ChN2MA ; 40ChGNM	F.1280-35NiCrMo4	5
2506	SNCM220(H)	20ChGNM	F.1552-20NiCrMo2 ; F.1534-20NiMo31	5
–	SNCM240	38ChGNM	F.1204-40NiCrMo2 ; F.1205-40NiCrMo2DF	5
2541	–	38Ch2N2MA	F.1272-40NiCrMo7 ;34CrNiMo6	5
–	–	–	F.1560-14NiCrMo13	5
–	–	–	F.1560-14NiCrMo13 ;F.1569-14NiCrMo131	5
–	SCR415(H)	15Ch	–	2
–	SCR430(H)	35Ch	F.8221-35Cr4	5
–	SCR440(H)	40Ch	F.1211-41Cr4DF ; F.1202-42Cr4	5
2245	SCR440	40Ch	F.1202-42Cr4	5
2511	–	18ChG	F.1516-16MnCr5 ; F.1517-16MnCr5	5
–	SUP9(A)	50ChGA	F.1431-55Cr3	5
2225	SCM420	20ChM ; 30ChM	F.8372-AM26CrMo4;F.8330-AM25CrMo4;F.1256-30CrMo4-1	5
2234	SCM432; SCCRM3	AS38ChGM;35ChM;35ChML	F.8331-AM34CrMo4;F.823134CrMo4;F.1250-35CrMo4;F.1254-35CrMo4DF	5
2244	SCM440	40ChFA	F.8332-AM42CrMo4;F.8232-42CrMo4;F.1252-40CrMo4	5
2244	SCM440(H)	–	F.8332-AM42CrMo4;F.8232-42CrMo4;F.1252-40CrMo4	5
2216	SCM415(H)	–	F.1551-12CrMo4	5
–	–	12ChM ; 15ChM	F.2631-14CrMo45	5
2240	–	–	F.124.A	5
2218	–	12Ch8	TU.H	5
–	–	–	F.2621-13MoCrV6	5
2230	SUP10	50ChGFA ; 50ChFA	F.1430-51CrV4	5
2940	–	38ChMJuA	F.1740-41CrAlMo7	8
–	–	–	–	8
1880	–	U10A-1;2	F.516	5
–	SK2	U13	F.5123 ; C120	5
–	–	Ch	F.5230 ; 100Cr6	8
–	SKD1	Ch12	F.5212 ; X210 Cr12	10
–	–	–	–	10
–	–	–	–	10
–	–	–	–	10
–	SKD6	4ChMFS	F.5317 ; X37 CrMoV5	10
2242	SKD61	4ChMF1S	F.5318 ; X40CrMoC5	10
–	–	–	–	10
2260	SKD12	–	F.5227 ; X100CrMoV5	10
–	–	–	–	10
2310	SKD11	–	F.520A	10
2140	SKS31;SKS2,SKS3	ChWG	F.5233 ; 105WCr5	10
2312	SKD2	–	F.5213 ; X210CrW12	10
2710	–	5ChW2SF	F.5241 ; 45WCrSi8	10
–	SKD5	3Ch2W8F	F.5323 ; X30WCrV9	10
2310	–	–	F.5211 ; X160CrMoV12	10
–	SKT4	5ChNM	F.520S	10
–	–	–	–	10
–	SKS43	–	–	10
2723	SKH55	2723	R6M5K5	10
–	SKH3	–	F.5530 ; 18-1-1-5	10
2722	SKH9	(R6AM5) ; R6M5	F.5603 ; 6-5-2	10
2782	–	–	F.5607 ; 18-0-1	10
–	SKH2	R18	F.5520 ; 18-0-1	10



