WE NEVER STOP...

Turning

Valenite®

Valenite®

Dear Valued Customer,

WE NEVER STOP...

Working
To keep you on the cutting edge of technology, productivity, cost savings and service with new tools and dedicated people.

Supporting
You to stay competitive in today's global marketplace, we never stop finding ways to build the most effective relationships… personal, machine, workflow...

Developing
We have increased our product range in turning by over 40%.

This comprehensive turning catalog is a demonstration of our commitment to you. It is engineered to help you enhance your output as we never stop thinking of new ways to increase your productivity.

Make us prove it!

Your Valenite Team

WE NEVER STOP...

Thinking

Listening

Working

Valenite®

Inventing

Improving

Performing

Producing

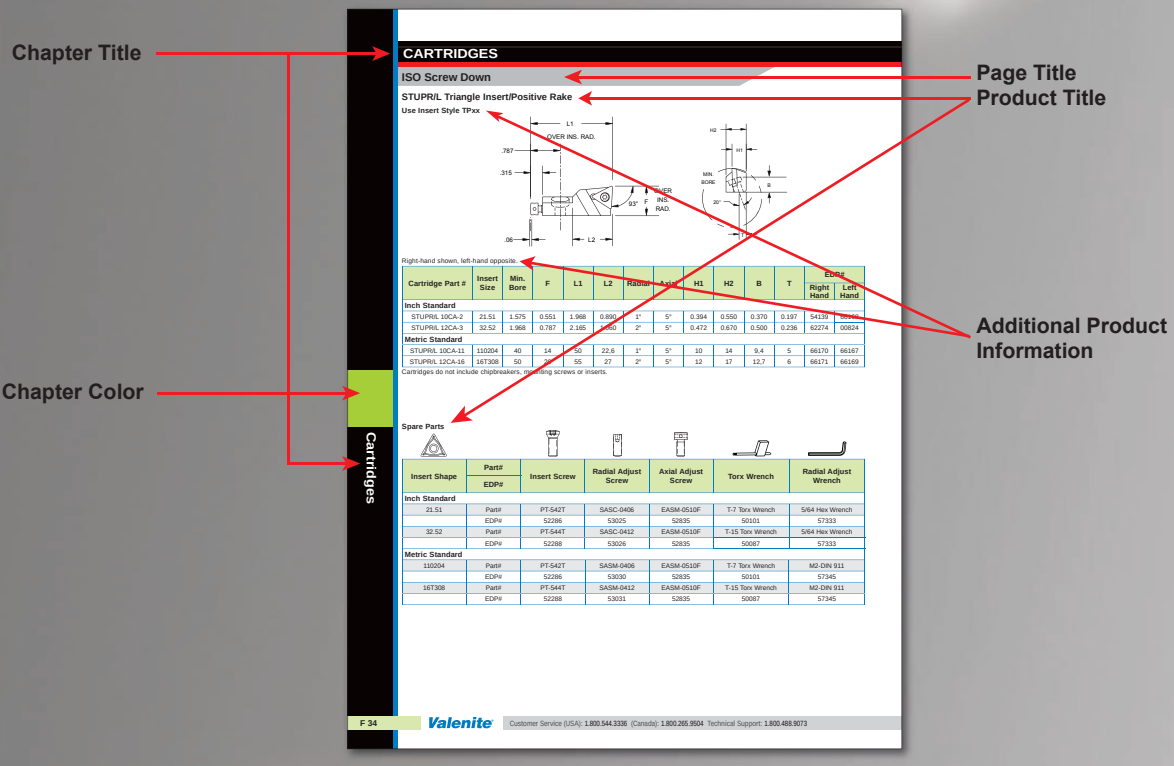
Advancing

How To Use Our Catalog

We never stop making things easier for you...

This catalog has been organized into 9 chapters and each chapter is identified by a different color.

Example: Cartridges = Green Chapter Color



At Valenite

WE NEVER STOP...

Advancing

- **V-Thread Laydown Threading System:**
  First choice for all types of threading applications
  Increased productivity with PVD TiAlN grade 922
  New B-style inserts offer precision tolerances combined with exceptional chip control

- **V-Loc Threading and Grooving System:**
  New ValPro system coated and uncoated grades for increased productivity
  Strength and rigidity to handle tough operations as well as light finishing cuts
  One system for grooving and threading reduces tooling requirements

Supporting

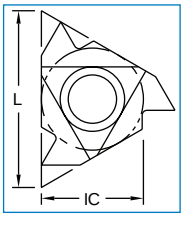
We can increase your productivity by 20%. Make us prove it!

Table of Contents

ValTHREAD™ Insert Designation

16	E	R	B	12	UN	M

L	IC
06	5/32
08	3/16
11	1/4
16	3/8
22	1/2
27	5/8
22U*	1/2U
27U*	5/8U



E	External
I	Internal

R	Right Hand
L	Left Hand

M	Chipbreaker—Utility
B	Chipbreaker—Precision

Partial Profile Insert Type			
Type	L	Pitch Range (mm)	Pitch Range TPI
A	06	0.5-1.25	48-20
A	08	0.5-1.5	48-20
U		1.75-2	14-11
A	11	0.5-1.5	48-16
A	16	0.5-1.5	48-16
AG		0.5-3	48-8
G		1.75-3	14-8
N	22	3.5-5	7-5
U		5.5-8	4.5-3.25
Q	27	5.5-6	4.5-4
U		6.5-9	4-2.75
V		6-10	4-2.5

Full Profile Pitch Range	
(mm)	TPI
0,35-6,0	72-2

Partial Profiles	
60	60° Partial Profile
55	55° Partial Profile

Multi-Tooth Style
# of Teeth

Full Profile Thread Standards	
ISO	ISO Metric
UN	American UN
W	Whitworth, BSW
NPT	American National Pipe Thread
NPTF	American National Pipe Thread (Dryseal)
ACME	American Acme
STACME	American Stub Acme
UNJ	Controlled Root Radius
RD	Round Din 405
API	API Round API Buttress Casing API Rotary Shoulder
ABUT	American Buttress

* Note: U Style Insert and Toolholder Pocket

ValTHREAD™ Toolholder Designation

S	E	R	2020	K	16	C

Clamping Method

S = Screw

E	External
I	Internal

R	Right Hand
L	Left Hand

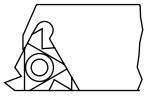
Cross Section External Toolholders

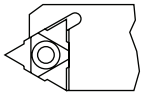
Square Shank:
Inch: 1500 = 1.5" x 1.5"
Metric: 2020 = 20mm x 20mm

Internal Toolholders

Round Shank:
Metric: 0025 = 25mm Diameter
Inch: 0750 = 0.75" Diameter

Standard Style Insert and Toolholder Pocket





U-Style Insert and Toolholder Pocket

Toolholder Length

	mm	Inch
D	60	2.5
F	80	3.25
H	100	4.0
K	125	5.0
L	140	5.5
M	150	6.0
P	170	7.0
R	200	8.0
S	250	10.0
T	300	12.0
U	350	14.0
V	400	16.0

Special Features

B	Coolant Hole
CB	Carbide Shank with Coolant Hole
O	Offset Style
A	API (Oil)
D	Drop Head

Pocket Size

L (mm)	IC
06	5/32
08	3/16
11	1/4
16	3/8
22	1/2
27	5/8
22U	1/2U*
27U	5/8U*

* Note: U-Style Insert and Toolholder Pocket

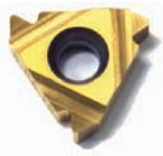
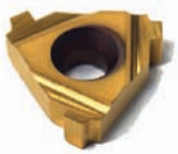
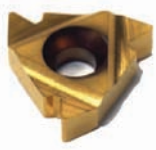
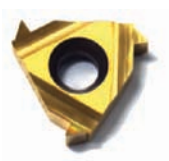
ValTHREAD™ Insert Geometry Application Data

Threading System

Insert Style	Description	Insert Style	Description
60	**Threading** Partial Profile Non-Cresting 60° Page E6	**NPT**	**Threading** American National Pipe Thread 60° Page E15
55	**Threading** Partial Profile Non-Cresting 55° Page E8	**NPTF**	**Threading** American NPT Dryseal 60° Page E17
UN	**Threading** American UN 60° Page E9	**ISO**	**Threading** ISO - Metric 60° Page E18
UNJ	**Threading** Controlled Root Radius 60° Page E14	**ACME**	**Threading** American Acme Page E22

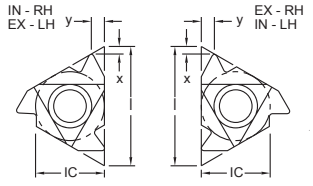
ValTHREAD™ Insert Geometry Application Data

Threading System

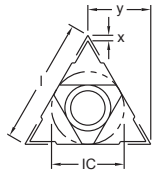
Insert Style	Description	Insert Style	Description
STACME 	**Threading** American Stub Acme Page E24	**APIRD** 	**Threading** API Round Page E29
W 	**Threading** Whitworth 55° Page E26	**BUT** 	**Threading** API Buttress Casing Page E30
RD 	**Threading** Round DIN 405 Page E29	**API** 	**Threading** API Rotary Shoulder Page E30
ABUT 	**Threading** American Buttress Thread Page E31	**MULTI** 	**Threading** UN, ISO, and API Round Page E28

ValTHREAD™ Product Offering

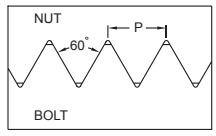
Partial Profiles - 60° - External



Standard Style (1)



U-Style (2)



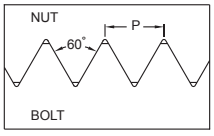
Part Number		Dimensions						Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y	R							
Right Hand	Left Hand	l (mm)	Inch	Inch	mm	mm	Inch		VC5	VC29	VC901	VC905	VC929	VC942
11 ER A60		.250 (11)	0.031	0.035	0,8	0,9	0.002	48-16	07995	13308		01812	01813	
	11 EL A60		0.031	0.035	0,8	0,9	0.002	48-16					01862	
16 ER A60		.375 (16,5)	0.031	0.035	0,8	0,9	0.002	48-16	08001	08002	01820	01821	01822	10948
	16 EL A60		0.031	0.035	0,8	0,9	0.002	48-16				01864	15443	
16 ER AG60			0.047	0.067	1,2	1,7	0.002	48-8	08004	08005	01825	01826	01827	
	16 EL AG60		0.047	0.067	1,2	1,7	0.002	48-8				01818	01866	
16 ER G60			0.047	0.067	1,2	1,7	0.007	14-8	08007		01829	01830	01831	
	16 EL G60		0.047	0.067	1,2	1,7	0.007	14-8					01867	
22 ER N60		.500 (22,5)	0.067	0.098	1,7	2,5	0.013	7 -5	08015			01848	01849	
	22 EL N60		0.067	0.098	1,7	2,5	0.013	7 - 5					16875	
22 ER L U60			0.024	0.433	0,6	11	0.011	4.5-3.25	08014				01846	
27 ER Q60		.625 (27,5)	0.083	0.122	2,1	3,1	0.025	4.5-4				01856	01857	
	27 EL Q60		0.083	0.122	2,1	3,1	0.025	4.5-4					01873	
27 ER L U60			0.039	0.539	1,0	13,7	0.011	4-2.75					01855	

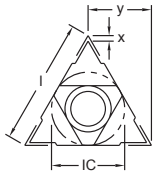
Partial Profiles - 60° - Internal

Part Number		Dimensions						Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y	R							
Right Hand	Left Hand	l (mm)	Inch	Inch	mm	mm	Inch		VC5	VC29	VC901	VC905	VC929	VC942
06 IR A60		.156 (6,9)	0.024	0.024	0,6	0,6		48-20			01807			10945
08 IR A60		.187 (8,7)	0.024	0.028	0,6	0,7		48-20			01809			14083
	08 IL A60		0.024	0.028	0,6	0,7		48-20			08816			08820
08 IR L U60			0.031	0.157	0,8	4,0		14-11			01811			
11 IR A60		.250 (11)	0.031	0.035	0,8	0,9	0.002	48-16	07996	07997		01816	01817	
	11 IL A60		0.031	0.035	0,8	0,9	0.002	48-16					01815	
16 IR A60		.375 (16,5)	0.031	0.035	0,8	0,9	0.002	48-16			01835	01836	01837	14084
	16 IL A60		0.031	0.035	0,8	0,9	0.002	48-16					01832	
16 IR AG60			0.047	0.067	1,2	1,7	0.002	48-8	08010	08011	01839	01840	01841	10951
	16 IL AG60		0.047	0.067	1,2	1,7	0.002	48-8				01833	16133	
16 IR G60			0.047	0.067	1,2	1,7	0.005	14-8	08012	08013	01842	01843	01844	
	16 IL G60		0.047	0.067	1,2	1,7	0.005	14-8					16145	
22 IR N60		.500 (22,5)	0.067	0.098	1,7	2,5	0.009	7-5	08018	08019		01852	01853	
	22 IL N60		0.067	0.098	1,7	2,5	0.009	7-5				17057	17058	
22 IR L U60			0.024	0.433	0,6	11	0.011	4.5-3.25				01850	01851	
27 IR Q60		.625 (27,5)	0.083	0.122	2,1	3,1	0.012	4.5-4				01860	01861	
	27 IL Q60		0.083	0.122	2,1	3,1	0.012	4.5-4					17478	
27 IR L U60			0.039	0.539	1,0	13,7	0.011	4-2,75				01858	01859	

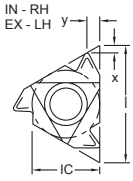
*U-Style inserts are neutral hand and require a U-Style Pocket Toolholder.

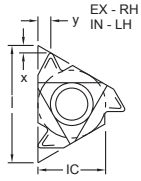
Partial Profiles - 60° - Chipbreaker - External





U-Style (2)





Standard Style (1)

Part Number		Dimensions						Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y	R							
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm	Inch		VC5	VC29	VC901	VC905	VC929	VC942
16 ERB A 60*		.375 (16,5)	0.031	0.035	0,8	0,9	0.002	48-16					08821	
16 ERB AG 60*			0.047	0.067	1,2	1,7	0.002	48-8					08819	
16 ERB G 60*			0.047	0.067	1,2	1,7	0.002	48-8					08823	
22 ERM N 60		.500 (22,5)	0.067	0.098	1,7	2,5	0.013	7-5				01763		

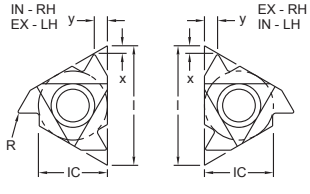
Partial Profiles - 60° - Chipbreaker - Internal

Part Number		Dimensions						Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y	R							
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm	Inch		VC5	VC29	VC901	VC905	VC929	VC942
06 IRM A60		.156 (6,9)	0.024	0.024	0,6	0,6	0.002	48-20			01748			
08 IRM A60		.187 (8,7)	0.024	0.028	0,6	0,7	0.002	48-20			01749			
11 IRM A60		.250 (11)	0.031	0.035	0,8	0,9	0.002	48-16				01750	07895	
16 IRB AG 60*		.375 (16,5)	0.047	0.067	1,2	1,7	0.007	48-8					10922	
16 IRB G 60*		.375 (16,5)	0.047	0.067	1,2	1,7	0.007	14-8					10923	

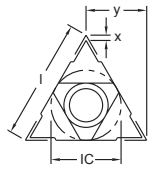
* B-Style inserts have a ground profile and pressed-in chipform

ValTHREAD™ Product Offering

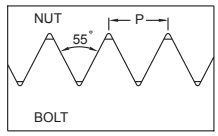
Partial Profiles - 55° - External



Standard Style (1)



U-Style (2)



Part Number		Dimensions						Pitch TPI	Available Grades-EDP#				
		I.C. (in.)	X	Y	x	y	R						
Right Hand	Left Hand	l (mm)	Inch	Inch	mm	mm	Inch		VC5	VC29	VC901	VC905	VC929
11 ER A55		.250 (11)	0.031	0.035	0,8	0,9	0.002	48-16					13300
	11 EL A55		0.031	0.035	0,8	0,9	0.002	48-16					11890
16 ER A55		.375 (16,5)	0.031	0.035	0,8	0,9	0.002	48-16				01819	15877
	16 EL A55		0.031	0.035	0,8	0,9	0.002	48-16					15440
16 ER AG55			0.047	0.067	1,2	1,7	0.002	48-8				01823	01824
16 ER G55			0.047	0.067	1,2	1,7	0.008	14-8				01828	15878
	16 EL G55		0.047	0.067	1,2	1,7	0.008	14-8				15446	15447
22 ER N55		.500 (22,5)	0.067	0.098	1,7	2,5	0.017	7-5				01847	16956
	22 EL N55		0.067	0.098	1,7	2,5	0.017	7-5					16873
22 ER L U55*			0.035	0.433	0,9	11	0.024	4.5-3.25					16953
27 ER Q55		.625 (27,5)	0.079	0.114	2,0	2,9	0.024	4.5-4					17421
	27 EL Q55		0.079	0.114	2,0	2,9	0.024	4.5-4					17370
27 ER L U55			0.047	0.539	1,2	13,7	0.024	4-2.75					17418

*U-Style inserts are neutral hand and require a U-Style Pocket Toolholder.

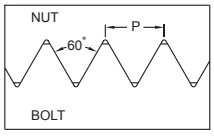
Partial Profiles - 55° - Internal

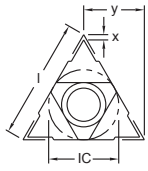
Part Number		Dimensions						Pitch TPI	Available Grades-EDP#				
		I.C. (in.)	X	Y	x	y	R						
Right Hand	Left Hand	l (mm)	Inch	Inch	mm	mm	Inch		VC5	VC29	VC901	VC905	VC929
08 IR A55		.187 (8,7)	0.024	0.028	0,6	0,7		48-20			01808		
	08 IL A55		0.024	0.028	0,6	0,7		48-20			08809		
11 IR A55		.250 (11)	0.031	0.035	0,8	0,9	0.002	48-16				15213	
	11 IL A55		0.031	0.035	0,8	0,9	0.002	48-16					14933
16 IR A55		.375 (16,5)	0.031	0.035	0,8	0,9	0.002	48-16				16571	16572
	16 IL A55		0.031	0.035	0,8	0,9	0.002	48-16					16137
16 IR AG55			0.047	0.067	1,2	1,7	0.002	48-8				01838	01868
	16 IL AG55		0.047	0.067	1,2	1,7	0.002	48-8					16130
16 IR G55			0.047	0.067	1,2	1,7	0.008	14-8				01869	16576
22 IR N55		.500 (22,5)	0.067	0.098	1,7	2,5	0.017	7-5				01872	17150
	22 IL N55		0.067	0.098	1,7	2,5	0.017	7-5					17053
22 IR L U55*			0.035	0.433	0,9	11	0.024	4.5-3.25				17146	
27 IR Q55		.625 (27,5)	0.079	0.114	2,0	2,9	0.024	4.5-4					17527
	27 IL Q55		0.079	0.114	2,0	2,9	0.024	4.5-4					17475
27 IR L U55			0.047	0.539	1,2	13,7	0.024	4-2.75					17523

*U-Style inserts are neutral hand and require a U-Style Pocket Toolholder.

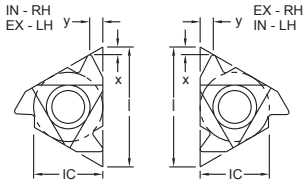
ValTHREAD™ Product Offering

UN - 60° - External

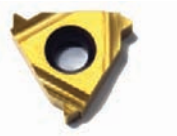




U-Style (2)



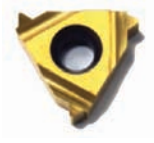
Standard Style (1)

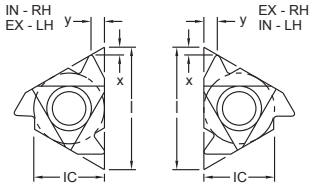


Part Number		Dimensions					Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y							
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC901	VC905	VC929	VC942
11 ER 32 UN		.250 (11)	0.024	0.024	0,6	0,6	32					01892	
16 ER 72 UN			0.031	0.016	0,8	0,4	72					01950	
16 ER 64 UN			0.031	0.016	0,8	0,4	64					16098	
16 ER 56 UN			0.028	0.016	0,7	0,4	56					01948	
16 ER 48 UN			0.024	0.024	0,6	0,6	48					16074	
16 ER 40 UN			0.024	0.024	0,6	0,6	40				01945	01946	
	16 EL 40 UN		0.024	0.024	0,6	0,6	40					15770	
16 ER 36 UN			0.024	0.024	0,6	0,6	36				01943	01944	
	16 EL 36 UN		0.024	0.024	0,6	0,6	36					15758	
16 ER 32 UN			0.024	0.024	0,6	0,6	32	08061	08062		01941	01942	
	16 EL 32 UN		0.024	0.024	0,6	0,6	32				15745	15746	
16 ER 28 UN			0.024	0.028	0,6	0,7	28				01939	01940	
	16 EL 28 UN		0.024	0.028	0,6	0,7	28					15726	
16 ER 27 UN			0.028	0.031	0,7	0,8	27				16035	01938	
	16 EL 27 UN		0.028	0.031	0,7	0,8	27					15718	
16 ER 24 UN			0.028	0.031	0,7	0,8	24		08058		01936	01937	
	16 EL 24 UN		0.028	0.031	0,7	0,8	24					02043	
16 ER 20 UN			0.031	0.035	0,8	0,9	20		08056		01934	01935	
	16 EL 20 UN		0.031	0.035	0,8	0,9	20					02041	
16 ER 18 UN		.375 (16,5)	0.031	0.039	0,8	1,0	18		08054		01932	01933	
	16 EL 18 UN		0.031	0.039	0,8	1,0	18					02040	
16 ER 16 UN			0.035	0.043	0,9	1,1	16	08051	08052		01929	01930	
	16 EL 16 UN		0.035	0.043	0,9	1,1	16				01914	01915	
16 ER 14 UN			0.039	0.047	1,0	1,2	14				01927	01928	
	16 EL 14 UN		0.039	0.047	1,0	1,2	14				15593	02039	
16 ER 13 UN			0.039	0.051	1,0	1,3	13				01925	01926	
	16 EL 13 UN		0.039	0.051	1,0	1,3	13					15566	
16 ER 12 UN			0.043	0.055	1,1	1,4	12		08048		01923	01924	
	16 EL 12 UN		0.043	0.055	1,1	1,4	12				01912	01913	
16 ER 11.5 UN			0.043	0.059	1,1	1,5	11.5					01920	
	16 EL 11.5 UN		0.043	0.059	1,1	1,5	11.5					15536	
16 ER 11 UN			0.043	0.059	1,1	1,5	11				01921	01922	
	16 EL 11 UN		0.043	0.059	1,1	1,5	11					15518	
16 ER 10 UN			0.043	0.059	1,1	1,5	10				01917	01918	
	16 EL 10 UN		0.043	0.059	1,1	1,5	10					15502	
16 ER 9 UN			0.047	0.067	1,2	1,7	9					16119	
	16 EL 9 UN		0.047	0.067	1,2	1,7	9					15865	
16 ER 8 UN			0.047	0.063	1,2	1,6	8		16113		01951	01952	
	16 EL 8 UN		0.047	0.063	1,2	1,6	8				01916	02044	

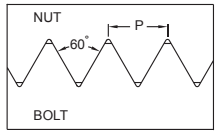
ValTHREAD™ Product Offering

UN - 60° - External





Standard Style (1) U-Style (2)

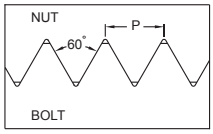


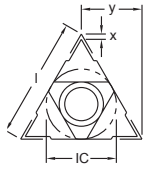
Part Number		Dimensions					Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y							
Right Hand	Left Hand	l (mm)	Inch	Inch	mm	mm		VC5	VC29	VC901	VC905	VC929	VC942
22 ER 7 UN		.500 (22)	0.063	0.091	1,6	2,3	7				02006	02007	
	22 EL 7 UN		0.063	0.091	1,6	2,3	7					16942	
22 ER 6 UN			0.063	0.091	1,6	2,3	6	08100				02005	
	22 EL 6 UN		0.063	0.091	1,6	2,3	6					16934	
22 ER 5 UN			0.067	0.098	1,7	2,5	5				02002	02003	
	22 EL 5 UN		0.067	0.098	1,7	2,5	5					16909	
22U ER L 4.5 UN*			0.079	0.433	2,0	11	4.5				17289	02018	
22U ER L 4 UN*			0.079	0.433	2,0	11	4					17282	
27 ER 4.5 UN		.625 (27,5)	0.075	0.106	1,9	2,7	4.5					02022	
	27 EL 4.5 UN		0.075	0.106	1,9	2,7	4.5					17399	
27 ER 4 UN			0.083	0.118	2,1	3,0	4				02023	17452	
	27 EL 4 UN		0.083	0.118	2,1	3,0	4					17391	
27U ER L 3 UN*			0.098	0.539	2,5	13,7	3					17600	

*U-Style inserts are neutral hand and require a U-Style Pocket Toolholder.

