VARGUS

Multi plus

Multi-tooth inserts for high-volume production.

Available in three styles

M+ Style

2-3 teeth

Z+ Style

2 teeth

T+ Style

Up to 8 teeth

NEW *Improved design!*

- Fewer passes for higher productivity
- Optimal distribution of cutting load
- Longer tool life

Metric

VARDEX Threading Solutions

ISO Metric

External

M+ Style

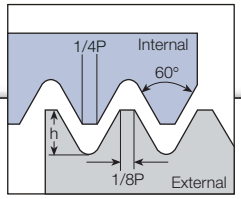
T+ Style

Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	mm		RH	h min	X	Y	RH	Toolholder
3/8"	16	1.0	3	3ER1.0ISO3M+...	0.61	1.8	2.6	YE3M	AL..-3
		1.5	2	3ER1.5ISO2M+...	0.92	1.6	2.4		
		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	YE4M	AL..-4
		2.0	2	4ER2.0ISO2M+...	1.23	2.1	3.1		
		2.0	3	4ER2.0ISO3M+...	1.23	3.2	5.1		
		2.5	2	4ER2.5ISO2M+...	1.53	2.5	3.9		
1/2"T	22	2.0	8	4ER2.0ISO8T+...	1.23	0.2	17.5	Y4T	AL..-4T

Internal

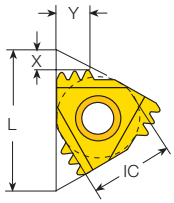
M+ Style

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	3IR1.0ISO3M+...	0.58	1.7	2.6	YI3M	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	2.0	2	4IR2.0ISO2M+...	1.15	2.0	3.1	YI4M	AVR..-4
		2.0	3	4IR2.0ISO3M+...	1.15	3.2	5.1		

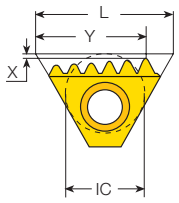


Defined by: R262 (DIN 13)
Tolerance class: 6g/6H

External

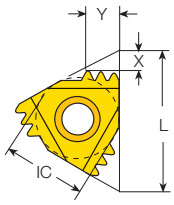


M+ Style



T+ Style

Internal



M+ Style

American UN

External

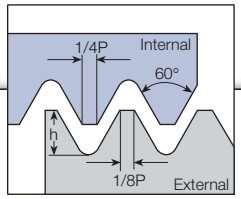
M+ Style

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	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
		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		
		10	2	4ER10UN2M+...	1.56	2.5	3.9		
5/8"	27	8	2	5ER8UN2M+...	1.95	3.1	4.9	YE5M	AL..-5M

Internal

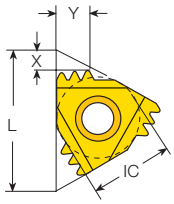
M+ Style

Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
3/8"	16	12	2	3IR12UN2M+...	1.22	2.2	3.3	YI3M	AVR..-3
		16	2	3IR16UN2M+...	0.92	1.7	2.5		
1/2"	22	16	3	4IR16UN3M+...	0.92	2.6	4.1	YI4M	AVR..-4
		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



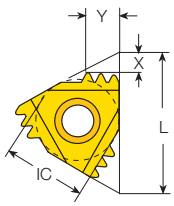
Defined by: ANSI B1.1:74
Tolerance class: 2A/2B

External



M+ Style

Internal



M+ Style

Whitworth for BSW, BSP

External

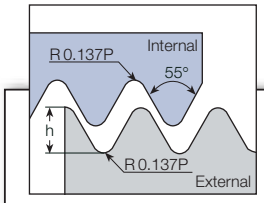
M+ Style

Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
3/8"	16	19	3	3ER19W3M+...	0.86	2.2	3.4	YE3M	AL..-3
		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		

Internal

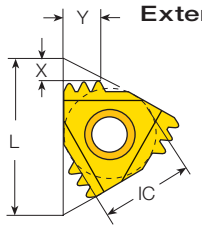
M+ Style

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



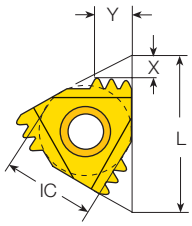
Defined by:
B.S.84:1956, DIN 259,
ISO228/1:1982
Tolerance class: Medium class A

External



M+ Style

Internal



M+ Style

NPT

External

M+ Style

Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
1/2"	22	11.5	2	4ER11.5NPT2M+...	1.64	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

