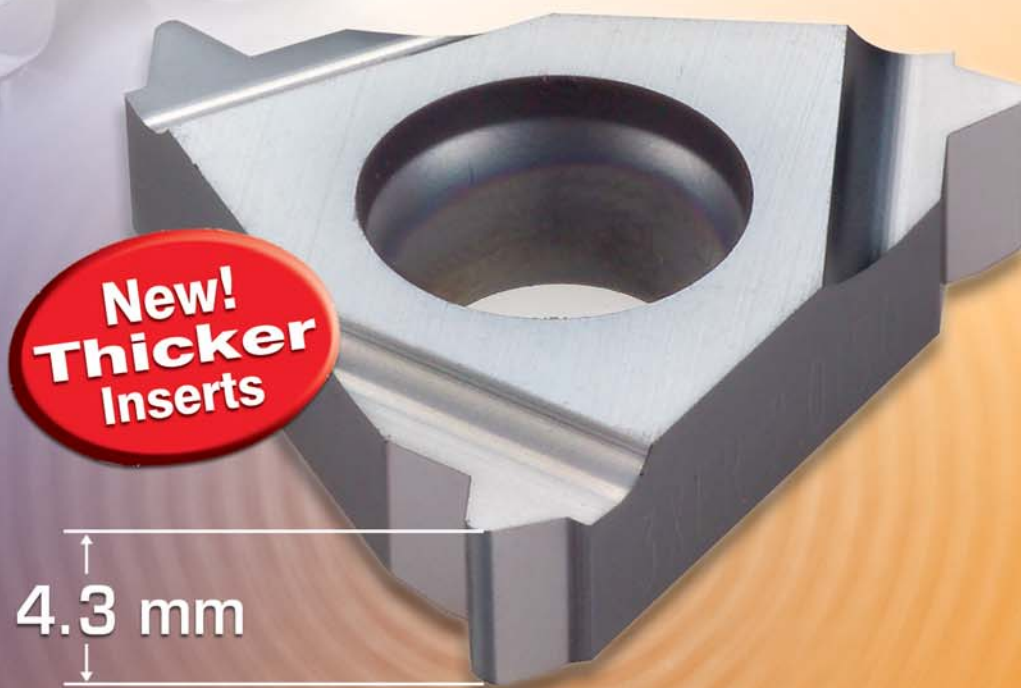




REDLINE

A New Line of **VARDEX** Threading Inserts

- Fits toolholders for 4.3 mm thick inserts
- Two superior carbide grades:
GBX for general use and steel; **GMX** for stainless steel
- Available in all popular profiles



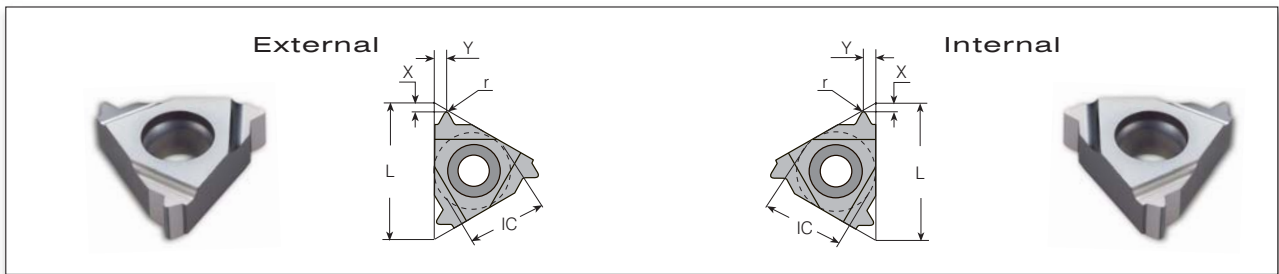
**New!
Thicker
Inserts**

4.3 mm

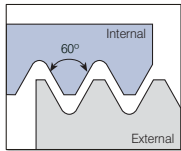


Metric

External/Internal Profiles: Partial, ISO

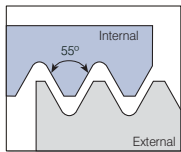


Partial 60°



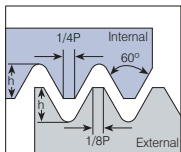
	Insert Size		Pitch		Ordering Code	Dimensions mm		
	IC	L mm	mm	tpi	Ordering Code	r	X	Y
External	3/8"	16	1.75-3.0	14-8	3XERG60...	0.27	1.2	1.7
			0.5-3.0	48-8	3XERAG60...	0.08	1.2	1.7
Internal	3/8"	16	1.75-3.0	14-8	3XIRG60...	0.16	1.2	1.7
			0.5-3.0	48-8	3XIRAG60...	0.05	1.2	1.7