# Material Comparison Table (con't)

Material Group	VarDEX No.	USA AISI/SAE	Germany W.-Nr.	Germany DIN	Great Britain BS	France AFNOR	Italy UNI
<b>M</b> Stainless Steel	12	403	1.4000	X6Cr13	403S17	Z6C13	X6Cr13
	12	-	1.4001	X7Cr14	-	-	-
	12	410	1.4006	X10Cr13	410S21	Z10C14	X12Cr13
	12	430	1.4016	X6Cr17	430S15	Z8C17	X8Cr17
	12	-	1.4027	G-X20Cr14	420C29	Z20C13M	-
	12	-	1.4034	X46Cr13	420S45	Z40CM;Z38C13M	X40Cr14
	12	431	1.4057	X20CrNi172	431S29	Z15CNi6.02	X16CrNi16
	12	430	1.4104	X12CrMoS17	-	Z10CF17	X10CrS17
	12	434	1.4113	X6CrMo171	434S17	Z8CD17.01	X8CrMo17
	12	-	1.4313	X5CrNi134	425C11	Z4CND13.4M	-
	12	-	1.4408	G-X6CrNiMo18 10	316C16	-	-
	12	HW3	1.4718	X45CrSi93	401S45	Z45CS 9	X45CrSi8
	12	405	1.4724	X10CrAl13	403S17	Z10C13	X101CrAl12
	11	-	1.4742	X10CrAl18	430S15	Z12CAS18	X8Cr17
	12	HNV6	1.4747	X80CrNiSi20	443S65	Z80CSN20.02	X80CrSiNi20
	11	446	1.4762	X10CrAl24	-	Z10CAS24	X16Cr26
	13	304	1.4301	X5CrNi18 10	304S15	Z6CN18.09	X5CrNi1810
	13	303	1.4305	X10CrNiS18 9	303S21	Z10CNF 18.09	X10CrNiS 18.09
	13	304L	1.4306	X2CrNi19 11	304S12;304C12	Z2CN18.10;Z3CN 19.10	X2CrNi18.11
	13	CF8	1.4308	G-X6CrNi18 9	304C15	Z6CN18.10M	-
	13	301	1.4310	X12CrNi177	301S21	Z12CN 17.07	X1 2CrNi1 707
	13	304LN	1.4311	X2CrNi18 10	304S62	Z2CN18.10	-
	13	316	1.4401	X5CrNiMo17122	316S16	Z6CND17.11	X5CrNiMo17 12
	13	316LN	1.4429	X2CrNiMoNi17133	-	Z2CND17.13	-
	13	316L	1.4435	X2CrNiMo18143	316S12	Z2CND17.13	X2CrNiMo17 13
	13	317L	1.4438	X2CrNiMo17133	317S12	Z2CND19.15	X2CrNiMo18 16
	13	329	1.4460	X8CrNiMo275	-	-	-
	12	321	1.4541	X6CrNiTi18 10	2337	Z6CNT18.10	X6CrNiTi18 11
	12	347	1.4550	X6CrNiNb18 10	347S17	Z6CNNb18.10	X6CrNiNb18 11
	12	316Ti	1.4571	X6CrNiMoTi17122	320S17	Z6NDT1 7.12	X6CrNiMoTi17 12
	12	-	1.4581	G-X5CrNiMoNb18 10	318C17	Z4CNDNb18 12M	XG8CrNiMo18 11
	12	318	1.4583	X10CrNiMoNb18 12	-	Z6CNDNb17 13B	X6CrNiMoNb17 13
	13	309	1.4828	X15CrNiSi20 12	309S24	Z15CNS20.12	-
	13	310S	1.4845	X12CrNi25 21	310S24	Z12CN25 20	X6CrNi25 20
	13	330	1.4864	X12NiCr36 16	-	Z12NCS35.16	-