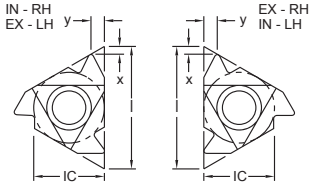
ValTHREAD™ Product Offering

UN - 60° - Internal

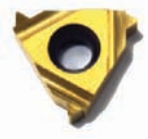




U-Style (2)



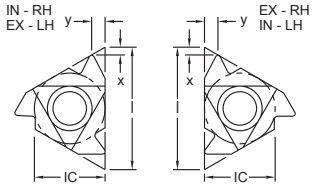
Standard Style (1)



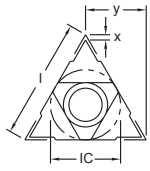
Part Number		Dimensions					Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y							
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC901	VC905	VC929	VC942
06 IR 32 UN		.156 (6,9)	0.031	0.020	0,8	0,5	32			01880			
06 IR 28 UN			0.031	0.024	0,8	0,6	28			01879			
06 IR 24 UN			0.028	0.024	0,7	0,6	24			01878			
06 IR 20 UN			0.024	0.024	0,6	0,6	20			01877			
06 IR 18 UN			0.024	0.028	0,6	0,7	18			01876			
08 IR 32 UN		.187 (8,7)	0.024	0.020	0,6	0,5	32			01886			
08 IR 24 UN			0.024	0.024	0,6	0,6	24			01884			10955
08 IR 20 UN			0.024	0.028	0,6	0,7	20			01883			14085
08 IR 18 UN			0.024	0.028	0,6	0,7	18			01882			10953
08 IR 16 UN			0.024	0.028	0,6	0,7	16			01881			
	08 IL 16 UN		0.024	0.028	0,6	0,7	16			09445			
08 IR 14 UN			0.024	0.031	0,6	0,8	14			02031			
08U IR L 14 UN			0.039	0.157	1,0	4,0	14			10891			
08U IR L 13 U			0.039	0.157	1,0	4,0	13			01889			
08U IR L 12 UN			0.035	0.157	0,9	4,0	12			10771			
08U IR L 11 UN			0.035	0.157	0,9	4,0	11			01888			
11 IR 72 UN		.250 (11)	0.031	0.012	0,8	0,3	72					15428	
11 IR 64 UN			0.031	0.016	0,8	0,4	64					15425	
11 IR 56 UN			0.028	0.016	0,7	0,4	56					15413	
11 IR 48 UN			0.024	0.024	0,6	0,6	48					15401	
11 IR 44 UN			0.024	0.024	0,6	0,6	44					15393	
11 IR 40 UN			0.024	0.024	0,6	0,6	40					01910	
11 IR 32 UN			0.024	0.024	0,6	0,6	32					01908	
11 IR 28 UN			0.024	0.028	0,6	0,7	28					01907	
11 IR 27 UN			0.028	0.031	0,7	0,8	27					02036	
11 IR 24 UN			0.028	0.031	0,7	0,8	24				01904	01905	
11 IR 20 UN			0.031	0.035	0,8	0,9	20				01902	01903	
11 IR 18 UN			0.031	0.039	0,8	1,0	18				01900	01901	
11 IR 16 UN			0.035	0.043	0,9	1,1	16				01898	01899	
11 IR 14 UN			0.035	0.043	0,9	1,1	14				01896	01897	

ValTHREAD™ Product Offering

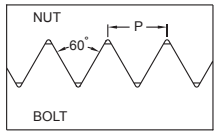
UN - 60° - Internal



Standard Style (1)



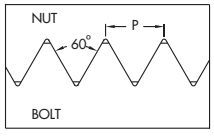
U-Style (2)

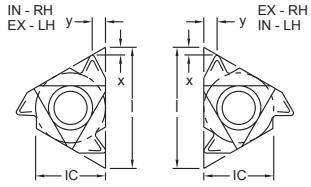


Part Number		Dimensions					Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y							
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC901	VC905	VC929	VC942
16 IR 40 UN		.375 (16,5)	0.024	0.024	0,6	0,6	40					02049	
16 IR 36 UN			0.024	0.024	0,6	0,6	36					16794	
16 IR 32 UN			0.024	0.024	0,6	0,6	32					01984	
	16 IL 32 UN		0.024	0.024	0,6	0,6	32					16442	
16 IR 28 UN			0.024	0.028	0,6	0,7	28				01981	01982	
	16 IL 28 UN		0.024	0.028	0,6	0,7	28					16422	
	16 IL 27 UN		0.028	0.031	0,7	0,8	27					16414	
16 IR 24 UN			0.028	0.031	0,7	0,8	24				01977	01978	
	16 IL 24 UN		0.028	0.031	0,7	0,8	24					16386	
16 IR 20 UN			0.031	0.035	0,8	0,9	20		08084		01975	01976	
	16 IL 20 UN		0.031	0.035	0,8	0,9	20					02046	
16 IR 18 UN			0.031	0.039	0,8	1,0	18				01973	01974	
	16 IL 18 UN		0.031	0.039	0,8	1,0	18				01958	02045	
16 IR 16 UN			0.035	0.043	0,9	1,1	18		08082		01971	01972	
	16 IL 16 UN		0.035	0.043	0,9	1,1	18					01957	
16 IR 14 UN			0.035	0.047	0,9	1,2	14				01969	01970	
	16 IL 14 UN		0.035	0.047	0,9	1,2	14					16286	
16 IR 13 UN			0.039	0.051	1,0	1,3	13					01968	
	16 IL 13 UN		0.039	0.051	1,0	1,3	13					16258	
16 IR 12 UN			0.043	0.055	1,1	1,4	12	08077	08078		01965	01966	
	16 IL 12 UN		0.043	0.055	1,1	1,4	12				01955	01956	
16 IR 11.5 UN			0.043	0.059	1,1	1,5	11.5					01962	
	16 IL 11.5 UN		0.043	0.059	1,1	1,5	11.5					16232	
16 IR 11 UN			0.043	0.059	1,1	1,5	11				01963	01964	
	16 IL 11 UN		0.043	0.059	1,1	1,5	11					16213	
16 IR 10 UN			0.043	0.059	1,1	1,5	10				01960	01961	
16 IR 9 UN			0.047	0.067	1,2	1,7	9				01995	01996	
16 IR 8 UN			0.043	0.059	1,1	1,5	8	08098	08099		01993	01994	
22 IR 7 UN		.005 (22)	0.063	0.091	1,6	2,3	7				02016	02017	
	22 IL 7 UN		0.063	0.091	1,6	2,3	7					17135	
22 IR 6 UN			0.063	0.091	1,6	2,3	6	08102			02014	02015	
	22 IL 6 UN		0.063	0.091	1,6	2,3	6					17127	
22 IR 5 UN			0.063	0.091	1,6	2,3	5					02013	
	22 IL 5 UN		0.063	0.091	1,6	2,3	5					17102	
22U IR L 4.5 UN*			0.094	0.433	2,4	11	4.5					02021	
27 IR 4.5 UN		.625 (27,5)	0.067	0.114	1,7	2,4	4.5	08111			02026	02027	
27 IR 4 UN			0.071	0.106	1,8	2,7	4				02028	02029	
	27 IL 4 UN		0.071	0.106	1,8	2,7	4				17494		
27U IR L 3 UN*			0.106	0.539	2,7	13,7	3					17652	

*U-Style inserts are neutral hand and require a U-Style Pocket Toolholder.

UN - 60° - Chipbreaker - External





Standard Style (1)

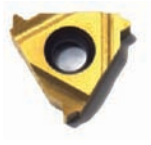
Part Number		Dimensions					Pitch TPI	Available Grades-EDP#				
		I.C. (in.)	X	Y	x	y						
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC905	VC922	VC929
16 ERB 24 UN		.375 (16,5)	0.028	0.031	0,7	0,8	24				10917	
16 ERB 20 UN			0.031	0.035	0,8	0,9	20				10915	
16 ERB 18 UN			0.031	0.039	0,8	1,0	18				10912	
16 ERB 16 UN			0.035	0.043	0,9	1,1	16				10909	
16 ERB 14 UN			0.039	0.047	1,0	1,2	14				10906	
16 ERB 12 UN			0.043	0.055	1,1	1,4	12				09474	
16 ERB 10 UN			0.043	0.059	1,1	1,5	10				20335	
16 ERB 8 UN			0.047	0.063	1,2	1,6	8				10921	

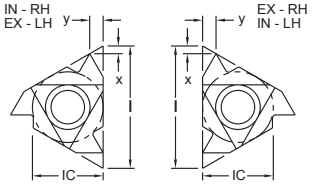
UN - 60° - Chipbreaker - Internal

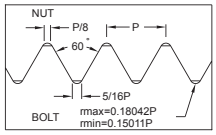
Part Number		Dimensions					Pitch TPI	Available Grades-EDP#				
		I.C. (in.)	X	Y	x	y						
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC905	VC922	VC929
16 IRB 18 UN		.375 (16,5)	0.031	0.039	0,8	1,0	18				10934	
16 IRB 16 UN			0.035	0.043	0,9	1,1	16				10933	
16 IRB 14 UN			0.035	0.047	0,9	1,2	14				10930	
16 IRB 12 UN			0.043	0.055	1,1	1,4	12				10926	
16 IRB 10 UN			0.043	0.059	1,1	1,5	10				20336	
16 IRB 8 UN			0.043	0.059	1,1	1,5	8				12769	

ValTHREAD™ Product Offering

UNJ - 60° - External







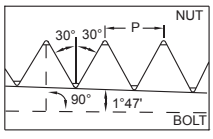
Standard Style (1)

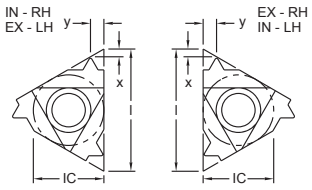
Part Number		Dimensions					Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y							
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC901	VC905	VC929	VC942
16 ER 32 UNJ		.375 (16,5)	0.024	0.024	0,6	0,6	32				02332	02333	
	16 EL 32 UNJ		0.024	0.024	0,6	0,6	32					15750	
16 ER 28 UNJ			0.024	0.024	0,6	0,6	28				02330	02331	
	16 EL 28 UNJ		0.024	0.024	0,6	0,6	28					15730	
16 ER 24 UNJ			0.027	0.031	0,7	0,8	24				02328	02329	
	16 EL 24 UNJ		0.027	0.031	0,7	0,8	24					15692	
16 ER 20 UNJ			0.031	0.035	0,8	0,9	20				02326	02327	
	16 EL 20 UNJ		0.031	0.035	0,8	0,9	20					15678	
16 ER 18 UNJ			0.031	0.039	0,8	1,0	18				02324	02325	
	16 EL 18 UNJ		0.031	0.039	0,8	1,0	18					15651	
16 ER 16 UNJ			0.031	0.039	0,8	1,0	16				02322	02323	
	16 EL 16 UNJ		0.031	0.039	0,8	1,0	16					15626	
16 ER 14 UNJ			0.039	0.047	1,0	1,2	14				02320	02321	
	16 EL 14 UNJ		0.039	0.047	1,0	1,2	14					15599	
16 ER 12 UNJ			0.043	0.055	1,1	1,4	12				02318	02319	
16 ER 10 UNJ			0.043	0.059	1,21	1,5	10					15922	
	16 EL 10 UNJ		0.043	0.059	1,21	1,5	10					15506	
	16 EL 8 UNJ		0.047	0.063	1,2	1,6	8					15857	

UNJ - 60° - Internal

Part Number		Dimensions					Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y							
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC901	VC905	VC929	VC942
16 IR 32 UNJ		.375 (16,5)	0.024	0.024	0,6	0,6	32					16786	
16 IR 28 UNJ			0.024	0.024	0,6	0,6	28					16772	
16 IR 24 UNJ			0.027	0.031	0,7	0,8	24					16747	
16 IR 20 UNJ			0.031	0.035	0,8	0,9	20				16733	16734	
16 IR 18 UNJ			0.031	0.039	0,8	1,0	18					16711	
16 IR 16 UNJ			0.031	0.039	0,8	1,0	16				16692	16693	
16 IR 14 UNJ			0.039	0.047	1,0	1,2	14					16670	
16 IR 12 UNJ			0.043	0.055	1,1	1,4	12				02339	16645	
16 IR 8 UNJ			0.047	0.063	1,2	1,6	8					16857	

NPT - External





Standard Style (1)

Part Number		Dimensions					Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y							
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC901	VC905	VC929	VC942
16 ER 27 NPT		.375 (16,5)	0.028	0.031	0,7	0,8	27					02187	
16 ER 18 NPT			0.031	0.039	0,8	1,0	18		08182		02184	02185	
	16 EL 18 NPT		0.031	0.039	0,8	1,0	18					15640	
16 ER 14 NPT			0.035	0.047	0,9	1,2	14		08181		02182	02183	
	16 EL 14 NPT		0.035	0.047	0,9	1,2	14					02209	
16 ER 11.5 NPT			0.043	0.059	1,1	1,5	11.5				02179	02180	
	16 EL 11.5 NPT		0.043	0.059	1,1	1,5	11.5					02178	
16 ER 8 NPT			0.051	0.071	1,3	1,8	8				02188	02189	
	16 EL 8 NPT		0.051	0.071	1,3	1,8	8					15839	

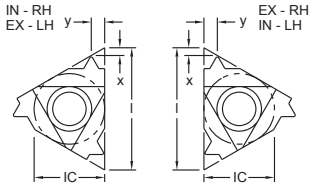
NPT - Internal

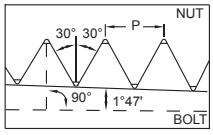
Part Number		Dimensions					Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y							
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC901	VC905	VC929	VC942
08 IR 27 NPT*		.187 (8,7)	0.024	0.024	0,6	0,6	27			02172			10962
08 IR 18 NPT*			0.024	0.024	0,6	0,6	18			02170			10960
11 IR 18 NPT		.250 (11)	0.031	0.039	0,8	1,0	18				02175	02176	
11 IR 14 NPT			0.031	0.039	0,8	1,0	14				02173	02174	
16 IR 27 NPT		.375 (16,5)	0.028	0.031	0,7	0,8	27					02211	
16 IR 18 NPT			0.031	0.039	0,8	1,0	18				16702		
16 IR 14 NPT			0.035	0.047	0,9	1,2	14				02194	02195	
	16 IL 14 NPT		0.035	0.047	0,9	1,2	14					16274	
16 IR 11.5 NPT			0.043	0.059	1,1	1,5	11.5				02190	02191	
	16 IL 11.5 NPT		0.043	0.059	1,1	1,5	11.5					16224	
16 IR 8 NPT			0.051	0.071	1,3	1,8	8				02196	02197	
	16 IL 8 NPT		0.051	0.071	1,3	1,8	8					16532	

*For Thread Types: 1/8" - 27 NPT; 1/4" - 18 NPT

ValTHREAD™ Product Offering

NPT - Chipbreaker - External





Standard Style (1)

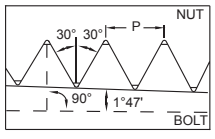
Part Number		Dimensions						Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y	Pitch						
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm	TPI	VC5	VC29	VC901	VC905	VC929	VC942
16 ERB 18 NPT*		.375 (16,5)	0.031	0.039	0,8	1,0	18					10911	
16 ERB 14 NPT*			0.035	0.047	0,9	1,2	14					10905	
16 ERB 115 NPT*			0.043	0.059	1,1	1.5	11.5					08825	
16 ERB 8 NPT*			0.051	0.071	1,3	1,8	8					10920	

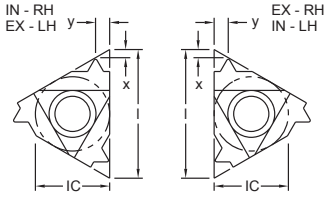
NPT - Chipbreaker - Internal

Part Number		Dimensions						Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y	Pitch						
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm	TPI	VC5	VC29	VC901	VC905	VC929	VC942
16 IRB 14 NPT*		.375 (16,5)	0.035	0.047	0,9	1,2	14					10927	
16 IRB 115 NPT*			0.043	0.059	1,1	1.5	11.5					10924	
16 IRB 8 NPT*			0.051	0.071	1,3	1,8	8					10944	

* B-Style inserts have a ground profile and pressed-in chipform

NPTF - External





Standard Style (1)

Part Number		Dimensions					Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y							
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC901	VC905	VC929	VC942
11 ER 18 NPTF		.250 (11)	0.031	0.039	0,8	1,0	18					14333	
	11 EL 18 NPTF		0.031	0.039	0,8	1,0	18					12175	
16 ER 27 NPTF		.375 (16,5)	0.028	0.028	0,7	0,7	27					16033	
16 ER 18 NPTF			0.031	0.039	0,8	1,0	18					15997	
16 ER 14 NPTF			0.035	0.047	0,9	1,2	14					15965	
	16 EL 14 NPTF		0.035	0.047	0,9	1,2	14					15586	
16 ER 11.5 NPTF			0.043	0.059	1,1	1,5	11.5					15938	
	16 EL 11.5 NPTF		0.043	0.059	1,1	1,5	11.5					15532	
16 ER 8 NPTF			0.051	0.071	1,3	1,8	8					02210	
	16 EL 8 NPTF		0.051	0.071	1,3	1,8	8					15843	

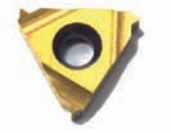
NPTF - Internal

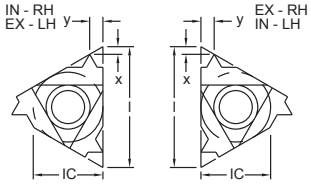
Part Number		Dimensions					Pitch TPI	Available Grades-EDP#					
		I.C. (in.)	X	Y	x	y							
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC901	VC905	VC929	VC942
08 IR 18 NPTF*		.187 (6,9)	0.024	0.024	0,6	0,6	18			02171			10961
11 IR 14 NPTF		.250 (11)	0.031	0.039	0,8	1,0	14					02207	
16 IR 14 NPTF		.375 (16,5)	0.035	0.047	0,9	1,2	14					16664	
16 IR 11.5 NPTF			0.043	0.059	1,1	1,5	11.5				02192	02193	

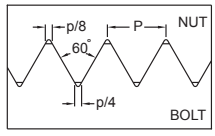
*For Thread Types 1/4" - 18 NPT

ValTHREAD™ Product Offering

ISO - 60° - External





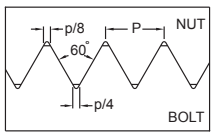


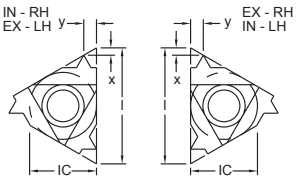
Standard Style (1)

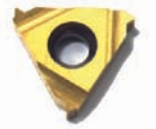
Part Number		Dimensions					Pitch mm	Available Grades-EDP#			
		I.C. (in.)	X	Y	x	y					
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC905	VC929
11 ER 0.5 ISO		.250 (11)	0.024	0.024	0,6	0,6	0,5				13593
11 ER 0.75 ISO			0.024	0.024	0,6	0,6	0,75				13705
11 ER 1.0 ISO			0.028	0.028	0,7	0,7	1,0				13715
11 ER 1.25 ISO			0.031	0.035	0,8	0,9	1,25				13819
11 ER 1.5 ISO			0.031	0.039	0,8	1,0	1,5				02115
11 ER 1.75 ISO			0.031	0.043	0,8	1,1	1,75				14323
16 ER 0.35 ISO		.375 (16,5)	0.031	0.016	0,8	0,4	0,35				15883
16 ER 0.5 ISO			0.024	0.024	0,6	0,6	0,5				02057
	16 EL 0.5 ISO		0.024	0.024	0,6	0,6	0,5				15465
16 ER 0.75 ISO			0.024	0.024	0,6	0,6	0,75				02059
	16 EL 0.75 ISO		0.024	0.024	0,6	0,6	0,75				02119
16 ER 0.8 ISO			0.024	0.024	0,6	0,6	0,8				15903
	16 EL 0.8 ISO		0.024	0.024	0,6	0,6	0,8				15480
16 ER 1.0 ISO			0.028	0.028	0,7	0,7	1,0			02060	02061
	16 EL 1.0 ISO		0.028	0.028	0,7	0,7	1,0				02120
16 ER 1.25 ISO			0.031	0.035	0,8	0,9	1,25			02062	02063
	16 EL 1.25 ISO		0.031	0.035	0,8	0,9	1,25				02121
16 ER 1.5 ISO			0.031	0.039	0,8	1,0	1,5	08128		02064	02065
	16 EL 1.5 ISO		0.031	0.039	0,8	1,0	1,5				02122
16 ER 1.75 ISO			0.035	0.047	0,9	1,2	1,75			02066	02067
	16 EL 1.75 ISO		0.035	0.047	0,9	1,2	1,75				15636
16 ER 2.0 ISO			0.039	0.051	1,0	1,3	2,0			02068	02069
	16 EL 2.0 ISO		0.039	0.051	1,0	1,3	2,0			02123	02124
16 ER 2.5 ISO			0.043	0.059	1,1	1,5	2,5			02070	
	16 EL 2.5 ISO		0.043	0.059	1,1	1,5	2,5				15700
16 ER 3.0 ISO			0.047	0.063	1,2	1,6	3,0			02072	02073
	16 EL 3.0 ISO		0.047	0.063	1,2	1,6	3,0				15742
22 ER 3.5 ISO		.500 (22)	0.063	0.091	1,6	2,3	3,5			02091	
	22 EL 3.5 ISO		0.063	0.091	1,6	2,3	3,5				16879
22 ER 4.0 ISO			0.063	0.091	1,6	2,3	4,0			02093	02094
	22 EL 4.0 ISO		0.063	0.091	1,6	2,3	4,0				16890
22 ER 4.5 ISO			0.067	0.094	1,7	2,4	4,5			02095	
	22 EL 4.5 ISO		0.067	0.094	1,7	2,4	4,5				16894
22 ER 5.0 ISO			0.067	0.098	1,7	2,5	5,0			02097	
	22 EL 5.0 ISO		0.067	0.098	1,7	2,5	5,0				16917
27 ER 5.5 ISO		.625 (27,5)	0.075	0.106	1,9	2,7	5,5				02104
	27 EL 5.5 ISO		0.075	0.106	1,9	2,7	5,5				17407
27 ER 6.0 ISO			0.079	0.114	2,0	2,9	6,0			02105	02106
	27 EL 6.0 ISO		0.079	0.114	2,0	2,9	6,0				17414