Partial 55°



	Insert Size		Pitch		Ordering Code	Dimensions mm		
	IC	L mm	mm	tpi	Ordering Code	r	X	Y
External	3/8"	16	1.75-3.0	14-8	3XERG55...	0.21	1.2	1.7
			0.5-3.0	48-8	3XERAG55...	0.07	1.2	1.7
Internal	3/8"	16	1.75-3.0	14-8	3XIRG55...	0.21	1.2	1.7
			0.5-3.0	48-8	3XIRAG55...	0.07	1.2	1.7

ISO

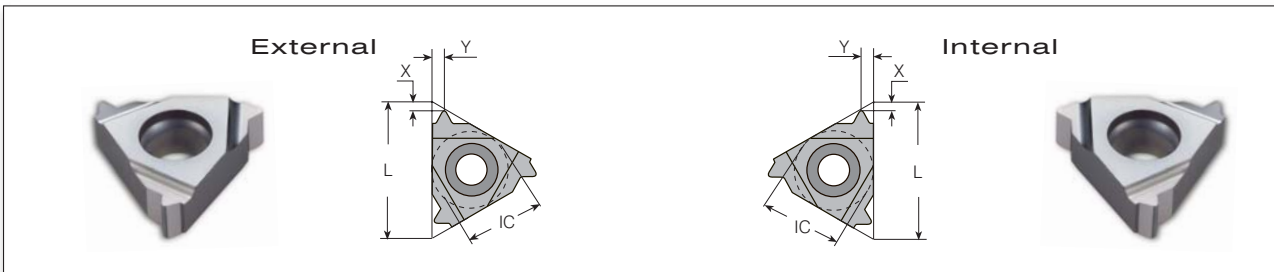


Defined by: R262 (DIN 13)
Tolerance class: 6g/6H

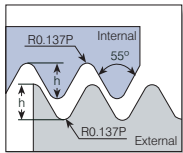
	Insert Size		Pitch		Ordering Code	Dimensions mm		
	IC	L mm	mm	tpi	Ordering Code	h min	X	Y
External	3/8"	16	0.75		3XER0.75ISO...	0.46	0.6	0.6
			0.8		3XER0.8ISO...	0.49	0.6	0.6
			1.0		3XER1.0ISO...	0.61	0.7	0.7
			1.25		3XER1.25ISO...	0.77	0.8	0.9
			1.5		3XER1.5ISO...	0.92	0.8	1.0
			1.75		3XER1.75ISO...	1.07	0.9	1.2
			2.0		3XER2.0ISO...	1.23	1.0	1.3
			2.5		3XER2.5ISO...	1.53	1.1	1.5
			3.0		3XER3.0ISO...	1.84	1.2	1.6
Internal	3/8"	16	0.75		3XIR0.75ISO...	0.43	0.6	0.6
			0.8		3XIR0.8ISO...	0.46	0.6	0.6
			1.0		3XIR1.0ISO...	0.58	0.6	0.7
			1.25		3XIR1.25ISO...	0.72	0.8	0.9
			1.5		3XIR1.5ISO...	0.87	0.8	1.0
			1.75		3XIR1.75ISO...	1.01	0.9	1.2
			2.0		3XIR2.0ISO...	1.15	1.0	1.3
			2.5		3XIR2.5ISO...	1.44	1.1	1.5
			3.0		3XIR3.0ISO...	1.73	1.1	1.5



External/Internal Profiles: BSW, UN, NPT



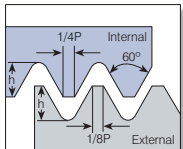
BSW



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

	Insert Size		Pitch	Ordering Code	Dimensions mm		
	IC	L mm			tpi	Ordering Code	h min
External	3/8"	16	19	3XER19W...	0.86	0.8	1.0
			14	3XER14W...	1.16	1.0	1.2
			11	3XER11W...	1.48	1.1	1.5
Internal	3/8"	16	19	3XIR19W...	0.86	0.8	1.0
			14	3XIR14W...	1.16	1.0	1.2
			11	3XIR11W...	1.48	1.1	1.5