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		

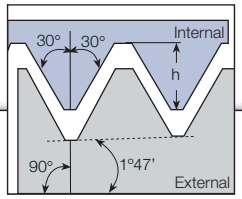
Internal

M+ Style

Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
1/2"	22	11.5	2	4IR11.5NPT2M+...	1.64	2.2	3.4	YI4M	AVR..-4
5/8"	27	11.5	3	5IR11.5NPT3M+...	1.64	3.5	5.6	YI5M	AVR..-5M
		8	2	5IR8NPT2M+...	2.42	3.1	4.9		

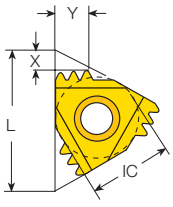
Z+ Style

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		

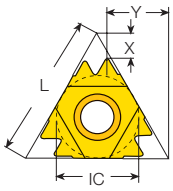


Defined by: USAS B2.1:1968
Tolerance class: Standard NPT

External

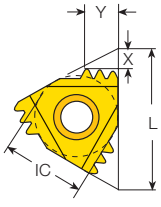


M+ Style

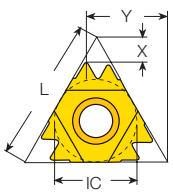


Z+ Style

Internal



M+ Style



Z+ Style

API Buttress Casing

External

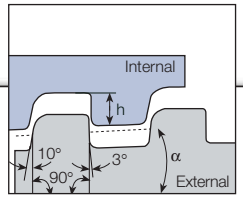
T+ Style

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

Internal

T+ Style

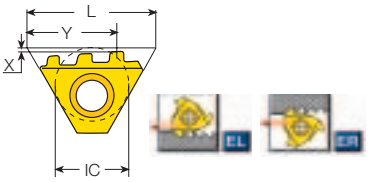
Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
1/2"T	22	5	3	4IR5BUT753T+...	1.55	0.1	16.1	Y4T	AVR..-4T



α = arctg (IPF/24)

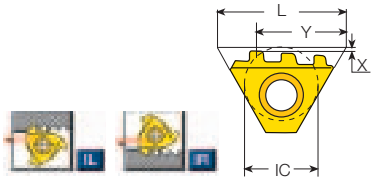
Defined by: STD.5B.1979
Tolerance class: Standard API

External



T+ Style

Internal



T+ Style

API Round Casing & Tubing

External

M+ Style

T+ Style

Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
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		
1/2"T	22	8	3	4ER8APIRD3T+...	1.81	0.2	14.2	Y4T	AL..-4T
		8	5	4ER8APIRD5T+...	1.81	0.2	16.7		

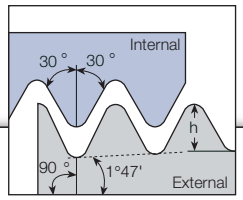
Internal

M+ Style

Z+ Style

T+ Style

Insert Size		Pitch	Teeth	Ordering Code	Dimensions mm			Anvil	
IC	L mm	tpi		RH	h min	X	Y	RH	Toolholder
1/2"	22	10	2	4IR10APIRD2M+...	1.41	2.4	3.7	YI4M	AVR..-4
5/8"	27	10	3	5IR10APIRD3M+...	1.41	3.9	6.3	YI5M	AVR..-5M
		8	2	5IR8APIRD2M+...	1.81	2.9	4.5		
1/2"	22	8	2	4IR8APIRD2Z+...	1.81	3.7	9.6	YI4Z	AVR..-4Z
1/2"T	22	8	5	4IR8APIRD5T+...	1.81	0.2	16.7	Y4T	AVR..-4T



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

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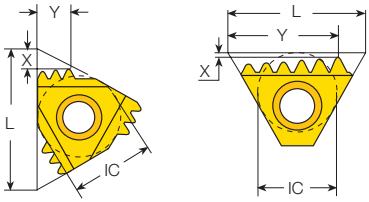
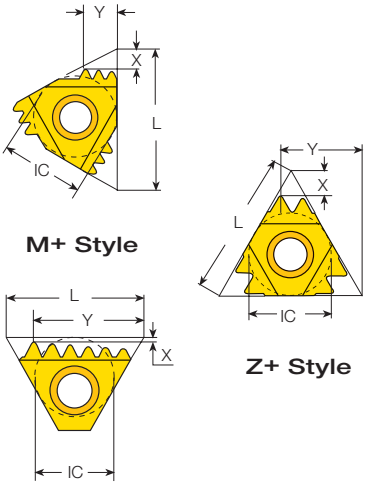