ValTHREAD™ Product Offering

ISO - 60° - Internal





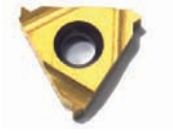


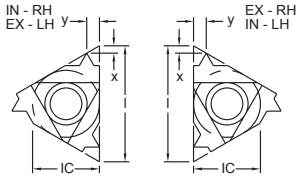
Standard Style (1)

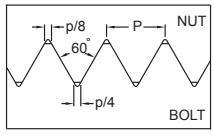
Part Number		Dimensions					Pitch mm	Available Grades-EDP#				
		I.C. (in.)	X	Y	x	y						
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC901	VC905	VC929
06 IR 0.75 ISO		.156 (6,9)	0.031	0.020	0,8	0,5	0,75			02050		
	06 IL 0.75 ISO		0.031	0.020	0,8	0,5	0,75			07925		
06 IR 1.0 ISO			0.028	0.024	0,7	0,6	1,0			02110		
	06 IL 1.0 ISO		0.028	0.024	0,7	0,6	1,0			02109		
06 IR 1.25 ISO			0.024	0.024	0,6	0,6	1,25			08466		
	06 IL 1.25 ISO		0.024	0.024	0,6	0,6	1,25			07928		
08 IR 0.75 ISO		.187 (8,7)	0.024	0.020	0,6	0,5	0,75			10066		
	08 IL 0.75 ISO		0.024	0.020	0,6	0,5	0,75			08847		
08 IR 1.0 ISO			0.024	0.024	0,6	0,6	1,0			02111		
	08 IL 1.0 ISO		0.024	0.024	0,6	0,6	1,0			08855		
08 IR 1.25 ISO			0.024	0.028	0,6	0,7	1,25			02112		
	08 IL 1.25 ISO		0.024	0.028	0,6	0,7	1,25			08870		
08 IR 1.5 ISO			0.024	0.028	0,6	0,7	1,5			02113		
11 IR 0.5 ISO		.250 (11)	0.024	0.024	0,6	0,6	0,5					15231
11 IR 0.75 ISO			0.024	0.024	0,6	0,6	0,75					02116
11 IR 1.0 ISO			0.024	0.028	0,6	0,7	1,0					02117
11 IR 1.25 ISO			0.031	0.031	0,8	0,8	1,25					15252
11 IR 1.5 ISO			0.031	0.039	0,8	1,0	1,5				02054	02118
11 IR 1.75 ISO			0.031	0.043	0,8	1,1	1,75					15288
16 IR 0.5 ISO		.375 (16,5)	0.024	0.024	0,6	0,6	0,5					16591
	16 IL 0.5 ISO		0.024	0.024	0,6	0,6	0,5					16161
16 IR 0.75 ISO			0.024	0.024	0,6	0,6	0,75					02075
	16 IL 0.75 ISO		0.024	0.024	0,6	0,6	0,75					16173
16 IR 1.0 ISO			0.024	0.028	0,6	0,7	1,0					02076
	16 IL 1.0 ISO		0.024	0.028	0,6	0,7	1,0					02128
16 IR 1.25 ISO			0.031	0.035	0,8	0,9	1,25					02079
	16 IL 1.25 ISO		0.031	0.035	0,8	0,9	1,25					16254
16 IR 1.5 ISO			0.031	0.039	0,8	1,0	1,5				02080	02081
	16 IL 1.5 ISO		0.031	0.039	0,8	1,0	1,5					16298
16 IR 1.75 ISO			0.035	0.047	0,9	1,2	1,75					02083
	16 IL 1.75 ISO		0.035	0.047	0,9	1,2	1,75					16329
16 IR 2.0 ISO			0.039	0.051	1,0	1,3	2,0				02084	02085
	16 IL 2.0 ISO		0.039	0.051	1,0	1,3	2,0					16367
16 IR 2.5 ISO			0.043	0.059	1,1	1,5	2,5				02086	02087
	16 IL 2.5 ISO		0.043	0.059	1,1	1,5	2,5					16398
16 IR 3.0 ISO			0.043	0.059	1,1	1,5	3,0				02088	02089
	16 IL 3.0 ISO		0.043	0.059	1,1	1,5	3,0					16438

ValTHREAD™ Product Offering

ISO - 60° - Internal



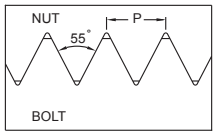


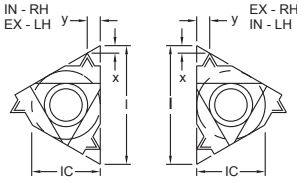


Standard Style (1)

Part Number		Dimensions					Pitch mm	Available Grades-EDP#				
		I.C. (in.)	X	Y	x	y						
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC901	VC905	VC929
22 IR 3.5 ISO		.500 (22)	0.063	0.091	1,6	2,3	3,5				02098	02099
	22 IL 3.5 ISO		0.063	0.091	1,6	2,3	3,5					17063
22 IR 4.0 ISO			0.063	0.091	1,6	2,3	4,0				02100	02101
	22 IL 4.0 ISO		0.063	0.091	1,6	2,3	4,0					17076
22 IR 4.5 ISO			0.063	0.094	1,6	2,4	4,5					17193
	22 IL 4.5 ISO		0.063	0.094	1,6	2,4	4,5					17082
22 IR 5.0 ISO			0.063	0.091	1,6	2,3	5,0				02102	02103
	22 IL 5.0 ISO		0.063	0.091	1,6	2,3	5,0					17110
27 IR 5.5 ISO		.625 (27,5)	0.063	0.091	1,6	2,3	5,5					02107
	27 IL 5.5 ISO		0.063	0.091	1,6	2,3	5,5					17511
27 IR 6.0 ISO			0.071	0.098	1,8	2,5	6,0				02133	02108
	27 IL 6.0 ISO		0.071	0.098	1,8	2,5	6,0					17519

ISO - Chipbreaker - 55° - External





Standard Style (1)

Part Number		Dimensions					Pitch mm	Available Grades-EDP#				
		I.C. (in.)	X	Y	x	y						
Right Hand	Left Hand	l (mm)	Inch	Inch	mm	mm		VC5	VC29	VC905	VC929	VC922
16 ERB 1.5 ISO*	16 ERB 1.5 ISO*	.375 (16,5)	0.031	0.039	0,8	1,0	1,5					10907
16 ERB 2.0 ISO*	16 ERB 2.0 ISO*		0.039	0.051	1,0	1,3	2,0					10913
16 ERB 3.0 ISO*	16 ERB 3.0 ISO*		0.047	0.063	1,2	1,6	3,0					10918

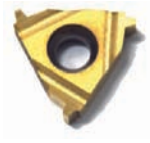
ISO - Chipbreaker - 55° - Internal

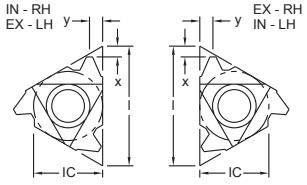
Part Number		Dimensions					Pitch mm	Available Grades-EDP#				
		I.C. (in.)	X	Y	x	y						
Right Hand	Left Hand	l (mm)	Inch	Inch	mm	mm		VC5	VC29	VC905	VC929	VC922
16 IRB 1.5 ISO*		.375 (16,5)	0.031	0.039	0,8	1,0	1,5					10932
16 IRB 2.0 ISO*			0.039	0.051	1,0	1,3	2,0					10935
16 IRB 3.0 ISO*			0.043	0.059	1,1	1,5	3,0					24746

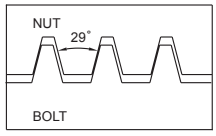
* B-Style inserts have a ground profile and pressed-in chipform

ValTHREAD™ Product Offering

ACME - 29° - External





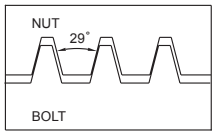


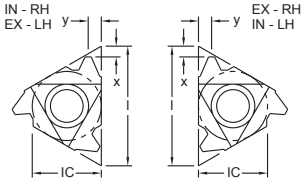
Standard Style (1)
U-Style not shown

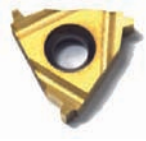
Part Number		Dimensions					Pitch TPI	Available Grades-EDP#			
		I.C. (in.)	X	Y	x	y					
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC905	VC929
11 ER 16 ACME		0.250 (11)	0.035	0.039	0,9	1,0	16			14047	14281
16 ER 16 ACME		0.375 (16, 5)	0.039	0.043	1,0	1,1	16			02224	02225
	16 EL 16 ACME		0.039	0.043	1,0	1,1	16				15616
16 ER 14 ACME			0.039	0.047	1,0	1,2	14				02265
	16 EL 14 ACME		0.039	0.047	1,0	1,2	14				15574
16 ER 12 ACME			0.043	0.047	1,1	1,2	12			02222	02223
	16 EL 12 ACME		0.043	0.047	1,1	1,2	12				15544
16 ER 10 ACME			0.051	0.051	1,3	1,3	10	08191		02220	02221
	16 EL 10 ACME		0.051	0.051	1,3	1,3	10				15488
16 ER 8 ACME			0.059	0.059	1,5	1,5	8		08195	02226	02227
	16 EL 8 ACME		0.059	0.059	1,5	1,5	8				15833
22 ER 6 ACME		0.500 (22)	0.071	0.083	1,8	2,1	6			02242	02243
	22 EL 6 ACME		0.071	0.083	1,8	2,1	6				02239
22 ER 5 ACME			0.079	0.091	2,0	2,3	5	08202		02240	02241
	22 EL 5 ACME		0.079	0.091	2,0	2,3	5				16897
22U ER 4 ACME*			0.091	0.433	2,3	11	4			02250	02251
27 ER 4 ACME		.625 (27)	0.091	0.106	2,3	2,7	4			02255	02256
27U ER 3 ACME*			0.110	0.539	2,8	13,7	3			02260	02261

*U-Style inserts are neutral hand and require a U-Style Pocket Toolholder.

ACME - 29° - Internal







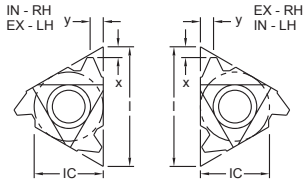
Standard Style (1)
U-Style not shown

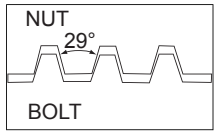
Part Number		Dimensions					Pitch TPI	Available Grades-EDP#			
		I.C. (in.)	X	Y	x	y					
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC905	VC929
11 IR 16 ACME		0.250 (11)	0.039	0.039	1,0	1,0	16			02219	15274
16 IR 16 ACME		0.375 (16, 5)	0.039	0.043	1,0	1,1	16				02235
	16 IL 16 ACME		0.039	0.043	1,0	1,1	16				16310
16 IR 14 ACME			0.039	0.047	1,0	1,2	14				16657
	16 IL 14 ACME		0.039	0.047	1,0	1,2	14				16266
16 IR 12 ACME			0.043	0.047	1,1	1,2	12			02231	02232
	16 IL 12 ACME		0.043	0.047	1,1	1,2	12				02267
16 IR 10 ACME			0.051	0.051	1,3	1,3	10			02229	02230
	16 IL 10 ACME		0.051	0.051	1,3	1,3	10				02266
16 IR 8 ACME			0.059	0.059	1,5	1,5	8	08200	08201	02236	02237
	16 IL 8 ACME		0.059	0.059	1,5	1,5	8				02228
22 IR 6 ACME		0.500 (22)	0.071	0.083	1,8	2,1	6		08207	02248	02249
	22 IL 6 ACME		0.071	0.083	1,8	2,1	6			02245	17116
22 IR 5 ACME			0.079	0.091	2,0	2,3	5	08205	08206	02246	02247
	22 IL 5 ACME		0.079	0.091	2,0	2,3	5			02244	17086
22U IR 4 ACME*			0.091	0.433	2,3	11	4				02253
	22U IL 4 ACME*		0.091	0.433	2,3	11	4				17326
27 IR 4 ACME		.625 (27)	0.091	0.106	2,3	2,7	4		08213	02258	02259
	27 IL 4 ACME		0.091	0.106	2,3	2,7	4				02271
27U IR 3 ACME*			0.110	0.539	2,8	13,7	3			02262	02263

*U-Style inserts are neutral hand and require a U-Style Pocket Toolholder.

ValTHREAD™ Product Offering

Stub ACME - 29° - External



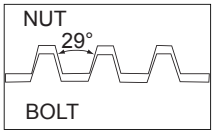


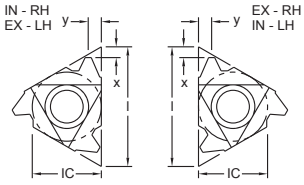
Standard Style (1)
U-Style not shown

Part Number		Dimensions					Pitch TPI	Available Grades-EDP#			
		I.C. (in.)	X	Y	x	y					
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC905	VC929
11 ER 16 ST ACME		.250 (11)	0.039	0.039	1,0	1,0	16				14291
16 ER 16 ST ACME		.375 (16,5)	0.039	0.039	1,0	1,0	16			02279	02280
	16 EL 16 ST ACME		0.039	0.039	1,0	1,0	16				15620
16 ER 14 ST ACME			0.043	0.043	1,1	1,1	14			02278	15968
	16 EL 14 ST ACME		0.043	0.043	1,1	1,1	14				15590
16 ER 12 ST ACME			0.047	0.047	1,2	1,2	12			02276	02277
	16 EL 12 ST ACME		0.047	0.047	1,2	1,2	12				15549
16 ER 10 ST ACME			0.051	0.051	1,3	1,3	10			02274	02275
	16 EL 10 ST ACME		0.051	0.051	1,3	1,3	10				02310
16 ER 8 ST ACME			0.059	0.059	1,5	1,5	8			02283	02284
	16 EL 8 ST ACME		0.059	0.059	1,5	1,5	8				15851
16 ER 6 ST ACME			0.071	0.071	1,8	1,8	6			02281	02282
22 ER 5 ST ACME			0.079	0.091	2,0	2,3	5				02298
	22 EL 5 ST ACME		0.079	0.091	2,0	2,3	5				16901
22U ER 4 ST ACME*			0.098	0.433	2,5	11	4			02303	02312
	22U EL 4 ST ACME*		0.098	0.433	2,5	11	4			17268	17269
22U ER 3 ST ACME*			.130	0.433	3,3	11	3				02302
27 ER 4 ST ACME		.625 (27)	0.091	0.094	2,3	2,4	4			02306	02307
	27 EL 4 ST ACME		0.091	0.094	2,3	2,4	4				17387
27 ER 3 ST ACME			.110	0.114	2,8	2,9	3			02315	17428
	27 EL 3 ST ACME		.110	0.114	2,8	2,9	3				17377

*U-Style inserts are neutral hand and require a U-Style Pocket Toolholder.

Stub ACME - 29° - Internal





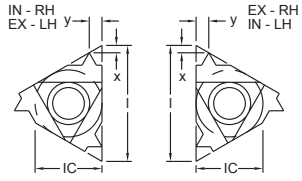
Standard Style (1)
U-Style not shown

Part Number		Dimensions					Pitch TPI	Available Grades-EDP#			
		I.C. (in.)	X	Y	x	y					
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC905	VC929
11 IR 16 ST ACME		.250 (11)	0.039	0.039	1,0	1,0	16				02273
16 IR 16 ST ACME		.375 (16,5)	0.039	0.039	1,0	1,0	16			02291	02292
	16 IL 16 ST ACME		0.039	0.039	1,0	1,0	16				16314
	16 IL 14 ST ACME		0.043	0.043	1,1	1,1	14				16282
16 IR 12 ST ACME			0.047	0.047	1,2	1,2	12			02287	02288
	16 IL 12 ST ACME		0.047	0.047	1,2	1,2	12				16242
16 IR 10 ST ACME			0.051	0.051	1,3	1,3	10		16617	02285	02286
	16 IL 10 ST ACME		0.051	0.051	1,3	1,3	10			16193	16194
16 IR 8 ST ACME			0.059	0.059	1,5	1,5	8			02295	02296
	16 IL 8 ST ACME		0.059	0.059	1,5	1,5	8				16544
16 IR 6 ST ACME			0.071	0.071	1,8	1,8	6			02293	02294
	16 IL 6 ST ACME		0.071	0.071	1,8	1,8	6				16510
22 IR 5 ST ACME		.500 (22)	0.098	0.091	2,5	2,3	5				02300
	22 IL 5 ST ACME		0.098	0.091	2,5	2,3	5				02311
22U IR 4 ST ACME*			0.098	0.433	2,5	11	4				02305
	22U IL 4 ST ACME*		0.098	0.433	2,5	11	4				02313
27 IR 4 ST ACME		.625 (27)	0.091	0.094	2,3	2,4	4			02308	02309
	27 IL 4 ST ACME		0.091	0.094	2,3	2,4	4				02316
27 IR 3 ST ACME			.110	0.114	2,8	2,9	3			17535	17536

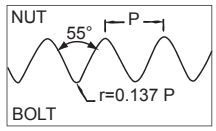
*U-Style inserts are neutral hand and require a U-Style Pocket Toolholder.

ValTHREAD™ Product Offering

BSW - 55° - External



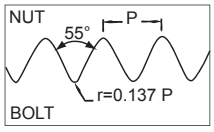
Standard Style (1)



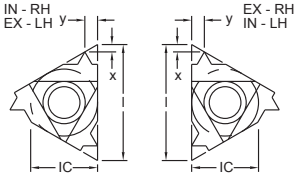
British BSW

Part Number		Dimensions					Pitch TPI	Available Grades-EDP#			
		I.C. (in.)	X	Y	x	y					
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC905	VC929
16 ER 24 W		.375 (16,5)	0.028	0.031	0,7	0,8	24			16025	02157
16 ER 20 W			0.031	0.035	0,8	0,9	20				16017
	16 EL 20 W		0.031	0.035	0,8	0,9	20				15682
16 ER 19 W			0.031	0.039	0,8	1,0	19				02156
16 ER 18 W			0.031	0.039	0,8	1,0	18				16001
	16 EL 18 W		0.031	0.039	0,8	1,0	18				15655
	16 EL 16 W		0.035	0.043	0,9	1,1	16				15630
16 ER 14 W			0.039	0.047	1,0	1,2	14			02136	02137
	16 EL 14 W		0.039	0.047	1,0	1,2	14				02151
16 ER 12 W			0.043	0.055	1,1	1,4	12			02135	15948
	16 EL 12 W		0.043	0.055	1,1	1,4	12				15560
16 ER 11 W			0.043	0.059	1,1	1,5	11				02154
	16 EL 11 W		0.043	0.059	1,1	1,5	11				02150
16 ER 10 W			0.043	0.059	1,1	1,5	10			02153	15925
	16 EL 10 W		0.043	0.059	1,1	1,5	10				15510
16 ER 9 W			0.047	0.067	1,2	1,7	9			02160	
16 ER 8 W			0.047	0.059	1,2	1,5	8			02159	
22 ER 5 W		.500 (22)	0.067	0.094	1,7	2,4	5			02166	

BSW - 55° - Internal



British BSW

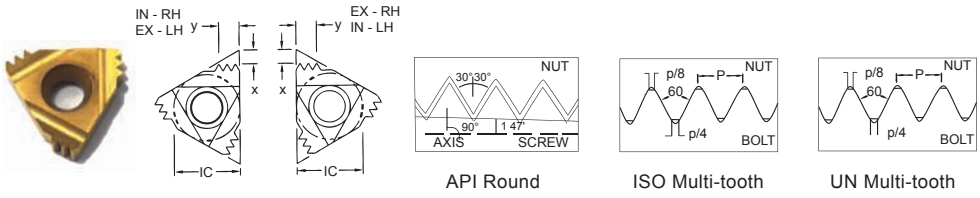


Standard Style (1)

Part Number		Dimensions					Pitch TPI	Available Grades-EDP#			
		I.C. (in.)	X	Y	x	y					
Right Hand	Left Hand	I (mm)	Inch	Inch	mm	mm		VC5	VC29	VC905	VC929
16 IR 20 W		.375 (16,5)	0.031	0.035	0,8	0,9	20				16738
	16 IL 20 W		0.031	0.035	0,8	0,9	20				16378
16 IR 18 W			0.031	0.039	0,8	1,0	18				16715
	16 IL 18 W		0.031	0.039	0,8	1,0	18				16347
16 IR 16 W			0.035	0.043	0,9	1,1	16				16699
	16 IL 16 W		0.035	0.043	0,9	1,1	16				16325
16 IR 14 W			0.039	0.047	1,0	1,2	14			02145	02162
	16 IL 14 W		0.039	0.047	1,0	1,2	14				16294
16 IR 12 W			0.043	0.055	1,1	1,4	12				16648
	16 IL 12 W		0.043	0.055	1,1	1,4	12				16250
16 IR 11 W			0.043	0.059	1,1	1,5	11			02143	02144
16 IR 10 W			0.043	0.059	1,1	1,5	10				16624
	16 IL 10 W		0.043	0.059	1,1	1,5	10				16205
16 IR 9 W			0.047	0.067	1,2	1,7	9				16869
16 IR 8 W			0.047	0.059	1,2	1,5	8				02147
	16 IL 8 W		0.047	0.059	1,2	1,5	8				16555
22 IR 5 W		.500 (22)	0.067	0.094	1,7	2,4	5				17219

ValTHREAD™ Product Offering

Multi-Tooth



API Round | ISO Multi-tooth | UN Multi-tooth

Part Number		Dimensions			Pitch mm	No. of Teeth	No. of Passes	Infeed per Pass/Inch				Available Grades-EDP#			
External	Internal	I.C. (in.)	X	Y				1	2	3	4	VC5	VC29	VC905	VC929
16 ER 1.0 ISO 3M		.375	0.067	0.098	(1,00)	3	2	0.015	0.010						15913
16 ER 1.5 ISO 2M			0.059	0.091	(1,5)	2	3	0.016	0.012	0.008					02127
22 ER 1.5 ISO 3M		.500	0.091	0.146	(1,5)	3	2	0.021	0.015						16979
	22 IR 1.5 ISO 3M		0.091	0.146	(1,5)	3	2	0.021	0.015						17172
22 ER 2.0 ISO 2M			0.079	0.118	(2,0)	2	3	0.021	0.015	0.011					16985
	22 IR 2.0 ISO 2M		0.079	0.118	(2,0)	2	3	0.021	0.015	0.011					17179
22 ER 2.0 ISO 3M			0.122	0.197	(2,0)	3	2	0.029	0.019						02090
	22 IR 2.0 ISO 3M		0.122	0.197	(2,0)	3	2	0.029	0.019					02130	
27 ER 3.0 ISO 2M		.625	0.114	0.177	(3,0)	2	4	0.022	0.020	0.017	0.013				17432
	27 IR 3.0 ISO 2M		0.114	0.177	(3,0)	2	4	0.022	0.020	0.017	0.013				17540