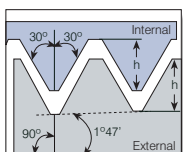
UN



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

	Insert Size		Pitch	Ordering Code	Dimensions mm		
	IC	L mm			tpi	Ordering Code	h min
External	3/8"	16	32	3XER32UN...	0.49	0.6	0.6
			28	3XER28UN...	0.56	0.6	0.7
			20	3XER20UN...	0.78	0.8	0.9
			18	3XER18UN...	0.87	0.8	1.0
			16	3XER16UN...	0.97	0.9	1.1
			14	3XER14UN...	1.11	1.0	1.2
			12	3XER12UN...	1.30	1.1	1.4
			8	3XER8UN...	1.95	1.2	1.6
Internal	3/8"	16	32	3XIR32UN...	0.51	0.6	0.6
			28	3XIR28UN...	0.52	0.6	0.7
			20	3XIR20UN...	0.73	0.8	0.9
			18	3XIR18UN...	0.81	0.8	1.0
			16	3XIR16UN...	0.92	0.9	1.1
			14	3XIR14UN...	1.05	0.9	1.2
			12	3XIR12UN...	1.22	1.1	1.4
			8	3XIR8UN...	1.83	1.1	1.5

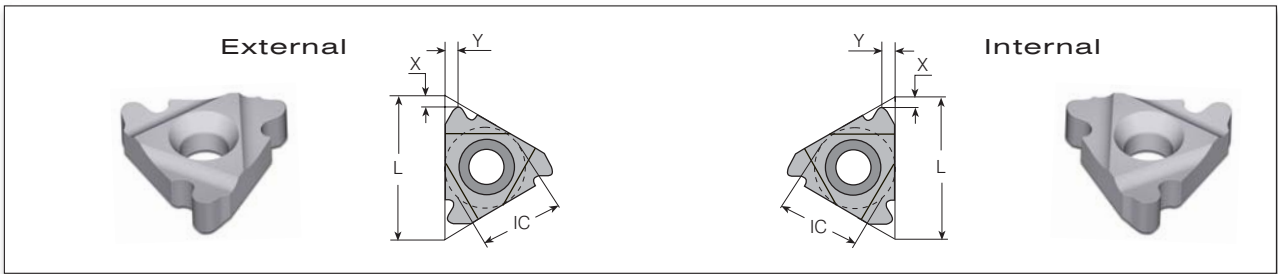
NPT



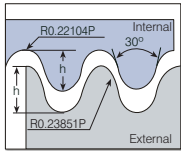
Defined by: USAS B2.1.1968
Tolerance class: Standard NPT

	Insert Size		Pitch	Ordering Code	Dimensions mm		
	IC	L mm			tpi	Ordering Code	h min
External	3/8"	16	14	3XER14NPT...	1.33	0.9	1.2
			11.5	3XER11.5NPT...	1.64	1.1	1.5
			8	3XER8NPT...	2.42	1.3	1.8
Internal	3/8"	16	14	3XIR14NPT...	1.33	0.9	1.2
			11.5	3XIR11.5NPT...	1.64	1.1	1.5
			8	3XIR8NPT...	2.42	1.3	1.8

External/Internal Profiles: Round (DIN 405)



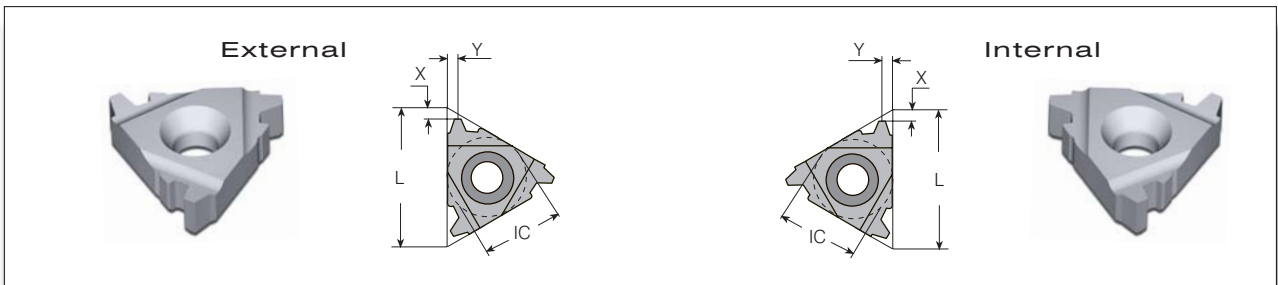
Round (DIN 405)