M+ Style **T+ Style**

Internal

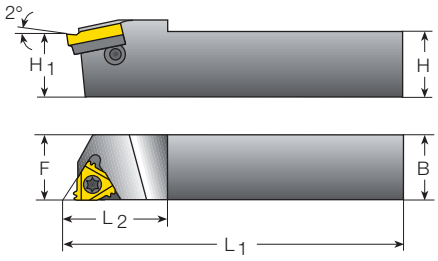


M+ Style

Z+ Style

T+ Style

External Toolholders

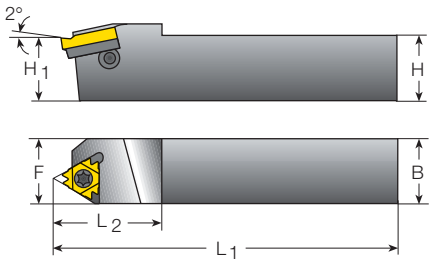


M Style

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

All M Style toolholders have a 1.5° helix angle.

External Toolholders

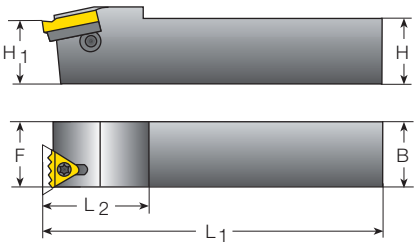


Z Style

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

All Z Style toolholders have a 1.5° helix angle.

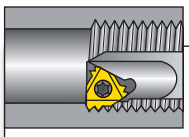
External Toolholders



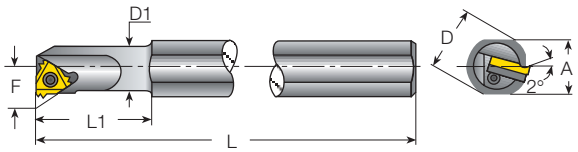
T Style

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

All T Style toolholders have a 0° helix angle.



Internal Toolholders



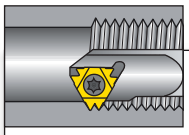
M Style

Insert Size	Ordering Code	Dimensions mm						Min. bore dia
IC		A	L	L1	D	D1	F	mm
5/8"M	AVR32-5M	29	250	60	32	32	22.4	40
	AVR40-5M	36	300	60	40	40	26.4	48
	AVR50-5M	45	350	75	50	50	31.4	58
	AVR60-5M	54	400	75	60	60	36.4	69

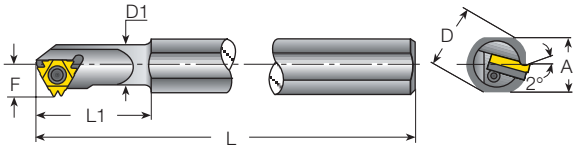
Spare Parts

Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
SA5T	SY5T	K5T	YI5M	YE5M

All M style toolholders have a 1.5° helix angle.
Holders with coolant channel available as standard. Sample order: AVRC 32-5M



Internal Toolholders



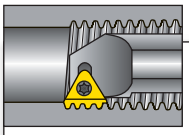
Z Style

Insert Size	Ordering Code	Dimensions mm						Min. bore dia
IC		A	L	L1	D	D1	F	mm
1/2"Z	AVR32-4Z	29	250	60	32	32	25.5	42
	AVR40-4Z	36	300	60	40	40	29.5	51
5/8"Z	NVR32-5Z	29	250	60	32	32	24.7	42
	AVR40-5Z	36	300	60	40	40	29.4	53
	AVR50-5Z	45	350	75	50	50	34.3	63
	AVR60-5Z	54	400	75	60	60	39.3	74

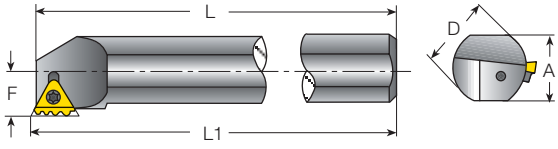
Spare Parts

Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
SA4T	SY4T	K4T	YI4Z	YE4Z
SA5T	SY5T	K5T	YI5Z	YE5Z

All Z style toolholders have a 1.5° helix angle.
Holders with coolant channel available as standard. Sample order: AVRC 32-4Z



