PARTING, GROOVING & THREADING


ValGROOVE™
ValTHREAD™

ValGROOVE™

THE NEW FORCE IN HIGH PRODUCTION PARTING AND GROOVING

Valenite brings you the most advanced system available for parting, grooving, undercutting and profiling: ValGROOVE™. A total system, combining our flexible toolholder family with super tough one and two edge inserts. You want to groove with the best - groove with Valenite.

TOOLHOLDERS

Engineered for optimal performance in virtually every application.

- Expanded versatility with toolholders that accept VSG one edge or VTG two edge inserts
- Designed to optimize all of your applications:
  - Parting blades
  - Deep groove/parting toolholders
  - Turning/grooving boring bars
  - Face grooving and turning holders
- High production Connection Tooling System:
  - Wedge clamp anvil (VSG)
  - Screw clamp anvil (VTG)
  - Compatible with our VM Connection Tools

INSERTS

VSG one edge and VTG two edge, advanced geometries, state of the art coatings, unbeatable value.

- Quick selection for every job: parting, grooving, turning, profiling, undercutting, face grooving
- New VTG two edge inserts
- State of the art coated Grades engineered specifically for your application
- Expanded range of one edge inserts
- Advanced top form geometries for improved chip control

TOOLHOLDER DESCRIPTIONS

ValGROOVE™

VSG SYSTEM TOOLHOLDERS FOR ONE EDGE INSERTS	**VG101**	**Double Ended Parting Blades** (VGTB tool block required) • Ideal for parting off bars and tubes • Economical system for many applications
	VG103	**Double Ended Parting Blades** (VDG tool block required) • Ideal for parting off bars and tubes • Use only with Valenite VDG Tool Blocks
	VG105	**Reinforced Spring Clamp Parting Toolholder** • Reinforced clamping for better insert seating and lower vibration • Small shanks for lower horsepower machines
	VG107	**Spring Clamp Parting Toolholder** • Parting of bars and tubes • Deep grooving capability with quick change spring clamp design
	VG109	**Deep Grooving and Parting Toolholder** • Excellent for deep grooving operations • Screw clamp for secure insert seating and lower vibration
	VG111	**Grooving, Turning and Profiling Toolholder** • Short reach for minimal deflection in turning and profiling • Screw clamp for secure insert seating and lower vibration
	VG115	**Grooving and Undercut Turning Toolholder** • Designed for undercutting and turning at 45°
	VG117	**ID Grooving and Turning Boring Bar** • For internal grooving and turning applications
	VGBT	**MTS System Blades**
	VGDG	**VIDG Replacement Blades**
VTG SYSTEM TOOLHOLDERS FOR TWO EDGE INSERTS	**VG102**	**Double-ended VTG Spring Clamp Parting Blade** • Ideal for parting of bars and tubes up to 1.8 inch diameter • Uses two-edge ValGroove inserts for economy
	VG104	**Single-ended VTG Screw Clamp Parting Blade** • Ideal for parting of bars and tubes up to 1.8 inch diameter • Uses two-edge ValGroove inserts for economy
	VG110	**VTG System Grooving and Turning Toolholder** • Insert clamping designed to resist axial forces when turning • Increased speed/feed without encountering vibration problems • Uses two edge inserts for economy
	VG112	**Deep Grooving and Parting Toolholder** • Deep grooving and parting with VTG inserts • Insert clamping designed to resist axial forces • Increased speed/ feed without encountering vibration problems