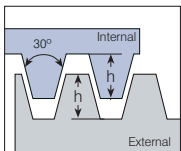
Defined by: DIN 405
Tolerance class: 7h/7H

	Insert Size		Pitch	Ordering Code	Dimensions mm		
	IC	L mm	tpi	Ordering Code	h min	X	Y
External	3/8"	16	10	3XER10RD...	1.27	1.1	1.2
			8	3XER8RD...	1.59	1.4	1.3
			6	3XER6RD...	2.12	1.5	1.7
Internal	3/8"	16	10	3XIR10RD...	1.27	1.1	1.2
			8	3XIR8RD...	1.59	1.4	1.4
			6	3XIR6RD...	2.12	1.4	1.5

External/Internal Profiles: Trapez



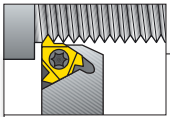
Trapez



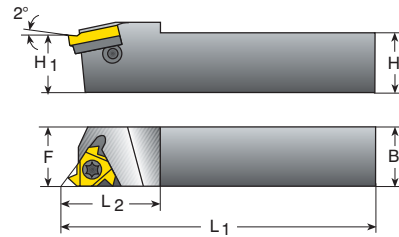
Defined by: DIN 103
Tolerance class: 7e/7H

	Insert Size		Pitch	Ordering Code	Dimensions mm		
	IC	L mm	mm	Ordering Code	h min	X	Y
External	3/8"	16	1.5	3XER1.5TR...	0.90	1.0	1.1
			2.0	3XER2.0TR...	1.25	1.1	1.3
			3.0	3XER3.0TR...	1.75	1.3	1.5
Internal	3/8"	16	1.5	3XIR1.5TR...	0.90	1.0	1.1
			2.0	3XIR2.0TR...	1.25	1.1	1.3
			3.0	3XIR3.0TR...	1.75	1.3	1.5

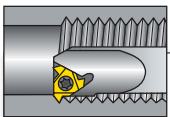
Note: Additional profiles are available by request.



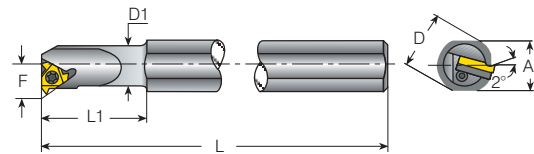
External Toolholders



Insert Size						Spare Parts				
IC	Ordering Code	H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
3/8"	AL12-3X	12	16	83.2	22	SA3TS	SY3T	K3T	YE3	Y13
	AL16-3X	16	16	100.0	20.5					
	AL20-3X	20	20	128.6	30					
	AL25-3X	25	25	153.6	30					
	AL32-3X	32	32	173.6	30					



Internal Toolholders

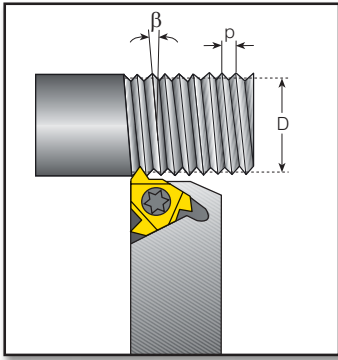


Insert Size									Spare Parts				
IC	Ordering Code	A	L	L1	D	D1	F	Min. Bore dia. mm	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
3/8"	NVRC13-3X	18.0	180	32	20	12.7	10.3	17	SN3TS	-	K3T	-	-
	NVRC16-3X	18.0	180	40	20	16.0	11.5	20					
	AVRC20-3X	18.0	180	40	20	20.0	13.4	24	SA3TS	SY3T	K3T	Y13	YE3
	AVRC25-3X	29.0	250	60	32	25.0	16.3	29					
	AVRC32-3X	29.0	250	60	32	32.0	19.6	36					
	AVRC40-3X	36.0	300	60	40	40.0	23.8	44					

The above toolholders have a 1.5° helix angle.
 Toolholders with prefix "N" cannot be used with an anvil.

The above toolholders are for RH inserts. For LH inserts, add LH to the toolholder's ordering code.