Internal Toolholders



T Style

Insert Size	Ordering Code	Dimensions mm					Min. bore dia
IC		A	L	L1	D	F	mm
1/2"T	AVR40-4T	36	300	302	40	23.3	60
	AVR50-4T	45	350	352	50	28.3	70
	AVR60-4T	54	400	402	60	33.3	80

Spare Parts

Insert Screw	Anvil Screw	Torx Key	Anvil Torx Key	Anvil RH/LH
SA4T	SY4K2	K4T	K2	Y4T

All T style toolholders have a 0° helix angle.
Holders with coolant channel available as standard. Sample order: AVRC 40-4T

For the complete list of VARDEX toolholders, see our main catalogue.

Number of Passes and Depth of Cut Per Pass for MultiPlus Inserts

NEW!

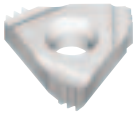
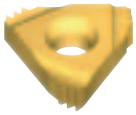
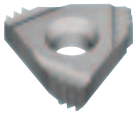
Standard	Insert Type	Insert Size		Pitch	Teeth	Ordering Code	Passes	Depth of cut per pass			
		IC	L mm			RH		1	2	3	4
ISO External	M+	3/8"	16	1.0 mm	3	3ER1.0ISO3M+...	2	0.32	0.3		
				1.5 mm	2	3ER1.5ISO2M+...	3	0.34	0.3	0.29	
				2.0 mm	2	3ER2.0ISO2M+...	3	0.45	0.4	0.38	
	M+	1/2"	22	1.5 mm	3	4ER1.5ISO3M+...	2	0.48	0.45		
				2.0 mm	2	4ER2.0ISO2M+...	3	0.45	0.4	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
	T+	1/2"T	22	2.0 mm	8	4ER2.0ISO8T+...	1	1.23			
ISO Internal	M+	3/8"	16	1.0 mm	3	3IR1.0ISO3M+...	2	0.3	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	
	M+	1/2"	22	2.0 mm	2	4IR2.0ISO2M+...	3	0.42	0.37	0.36	
				2.0 mm	3	4IR2.0ISO3M+...	2	0.59	0.56		
UN External	M+	3/8"	16	20 tpi	3	3ER20UN3M+...	2	0.41	0.38		
				18 tpi	3	3ER18UN3M+...	2	0.45	0.42		
				16 tpi	2	3ER16UN2M+...	3	0.36	0.32	0.3	
				14 tpi	2	3ER14UN2M+...	3	0.43	0.38	0.37	
				12 tpi	2	3ER12UN2M+...	3	0.47	0.43	0.4	
	M+	1/2"	22	16 tpi	3	4ER16UN3M+...	2	0.51	0.47		
				12 tpi	2	4ER12UN2M+...	3	0.47	0.43	0.4	
				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	0.4	0.36
	M+	5/8"	27	8 tpi	2	5ER8UN2M+...	4	0.56	0.5	0.48	0.41
UN Internal	M+	3/8"	16	12 tpi	2	3IR12UN2M+...	3	0.45	0.39	0.38	
				16 tpi	2	3IR16UN2M+...	3	0.33	0.3	0.28	
	M+	1/2"	22	16 tpi	3	4IR16UN3M+...	2	0.47	0.44		
				12 tpi	2	4IR12UN2M+...	3	0.45	0.39	0.38	
				12 tpi	3	4IR12UN3M+...	2	0.63	0.59		
	M+	5/8"	27	8 tpi	2	5IR8UN2M+...	4	0.52	0.47	0.44	0.38
BSW External	M+	3/8"	16	19 tpi	3	3ER19W3M+...	2	0.45	0.41		
				14 tpi	2	3ER14W2M+...	3	0.43	0.38	0.35	
	M+	1/2"	22	14 tpi	3	4ER14W3M+...	2	0.6	0.56		
				11 tpi	2	4ER11W2M+...	4	0.44	0.38	0.36	0.3
BSW Internal	M+	3/8"	16	14 tpi	2	3IR14W2M+...	3	0.43	0.38	0.35	
	M+	1/2"	22	11 tpi	2	4IR11W2M+...	4	0.44	0.38	0.36	0.3
NPT External	M+	1/2"	22	11.5 tpi	2	4ER11.5NPT2M+...	4	0.46	0.43	0.42	0.4
	M+	5/8"	27	11.5 tpi	3	5ER11.5NPT3M+...	4	0.48	0.43	0.42	0.38
				8 tpi	2	5ER8NPT2M+...	4	0.72	0.64	0.6	0.53
	Z+	1/2"	22	11.5 tpi	2	4ER11.5NPT2Z+...	4	0.46	0.43	0.42	0.4
				8 tpi	2	4ER8NPT2Z+...	4	0.72	0.64	0.6	0.53
NPT Internal	M+	1/2"	22	11.5 tpi	2	4IR11.5NPT2M+...	4	0.46	0.43	0.42	0.4
	M+	5/8"	27	11.5 tpi	3	5IR11.5NPT3M+...	4	0.48	0.43	0.42	0.38
				8 tpi	2	5IR8NPT2M+...	4	0.72	0.64	0.6	0.53
	Z+	1/2"	22	11.5 tpi	2	4IR11.5NPT2Z+...	4	0.46	0.43	0.42	0.4
				8 tpi	2	4IR8NPT2Z+...	4	0.72	0.64	0.6	0.53
API BUT External	T+	1/2"	22	5 tpi	3	4ER5BUT753T+...	3	0.57	0.52	0.5	
API BUT Internal	T+	1/2"	22	5 tpi	3	4IR5BUT753T+...	3	0.57	0.52	0.5	
API RD External	M+	5/8"	27	10 tpi	3	5ER10APIRD3M+...	2	0.74	0.69		
				8 tpi	2	5ER8APIRD2M+...	3	0.66	0.6	0.58	
	T+	1/2"	22	8 tpi	3	4ER8APIRD3T+...	2	0.94	0.9		
				8 tpi	5	4ER8APIRD5T+...	2	0.94	0.9		
API RD Internal	M+	1/2"	22	10 tpi	2	4IR10APIRD2M+...	3	0.52	0.46	0.45	
	M+	5/8"	27	10 tpi	3	5IR10APIRD3M+...	3	0.48	0.48	0.47	
				8 tpi	2	5IR8APIRD2M+...	3	0.66	0.6	0.58	
	Z+	1/2"	22	8 tpi	2	4IR8APIRD2Z+...	3	0.66	0.6	0.58	
	T+	1/2"	22	8 tpi	5	4IR8APIRD5T+...	2	0.94	0.9		