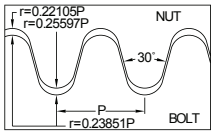
UN - Multi-Tooth

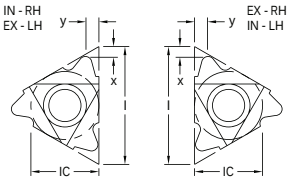
Part Number		Dimensions			Pitch TPI	No. of Teeth	No. of Passes	Infeed per Pass/Inch				Available Grades-EDP#			
External	Internal	I.C. (in.)	X	Y				1	2	3	4	VC5	VC29	VC905	VC929
16 ER 16 UN 2M		.375	0.059	0.091	16	2	3	0.017	0.011	0.009				15989	01931
	16 IR 16 UN 2M		0.059	0.091	16	2	3	0.017	0.011	0.009					02048
22 ER 16 UN 3M		.500	0.098	0.157	16	3	2	0.022	0.015						02001
	22 IR 16 UN 3M		0.098	0.157	16	3	2	0.022	0.015						17175
22 ER 12 UN 2M			0.087	0.134	12	2	3	0.022	0.017	0.012					01998
27 ER 8 UN 2M		.625	0.122	0.193	8	2	4	0.028	.020	0.017	0.013				02025
	27 IR 8 UN 2M		0.122	0.193	8	2	4	0.028	.020	0.017	0.013				17576

API (OIL) - Round - Multi-Tooth

Part Number		Dimensions			Pitch TPI	No. of Teeth	No. of Passes	Infeed per Pass/Inch				Available Grades-EDP#			
External	Internal	I.C. (in.)	X	Y				1	2	3	4	VC5	VC29	VC905	VC929
22 ER 10 API RD 2M		.500	0.094	0.146	10	2	3	0.024	0.020	0.012				16959	
	22 IR 10 API RD 2M		0.094	0.146	10	2	3	0.024	0.020	0.012				02369	
27 ER 8 API RD 2M		.625	0.118	0.177	8	2	3	0.031	0.024	0.016				02373	17467
	27 IR 8 API RD 2M		0.118	0.177	8	2	3	0.031	0.024	0.016					02384

Round (DIN 405) Threading Inserts - External





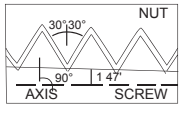
Standard Style (1)

Part Number		Dimensions					Pitch TPI	Available Grades-EDP#			
		I.C. (in.)	X	Y	x	y					
Right Hand	Left Hand		Inch	Inch	mm	mm		VC5	VC29	VC905	VC929
16 ER 6 RD		.375	0.059	0.067	1,5	1,7	6				16092
22 ER 4 RD		.500	0.087	0.091	2,2	2,3	4				16993
22 ER 6 RD		.500	0.059	0.067	1,5	1,7	6				17033

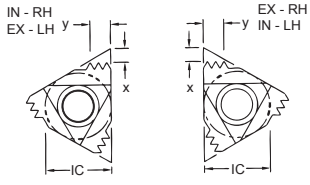
Round (DIN 405) Threading Inserts - Internal

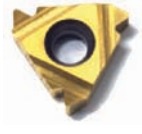
Part Number		Dimensions					Pitch TPI	Available Grades-EDP#			
		I.C. (in.)	X	Y	x	y					
Right Hand	Left Hand		Inch	Inch	mm	mm		VC5	VC29	VC905	VC929
16 IR 6 RD		.375	0.055	0.059	1,4	1,5	6				16833
22 IR 4 RD		.500	0.087	0.091	2,2	2,3	4				17186
22 IR 6 RD		.500	0.059	0.067	1,5	1,7	6				17229

API (Oil) - Round



API Round

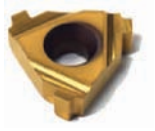


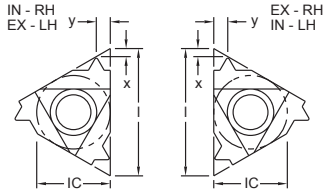


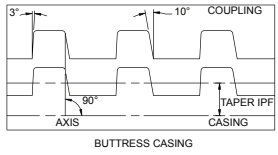
Part Number		Dimensions			Pitch TPI	Taper IPF	Size or Connection #	Available Grades-EDP#			
External	Internal	I.C. (in.)	X	Y				VC5	VC29	VC905	VC929
16 ER 8 API RD		.375	0.051	0.063	8	0.75	4 1/2 - 20			02360	02361
	16 IR 8 API RD		0.051	0.063	8	0.75	4 1/2 - 20			02364	02365
16 ER 10 API RD			0.059	0.055	10	0.75	1.050 - 3 1/2			02359	02374
	16 IR 10 API RD		0.059	0.055	10	0.75	1.050 - 3 1/2			02362	02363

ValTHREAD™ Product Offering

API Buttress Casing



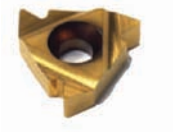


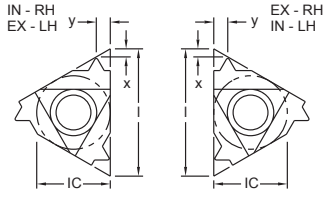


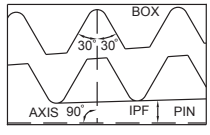
BUTTRESS CASING

Part Number		Dimensions			Pitch	Taper	Size or	Available Grades-EDP#			
External	Internal	I.C. (in.)	X	Y	TPI	IPF	Connection #	VC5	VC29	VC905	VC929
22 ER 5 BUT 0.75		.500	0.087	0.094	5	0.75	4 1/2 - 13 3/8				02368
	22 IR 5 BUT 0.75		0.087	0.094	5	0.75	4 1/2 - 13 3/8			17198	

API Rotary Shoulder Connections



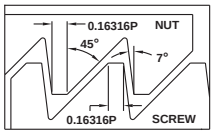


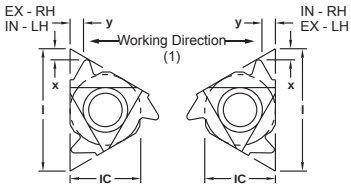


Rotary Shouldered Connections

Part Number		Dimensions			Pitch	Taper	Size or	Available Grades-EDP#			
External	Internal	I.C. (in.)	X	Y	TPI	IPF	Connection #	VC5	VC29	VC905	VC929
22 ER 5 API 403		.500	0.071	0.098	5	3	2 3/8 - 4 1/2 REG			02375	02367
	22 IR 5 API 403		0.071	0.098	5	3	2 3/8 - 4 1/2 REG			02370	02371
27 ER 4 API 382		.625	0.083	0.110	4	2	NC 23 - NC 50			02378	17436
	27 IR 4 API 382		0.083	0.110	4	2	NC 23 - NC 50			02381	02382
	27 IR 4 API 503		0.079	0.118	4	3	5 1/2, 7 5/8, 8 5/8 REG			17552	
27 ER 4 API 502			0.079	0.118	4	2	6 5/8 REG			17443	
	27 IR 4 API 502		0.079	0.118	4	2	6 5/8 REG			17549	02383

American Buttress - External





Standard Style (1)

Part Number		Dimensions			Pitch	Available Grades-EDP#			
Right Hand	Left Hand	I.C. (in.) l (mm)	X	Y	TPI	VC5	VC29	VC905	VC929
16 ER 16 ABUT		0.375 (16,5)	0.039	0.059	16				15983
	16 EL 16 ABUT		0.039	0.059	16				15612
16 ER 12 ABUT			0.055	0.079	12			02386	02387
	16 EL 12 ABUT		0.055	0.079	12			15539	
16 ER 10 ABUT			0.059	0.091	10			02395	15906
22 ER 8 ABUT		0.500 (22)	0.083	0.130	8			02391	17049

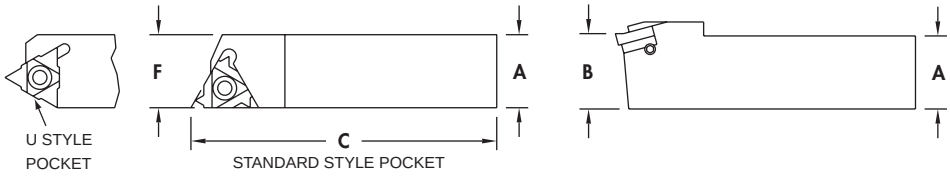
American Buttress - Internal

Part Number		Dimensions			Pitch	Available Grades-EDP#			
Right Hand	Left Hand	I.C. (in.) l (mm)	X	Y	TPI	VC5	VC29	VC905	VC929
16 IR 16 ABUT		0.375 (16,5)	0.039	0.059	16				16687
	16 IL 16 ABUT		0.039	0.059	16				16306
16 IR 12 ABUT			0.055	0.079	12			02388	02389
16 IR 10 ABUT			0.059	0.091	10			02396	02397
22 1R 8 ABUT			0.083	0.130	8				02392
22 IR 6 ABUT		0.500 (22)	0.083	0.134	6			17221	

Note:
- The flank with the large angle is the leading edge.

ValTHREAD™ External Toolholders

Inch Toolholders



Right Hand Shown, Left Hand Opposite

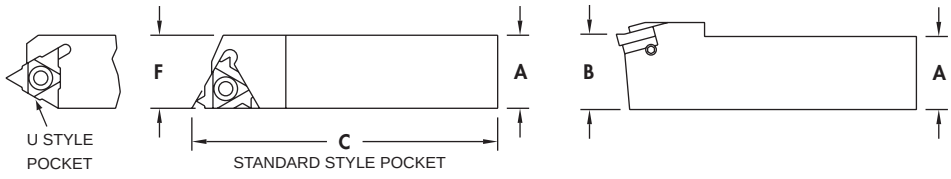
Part Number		Dimensions				EDP#	
Right Hand	Left Hand	I.C.	A=B	C	F	Right Hand	Left Hand
SER 0310 H11*	SEL 0310 H11*	0.250	0.312	4.000	0.430	58518	58279
SER 0375 H11*	SEL 0375 H11*	0.250	0.375	4.000	0.430	58520	58280
SER 0375 D16	SEL 0375 D16	0.375	0.375	2.500	0.630	58519	58555
SER 0500 F16	SEL 0500 F16	0.375	0.500	3.250	0.630	58521	58556
SER 0625 H16	SEL 0625 H16	0.375	0.625	4.000	0.630	58522	58557
SER 0750 K16	SEL 0750 K16	0.375	0.750	5.000	0.750	58523	58558
SER 1000 M16	SEL 1000 M16	0.375	1.000	6.000	1.000	58525	58514
SER 1250 P16	SEL 1250 P16	0.375	1.250	7.000	1.250	58534	58559
SER 1000 M22	SEL 1000 M22	0.500	1.000	6.000	1.000	58527	58515
SER 1000 M22U	SEL 1000 M22U	0.500U	1.000	6.000	1.100	58529	58292
SER 1250 P22	SEL 1250 P22	0.500	1.250	7.000	1.250	58535	58300
SER 1250 P22U	SEL 1250 P22U	0.500U	1.250	7.000	1.250	58536	58302
SER 1500 R22	SEL 1500 R22	0.500	1.500	8.000	1.500	58539	58306
SER 1500 R22U	SEL 1500 R22U	0.500U	1.500	8.000	1.500	58540	58308
SER 1000 M27	SEL 1000 M27	0.625	1.000	6.000	1.250	58530	58517
SER 1250 P27	SEL 1250 P27	0.625	1.250	7.000	1.250	58537	58560
SER 1250 P27U	SEL 1250 P27U	0.625U	1.250	7.000	1.250	58538	58304
SER 1500 R27	SEL 1500 R27	0.625	1.500	8.000	1.500	58541	58310
SER 1500 R27U	SEL 1500 R27U	0.625U	1.500	8.000	1.500	58542	58312

* Complete without anvil

Note:
- Insert and toolholder should always match, i.e., external right hand insert with external right hand toolholder.
- Toolholders are made with a 1.5° helix angle. For other helix angle data, see Machining Guidelines section, pg E48-49.

ValTHREAD™ External Toolholders

Metric Toolholders



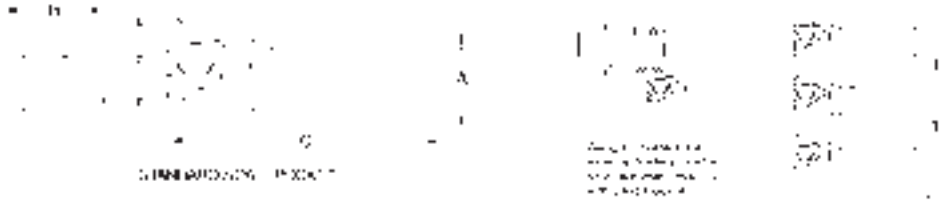
Right Hand Shown, Left Hand Opposite

Part Number		Dimensions				EDP#	
Right Hand	Left Hand	I.C.	A=B	C	F	Right Hand	Left Hand
SER 0808 H11*	SEL 0808 H11*	11	8	100	11	58371	58286
SER 1010 H11*	SEL 1010 H11*	11	10	100	11	58531	58294
SER 1212 F16	SEL 1212 F16	16	12	80	16	58533	58298
SER 1616 H16	SEL 1616 H16	16	16	100	16	58543	58314
SER 2020 K16	SEL 2020 K16	16	20	125	20	58545	58561
SER 2525 M16	SEL 2525 M16	16	25	150	25	58546	58562
SER 3232 P16	SEL 3232 P16	16	32	170	32	58549	58563
SER 2525 M22	SEL 2525 M22	22	25	150	25	58547	58320
SER 2525 M22U	SEL 2525 M22U	22U	25	150	28	58548	58327
SER 3232 P22	SEL 3232 P22	22	32	170	32	58376	58337
SER 3232 P22U	SEL 3232 P22U	22U	32	170	32	58377	58340
SER 4040 R22	SEL 4040 R22	22	40	200	40	58551	58359
SER 4040 R22U	SEL 4040 R22U	22U	40	200	40	58552	58361
SER 2525 M27	SEL 2525 M27	27	25	150	25	58564	58332
SER 3232 P27	SEL 3232 P27	27	32	170	32	58550	58356
SER 3232 P27U	SEL 3232 P27U	27U	32	170	32	58378	58357
SER 4040 R27	SEL 4040 R27	27	40	200	40	58553	58365
SER 4040 R27U	SEL 4040 R27U	27U	40	200	40	58554	58367

* Complete without anvil

Note:
- Insert and toolholder should always match, i.e., external right hand insert with external right hand toolholder.
- Toolholders are made with a 1.5° helix angle. For other helix angle data, see Machining Guidelines section, pg E48-49.

Gang Toolholders—Metric



Right Hand Shown, Left Hand Opposite

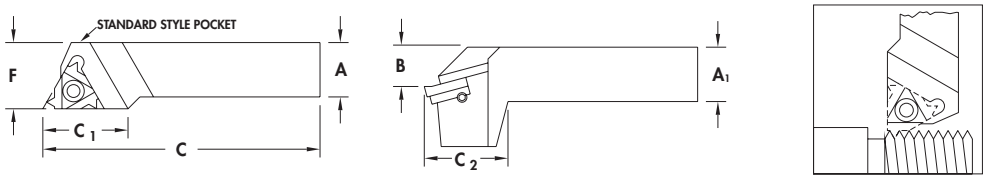
Part Number		Dimensions				EDP#	
Right Hand	Left Hand	I.C.	A=B	C	F	Right Hand	Left Hand
SER 0808 H11G*	SEL 0808 H11G*	11	8	100	12,0	58372	58288
SER 1010 H11G*	SEL 1010 H11G*	11	10	100	14,0	58532	58296
SER 1616 K16G	SEL 1616 K16G	16	16	125	21,7	58544	58316

* Complete without anvil

Note:
- Insert and toolholder should always match, i.e., external right hand insert with external right hand toolholder.
- Toolholders are made with a 1.5° helix angle. For other helix angle data, see Machining Guidelines section, pg E48-49.

ValTHREAD™ External Drophead Toolholders

Inch Toolholders



Right Hand Shown, Left Hand Opposite

Part Number		Dimensions							EDP #	
Right Hand	Left Hand	IC	A=B	A1	C	C1	C2	F	Right Hand	Left Hand
SER 0750 K16D	SEL 0750 K16D	0.375	0.750	0.750	5.000	0.840	1.500	1.000	58369	58284
SER 1000 K16D	SEL 1000 K16D	0.375	1.000	1.000	5.000	0.840	1.500	1.250	58524	58513
SER 1000 M16D	SEL 1000 M16D	0.375	1.000	1.000	6.000	0.840	1.500	1.250	58526	58290
SER 1000 M22D	SEL 1000 M22D	0.500	1.000	1.000	6.000	1.000	1.500	1.250	58528	58516

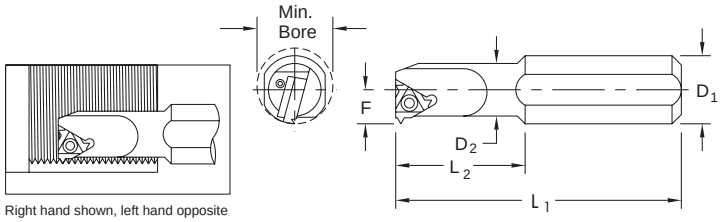
Metric Toolholders

Part Number		Dimensions							EDP #	
Right Hand	Left Hand	IC (mm)	A (mm)	A1 (mm)	C (mm)	C1 (mm)	C2 (mm)	F (mm)	Right Hand	Left Hand
SER 2020 K16D	SEL 2020 K16D	16	20	20	125	21	38	25	58373	58317
SER 2525M 16D	SEL 2525 M16D	16	25	25	150	21	38	32	58374	58318
SER 2525 M22D	SEL 2525 M 22D	22	25	25	150	21	38	32	58375	58375

- Insert and toolholder should always match, i.e., external right hand insert with external right hand toolholder.
- Toolholders are made with a 1.5° helix angle. For other helix angle data, see Machining Guidelines section, pg E48-49.

ValTHREAD™ Internal Boring Bars

Inch Boring Bars



Right hand shown, left hand opposite

Standard Style Pocket
U-Style pocket not shown

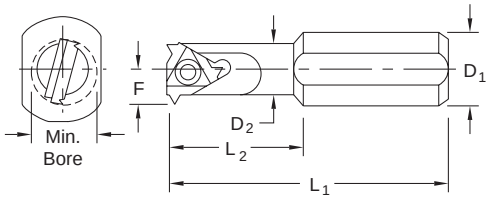
Part Number		*	Dimensions							EDP#	
Right Hand	Left Hand		IC	D1	D2	Min. Bore	L1	L2	F	Right Hand	Left Hand
SIR 0205 H06	SIL 0205 H06	*	0.156	0.500	0.200	0.240	4.000	0.470	0.170	58599	58825
SIR 0265 K08	SIL 0265 K08	*	0.187	0.625	0.260	0.310	5.000	0.700	0.210	58601	58830
SIR 0310 K08U	SIL 0310 K08U	*	0.187U	0.625	0.290	0.350	5.000	0.830	0.260	58603	58862
SIR 0375 H11	SIL 0375 H11	*	0.250	0.375	0.375	0.470	4.000	-	0.280	58605	58565
SIR 0375 K11	SIL 0375 K11	*	0.250	0.625	0.375	0.470	5.000	1.000	0.280	58606	58633
SIR 0500 L11	SIL 0500 L11	*	0.250	0.625	0.500	0.580	5.500	1.250	0.340	58608	58635
SIR 0500 M16	SIL 0500 M16	*	0.375	0.625	0.500	0.640	6.000	1.250	0.390	58609	58566
SIR 0625 P16	SIL 0625 P16	*	0.375	0.750	0.625	0.750	7.000	1.570	0.450	58611	58637
SIR 0750 P16	SIL 0750 P16		0.375	0.750	0.750	0.900	7.000	-	0.510	58613	58567
SIR 1000 R16	SIL 1000 R16		0.375	1.000	1.000	1.160	8.000	-	0.650	58615	58569
SIR 1250 S16	SIL 1250 S16		0.375	1.250	1.250	1.400	10.000	-	0.770	58617	58571
SIR 1500 T16	SIL 1500 T16		0.375	1.500	1.500	1.650	12.000	-	0.900	58622	58643
SIR 0750 P22	SIL 0750 P22	*	0.500	0.750	0.750	0.900	7.000	-	0.590	58614	58568
SIR 1000 R22	SIL 1000 R22		0.500	1.000	1.000	1.160	8.000	-	0.710	58616	58570
SIR 1250 S22	SIL 1250 S22		0.500	1.250	1.250	1.500	10.000	-	0.850	58618	58639
SIR 1250 S22U	SIL 1250 S22U		0.500U	1.250	1.250	1.500	10.000	-	0.950	58619	58640
SIR 1500 T22	SIL 1500 T22		0.500	1.500	1.500	1.750	12.000	-	0.980	58623	58901
SIR 1500 T22U	SIL 1500 T22U		0.500U	1.500	1.500	1.750	12.000	-	1.080	58624	58911
SIR 1250 S27	SIL 1250 S27		0.625	1.250	1.250	1.560	10.000	-	0.880	58620	58641
SIR 1250 S27U	SIL 1250 S27U		0.625U	1.250	1.250	1.560	10.000	-	1.000	58621	58642
SIR 1500 T27	SIL 1500 T27		0.625	1.500	1.500	1.800	12.000	-	1.000	58625	58918
SIR 1500 T27U	SIL 1500 T27U		0.625U	1.500	1.500	1.800	12.000	-	1.130	58646	58933
SIR 2000 U27	SIL 2000 U27		0.625	2.000	2.000	2.300	14.000	-	1.250	58626	58572
SIR 2000 U27U	SIL 2000 U27U		0.625U	2.000	2.000	2.300	14.000	-	1.370	59149	58940
SIR 2500 V27	SIL 2500 V27		0.625	2.500	2.500	2.800	16.000	-	1.500	58627	58952
SIR 2500 V27U	SIL 2500 V27U		0.625U	2.500	2.500	2.800	16.000	-	1.610	58628	58967

* Complete without anvil

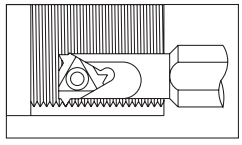
Note:
- Insert and Boring Bar should always match; right-hand insert with right-hand bar, left-hand insert with left-hand bar.
- Boring Bars are made with a 1.5° helix angle. For other helix angle data, see Machining Guidelines section, pg E48-49.