Calculating the Helix Angle β



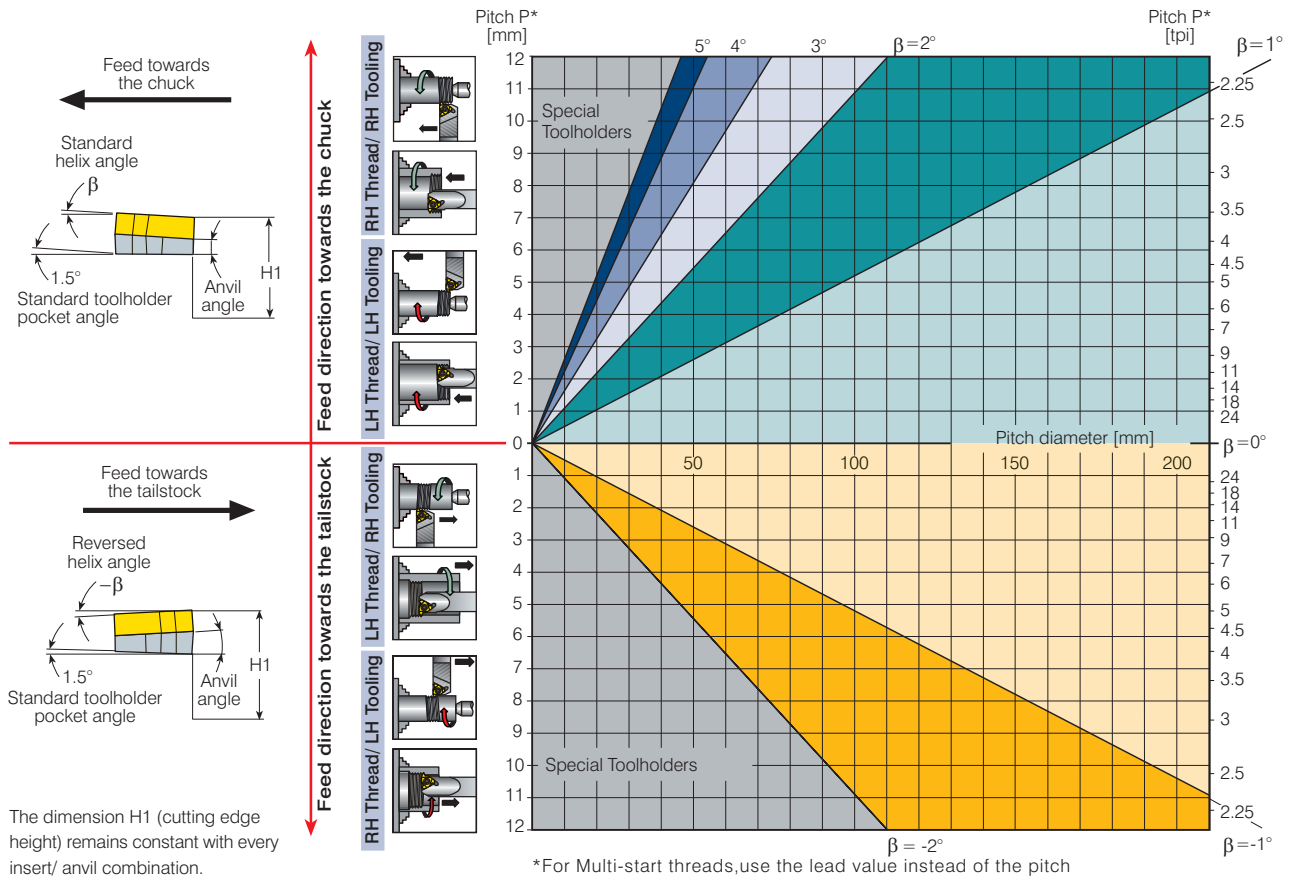
The helix angle is calculated by the following formula:

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

β - 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



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



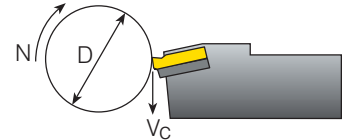
Recommended Grades and Cutting Speeds Vc [m/min]