ValGROOVE™

INSERT GEOMETRY DESCRIPTIONS

VTG SYSTEM TOOLHOLDERS FOR TWO EDGE INSERTS (cont.)	**VG114/ VG116**	**VTG System Face Grooving and Turning Toolholders** • Insert clamping designed to resist axial forces when face grooving and turning • Increased speed/feed without encountering vibration problems • Uses two edge inserts for economy
	VG118	**VTG System I.D. Groving and Turning Boring Bars** • For internal grooving applications • Excellent for internal turning
VM CONNECTION TOOLING SYSTEM	**VG120/ VG122** **VGWCA/ VGSCA**	VM Connection Tooling System for VSG and VTG Inserts • Wedge clamp anvil (VGWCA) for one edge insert system • Screw clamp anvil (VGSCA) for two edge insert system • Fits with Valenite standard VM Connection Tools • VGWCA and VGSCA also fit Valenite Econ-O-Groove®™ Toolholders
VSG SYSTEM ONE EDGE INSERTS	**VSG-FG**	**First Choice fore general Parting and Grooving Operations** • Good chip control and moderate cutting forces • Recommended for tubes and stainless steel applications
	VSG-GG	**Ideal for Heavy Parting and Grooving Operations** • Strong geometry ideal for interrupted cuts or high feed rate operations • For parting off and grooving of steel and cast iron bars
	VSG-CG	Parting and Light Grooving Geometry • Minimizes pips and burrs when parting bars and tubes • Excellent for stainless and low carbon steel, ductile and work hardening alloys
	VSG-LG	**Optimized for Lower Radial Feed Rates** • Generates lower cutting forces resulting in reduced vibration • For stainless steels, ductile and work hardening materials
	VSG-PG	**Best Choice for Precision Grooving** • Excellent repeatability due to tight tolerances on insert • Low cutting forces and good chip control on many materials
	VSG-RG	**Designed for Profiling and Turning on All Materials** • Generates excellent surface finish • Recommended for stainless and heat resistant materials
	VSG-UG	**First Choice for Turning of Reliefs and Undercuts** • Increased clearance angle permits undercutting • Good chip control provides added value
VTG SYSTEM TWO EDGE INSERTS	**VTG-GG**	**First Choice for Parting and Grooving Operations on All Materials** • Positive geometry eliminates risk of edge build up - good for stainless steel • Lower cutting forces resulting in reduced vibration • Recommended for thin walled tubes and small diameters
	VTG-TG	**Excellent Choice for General Plunge Turning** • Medium feed rate capability with good chip control • Positive geometry minimizes edge build up • Recommended on steels and stainless steels
VTG SYSTEM TIPPED INSERTS	**VTG-PCD** **VTG-CBN**	**Alternative for Finish Grooving and Profiling of Both Hardened and Non-Ferrous Materials** • Maintains close tolerance and excellent surface finish • Outstanding productivity

TOOLHOLDER NOMENCALTURE

ValGROOVE™

IDENTIFIER	COMPONENT TYPE	TOOLHOLDER STYLE	HAND OF HOLDER	SHANK SIZE	FIRST CUT DIAMETER	SEAT SIZE
VG	TB	101	R	16	044	20

IDENTIFIER
ValGROOVE™

COMPONENT TYPE
TB = Tool Block

HAND OF HOLDER
Void = Neutral
R = Right
L = Left

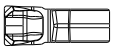
FIRST CUT DIAMETER
Face Grooving:
First Cut Diameter – minimum inside diameter (mm)

SHANK SIZE
Toolholders (inch)
Blades - Cutting Edge Height (mm)

SEAT SIZE
15 20 25 30
40 50 60 80

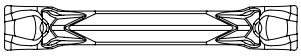
TOOLHOLDER STYLE

Single Ended System



101 = Double Ended Parting Blade
103 = VDG Double Ended Parting Blade
105 = Reinforced Spring Clamp Holder
107 = Spring Clamp Parting / Grooving Holder
109 = Deep Groove / Parting Holder
111 = Grooving / Turning / Profiling Holder
115 = Undercut Turning Holder
117 = ID Turning / Grooving / Boring Bar
123 = Manchester Blade
VGWCA = Wedge Clamp Anvil
VGBT = MTS System blades
VGDG = VIDG Replacement Blades

Double Ended System



102 = VTG Double Ended Parting Blade
104 = VTG Single Ended Parting Blade
110 = Grooving / Turning Holder
112 = Parting / Deep Grooving Holder
114 = Face Grooving Holder
116 = 90° Face Holder
VG118 = I.D. Turning/Grooving/Boring Bar
120 = VM Connection Tool
122 = 90° VM Connection Tool
VG130 = Shallow Groove/Face Groove Holder
VG132 = 90° Shallow Groove/Face Groove Holder
VGSCA = Screw Clamp Anvil