Multi plus

Recommended Grades and Cutting Speeds Vc [m/min]

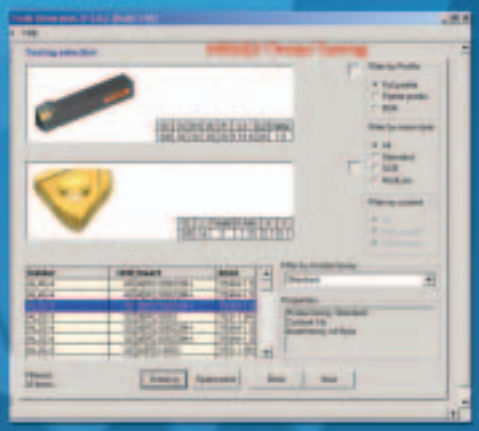
	Material		Hardness Brinell HB	Vc [m/min]			
				Coated			Uncoated
				VTX	VM7	VKX	VK2
P	Unalloyed steel	Medium carbon (0.25-0.55 %)	150	100-175		120-180	
P	Low alloy steel	Non hardened	180	85-145		100-155	
M	Stainless steel	Austenitic	200	90-140	90-160	70-100	
K	Aluminium alloys	Non aging	60	100-365		100-240	100-250

Grades and Applications

Grade	Application	Sample
VTX	A tough sub-micron substrate with TiAlN coating for general use. Provides fracture toughness and excellent wear resistance.	
VM7	Premium grade for stainless steel. Extra tough coating. Special multi-layer PVD coating guaranteeing higher resistance to wear in Stainless Steel application.	
VKX	High hardness substrate for steels, stainless steel, non ferrous & aluminium. Recommended for rigid machine conditions. TiN coating.	
VK2	The uncoated grade for nonferrous, aluminium, high temperature and titanium alloys.	

TT Gen - Thread Turning Tool Selection Software

VARGUS' new TT Gen software guides you to the right thread turning tool and the best cutting conditions for your application in seconds. For TT Gen updates, see www.vargus.com



Take the guesswork out of threading!

136EE
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Edition 1

VARDEX
THREADING SOLUTIONS

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