ValTHREAD™ Internal Boring Bars

Inch Boring Bars with Coolant Hole



Standard Style Pocket
U-Style pocket not shown



Right hand shown, left hand opposite

Part Number		*	Dimensions							EDP#	
Right Hand	Left Hand		IC	D1	D2	Min. Bore	L1	L2	F	Right Hand	Left Hand
SIR 0625 P16B	SIL 0625 P16B	*	0.375	0.750	0.625	0.750	7.000	1.570	0.450	59041	58874
SIR 0750 P16B	SIL 0750 P16B		0.375	0.750	0.750	0.900	7.000	-	0.510	59095	58884
SIR 1000 R16B	SIL 1000 R16B		0.375	1.000	1.000	1.160	8.000	-	0.650	59144	58900

*Complete without anvil

Inch Boring Bars, Carbide Shank with Coolant Hole

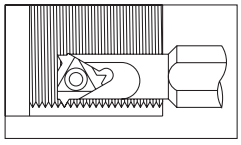
Part Number		*	Dimensions							EDP#	
Right Hand	Left Hand		IC	D1	D2	Min. Bore	L1	L2	F	Right Hand	Left Hand
SIR 0205 H06CB	SIL 0205 H06CB		0.156	0.250	0.200	0.240	4.0	0.470	0.170	56521	62776
SIR 0265 K08CB	SIL 0265 K08CB		0.187	0.312	0.260	0.310	5.0	1.220	0.210	61125	62777
SIR 0310 K08UCB	SIL 0310 K08UCB		.187U	0.312	0.290	0.350	5.0	1.380	0.260	56523	62778
SIR 0375 M11CB	SIL 0375 M11CB		0.250	0.375	0.375	0.470	6.0	-	0.280	56524	62779
SIR 0500 P11CB	SIL 0500 P11CB		0.250	0.500	0.500	0.580	7.0	-	0.340	56526	62780
SIR 0625 R16CB	SIL 0625 R16CB		0.375	0.625	0.625	0.750	8.0	-	0.460	56527	62781
SIR 0750 S16CB		*	0.375	0.750	0.750	0.900	10.0	-	0.540	56541	-
SIR 1000 S16CB		*	0.375	1.000	1.000	1.100	10.0	-	0.640	56528	-

* With anvil

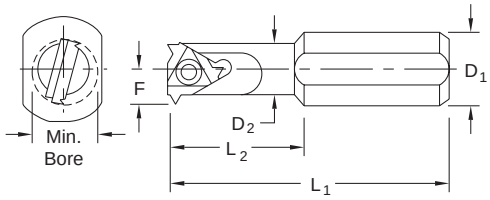
Note:
- Insert and Boring Bar should always match; right-hand insert with right-hand bar, left-hand insert with left-hand bar.
- Boring Bars are made with a 1.5° helix angle. For other helix angle data, see Machining Guidelines section, pg E48-49.

ValTHREAD™ Internal Boring Bars

Metric Boring Bars



Right hand shown, left hand opposite



STANDARD STYLE POCKET
U-Style pocket not shown

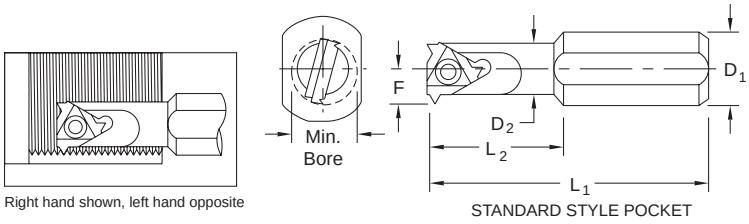
Part Number		*	Dimensions							EDP#	
Right Hand	Left Hand		IC (mm)	D1 (mm)	D2 (mm)	Min. Bore (mm)	L1 (mm)	L2 (mm)	F (mm)	Right Hand	Left Hand
SIR 0005 H06	SIL 0005 H06	*	6	12	5,1	6,0	100	12	4,3	58573	58629
SIR 0007 K08	SIL 0007 K08	*	8	16	6,6	7,8	125	18	5,3	58575	58380
SIR 0008 K08U	SIL 0008 K08U		8U	16	7,3	9,0	125	21	6,6	58970	58382
SIR 0010 H11	SIL 0010 H11	*	11	10	10	12	100	-	7,4	58578	58384
SIR 0010 K11	SIL 0010 K11	*	11	16	10	12	125	25	7,4	58579	58385
SIR 0013 L11	SIL 0013 L11	*	11	16	13	15	140	32	8,9	58582	58457
SIR 0013 M16	SIL 0013 M16	*	16	16	13	16	150	32	10,2	58583	58630
SIR 0016 P16	SIL 0016 P16	*	16	20	16	19	170	40	11,7	58584	58458
SIR 0020 P16	SIL 0020 P16		16	20	20	24	170	-	13,7	58586	58461
SIR 0025 R16	SIL 0025 R16		16	25	25	29	200	-	16,2	58588	58631
SIR 0032 S16	SIL 0032 S16		16	32	32	36	250	-	19,7	58590	58466
SIR 0040 T16	SIL 0040 T16		16	40	40	44	300	-	23,7	58593	58471
SIR 0020 P22	SIL 0020 P22	*	22	20	20	24	170	-	15,6	58587	58463
SIR 0025 R22	SIL 0025 R22		22	25	25	29	200	-	18,1	58589	58465
SIR 0032 S22	SIL 0032 S22		22	32	32	38	250	-	21,6	58591	58467
SIR 0032 S22U	SIL 0032 S22U		22U	32	32	38	250	-	24,4	58592	58468
SIR 0040 T22	SIL 0040 T22		22	40	40	46	300	-	25,6	59031	58472
SIR 0040 T22U	SIL 0040 T22U		22U	40	40	46	300	-	28,1	58594	58473
SIR 0032 S27	SIL 0032 S27		27	32	32	40	250	-	22,6	58644	58469
SIR 0032 S27U	SIL 0032 S27U		27U	32	32	40	250	-	25,8	59026	58470
SIR 0040 T27	SIL 0040 T27		27	40	40	48	300	-	26,6	58645	58474
SIR 0040 T27U	SIL 0040 T27U		27U	40	40	48	300	-	29,4	58595	58506
SIR 0050 U27	SIL 0050 U27		27	50	50	58	350	-	31,6	59039	58507
SIR 0050 U27U	SIL 0050 U27U		27U	50	50	58	350	-	34,3	58596	58508
SIR 0060 V27	SIL 0060 V27		27	60	60	68	400	-	36,6	58597	58726
SIR 0060 V27U	SIL 0060 V27U		27U	60	60	68	400	-	39,7	58598	58780

*Complete without anvil

Note:
- Insert and Boring Bar should always match; right-hand insert with right-hand bar, left-hand insert with left-hand bar.
- Boring Bars are made with a 1.5° helix angle. For other helix angle data, see Machining Guidelines section, pg E48-49.

ValTHREAD™ Internal Boring Bars

Metric Boring Bars with Coolant Hole



Right hand shown, left hand opposite

STANDARD STYLE POCKET

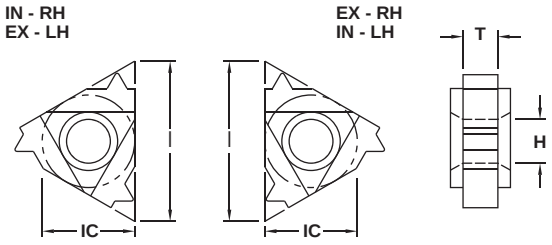
Part Number		*	Dimensions							EDP#	
Right Hand	Left Hand		I.C.	D1	D2	Min. Bore	L1	L2	F	Right Hand	Left Hand
SIR 0016 P16B	SIL 0016 P16B	*	16	20	16	19	170	40	11,7	58994	58459
SIR 0020 P16B	SIL 0020 P16B		16	20	20	24	170	-	13,7	59013	58462
SIR 0025 R16B	SIL 0025 R16B		16	25	25	29	200	-	16,2	59021	58464

*Complete without anvil

Note:
- Insert and Boring Bar should always match; right-hand insert with right-hand bar, left-hand insert with left-hand bar.
- Boring Bars are made with a 1.5° helix angle. For other helix angle data, see Machining Guidelines section, pg E48-49.

The ValTHREAD system combined with ValPro support sets new standards for productivity.

ValTHREAD™ Common Insert Dimensions Chart



Designation	
IC =	Inscribed Circle
L =	Theoretical Cutting Edge Length
T =	Insert Thickness
H =	Insert Hole Size

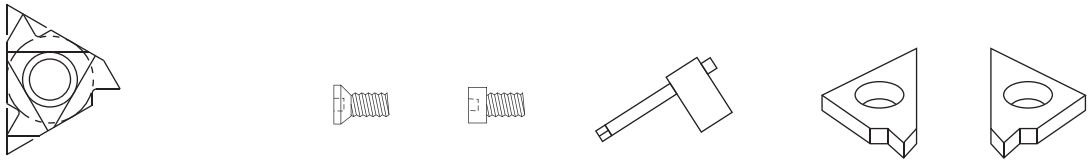
External

ISO Number	IC	l	T	H
06 ER / L	5/32	0.273	0.073	0.089
08 ER / L	3/16	0.341	0.087	0.100
11 ER / L	1/4	0.433	0.126	0.128
16 ER / L	3/8	0.650	0.143	0.157
22 ER / L	1/2	0.866	0.188	0.197
27 ER / L	5/8	1.083	0.257	0.240

Internal

ISO Number	IC	l	T	H
06 IR / L	5/32	0.273	0.073	0.089
08 IR / L	3/16	0.341	0.087	0.100
11 IR / L	1/4	0.433	0.126	0.128
16 IR / L	3/8	0.650	0.143	0.157
22 IR / L	1/2	0.866	0.188	0.197
27 IR / L	5/8	1.083	0.257	0.240

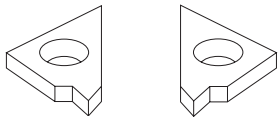
Spare Parts



Insert Size	Insert Style	Insert Screw	Anvil Screw	Torx Wrench	Anvil Right Hand	Anvil Left Hand
06 (5/32 inch)	Internal	PT-807	---	T-6 Torx Wrench	---	---
08 (3/16 inch)	Internal	PT-808	---	T-6 Torx Wrench	---	---
11 (1/4 Inch)	Ext./Int.	PT-809	---	T-8 Torx Wrench	---	---
16 (3/8 Inch)	External	PT-810	PT-804	T-10 Torx Wrench	CAE16	CAI16
16 (3/8 Inch)	Internal	PT-810	PT-804	T-10 Torx Wrench	CAI16	CAE16
16 (3/8 Inch)*	Internal	PT-810S	PT-804	T-10 Torx Wrench	CAI16	CAE16
22 (1/2 Inch)	External	PT-811	PT-805	T-20 Torx Wrench	CAE22	CAI22
22 (1/2 Inch)	Internal	PT-811	PT-805	T-20 Torx Wrench	CAI22	CAE22
22U (1/2 Inch)	External	PT-811	PT-805	T-20 Torx Wrench	CAE22U	CAI22U
22U (1/2 Inch)	Internal	PT-811	PT-805	T-20 Torx Wrench	CAI22U	CAE22U
27 (5/8 Inch)	External	PT-812	PT-806	T-25 Torx Wrench	CAE27	CAI27
27 (5/8 Inch)	Internal	PT-812	PT-806	T-25 Torx Wrench	CAI27	CAE27
27U (5/8 Inch)	External	PT-812	PT-806	T-25 Torx Wrench	CAE27U	CAI27U
27U (5/8 Inch)	Internal	PT-812	PT-806	T-25 Torx Wrench	CAI27U	CAE27U

* Use insert screw PT-810S for boring bars:
SIR/L 0500 M16
SIR/L 0625 P16
SIR/L 0013 M16
SIR/L 0016 P16

Standard and Slanted Anvils—Standard Positive Helix Anvils



Dimensions											
Toolholder	A (I.C.)	4.5º	EDP#	3.5º	EDP#	2.5º	EDP#	1.5º	EDP#	0.5º	EDP#
EX, RH, or IN, LH	.375	CAE 16 4.5P	08265	CAE 16 3.5P	08264	CAE 16 2.5P	08263	CAE 16	08260	CAE 16 0.5P	08310
EX, LH, or IN, RH	.375	CAI 16 4.5P	08291	CAI 16 3.5P	08290	CAI 16 2.5P	08289	CAI 16	08286	CAI 16 0.5P	08287
EX, RH, or IN, LH	.500	CAE 22 4.5P	08269	CAE 22 3.5P	08268	CAE 22.2 5P	24782	CAE 22	08266	CAE 22 0.5P	24781
EX, LH, or IN, RH	.500	CAI 22 4.5	24792	CAI 22 3.5P	08297	CAI 22 2.5P	08296	CAI 22	08293	CAI 22 0.5P	08294
EX, RH, or IN, LH	.625	CAE 27 4.5P	08278	CAE 27 3.5P	24787	CAE 27 2.5P	24786	CAE 27	08275	CAE 27 0.5P	24784
EX, LH, or IN, RH	.625	CAI 27 4.5P	24799	CAI 27 3.5P	08313	CAI 27 2.5P	08312	CAI 27	08304	CAI 27 0.5P	24797
EX, RH, or IN, LH	.500U	CAE 22U 4.5P	24779	CAE 22U 3.5P	24772	CAE 22U 2.5P	24771	CAE 22U	08271	CAE 22U 0.5P	08273
EX, LH, or IN, RH	.500U	CAI 22U 4.5P	08303	CAI 22U 3.5P	24789	CAI 22U 2.5P	08302	CAI 22U	08299	CAI 22U 0.5P	08300
EX, RH, or IN, LH	.625U	CAE 27U 4.5P	08285	CAE 27U 3.5P	08284	CAE 27U 2.5P	08283	CAE 27U	08280	CAE 27U 0.5P	08282
EX, LH, or IN, RH	.625U	CAI 27U 4.5P	08309	CAI 27U 3.5P	24795	CAI 27U 2.5P	08308	CAI 27U	08306	CAI 27U 0.5P	08307

Standard Negative Helix Anvils

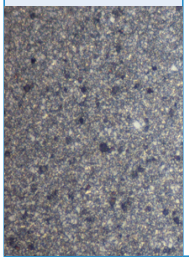
Dimensions							
Toolholder	A (I.C.)	-0.5º	EDP#	-1.5º	EDP#	Multi-Tooth Anvils	EDP#
EX, RH, or IN, LH	.375	CAE 16 0.5N	08261	CAE 16 1.5N	08262	CAE 16M	24770
EX, LH, or IN, RH	.375	CAI 16 0.5N	08311	CAI 16 1.5N	08288	CAI 16M	08292
EX, RH, or IN, LH	.500	CAE 22 0.5N	24780	CAE 22 1.5N	08267	CAE 22M	08270
EX, LH, or IN, RH	.500	CAI 22 0.5N	24790	CAI 22 1.5N	08295	CAI 22M	08298
EX, RH, or IN, LH	.625	CAE 27 0.5N	08276	CAE 27 1.5N	08277	CAE 27M	08279
EX, LH, or IN, RH	.625	CAI 27 0.5N	24796	CAI 27 1.5N	24798	CAI 27M	08305
EX, RH, or IN, LH	.500U	CAE 22U 0.5N	08272	CAE 22U 1.5N	08274		
EX, LH, or IN, RH	.500U	CAI 22U 0.5N	24788	CAI 22U 1.5N	08301		
EX, RH, or IN, LH	.625U	CAE 27U 0.5N	08281	CAE 27U 1.5N	24783		
EX, LH, or IN, RH	.625U	CAI 27U 0.5N	24793	CAI 27U 1.5N	24794		

Note: See pages E48-49 for thread helix angle data.

ValTHREAD™ Threading Grade Descriptions

Grade	Description	Performance	ISO Class	Application
VC929 	**PVD Coated Carbide** TiN Coating Micro Grain Substrate	**Light Duty Grade** Excellent Wear Resistance Low Build-Up at the Cutting Edge Outstanding Edge Integrity	P10 M15 K15 S10 N10	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Aluminum & Non-Ferrous Alloys. Finish to General Purpose Machining. Medium to High Speeds.
VC922 	**PVD Coated Carbide** TiAlN Coating Micro Grain Substrate High Cobalt Substrate	**Medium Duty Grade** Enhanced Crater Resistance Excellent Wear Resistance Excellent Toughness and Chipping Resistance Less Build-Up at the Cutting Edge	P20 M20 K25 S20 N20	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Aluminum & Non-Ferrous Alloys. General Purpose Machining. Medium to High Speeds. Continuous and Interrupted Cuts, and High Feed Rates.
VC905 	**PVD Coated Carbide** TiN Coating Medium Hardness	**Medium Duty Grade** Good Deformation Resistance Good Chipping Resistance	P25 M20	Steels, Cast Steels, Ferritic and Martensitic Stainless Steels. General Machining with Good Surface Finish, Continuous and Interrupted Cuts.
VC901 	**PVD Coated Carbide** TiN Coating Micro Grain Substrate	**Medium Duty Grade** Excellent Toughness and Chipping Resistance Good Deformation Resistance	P30 M25 K30 S25 N25	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Non-Ferrous Alloys. General Purpose Machining. Medium Speeds. Continuous and Interrupted Cuts, and High Feed Rates.

ValTHREAD™ Threading Grade Descriptions

Grade	Description	Performance	ISO Class	Application
VC29 	**Uncoated Carbide** Micro Grain High Hardness	**Finishing Grade** Excellent Wear Resistance Excellent Edge Strength Enhanced Notch Resistance	M10 K10 S10 N15	High Temperature Alloys, Titanium Alloys, Aluminum and Non-Ferrous Alloys. Finishing Applications.
VC5 	**Uncoated Carbide** Medium Grain Size Medium Hardness	**General Purpose Grade** Excellent Toughness Good Wear Resistance and Chipping Resistance	P30 S25	Steels, Cast Steels, Stainless Steels. Low to Medium Speed Under a Wide Range of Cutting Conditions. General Machining with Good Surface Finish, Continuous and Interrupted Cuts.
VC942 	**PVD Coated HSS** TiN Coating	**Light Duty Grade** Excellent Edge Strength	P25 M25 K25 S25 N25	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Aluminum & Non-Ferrous Alloys. Finish to General Purpose Machining. Very Low Speed Grade Especially for Small Diameter Internal Threads.

V-ValTHREAD™ Guide to Workpiece Material

ValPRO™ Color System Simplifies Tool Selection Process

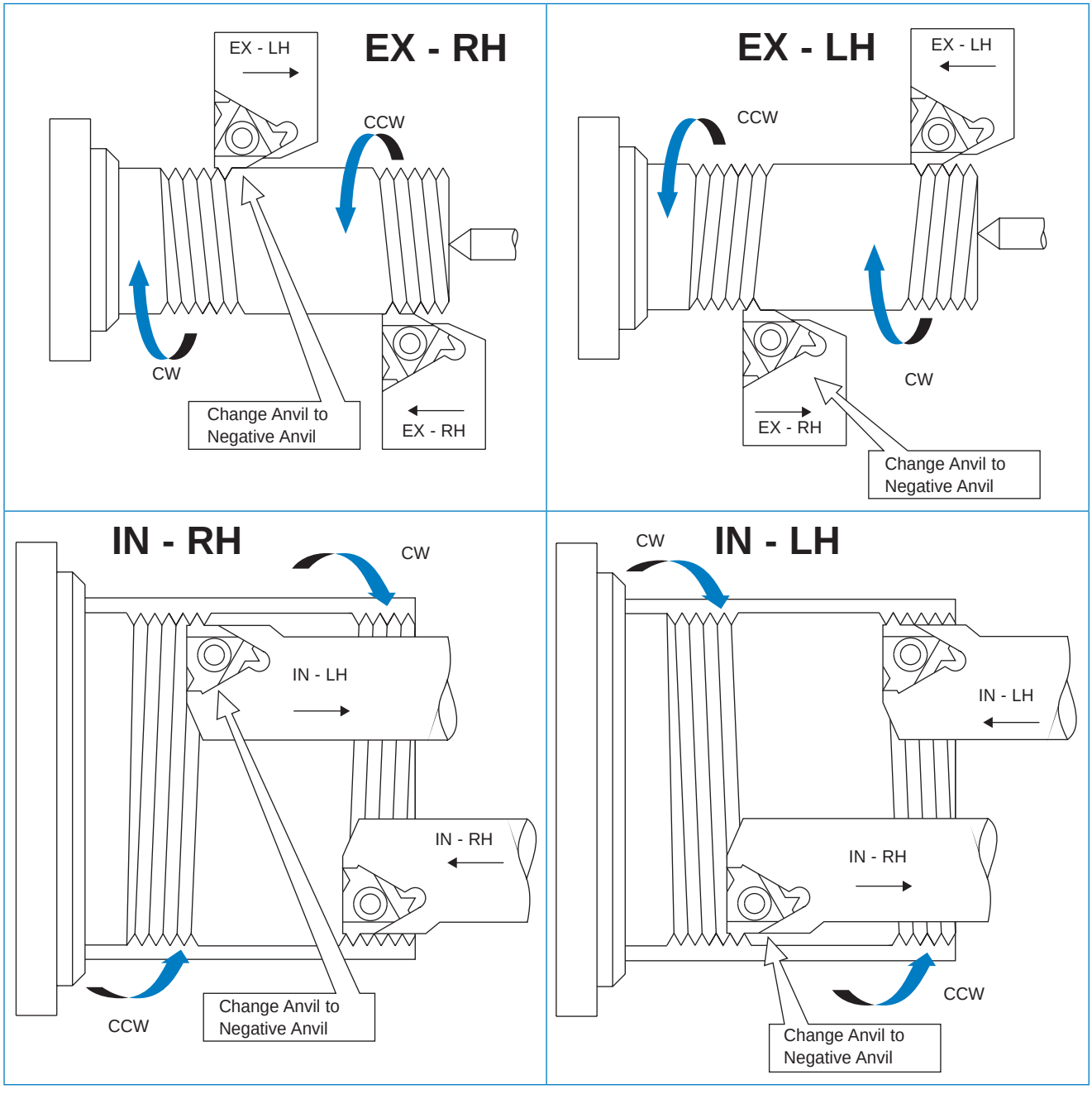
Use the ValPRO™ color-coded identification system for matching our tools to your application. Color and letter designations correspond to the ISO standard classification system. These letters and colors are used throughout the catalog to reduce the time you spend looking for information.