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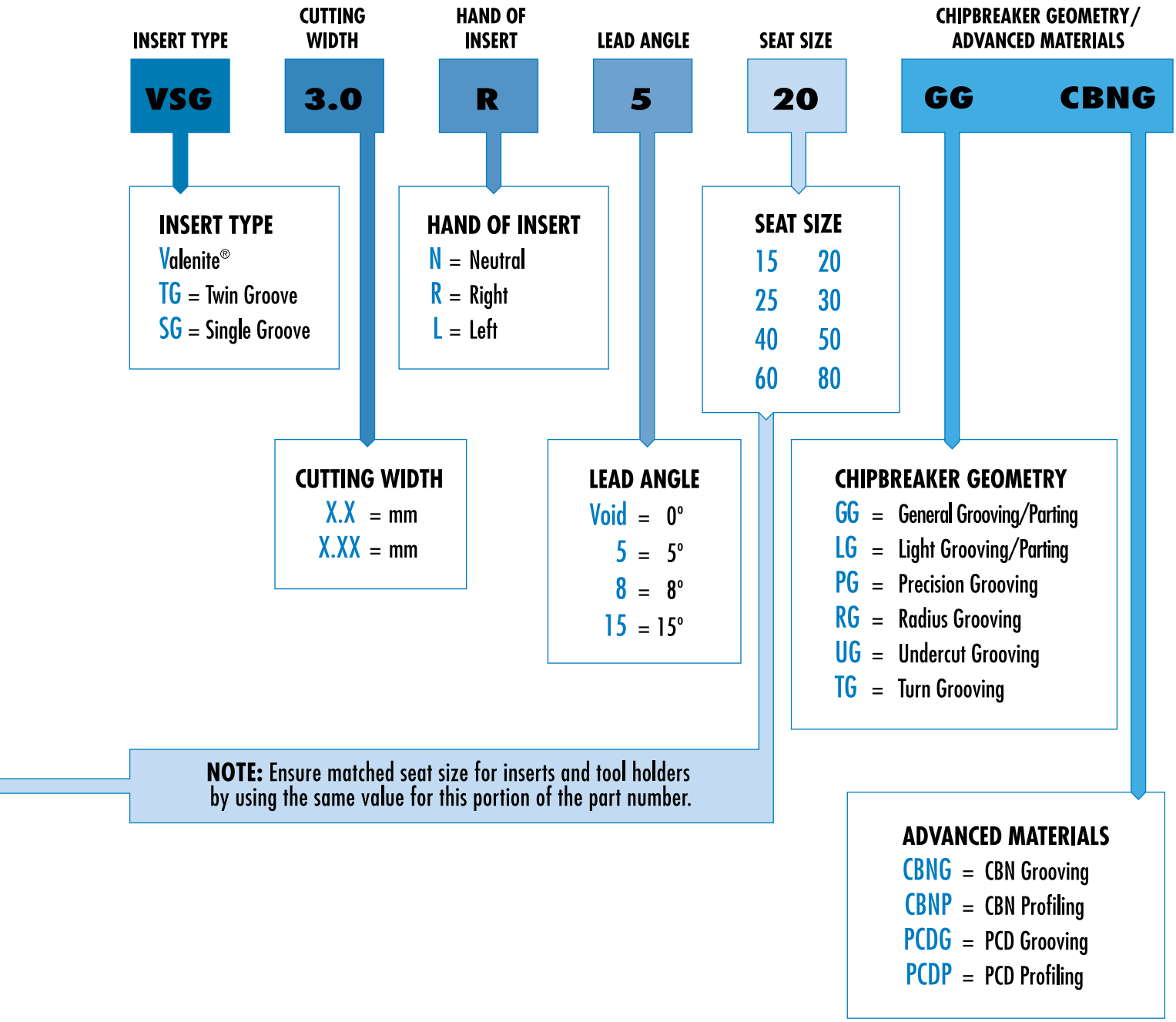
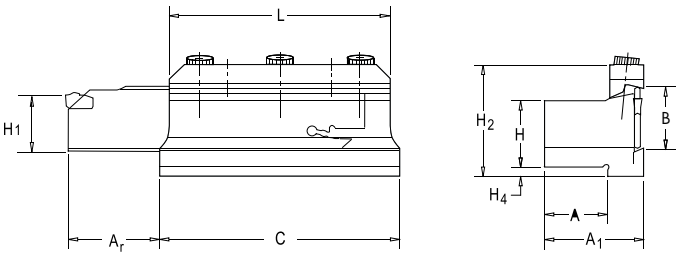
INSERT NOMENCALTURE