Material	Hardness Brinell HB	Vc[m/min]			
		Coated			
		GBX	GMX		
P	Unalloyed steel	Low carbon (C=0.1-0.25 %)	125	130-225	
		Medium carbon (C=0.25-0.55 %)	150	110-185	
		High carbon (C=0.55-0.85 %)	170	100-175	
	Low alloy steel (alloying elements ≤ 5%)	Non hardened	180	85-150	
		Hardened	275	75-130	
		Hardened	350	70-125	
	High alloy steel (alloying elements > 5%)	Annealed	200	60-125	
		Hardened	325	60-110	
	Cast steel	Low alloy (alloying elements <5%)	200	75-140	
		High alloy (alloying elements >5%)	225	60-110	
M	Stainless steel Ferritic	Non hardened	200	60-125	70-150
		Hardened	330	50-110	60-125
	Stainless steel Austenitic	Austenitic	180	65-140	90-160
		Super austenitic	200	30-110	40-120
	Stainless steel Cast ferritic	Non hardened	200	65-120	90-150
		Hardened	330	45-110	65-120
	Stainless steel Cast austenitic	Austenitic	200	60-110	85-120
		Hardened	330	45-100	60-110
	High temperature alloys	Annealed (Iron based)	200	45-70	
		Aged (Iron based)	280	30-50	
Annealed (Nickel or Cobalt based)		250	20-30		
Aged (Nickel or Cobalt based)		350	15-25		
Titanium alloys	Pure 99.5 Ti	400Rm	140-200		
	α+β alloys	1050Rm	50-70		
K	Extra hard steel	Hardened & tempered	55HRc	45-60	
	Malleable cast iron	Ferritic (short chips)	130	45-175	
		Pearlitic (long chips)	230	45-175	
	Grey cast iron	Low tensile strength	180	55-170	
		High tensile strength	260	45-120	
	Nodular SG iron	Ferritic	160	95-200	
		Pearlitic	260	75-120	
	Aluminium alloys Wrought	Non aging	60	1000-1500	
		Aged	100	350-550	
	Aluminium alloys Cast	Cast	75	400-500	
Cast & aged		90	250-300		
Aluminium alloys Cast Si 13-22%		130	200-275		
Copper and copper alloys	Brass	90	200-275		
	Bronze and non leaded copper	100	150-200		

Calculation of N [RPM]

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

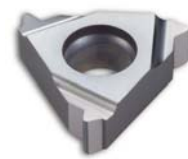
$$V_C = \frac{N \times \pi \times D}{1000}$$



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

2 Grades:

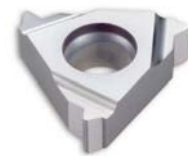
GBX



1st choice for:

- Steel
- General use

GMX



1st choice for:

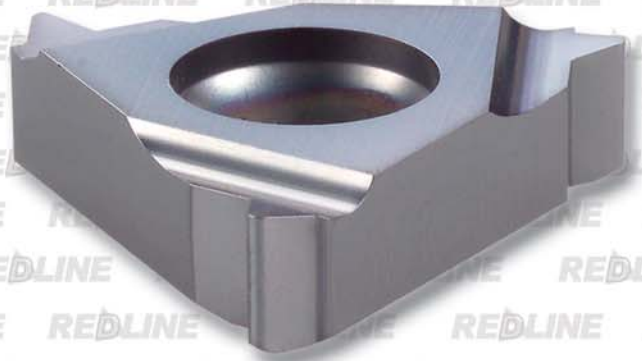
- Stainless steel

Number of Passes

Pitch	mm	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.50	3.00
	tpi	48	32	24	20	16	14	12	10	8
No. of passes		4-6	4-7	4-8	5-9	6-10	7-12	7-12	8-14	9-16

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THREADING SOLUTIONS

Vargus Ltd.

Head Office - Israel

1 Hayotsrim Street

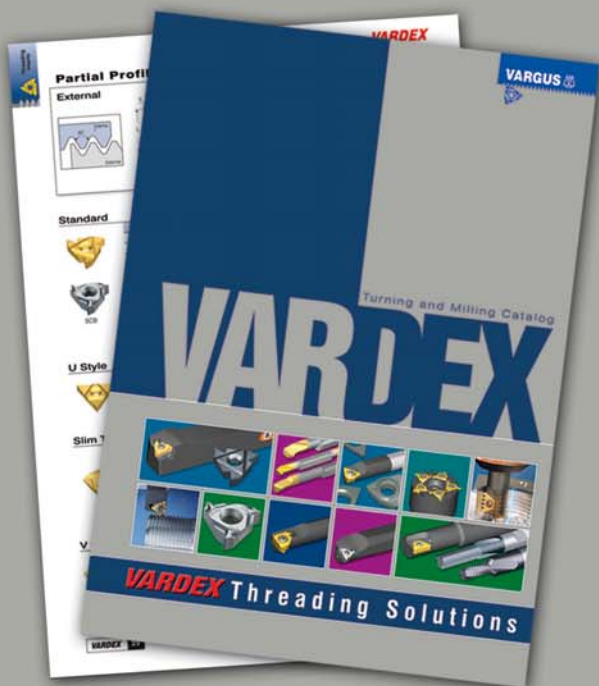
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