Material Group	Category	Material Designation
Steels P	Free Machining and Low Carbon	1006, 1008, 1010, 1015, 1018, 1020, 1025, 1117, 1141, 1213,12L13, 12L14, 11L41
	Medium Carbon and High Carbon	1030, 1035, 1040, 1045, 1052, 1055, 1060, 1085, 1095, 1424, 1541, 1551,
	Alloy and Easy To Machine Tool Steels	4130, 4150, 4340, 5140, 4320, 5120, 8620, 6150, 5200, W1, W2, W5, 300M
	Tool Steels and Die	M1, M2, T1, T4, T5, A2, A3, D2, D4, 01, H10, H11, P2, P20
Stainless Steels M	Ferritic and Martensitic	403, 405, 409, 410, 410S, 414, 430, 431, 434, 440, 442
	Austenitic	201, 203, 303, 304, 304l 316, 316L, 321, 327, Nitronic 40, Custom 455
	PH and Duplex	15-5 PH, 17-4 PH, 13-8 Mo, AM350, AM355, Ferralium 255, 329, S32950
Cast Irons K	Gray Cast Iron	ASTM A48, CLass 20, 25, 30, 35, 40
	Ductile and Malleable-Low & Medium Tensile	ASTM A546, Grades 60-40-18, 65-45-12, 80-55-06, SAE 434 J434C, Grade D7003, ASTM A220, Grades 7003, 820002, 900001, SAE JT58, Grades M7002, M8501
	Ductile and Malleable-High Tensile	ASTM A536, Grades 100-70-03, SAE J434C, Grade D7003, ASTM A220 Grades70003, 820002, 90001, SAE J158, Grades M7002, M8501
High Temp Alloys S	Iron Base Alloys	A-286, Incoloy 800, 801, 802, N-155, 19-9 DL
	Nickel and Cobalt Base Alloys	Inconel 600, 625, 718 and X750, Waspaloy, Nimonic 90, Udimet 500 & 700, Monel Alloys L-605, Haynes Alloy 25, 188 Haynes Stellite 6, 21, WI-52
	Titanium Alloys	6A14V, 5A1-2.5Sn, 6AL-2Sn-4Zr-6Mo
Aluminum And Non-Ferrous Materials N	Aluminum Alloys < 7% Silicon	AA 2014, 2024, 4032, 6061, 6151, 7075, SAE, 304, 335, 336, 380
	Aluminum Alloys 7% - 12% Silicon	AA380, A380, 384, A384, SAE 303, 305, 306, 308, 309, 383
	Aluminum Alloys 12% - 18% Silicon	AA 390, 392
	Non-Ferrous	Precious Metals, Copper & Brass Alloys, Plastics, Magnesium Alloys
Hardened Materials H	Heat Treated Steels	40-50- Rc
	Heat Treated Tool & Die Steels	50-60- Rc
	Chilled & Ni-Resist Cast Irons	40-60 Rc

Material Group	Category	Threading Grade and Speed Selection SFM (V m/min)						
		VC922	VC929	VC901	VC905	VC5	VC29	VC942
Steels P	Free Machining and Low Carbon Steels 120 - 170 BHN	300 - 600 (90 - 180)	330 - 650 (100 - 200)	200 - 500 (60 - 150)	260 - 550 (80 - 170)	230 - 400 (70 - 125)	-	30 - 130 (10 - 40)
	Medium Carbon and High Carbon Steels 180 - 220 BHN	275 - 550 (85 -170)	300 - 600 (90 - 180)	180 - 450 (55 - 135)	240 - 450 (75 - 140)	200 - 330 (60 - 100)	-	30 - 130 (10 - 40)
	Alloy Steels and Easy to Machine Tool Steels 200 - 240 BHN	275 - 450 (85 - 140)	275 - 450 (85 - 140)	150 - 350 (45 - 110)	160 - 330 (50 - 100)	160 - 260 (50 - 80)	-	30 - 130 (10 - 40)
	Tool Steels and Die Steels 220 -260 BHN	225 - 400 (70 - 120)	225 - 400 (70 - 120)	125 - 225 (40 - 70)	140 - 275 (45 - 85)	100 - 200 (30 - 60)	-	30 - 130 (10 - 40)
Stainless Steels M	Ferritic and Martensitic Stainless Steels 180 - 240 BHN	250 - 450 (75 - 140)	300 - 400 (90 - 125)	150 - 350 (45 - 110)	-	200 - 300 (60 - 90)	250 - 350 (80 - 110)	15 - 100 (5 - 30)
	Austenitic Stainless Steels 140 - 180 BHN	250 - 450 (75 - 140)	300 - 400 (90 - 125)	100 - 300 (30 - 90)	-	200 - 300 (60 - 90)	250 - 350 (80 - 110)	15 - 100 (5 - 30)
	PH and Duplex Stainless Steels 220 - 260 BHN	200 - 400 (60 - 120)	250 - 350 (75 - 110)	85 - 250 (25 - 75)	-	150 - 250 (45 - 75)	200 - 300 (60 - 90)	15 - 100 (5 - 30)
Cast Iron K	Gray Cast Irons 180 - 220 BHN	275 - 500 (85 - 150)	275 - 550 (85 - 170)	250 - 450 (75 - 140)	-	-	200 - 350 (60 - 110)	15 - 100 (5 - 30)
	Gray Cast Irons 220 - 260 BHN	250 - 450 (75 - 140)	250 - 450 (75 - 140)	200 - 400 (60 - 120)	-	-	180 - 300 (55 - 90)	15 - 100 (5 - 30)
	Ductile & Malleable Cast Irons 140 - 200 BHN	300 - 550 (90 - 170)	300 - 600 (90 - 180)	150 - 250 (45 - 75)	-	-	200 - 350 (60 - 110)	15 - 100 (5 - 30)
	Ductile & Malleable Cast Irons 200 - 260 BHN	250 - 450 (75 - 140)	250 - 450 (75 - 140)	125 - 200 (40 - 60)	-	-	180 - 300 (55 - 90)	15 - 100 (5 - 30)
High Temp Alloys S	Iron & Nickel Based Alloys, Monel, Hastelloy, Inconel, Waspaloy	125 - 350 (40 - 110)	125 - 250 (40 - 75)	90 - 150 (30 - 45)	-	-	45 - 125 (15 - 40)	15 - 50 (5 - 15)
	Cobalt Based Alloys, Haynes Stellite	125 - 350 (40 - 110)	125 - 250 (40 - 75)	90 - 150 (30 - 45)	-	-	45 - 125 (15 - 40)	15 - 50 (5 - 15)
	Titanium Alloys 6Al-4V	125 - 350 (40 - 110)	125 - 250 (40 - 75)	90 - 150 (30 - 45)	-	-	30 - 100 (15 - 35)	15 - 50 (5 - 15)
Aluminum & Non-Ferrous Materials N	Aluminum Alloys <7% Silicon	1200 - 2600 (365 - 800)	1200 - 1800 (365 - 550)	150 - 800 (45 - 245)	-	-	400 - 650 (120 - 200)	100 - 350 (30 - 110)
	Aluminum Alloys 7% - 12% Silicon	1000 - 2400 (305 - 730)	1000 - 1600 (305 - 490)	100 - 650 (35 - 200)	-	-	350 - 600 (110 - 180)	100 - 350 (30 - 110)
	Aluminum Alloys 12% - 18% Silicon	900 - 1500 (275 - 460)	900 - 1400 (275 - 430)	50 - 400 (15 - 120)	-	-	200 - 400 (60 - 120)	75 - 200 (25 - 60)
	Copper Alloys	600 - 1000 (180 - 305)	600 - 1000 (180 - 305)	500 - 900 (150 - 275)	-	-	175 - 300 (55 - 90)	100 - 350 (30 - 110)
Hardened Materials H	Steels 45 - 50 Rc	75 - 200 (25 - 60)	60 - 150 (18 - 45)	60 - 125 (18 - 40)	-	-	-	-
	Steels 50 - 60 Rc	60 - 175 (18 - 55)	50 - 125 (15 - 40)	50 - 100 (15 - 30)	-	-	-	-
	Chilled Irons 45 - 50 Rc	75 - 200 (25 - 60)	60 - 150 (18 - 45)	60 - 125 (18 - 40)	-	-	-	-

ValTHREAD™ Machining Guidelines

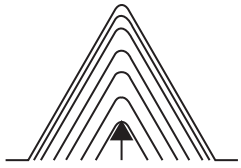
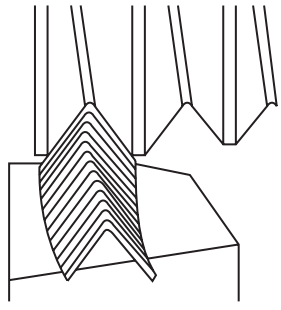
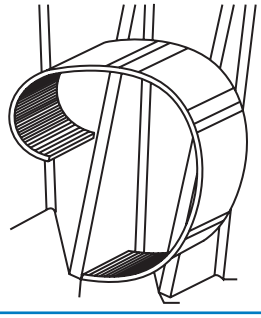
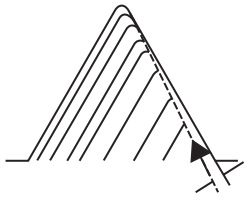
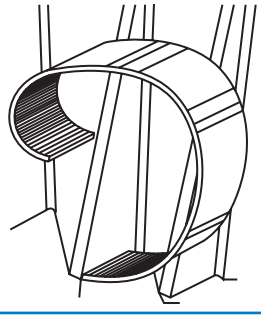
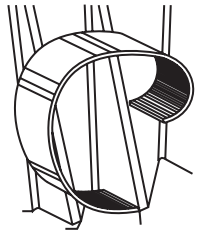
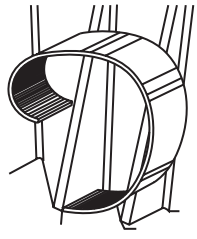
Threading Methods



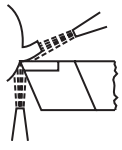
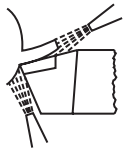
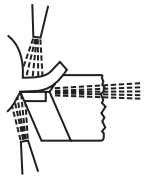
Number of Cutting Passes Selection

Pitch Millimeters	0.5	1.0	1.5	2.0	2.5	3.0	4.0	6.0
Threads Per Inch	48	24	16	12	10	8	6	4
Number of Passes	3-6	4-9	5-11	6-13	7-15	8-17	10-20	11-22

Thread Pass Notes:
- For most standard applications, choose the middle of the range as a good starting point.
- In most cases, the tougher the material, the higher the number of cutting passes required.
- As a general rule of thumb, less passes are better than increasing speed.

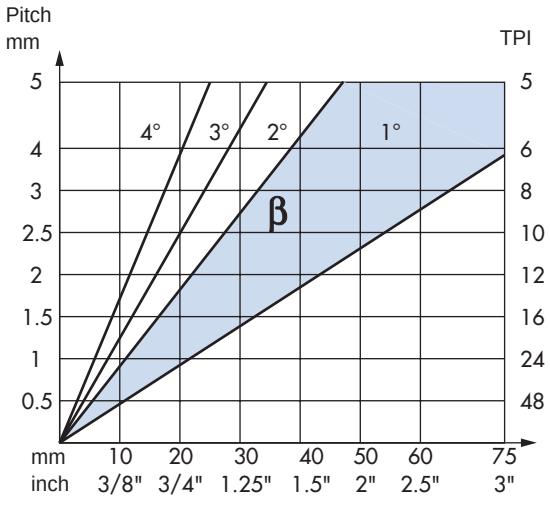
Infeed Angle Selection and Chip Formation		Typical Chip Formation
Infeed Angle 0˚ **Benefit:** Cutting edge is protected from chipping by both sides in cut. **Problem:** Both sides of insert are heated by the workpiece. Produces "Vee" chips which can be very difficult to handle.		
Infeed Angle 30˚ **Benefit:** Chip is curled away from thread form. **Problem:** Trailing edge may drag rather than cut, which may cause chipping.		
Infeed Angle 29˚ **Benefit:** Cutting edge is protected from chipping by both sides in cut. Chip is curled away from thread form. Part of the heat generated is dissipated to the trailing edge. Final pass infeed angle should be 0˚.		
Alternating Flank Infeed **For very large thread forms** **Benefit:** Increased tool life because both edges are used effectively. Final pass should be 0˚.		 

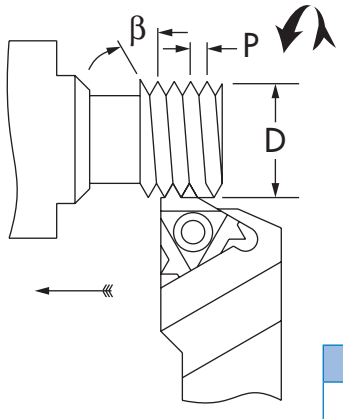
The coolant should provide:

 Fast heat removal	 Good surface coverage	 Non-corrosiveness	 Homogeneity and stability	 Good lubricant qualities

ValTHREAD™ Machining Guidelines

Thread Helix Angle





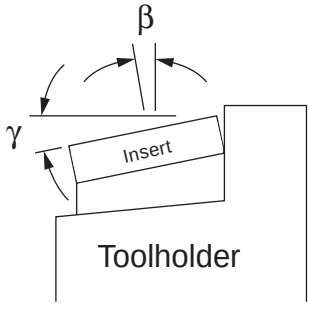
$$\text{Tan } \beta = \frac{P}{\pi \times D}$$

Simplified Formula	
Metric:	β = 20P/D
Inch:	β = 20/PD

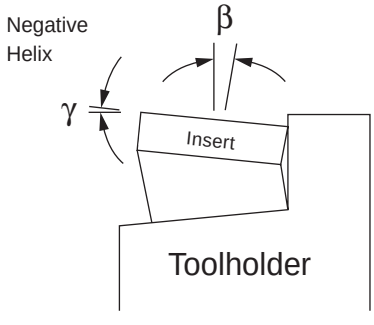
Example
D = 30 mm (1.18")
P = 1.5 mm(16 TPI)
Metric: β = 20 x 1.5/30 = 1
Inch: β = 20/16 x 1.18 = 1

Standard and Slanted Anvils

Valenite toolholder and boring bar pockets have a built-in 1.5 helix compensation angle. This angle may be adjusted to match the helix angle of the thread being produced by replacing the anvil.



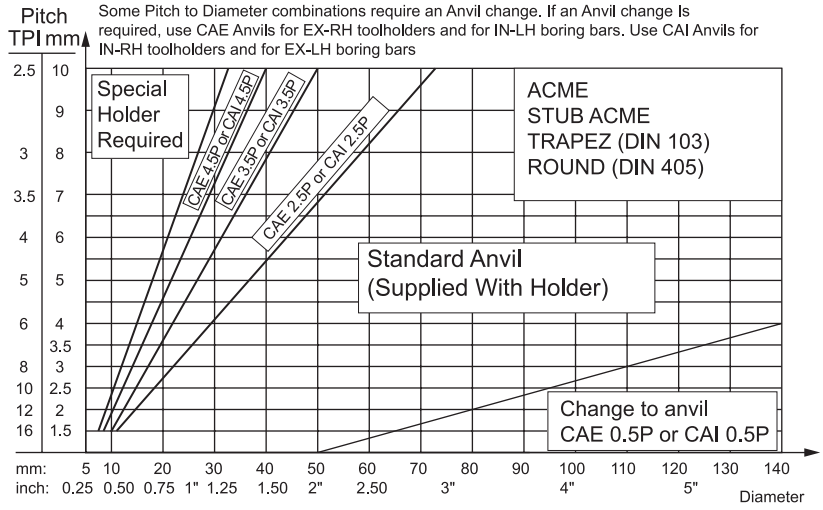
Positive Helix Angles
Applicable when turning RH thread with RH holder or LH thread with LH holder.

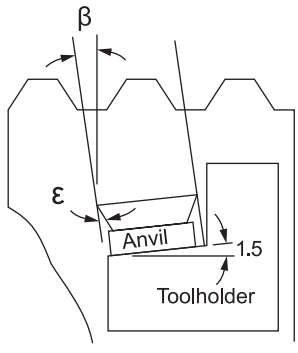


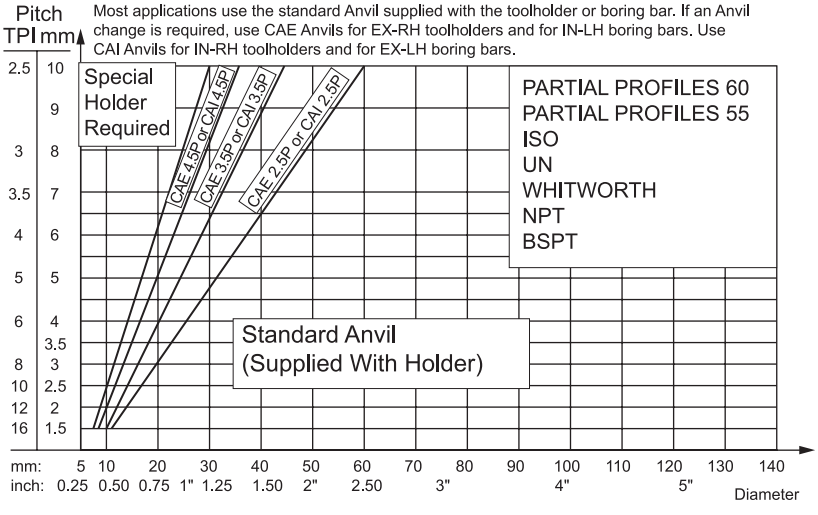
Negative Helix Angles
Applicable when turning RH thread with LH holder or LH thread with RH holder.

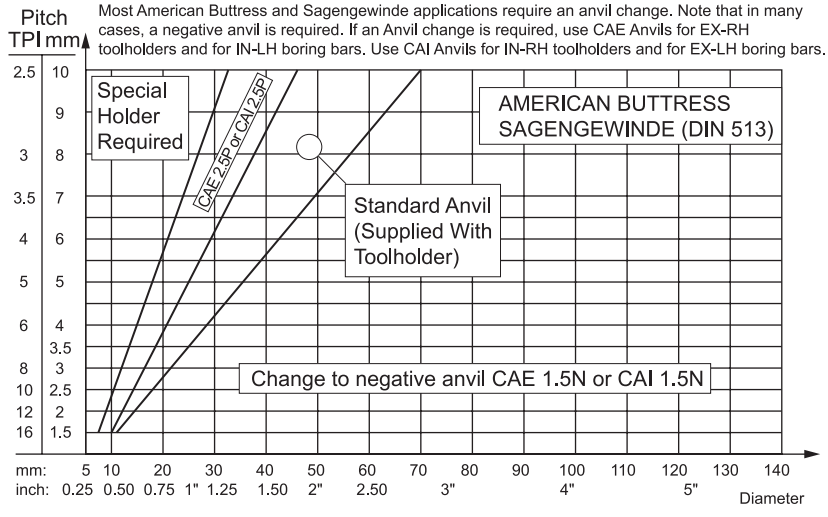
See Page E41 for Standard and Slanted Anvil product listing.

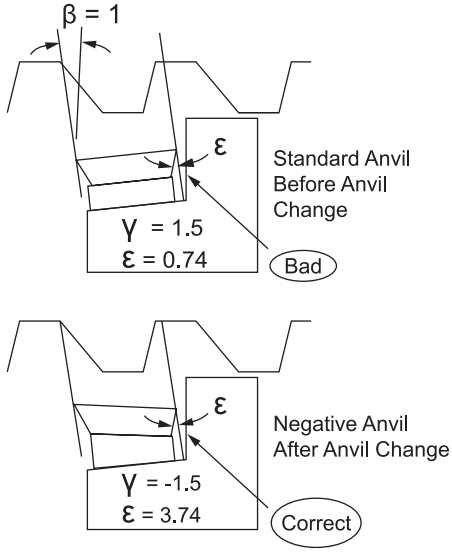
Recommended Anvil Replacements









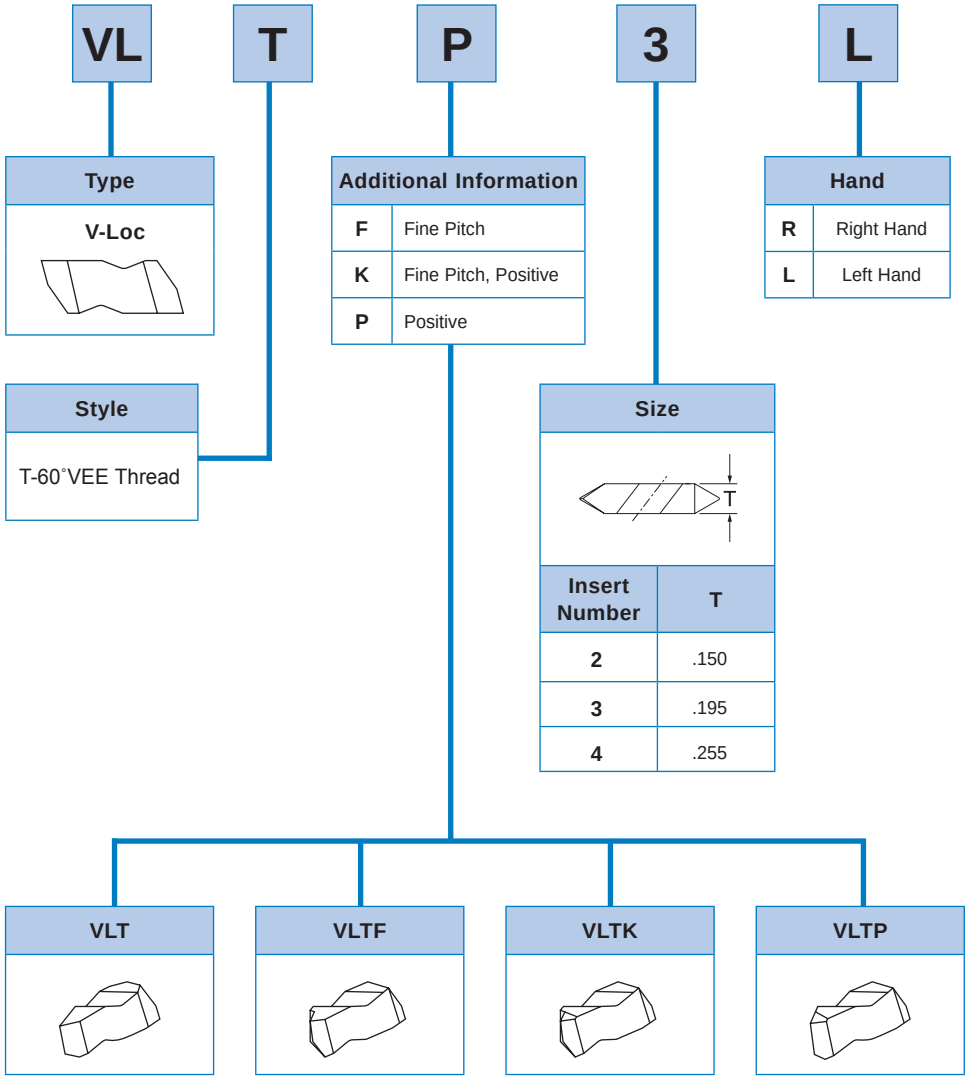


ValTHREAD™ Failure Modes

Problem	Control Action/Remedy
Shallow Thread Profile	• Adjust center height • Replace insert
Uneven Flank Wear	• Decrease number of passes • Change infeed angle
Trailing Edge Chipping	• Select tougher grade • Change infeed angle
Leading Edge Chipping	• Reduce DOC on first pass • Select tougher grade
Crest Burr or Torn Finish	• Use topping insert • Change infeed angle
Poor Tool Life	• Decrease speed (SFM) • Select wear resistant grade • Apply coolant
Excessive Flank Wear	• Decrease speed (SFM) • Select wear resistant grade • Change Infeed Angle

Problem	Control Action/Remedy
Deformation	• Decrease speed (SFM) • Select wear resistant grade • Apply coolant • Reduce DOC on flrst pass
Fracture	• Reduce DOC on first pass • Change infeed angle • Adjust center height • Select tougher grade
Chatter	• Reduce tool overhang • Adjust center height • Check insert for movement and reseat • Increase speed (SFM)
Built-Up Edge	• Increase speed (SFM) • Decrease number of passes • Apply coolant • Select positive rake angle • Use PVD coated insert

V-LOC® Insert Designation

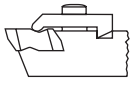


V-LOC® Toolholders Designation

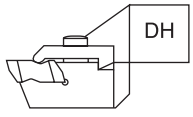
VL	S	R		16	3	D

Holding Method

V-Loc



Drop Head



Shank Size

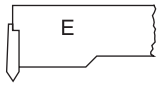
For shanks 5/8" square and larger, the number of 1/16" width and height.