VGTB TOOL BLOCKS

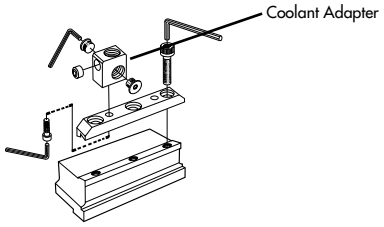


Part Number	Ar	Dimensions									EDP#
		A	A1	H	H1	H2	H4	C	L	B	
VGTB 10 16	1.57	0.63	1.30	0.63	0.62	1.34	0.16	3.15	2.76	0.75	**58321**
VGTB 12 21	1.38	0.73	1.46	0.75	0.84	1.79	0.43	3.15	2.76	1.02	**58322**
VGTB 16 21	3.15	1.03	1.70	1.00	0.84	1.75	0.2	4.72	4.32	1.02	**56323**
VGTB 16 25	2.36	0.98	1.71	1.00	0.98	1.79	0.43	4.72	4.33	1.26	**58324**
VGTB 20 25	2.36	1.23	1.96	1.25	0.98	2.15	0.21	4.72	4.33	1.26	**58326**
VGTB 24 25	2.36	1.48	2.21	1.50	0.98	2.40	0.20	4.72	4.33	1.26	**62415**

Spare Parts

Part Number	Hex Wrench		Screw		Clamp	
	Part#	EDP#	Part#	EDP#	Part#	EDP#
VGTB 10 16	PT1212	**62398**	PT1218	**62404**	CL1221	**62292**
VGTB 12 21	PT1212	**62398**	PT1218	**62404**	CL1221	**62292**
VGTB 16 21	PT1212	**62398**	PT1219	**62405**	CL1225	**62293**
VGTB 16 25	PT1212	**62398**	PT1219	**62405**	CL1225	**62293**
VGTB 20 25	PT1212	**62398**	PT1219	**62405**	CL1225	**62293**
VGTB24 25	PT1212	**62398**	PT1219	**62405**	CL1225	**62293**

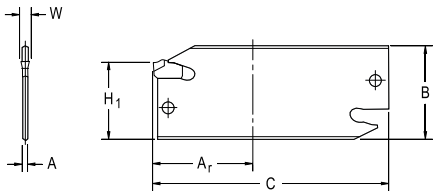
Coolant Adapter
VGTBCA1 **EDP# 56851**



Notes:
1. The blade height, H1 must match the H1 - dimension of the tool block.
   Example: **Blade** - VG101 **16** 15 , **Tool block** VGTB 10 **16**
2. Blade height refers to dimension H1 from the base of the blade to the insert cutting edge.

VG101 & VG103 VSG DOUBLE ENDED CUT OFF BLADES

VG101 blades are used with VGTB & V Cut tool blocks.
VG103 blades are used only withVDG tool blocks.