	13	-	1.4865	G-X40NiCrSi38 18	330C11	-	XG50NiCr39 19
13	EV8	1.4871	X53CrMnNiN2 19	349S54;321S12	Z52CMN21.09	X53CrMnNiN219	
13	321	1.4878	X12CrNiTi18 9	321S320	Z6CNT18.12B	X6CrNiTi1811	
30	No 20 B	0.6010	GG10	-	Ft 10 D	-	
30	No 25 B	0.6015	GG15	Grade 150	Ft 15 D	-	
30	No 30 B	0.6020	GG20	Grade 220	Ft 20 D	-	
29	No 35 B; No 40 B	0.6025	GG25	Grade 260	Ft 25 D	-	
29	No 45 B	0.6030	GG30	Grade 300	R 30 D	-	
29	No 50 B	0.6035	GG35	Grade 350	Ft 35 D	-	
29	No 55 B	0.6040	GG40	Grade 400	Ft 40 D	-	
29	ASTM	-	DIN4694	3468: 1974	-	-	
29	A436-72	-	GGL-	-	A32-301	-	
29	Type 2	-	NiCr20 2	L-NiCr 20 2	L-NC 20 2	-	
30	60-40-18	0.7040	GGG 40	SNG 420/12	FCS 400-12	GS 370-17	
30	-	0.7043	GGG 40.3	SNG 370/17	FGS 370-17	-	
30	-	0.7033	GGG 35.3	-	-	-	
31	80-55-06	0.7050	GGG 50	SNG 500/7	FGS 500-7	GS 500	
31	-	0.7060	GGG 60	SNG 600/3	FGS 600-3	-	
31	100-70-03	0.7070	GGG70	SNG 700/2	FGS 700-2	GS 700-2	
31	-	-	DIN 1694	-	L-NM 13 7	-	
31	Type 2	-	GGG NiMn 13 7	L-NiMn 13 7	L-NC 20 2	-	
31	-	-	GGG NiCr 20 2	L-NC 20 2	-	-	
28	32510	0.8135	GTS-35	B 340/12	MN 35-10	-	
29	40010	0.8145	GTS-45	P 440/7	-	-	
29	50005	0.8155	GTS-55	P 510/4	MP50-5	-	
29	70003	0.8165	GTS-65	P 570/3	MP 60-3	-	
29	80002	0.8170	GTS-70	P690/2	MP 70-2	-	
36	-	-	G-AlSi12	LM20	-	-	
36	-	-	GD-AlSi12	-	-	-	
36	-	-	GD-AlSi8Cu3	LM24	-	-	
36	-	-	G-AlSi10Mg	LM9	-	-	
36	-	-	G-AlSi12	LM6	-	-	
19	330	1.4864	X12NiCrSi	-	Z12NCS35.16	-	
19	-	1.4865	G-X40NiCrSi	330C11	-	XG50NiCr	
19	5390 A	2.4603	-	-	NC22FeD	-	
19	-	2.4630	NiCr20Ti	HR5, 203-4	NC20T	-	
19	5666	2.4856	NiCr22Mo9N	-	NC22FeDNB	-	
19	5537 C	LW2.496	CoCr20W15	-	KC20WN	-	
19	4676	2.4375	NiCu30Al	3072-76	-	-	
19	-	2.4631	NiCr20TiAk	Hr40,601	NC20TA	-	
19	AMS 5399	2.4973	NiCr19Co11	-	NC19KDT	-	
21	5391	LW2.467	S-NiCr13Al16	3146-3	NC12AD	-	
21	5660	LW2.466	NiCr19Fe19	HR8	NC19FeNb	-	
21	5383	LW2.466	NiCr19Fe19	-	NC20K14	-	
21	-	-	CoCr22W14	-	KC22WN	-	
21	-	LW2.467	NiCo15Cr10	-	-	-	
23	-	-	TiAl14Mo4Sn4Si0.5	-	-	-	
23	-	-	TiAl5Sn2.5	TA14/17	T-A5E	-	
23	-	-	TiAl6V4	TA10-13/TA2	T-A6V	-	
23	-	-	TiAl6V4ELI	TA11	-	-	