For shanks under 5/8" square, the number of 1/16" of cross-section will be preceded by a zero.

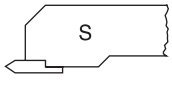
Qualified Back and End

A	4.00" LG
B	4.50" LG
C	5.00" LG
D	6.00" LG
V	3.50" LG

Insert Location



Side Mount Offset

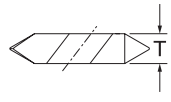


Hand of Tool

End Mount

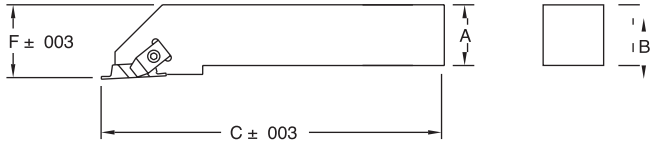
Side Mount

Insert Size



Insert Number	T
2	.150
3	.195
4	.255

Qualified Back and End



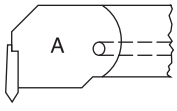
Toolholders are qualified over sharp corner of gage grooving insert.

V-LOC® Boring Bars Designation

A **32** **VL** **E** **R** **3**

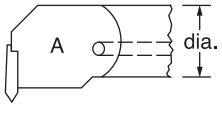
Bar Type

Steel with Coolant



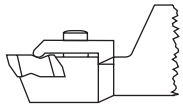
Bar Diameter

Indicates bar diameter in sixteenth of an inch.



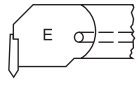
Holding Method

V-Loc



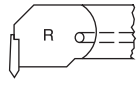
Insert Location

End Mount

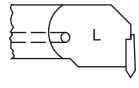


Insert Location

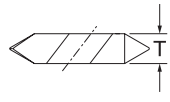
Right Hand



Left Hand



Insert Size

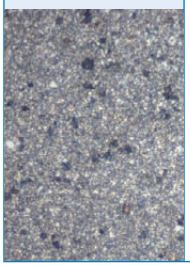


Insert Number	T
2	.150
3	.195
4	.255

Right-hand bars use left-hand threading/grooving inserts and clamps.
Left-hand bars use right-hand threading/grooving inserts and clamps.

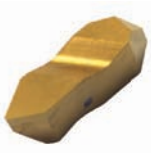
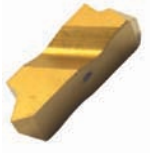
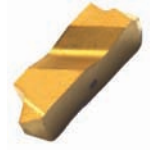
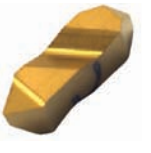
V-LOC® Grade Description

Threading System

Grade	Description	Performance	ISO Class	Application
VP5820 	**PVD Coated Carbide** TiAlN/TiN Multi-Layer Coating Micro Grain Substrate High Cobalt Substrate	**General Machining Grade** Enhanced Crater Resistance Excellent Wear Resistance Excellent Toughness and Chipping Resistance Low Cutting Edge Build-Up	P20 M20 K20 S20 N20	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Aluminum & Non-Ferrous Alloys. General Purpose Machining. Medium to High Speeds. Continuous and Interrupted Cuts, and Medium to High Feed Rates.
VP5410 	**PVD Coated Carbide** TiN Coating Micro Grain Substrate Dense Smooth Coating	**Light Duty Grade** Excellent Wear Resistance Low Cutting Edge Build-Up Outstanding Edge Integrity	P10 M15 K15 S10 N10	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Non-Ferrous Alloys. Finish to General Purpose Machining. Medium to High Speeds in Good Machining Conditions.
VP5425 	**PVD Coated Carbide** TiN Coating Micro Grain Substrate Dense Smooth Coating	Medium Duty Grade Excellent Toughness and Chipping Resistance Good Deformation Resistance	P30 M25 K30 S25 N25	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Non-Ferrous Alloys. General Purpose Machining. Medium Speeds. Continuous and Interrupted Cuts, and High Feed Rates.
VPUS10 	**Uncoated Carbide** Micro Grain High Hardness	**Finishing Grade** Excellent Wear Resistance Excellent Edge Strength Enhanced Notch Resistance	M10 K10 S10 N15	High Temperature Alloys, Titanium Alloys, Aluminum and Non-Ferrous Alloys. Finishing Applications.

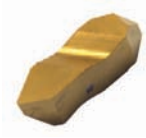
V-LOC® Insert Geometry Application Data

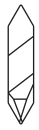
Threading System

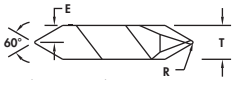
Insert Style	Description	Materials	Application
VLT 	**Threading** Partial profile 60° threading. General use for UN and ISO. Non-cresting inserts to cut a variety of thread pitches.	Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/ Non-Ferrous Hardened Material	**Main application area:** General threading operations Light to medium feed rates
VLTF 	**Threading** Fine pitch partial profile 60° threading. General use for UN and ISO. Non-cresting inserts to cut a variety of thread pitches. Capability to thread close to a shoulder.	Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/ Non-Ferrous Hardened Material	**Main application area:** General threading operations Light to medium feed rates
VLTK 	**Threading** Fine pitch partial profile 60° threading, with positive rake. General use for UN and ISO. Non-cresting inserts to cut a variety of thread pitches. Good for stainless, non-ferrous, and high temp alloys.	Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/ Non-Ferrous Hardened Material	**Main application area:** General threading operations Light to medium feed rates
VLTP 	**Threading** Partial profile 60° threading, with positive rake. General use for UN and ISO. Non-cresting inserts to cut a variety of thread pitches. Good for stainless, non-ferrous, and high temp alloys.	Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/ Non-Ferrous Hardened Material	**Main application area:** General threading operations Light to medium feed rates

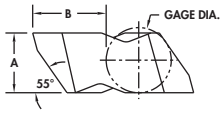
V-LOC® Product Offering

VLT





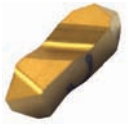


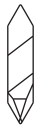


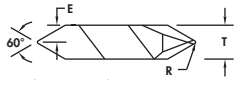
For common insert dimensions A, B & T, see chart page E63.

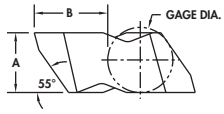
Part Number		Insert Dimensions									ValPro Selection			
		Insert Size	TPI		Pitch (mm)		R		E		Available Grades EDP #			
Right Hand	Left Hand		External	Internal	External	Internal	Inch	mm	Inch	mm	5820	5410	5425	US10
VLT 2R		2	8-36	7-20	0.70-3.00	1.25-3.50	0.004	0.10	0.075	1.91	23119	24597		24596
	VLT 2L	2	8-36	7-20	0.70-3.00	1.25-3.50	0.004	0.10	0.075	1.91	23118	24595		
VLT 3R		3	6-20	5-12	1.25-4.00	2.00-5.00	0.007	0.17	0.098	2.49	23121	24602	24753	24601
	VLT 3L	3	6-20	5-12	1.25-4.00	2.00-5.00	0.007	0.17	0.098	2.49	23120	24599	24752	24598
VLT 4R		4	4-20	4-12	1.25-6.25	2.00-6.25	0.007	0.17	0.128	3.25	23123	24605		
	VLT 4L	4	4-20	4-12	1.25-6.26	2.00-6.25	0.007	0.17	0.128	3.25	23122	24604		

VLTP





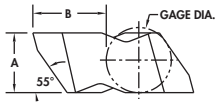


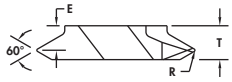


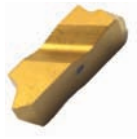
For common insert dimensions A, B & T, see chart page E63.

Part Number		Insert Dimensions									ValPro Selection			
		Insert Size	TPI		Pitch (mm)		R		E		Available Grades EDP #			
Right Hand	Left Hand		External	Internal	External	Internal	Inch	mm	Inch	mm	5820	5410	5425	US10
VLTP 2R		2	8-36	7-20	0.70-3.00	1.25-3.50	0.004	0.10	0.075	1.91	23113	24589		
	VLTP 2L	2	8-36	7-20	0.70-3.00	1.25-3.50	0.004	0.10	0.075	1.91	23112	24588		
VLTP 3R		3	6-20	5-12	1.25-4.00	2.00-5.00	0.007	0.17	0.098	2.49	23115	24593	24751	24592
	VLTP 3L	3	6-20	5-12	1.25-4.00	2.00-5.00	0.007	0.17	0.098	2.49	23114	24590	24750	
VLTP 4R		4	4-20	4-12	1.25-6.25	2.00-6.25	0.007	0.17	0.128	3.25	23117			
	VLTP 4L	4	4-20	4-12	1.25-6.26	2.00-6.25	0.007	0.17	0.128	3.25	23116			

VLTF



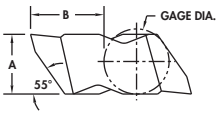


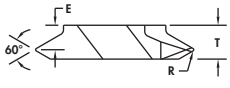


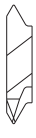
For common insert dimensions A, B & T, see chart page E63.

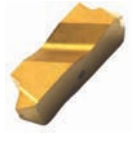
Part Number		Insert Size	Insert Dimensions								ValPro Selection			
			TPI		Pitch (mm)		R		E		Available Grades EDP #			
Right Hand	Left Hand		External	Internal	External	Internal	Inch	mm	Inch	mm	5820	5410	5425	US10
VLTF 2R		2	14-44	12-24	0.60-1.75	1.00-2.00	0.003	0.08	0.110	2.79	23109	24578		
	VLTF 2L	2	14-44	12-24	0.60-1.75	1.00-2.00	0.003	0.08	0.110	2.79	23348	24577		
VLTF 3R		3	10-44	9-24	0.60-2.50	1.00-2.50	0.003	0.08	0.141	3.58	23478	24581		24580
	VLTF 3L	3	10-44	9-24	0.60-2.50	1.00-2.50	0.003	0.08	0.141	3.58	23477	24579		
VLTF 4R		4	10-44	9-24	0.60-2.50	1.00-2.50	0.003	0.08	0.201	5.11	23480			
	VLTF 4L	4	10-44	9-24	0.60-2.50	1.00-2.50	0.003	0.08	0.201	5.11	23479			

VLTK









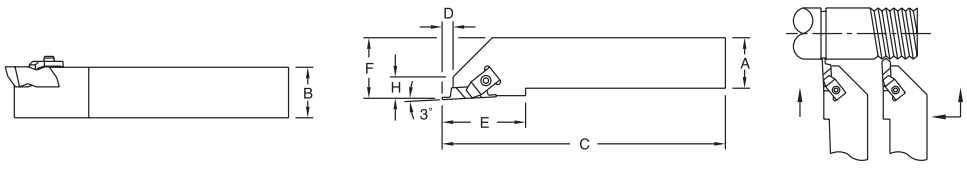
For common insert dimensions A, B & T, see chart page E63.

Part Number		Insert Size	Insert Dimensions								ValPro Selection			
			TPI		Pitch (mm)		R		E		Available Grades EDP #			
Right Hand	Left Hand		External	Internal	External	Internal	Inch	mm	Inch	mm	5820	5410	5425	US10
VLTK 2R		2	14-44	12-24	0.60-1.75	1.00-2.00	0.003	0.08	0.110	2.79	23350	24583		
	VLTK 2L	2	14-44	12-24	0.60-1.75	1.00-2.00	0.003	0.08	0.110	2.79	23349	24582		
VLTK 3R		3	10-44	9-24	0.60-2.50	1.00-2.50	0.003	0.08	0.141	3.58	23111	24586	24749	24585
	VLTK 3L	3	10-44	9-24	0.60-2.50	1.00-2.50	0.003	0.08	0.141	3.58	23110	24584		

V-LOC® Grooving and Threading Toolholders

VLS-R/L—Offset Grooving & Threading 3˚ Lead

Use Insert Style:
VLTx



Left Hand shown

Right-hand shown, Left-hand opposite

Part Number		Insert*	Dimensions							EDP#	
Right Hand	Left Hand		A	B	C	D	E	F**	H	Right Hand	Left Hand
VLSR 06 2		VL-2R	0.375	0.375	2.500	0.138	0.750	0.562	0.350	58681	
	VLSL 06 2	VL-2L									58671
VLSR 08 2V		VL-2R	0.500	0.500	3.500	0.138	0.750	0.750	0.350	58682	
	VLSL 08 2V	VL-2L									58672
VLSR 12 2B		VL-2R	0.750	0.750	4.500	0.138	0.750	1.000	0.350	58683	
	VLSL 12 2B	VL-2L									58673
VLSR 16 2C		VL-2R***	1.000	1.000	5.000	0.138	0.750	1.250	0.350	58685	
	VLSL 16 2C	VL-2L***									58675
VLSR 12 3B		VL-3R	0.750	0.750	4.500	0.210	1.250	1.000	0.500	58684	
	VLSL 12 3B	VL-3L									58674
VLSR 16 3C		VL-3R	1.000	1.000	5.000	0.210	1.250	1.250	0.500	58686	
	VLSL 16 3C	VL-3L									58676
VLSR 16 3D		VL-3R	1.000	1.000	6.000	0.210	1.250	1.250	0.500	58687	
	VLSL 16 3D	VL-3L									58677
VLSR 85 3D		VL-3R	1.000	1.250	6.000	0.210	1.250	1.250	0.500	58689	
	VLSL 85 3D	VL-3L									58679
VLSR 20 3D		VL-3R	1.250	1.250	6.000	0.210	1.250	1.500	0.500	58689	
	VLSL 20 3D	VL-3L									58678
VLSR 16 4D		VL-4R	1.000	1.000	5.000	0.294	1.330	1.250	0.540	58688	
	VLSL 16 4D	VL-4L									61906
VLSR 20 4D		VL-4R	1.250	1.250	6.000	0.294	1.380	1.500	0.540	61908	
	VLSL 20 4D	VL-4L									61907

Insert		Part #/ EDP#	Shim Seat	Shim Screw	Clamp		Clamp Screw
Right Hand	Left Hand				Right Hand	Left Hand	
VL-2R	VL-2L	Part#	-	-	VL-74	VL-75	6-32 x 1/2 SHCS
		EDP#			58721	58722	52090
VL-2R***	VL-2L***	Part#	-	-	VL-74	VL-75	10-32 x 3/4 SHCS
		EDP#			58721	58722	51991
VL-3R	VL-3L	Part#	-	-	VL-72	VL-73	10-32 x 3/4 SHCS
		EDP#			58719	58720	51991
VL-4R	VL-4L	Part#	SM 420	SL-344	VL-72	VL-73	10-32 x 3/4 SHCS
		EDP#	58712	58711	58719	58720	51991

*V-LOC threading or grooving inserts of the same size may be used in these toolholders. See page D87 for grooving inserts.

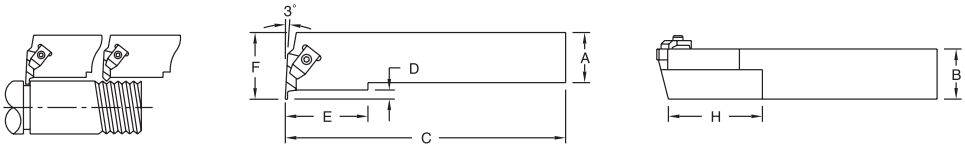
** "F" dimension over sharp point of grooving insert.

***VLSR162C and VLSL162C use the noted clamp and screw spare parts.

V-LOC® Grooving and Threading Toolholders

VLER/L—End Pocket Grooving & Threading 3˚ Lead

Use Insert Style:
VLTx



Right-hand shown, Left-hand opposite

Part Number		Insert*	Dimensions							EDP#	
Right Hand	Left Hand		A	B	C	D	E	F**	H	Right Hand	Left Hand
VLER 08 2V		VL-2L	0.500	0.500	3.500	0.138	0.500	0.750	1.000	58664	
	VLEL 08 2V	VL-2R									58657
VLER 12 2B		VL-2L	0.750	0.750	4.500	0.138	0.500	1.000	1.000	58665	
	VLEL 12 2B	VL-2R									58658
VLER 16 2C		VL-2L	1.000	1.000	5.000	0.138	0.500	1.250	1.000	58667	
	VLEL 16 2C	VL-2R									58660
VLER 12 3B		VL-3L	0.750	0.750	4.500	0.210	0.750	1.125	2.000	58666	
	VLEL 12 3B	VL-3R									58659
VLER 16 3C		VL-3L	1.000	1.000	5.000	0.210	0.750	1.250	2.000	58668	
	VLEL 16 3C	VL-3R									58661
VLER 16 3D		VL-3L	1.000	1.000	6.000	0.210	0.750	1.250	2.000	58669	
	VLEL 16 3D	VL-3R									58662
VLER 16 4D		VL-4L	1.000	1.000	6.000	0.294	0.750	1.375	2.000	61904	
	VLEL 16 4D	VL-4R									61902
VLER 20 3D		VL-3L	1.250	1.250	6.000	0.210	0.750	1.500	2.000	58670	
	VLEL 20 3D	VL-3R									58663
VLER 20 4D		VL-4L	1.250	1.250	6.000	0.294	0.750	1.625	2.000	61905	
	VLEL 20 4D	VL-4R									61903

*V-LOC threading or grooving inserts of the same size may be used in these toolholders. See page D87 for grooving inserts.

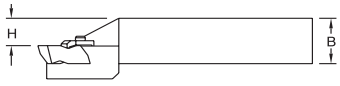
** “F” dimension over sharp point of grooving insert.

Insert		Part #/ EDP#	Clamp		Clamp Screw
Right Hand	Left Hand		Right Hand	Left Hand	
VL-2R	-	PART #	VL-74		6-32 X 1/2 SHCS
		EDP #	58721		52090
-	VL-2L	PART #		VL-75	6-32 X 1/2 SHCS
		EDP #		58722	52090
VL-3R	-	PART #	VL-72		10-32 X 3/4 SHCS
		EDP #	58719		51991
-	VL-3L	PART #		VL-73	10-32 X 3/4 SHCS
		EDP #		58720	51991
VL-4R	-	PART #	VL-72		10-32 X 3/4 SHCS
		EDP #	58719		51991
-	VL-4L	PART #		VL-73	10-32 X 3/4 SHCS
		EDP #		58720	51991

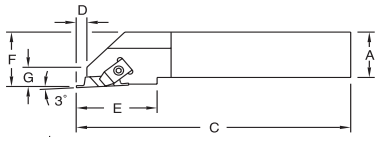
V-LOC® Grooving and Threading Toolholders

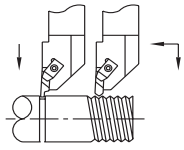
VLS-DH-R/L—Drop Head Grooving & Threading 3˚ Lead

Use Insert Style:
VLTx



Right hand shown, left hand opposite





Left hand shown

Part Number		Insert*	Dimensions								EDP#	
Right Hand	Left Hand		A	B	C	D	E	F**	G	H	Right Hand	Left Hand
VLSR DH 12 2B	-	VL-2R	0.750	0.750	4.500	0.125	1.200	1.000	0.400	0.750	58691	
VLSR DH 12 3A		VL-3R	0.750	0.750	4.000	0.180	1.500	1.250	0.580	0.750	58692	
VLSR DH 16 2C		VL-2R	1.000	1.000	5.000	0.125	1.200	1.250	0.400	1.000	58693	
VLSR DH 16 3C		VL-3R	1.000	1.000	5.000	0.180	1.500	1.250	0.580	1.000	58694	
VLSR DH 16 3D		VL-3R	1.000	1.000	6.000	0.180	1.530	1.250	0.580	1.250	58695	
VLSR DH 20 3D		VL-3R***	1.250	1.250	6.000	0.180	1.630	1.500	0.620	1.250	58696	
	VLSL DH 20 3D	VL-3L***										58680
VLSR DH 20 4D		VL-4R	1.250	1.250	6.000	0.280	1.630	1.500	0.620	1.250	61909	
VLSR DH 24 4D		VL-4R	1.500	1.500	6.000	0.280	1.630	2.000	1.000	1.500	61910	

*V-LOC threading or grooving inserts of the same size may be used in these toolholders. See page D87 for grooving inserts.
** "F" dimension over sharp point of grooving insert.
***VLSRDH203D and VLSLDH203D use the noted clamp and screw spare parts.

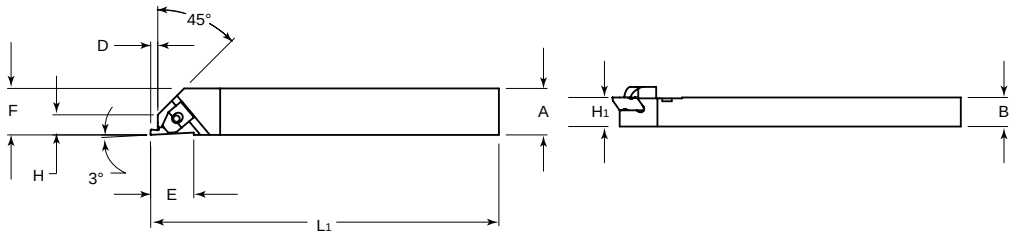
Insert		Part #/ EDP#	Clamp		Clamp Screw	Set Screw
Right Hand	Left Hand		Right Hand	Left Hand		
VL-2R	-	Part#	VL-74	-	6-32 x 1/2 SHCS	1/4 x 3/4 OPSS
		EDP#	58721		52090	RFQ*
VL-3R	-	Part#	VL-72	-	10-32 x 3/4 SHCS	-
		EDP#	58719		51991	
VL-3R***	VL-3L***	Part#	VL-72	VL-73	10-32 x 3/4 SHCS	3/8-16 x 1 OPSS
		EDP#	58719	58720	51991	00885
VL-4R	-	Part#	VL-72	-	10-32 x 3/4 SHCS	3/8-16 x 1 OPSS
		EDP#	58719		51991	00885

*RFQ - Contact your local Valenite Distributor or call Valenite Customer Service.
***VLSRDH203D and VLSLDH203D use the noted clamp and screw spare parts.