Thread Turning  
Technical Data

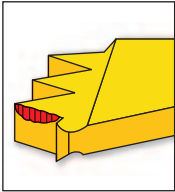
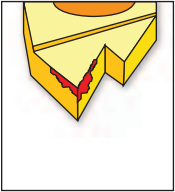
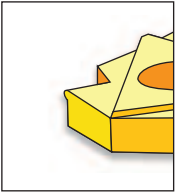
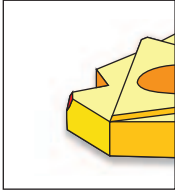
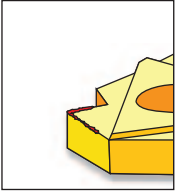
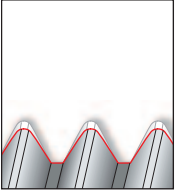
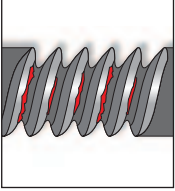


Sweden SS	Japan JIS	Russia GOST	Spain UNE	Vardex No.	
2301	SUS403	08Ch13	F.3110-X6Cr13 ; F.8401-AM-X12Cr13	12	<b>M</b>
-	-	08Ch13	F.3110-X6Cr13 ; F.8401-AM-X12Cr13	12	
2302	SUS410	12Ch13 ; 15Ch13L	F.3401-X10Cr13	12	
2320	SUS430	12Ch17	F.3113-X6Cr17	12	
-	SCS2	20Ch13L	-	12	
2304	SUS420J2	40Ch13	F.3405-X45Cr13	12	
2321	SUS431	20Ch17N2	F.3427-X19CrNi172	12	
2383	SUS430F	-	F.3117-X10CrS17 ; F.3413-X14CrMoS17	12	
2325	SUS434	-	F.3116-X6CrMo171	12	
-	SCS5	-	-	12	
-	SCS14	07Ch18N10G2S2M2L	F.8414-AM-X7CrNiMo2010	12	
-	SUH1	40Ch9S2	F.3220-X45CrSi09-03	12	
-	SUS405	10Ch13SJu	F.3152-X10CrAl13	12	
-	SUH21	15Ch18SJu	F.3153-X10CrAl18	11	
-	SUH4	-	F.3222-X80CrSiNi20-02	12	
2322	SUH446	-	F.3154-X10CrAl24	11	
2332	SUS304	08Ch18N10	F.3551-X5CrNi1811;F.3541-X5CrNi1810 ; F.3504-X6CrNi1910	13	
2346	SUS303	-	F.3508-X10CrNiS18-09	13	
2352	SCS19; SUS304L	03Ch18N11	F.3503-X2CrNi1810	13	
2333	SCS13	07Ch18N9L	-	13	
2331	SUS301	-	F.3517-X12CrNi177	13	
2371	SUS304LN	-	F.3541-X2CrNi1810	13	
2347	SUS316	-	F.3534-X5CrNiMo17122	13	
2375	SUS316LN	-	F.3543-X2CrNiMoN17133	13	
2353	SCS16	03Ch17N14M3	F.3533-X2CrNiMo17132	13	
2367	SUS317L	-	F.3539-X2CrNiMo18164	13	
2324	SUS329L;	-	F.3309-X8CrNiMo27-05; F.3552-X8CrNiMo266	13	
58B	SUS321	06Ch18N10T; 08Ch18N10T; 09Ch18N10T; 12Ch18N10T	F.3523-X6CrNiTi1810	12	
2338	SUS347	08Ch18N12B	F.3524-X6CrNiNb1810	12	
2350	-	10Ch17N13M2T	F.3535-X6CrNiMoTi17122	12	
-	SCS22	-	-	12	
-	-	-	-	12	
-	SUH309	20Ch20N14S2	F.3312-X15CrNiSi20-12	13	
2361	SUH310	20Ch23N18	-	13	
-	SUH330	-	F.3313-X12CrNiSi36-16	13	
-	SCH15	-	-	13	
-	SUH35,SUH36,SU321	55Ch20G9AN4	F.3217-X53CrMnNiN21-09	13	
-	-	-	-	13	
01 10	-	C410	FG10	30	
01 15	-	C415	FG15	30	
01 20	-	C420	FG20	30	
01 25	-	C425	FG25	29	
01 30	-	C430	FG30	29	
01 35	-	C435	FG35	29	
01 40	-	C440	-	29	
MB	-	-	-	29	
ISO-215	-	-	-	29	
523	-	-	-	29	
07 17-02	-	VC42-12	-	30	
07 17-12	-	VC42-12	-	30	
07 17-15	-	-	-	30	
07 27-02	-	VC50-2	-	31	
07 32-03	-	VC60-2	-	31	
07 37-01	-	VC70-2	-	31	
07 72	-	-	-	31	
07 76	-	-	-	31	
-	-	-	-	31	
08 15	-	-	-	28	
08 52	-	-	-	29	
08 54	-	-	-	29	
08 58	-	-	-	29	
08 62	-	-	-	29	
4260	-	-	-	36	
4247	-	-	-	36	
4250	-	-	-	36	
4253	-	-	-	36	
4261	-	-	-	36	
-	SUH 330	-	F.3313-X12CrNiSi36-16	19	
-	SCH 15	-	-	19	
-	-	-	-	19	
-	-	-	-	19	
-	-	-	-	19	
-	-	-	-	19	
-	-	-	-	19	
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-	-	-	-	23	
-	-	-	-	23	

Thread Turning  
Technical Data

# 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