V-LOC® Grooving and Threading Toolholders

VLASR/L—Swiss/Screw Machine Grooving & Threading

Use Insert Style:
VLTx



Inch Toolholders

Right-hand shown, Left-hand opposite

Part Number		Insert*	Dimensions										EDP#	
Right Hand	Left Hand		B	A	H1	L1	D	E	F**	H	Radial	Axial	Right Hand	Left Hand
VLASR 06 2D		VL-R	0.375	0.375	0.375	6.000	0.130	0.750	0.470	0.350	0°	0°	61895	
	VLASL 06 2D	VL-2L	0.375	0.375	0.375	6.000	0.130	0.750	0.470	0.350	0°	0°		61888
VLASR 08 2D		VL-2R	0.500	0.500	0.500	6.000	0.130	0.750	0.500	0.350	0°	0°	61896	
	VLASL 08 2D	VL-2L	0.500	0.500	0.500	6.000	0.130	0.750	0.500	0.350	0°	0°		61889
VLASR 10 3B		VL-3R	0.625	0.625	0.625	4.500	0.200	1.250	0.625	0.500	0°	0°	61899	
	VLASL 10 3B	VL-3L	0.625	0.625	0.625	4.500	0.200	1.250	0.625	0.500	0°	0°		61892
VLASR 61.5 2D		VL-3R	0.375	0.750	0.750	6.000	0.130	0.750	0.750	0.350	0°	0°	61901	
	VLASL 61.5 2D	VL-3L	0.375	0.750	0.750	6.000	0.130	0.750	0.750	0.350	0°	0°		61894

Metric Toolholders

Part Number		Insert*	Dimensions										EDP#	
Right Hand	Left Hand		B	A	H1	L1	D	E	F**	H	Radial	Axial	Right Hand	Left Hand
VLASR 1010M2Q		VL-2R	0.394	0.394	0.394	5.906	0.130	0.750	0.470	0.350	0°	0°	61897	
	VLASL 1010M2Q	VL-2L	0.394	0.394	0.394	5.906	0.130	0.750	0.470	0.350	0°	0°		61890
VLASR 1020M2Q		VL-2R	0.394	0.787	0.394	5.906	0.130	0.750	0.787	0.350	0°	0°	61898	
	VLASL 1020M2Q	VL-2L	0.394	0.787	0.394	5.906	0.130	0.750	0.787	0.350	0°	0°		61891
VLASR 1212M2Q		VL-2R***	0.472	0.472	0.472	5.906	0.130	0.750	0.472	0.352	0°	0°	61900	
	VLASL 1212M2Q	VL-2L***	0.472	0.472	0.472	5.906	0.130	0.750	0.472	0.352	0°	0°		61893

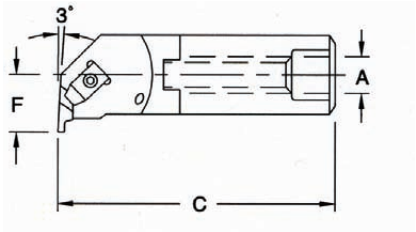
Insert		Part #/ EDP#	Clamp		Clamp Screw	Hex Wrench
Right Hand	Left Hand		Right Hand	Left Hand		
VL-2R	VL-2L	Part#	VL-182	VL-183	6-32x1/2 SHCS	7/64
		EDP#	59111	59112	52090	57336
VL-3R	VL-3L	Part#	VL-184	VL-185	10-32x3/4 SHCS	5/32
		EDP#	59113	59114	51991	57331
VL-2R***	VL-2L***	Part#	VL-182	VL-183	VLS 1025	M25DIN911
		EDP#	59111	59112	50106	57344

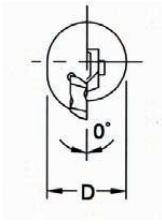
*V-LOC threading or grooving inserts of the same size may be used in these toolholders. See page D87 for grooving inserts.
** "F" dimension over sharp point of grooving insert.
***VLASR1212M2Q and VLASL1212M2Q use the noted clamp and screw spare parts.

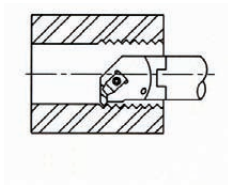
V-LOC® Grooving & Threading Boring Bars

A-VLER/L—Grooving & Threading with Coolant Hole 3˚ Lead

Use Insert Style:
VLTx







Right-hand shown, Left-hand opposite

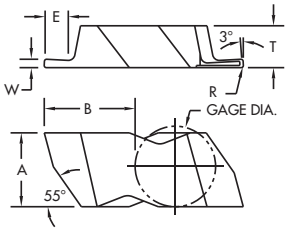
Part Number		Insert*	Dimensions					EDP#	
Right Hand	Left Hand		D	C	F	Min. Bore	A	Right Hand	Left Hand
A10 VLER 2		VL-2L	0.625	10.000	0.500	1.000	1/8-27NPT	58698	
	A10 VLEL 2	VL-2R							58697
A12 VLER 2		VL-2L	0.750	10.000	0.562	1.125	1/8-27NPT	58700	
	A12 VLEL 2	VL-2R							58699
A16 VLER 2		VL-2L	1.000	12.000	0.688	1.375	1/4-18NPT	58703	
	A16 VLEL 2	VL-2R							58701
A16 VLER 3		VL-3L	1.000	12.000	0.688	1.375	1/4-18NPT	58704	
	A16 VLEL 3	VL-3R							58702
A20 VLER 3		VL-3L	1.250	14.000	0.875	1.750	1/4-18NPT	58706	
	A20 VLEL 3	VL-3R							58705
A24 VLER 3		VL-3L	1.500	14.000	1.000	2.000	1/4-18NPT	58708	
	A24 VLEL 3	VL-3R							58707
A32 VLER 3		VL-3L	2.000	16.000	1.250	2.500	1/4-18NPT	58710	
	A32 VLEL 3	VL-3R							58709
A28 VLER 4		VL-4L	1.750	14.000	1.250	2.500	1/4-18NPT	55306	
	A28 VLEL 4	VL-4R							55305
A32 VLER 4		VL-4L	2.000	16.000	1.375	2.750	1/4-18NPT	55308	
	A32 VLEL 4	VL-4R							55307

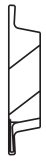
*V-LOC threading or grooving inserts of the same size may be used in these toolholders. See page D87 for grooving inserts.

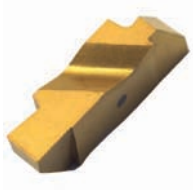
Note:
- Axx VLER Boring Bars use left hand inserts and clamps.
- Axx VLEL Boring Bars use right hand inserts and clamps.

Insert		Part #/ EDP#	Clamp		Clamp Screw
Right Hand	Left Hand		Right Hand	Left Hand	
VL-2R	-	PART #	VL-74		6-32 X 1/2 SHCS
		EDP #	58721		52090
-	VL-2L	PART #		VL-75	6-32 X 1/2 SHCS
		EDP #		58722	52090
VL-3R	-	PART #	VL-72		10-32 X 3/4 SHCS
		EDP #	58719		51991
-	VL-3L	PART #		VL-73	10-32 X 3/4 SHCS
		EDP #		58720	51991
VL-4R	-	PART #	VL-72		10-32 X 3/4 SHCS
		EDP #	58719		51991
-	VL-4L	PART #		VL-73	10-32 X 3/4 SHCS
		EDP #		58720	51991

V-LOC® Grooving and Threading Common Insert Dimensions

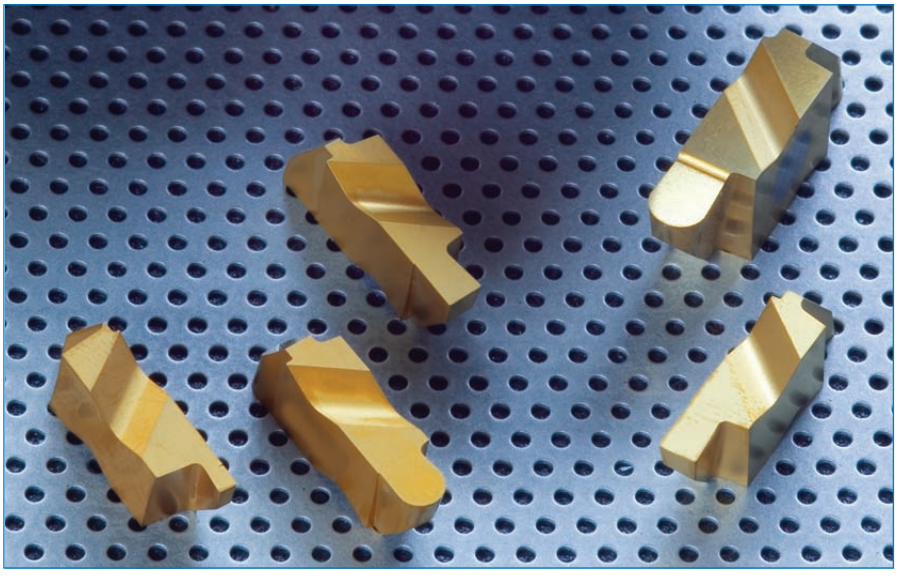






See Product pages E56-57 for E,R, & W dimensions.

Insert Size	A		T		Gage Dia		B	
	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2	0.219	5.56	0.15	3.81	0.1875	4.75	0.27	6.86
3	0.344	8.74	0.195	4.95	0.375	9.53	0.405	10.29
4	0.453	11.51	0.255	6.48	0.375	9.53	0.636	16.15



V-LOC® Guide to Workpiece Material

ValPRO™ Color System Simplifies Tool Selection Process

Use the ValPRO™ color-coded identification system for matching our tools to your application. Color and letter designations correspond to the ISO standard classification system. These letters and colors are used throughout the catalog to reduce the time you spend looking for information.

Material Group	Category	Material Designation
Steels P	Free Machining and Low Carbon	1006, 1008, 1010, 1015, 1018, 1020, 1025, 1117, 1141, 1213,12L13, 12L14, 11L41
	Medium Carbon and High Carbon	1030, 1035, 1040, 1045, 1052, 1055, 1060, 1085, 1095, 1424, 1541, 1551,
	Alloy and Easy To Machine Tool Steels	4130, 4150, 4340, 5140, 4320, 5120, 8620, 6150, 5200, W1, W2, W5, 300M
	Tool Steels and Die	M1, M2, T1, T4, T5, A2, A3, D2, D4, 01, H10, H11, P2, P20
Stainless Steels M	Ferritic and Martensitic	403, 405, 409, 410, 410S, 414, 430, 431, 434, 440, 442
	Austenitic	201, 203, 303, 304, 304l 316, 316L, 321, 327, Nitronic 40, Custom 455
	PH and Duplex	15-5 PH, 17-4 PH, 13-8 Mo, AM350, AM355, Ferralium 255, 329, S32950
Cast Irons K	Gray Cast Iron	ASTM A48, CLass 20, 25, 30, 35, 40
	Ductile and Malleable-Low & Medium Tensile	ASTM A546, Grades 60-40-18, 65-45-12, 80-55-06, SAE 434 J434C, Grade D7003, ASTM A220, Grades 7003, 820002, 900001, SAE JT58, Grades M7002, M8501
	Ductile and Malleable-High Tensile	ASTM A536, Grades 100-70-03, SAE J434C, Grade D7003, ASTM A220 Grades70003, 820002, 90001, SAE J158, Grades M7002, M8501
High Temp Alloys S	Iron Base Alloys	A-286, Incoloy 800, 801, 802, N-155, 19-9 DL
	Nickel and Cobalt Base Alloys	Inconel 600, 625, 718 and X750, Waspaloy, Nimonic 90, Udimet 500 & 700, Monel Alloys L-605, Haynes Alloy 25, 188 Haynes Stellite 6, 21, WI-52
	Titanium Alloys	6A14V, 5A1-2.5Sn, 6AL-2Sn-4Zr-6Mo
Aluminum And Non-Ferrous Materials N	Aluminum Alloys < 7% Silicon	AA 2014, 2024, 4032, 6061, 6151, 7075, SAE, 304, 335, 336, 380
	Aluminum Alloys 7% - 12% Silicon	AA380, A380, 384, A384, SAE 303, 305, 306, 308, 309, 383
	Aluminum Alloys 12% - 18% Silicon	AA 390, 392
	Non-Ferrous	Precious Metals, Copper & Brass Alloys, Plastics, Magnesium Alloys
Hardened Materials H	Heat Treated Steels	40-50- Rc
	Heat Treated Tool & Die Steels	50-60- Rc
	Chilled & Ni-Resist Cast Irons	40-60 Rc

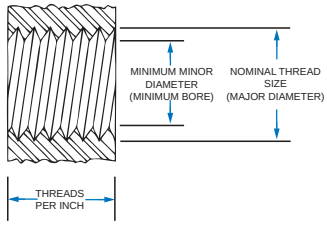
V-LOC® Application Guide for Threading

Material Group	Category	Threading Grade and Speed Selection SFM (V m/min)			
		VP5820 m/min	VP5410 m/min	VP5425 m/min	VPUS10 m/min
Steels P	Free Machining and Low Carbon Steels 120 - 170 BHN	300 - 600 (90 - 180)	330 - 650 (100 - 200)	200 - 500 (60 - 150)	-
	Medium Carbon and High Carbon Steels 180 - 220 BHN	275 - 550 (85 -170)	300 - 600 (90 - 180)	180 - 450 (55 - 135)	-
	Alloy Steels and Easy to Machine Tool Steels 200 - 240 BHN	275 - 450 (85 - 140)	275 - 450 (85 - 140)	150 - 350 (45 - 110)	-
	Tool Steels and Die Steels 220 -260 BHN	225 - 400 (70 - 120)	225 - 400 (70 - 120)	125 - 225 (40 - 70)	-
Stainless Steels M	Ferritic and Martensitic Stainless Steels 180 - 240 BHN	250 - 450 (75 - 140)	300 - 400 (90 - 125)	150 - 350 (45 - 110)	250 - 350 (80 - 110)
	Austenitic Stainless Steels 140 - 180 BHN	250 - 450 (75 - 140)	300 - 400 (90 - 125)	100 - 300 (30 - 90)	250 - 350 (80 - 110)
	PH and Duplex Stainless Steels 220 - 260 BHN	200 - 400 (60 - 120)	250 - 350 (75 - 110)	85 - 250 (25 - 75)	200 - 300 (60 - 90)
Cast Iron K	Gray Cast Irons 180 - 220 BHN	275 - 500 (85 - 150)	275 - 550 (85 - 170)	250 - 450 (75 - 140)	200 - 350 (60 - 110)
	Gray Cast Irons 220 - 260 BHN	250 - 450 (75 - 140)	250 - 450 (75 - 140)	200 - 400 (60 - 120)	180 - 300 (55 - 90)
	Ductile & Malleable Cast Irons 140 - 200 BHN	300 - 550 (90 - 170)	300 - 600 (90 - 180)	150 - 250 (45 - 75)	200 - 350 (60 - 110)
	Ductile & Malleable Cast Irons 200 - 260 BHN	250 - 450 (75 - 140)	250 - 450 (75 - 140)	125 - 200 (40 - 60)	180 - 300 (55 - 90)
High Temp Alloys S	Iron & Nickel Based Alloys, Monel, Hastelloy, Inconel, Waspaloy	125 - 350 (40 - 110)	125 - 250 (40 - 75)	90 - 150 (30 - 45)	45 - 125 (15 - 40)
	Cobalt Based Alloys, Haynes Stellite	125 - 350 (40 - 110)	125 - 250 (40 - 75)	90 - 150 (30 - 45)	45 - 125 (15 - 40)
	Titanium Alloys 6Al-4V	125 - 350 (40 - 110)	125 - 250 (40 - 75)	90 - 150 (30 - 45)	30 - 100 (15 - 35)
Aluminum & Non-Ferrous N	Aluminum Alloys <7% Silicon	1200 - 2600 (365 - 800)	1200 - 1800 (365 - 550)	150 - 800 (45 - 245)	400 - 650 (120 - 200)
	Aluminum Alloys 7% - 12% Silicon	1000 - 2400 (305 - 730)	1000 - 1600 (305 - 490)	100 - 650 (35 - 200)	350 - 600 (110 - 180)
	Aluminum Alloys 12% - 18% Silicon	900 - 1500 (275 - 460)	900 - 1400 (275 - 430)	50 - 400 (15 - 120)	200 - 400 (60 - 120)
	Copper Alloys	600 - 1000 (180 - 305)	600 - 1000 (180 - 305)	500 - 900 (150 - 275)	175 - 300 (55 - 90)
Hardened Materials H	Steels 45 - 50 Rc	75 - 200 (25 - 60)	60 - 150 (18 - 45)	60 - 125 (18 - 40)	-
	Steels 50 - 60 Rc	60 - 175 (18 - 55)	50 - 125 (15 - 40)	50 - 100 (15 - 30)	-
	Chilled Irons 45 - 50 Rc	75 - 200 (25 - 60)	60 - 150 (18 - 45)	60 - 125 (18 - 40)	-

V-LOC® Machining Guidelines

Internal Threading Limits With Standards

The following charts list the largest pitch that can be applied for VEE threading using insert sizes 2, 3, and 4.



VLT-2

Internal Threading Limitations
VEE Threading Inserts.

Threads per Inch	Normal Thread Size	Minimum Minor Diameter
6	1 7/8	1.695
7	1 3/4	1.595
8	1 5/8	1.490
9	1 9/16	1.442
10	1 1/2	1.392
11	1 7/16	1.339
11 1/2	1 3/8	1.281
12	1 3/8	1.285
13	1 5/16	1.229
14	1 1/4	1.173
16	1 1/4	1.182
18	1 1/8	1.065
20	1 1/8	1.071
24*	1 1/16	1.017

* Sixteen threads per inch and finer can be cut providing minor diameter is 1.000" or larger.

VLT-3 & VLT-4

Internal Threading Limitations
VEE Threading Inserts.

Threads per Inch	Normal Thread Size	Minimum Minor Diameter
4*	3	2.729
4 1/2*	2 7/8	2.634
5	2 3/4	2.534
6	2 1/2	2.230
7	2 1/4	2.095
8	2	1.865
9	1 15/16	1.817
10	1 7/8	1.767
11	1 13/16	1.714
11 1/2	1 3/4	1.656
12	1 3/4	1.660
13	1 5/8	1.542
14	1 9/16	1.485
16**	1 7/16	1.370

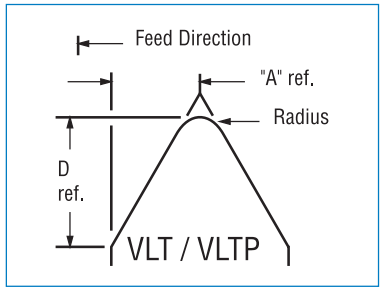
* VLT-4 insert only.

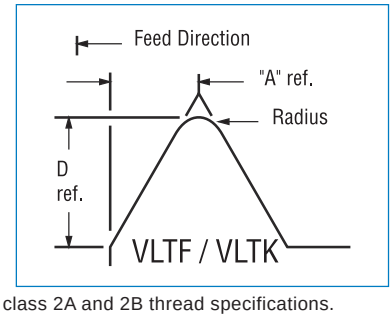
** Sixteen threads per inch and finer can be cut providing minor diameter is 1.000" or larger.

Threading Limits

60˚VEE Threading Application for Standard Inserts

Insert	Ref. D	Ref. A	Recommended threads per inch (tpi)*	
			External	Internal
VLT-2	.113	.075	36 tpi to 8 tpi	20 tpi to 7 tpi
VLT-3	.148	.097	20 tpi to 6 tpi	12 tpi to 5 tpi
VLT-3-C	.148	.097	11 tpi to 6 tpi	6 tpi (only)
VLT-4	.196	.127	20 tpi to 4 tpi	12 tpi to 4 tpi
VLT-4-C	.196	.127	11 tpi to 4½ tpi	6 tpi to 4½ tpi
VLTF-2	.062	.040	44 tpi to 14 tpi	24 to 12 tpi
VLTF-3	.083	.054	44 tpi to 10 tpi	24 tpi to 9 tpi
VLTF-4	.083	.054	44 tpi to 10 tpi	24 tpi to 9 tpi
VLTK-2	.062	.090	44 tpi to 14 tpi	24 tpi to 12 tpi
VLTK3	.083	.054	44 tpi to 10 tpi	24 tpi to 9 tpi
VLTK-4	.083	.054	44 tpi to 10 tpi	24 tpi to 9 tpi
VLTP-2	.113	.075	38 tpi to 8 tpi	20 tpi to 7 tpi
VLTP-3	.148	.097	20 tpi to 6 tpi	12 tpi to 5 tpi
VLTP-4	.196	.127	20 tpi to 4 tpi	12 tpi to 4 tpi





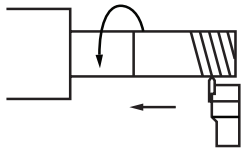
*Recommended threads per inch are based on the maximum insert radius and class 2A and 2B thread specifications.

Alternate Ways Of Turning A Thread

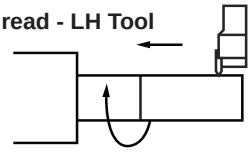
Feed Direction - Toward Chuck

RH Thread - RH Tool

- CCW Rotation
- RH Toolholder
- RH Insert and clamp

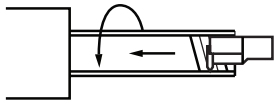


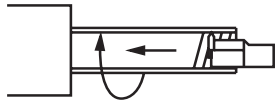
LH Thread - LH Tool



- CW Rotation
- LH Toolholder
- LH Insert and clamp

- CCW Rotation
- RH Bar
- LH Insert and clamp



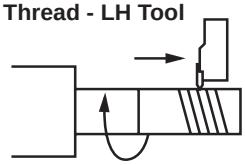


- CW Rotation
- LH Bar
- RH Insert and clamp

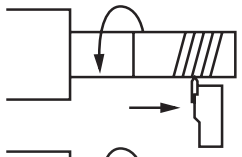
Feed Direction - Away from the Chuck

RH Thread - LH Tool

- CW Rotation
- LH Toolholder
- LH Insert and clamp

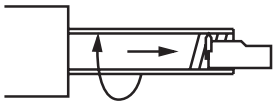


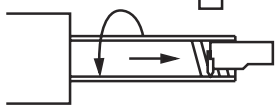
LH Thread - RH Tool



- CCW Rotation
- RH Toolholder
- RH Insert and clamp

- CW Rotation
- LH Bar
- RH Insert and clamp





- CCW Rotation
- RH Bar
- LH Insert and clamp

The workpiece can be rotated clockwise or counter-clockwise and the tool can be fed into or away from the chuck. In addition, the tool can also be in the normal position on one side of the workpiece or in the upside-down position on the other side of the workpiece regardless of the rotation direction. The alternate ways of turning a thread depends upon which operation is being performed with respect to machine, workpiece and chip clearance limitations. Choose the method best suited to your conditions as depicted in the above illustrations of right-hand and left-hand threading alternatives.

Thread Orientation	Thread Location	Workpiece Rotation	Feed Direction In Relation To Chuck	Toolholder/Bar*	Insert & Clamp
Right Hand	External	CCW	TOWARDS	RH	RH
		CW	AWAY	LH	LH
	Internal	CCW	TOWARDS	RH	LH
		CW	AWAY	LH	RH
Left Hand	External	CCW	AWAY	RH	RH
		CW	TOWARDS	LH	LH
	Internal	CCW	AWAY	RH	LH
		CW	TOWARDS	LH	RH

* Right-hand bars use left-hand threading and grooving inserts and clamps. Left-hand bars use right-hand threading and grooving inserts and clamps.

V-LOC® Failure Modes

Problem	Control Action/Remedy
Shallow Thread Profile	• Adjust center height • Replace insert
Uneven Flank Wear	• Decrease number of passes • Change infeed angle
Trailing Edge Chipping	• Select tougher grade • Change infeed angle
Leading Edge Chipping	• Reduce DOC on first pass • Select tougher grade
Crest Burr or Torn Finish	• Use topping insert • Change infeed angle
Poor Tool Life	• Decrease speed (SFM) • Select wear resistant grade • Apply coolant
Excessive Flank Wear	• Decrease speed (SFM) • Select wear resistant grade • Change Infeed Angle

Problem	Control Action/Remedy
Deformation	• Decrease speed (SFM) • Select wear resistant grade • Apply coolant • Reduce DOC on flrst pass
Fracture	• Reduce DOC on first pass • Change infeed angle • Adjust center height • Select tougher grade
Chatter	• Reduce tool overhang • Adjust center height • Check insert for movement and reseat • Increase speed (SFM)
Built-Up Edge	• Increase speed (SFM) • Decrease number of passes • Apply coolant • Select positive rake angle • Use PVD coated insert