VG101

Part Number	Ar	Seat Size	Dimensions					EDP#
			W	A	B	C	H1	
VG101.16 15	0.750	15	0.059	0.047	0.750	3.38	0.620	**58171**
VG101.21 15	0.750	15	0.059	0.047	1.020	4.33	0.840	**58173**
VG101.25 15	1.250	15	0.059	0.047	1.250	5.90	0.980	**58178**
VG101.21 20	1.378	20	.073 - .088	0.059	1.020	4.33	0.840	**58174**
VG101.16 20	1.500	20	.073 - .088	0.059	0.750	3.38	0.620	**58172**
VG101.25 20	2.000	20	.073 - .088	0.079	1.260	5.91	0.980	**56536**
VG101.21 25	1.378	25	.098 - .133	0.079	1.020	4.33	0.840	**58175**
VG101.25 25	2.362	25	.098 - .133	0.079	1.260	5.91	0.980	**58179**
VG101.21 30	1.378	30	.118 - .163	0.093	1.020	4.33	0.840	**58176**
VG101.25 30	2.362	30	.118 - .163	0.093	1.260	5.91	0.980	**58180**
VG101.21 40	1.378	40	.156 - .203	0.132	1.020	4.33	0.840	**58177**
VG101.25 40	2.362	40	.156 - .203	0.132	1.260	5.91	0.980	**58181**
VG101.25 50	2.362	50	.197 - .250	0.171	1.260	5.91	0.980	**58182**
VG101.25 60	2.362	60	.236 - .315	0.211	1.260	5.91	0.980	**58183**

VG103

Part Number	Ar	Seat Size	Dimensions					EDP#
			W	A	B	C	H1	
VG103.25 30	2.362	30	.118 - .163	0.093	1.260	5.91	0.980	**58184**
VG103.25 40	2.362	40	.156 - .203	0.132	1.260	5.91	0.980	**58185**
VG103.25 50	2.362	50	.197 - .250	0.171	1.260	5.91	0.980	**58186**

Note: Insert key must be ordered separately

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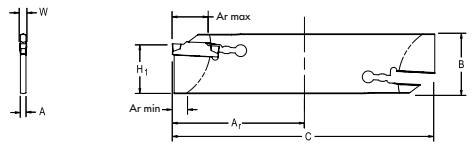
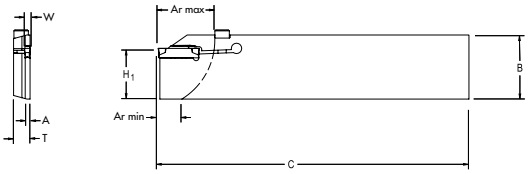
VG102 VTG DOUBLE ENDED SPRING CLAMP CUT OFF BLADES

VG102



VG104



VG102

Part Number	Ar	Seat Size	Dimensions						EDP#
			W	A		B	C	H1	
VG102 21 20	.197 - .590	20	0.081	0.059		1.02	3.937	0.827	**52220**
VG102 25 20	0.787	20	0.081	0.059		1.256	5.906	0.984	**52238**
VG102 21 25	1.181	25	0.100	0.079		1.02	3.937	0.827	**52226**
VG102 25 25	2.165	25	0.100	0.079		1.256	5.906	0.984	**52239**
VG102 21 30	1.181	30	0.120	0.093		1.02	3.937	0.827	**52231**
VG102 25 30	2.165	30	0.120	0.093		1.256	5.906	0.984	**52260**
VG102 25 40	2.165	40	0.159	0.132		1.256	5.906	0.984	**52266**
VG102 25 50	2.165	50	0.199	0.171		1.256	5.906	0.984	**52267**
VG102 25 60	2.165	60	0.238	0.211		1.256	5.906	0.984	**52270**

Note: Insert key must be ordered separately

VG104 VTG SINGLE ENDED SCREW CLAMP PARTING BLADES

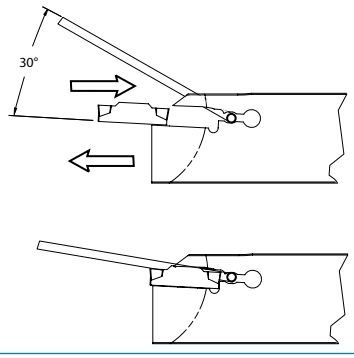
VG104

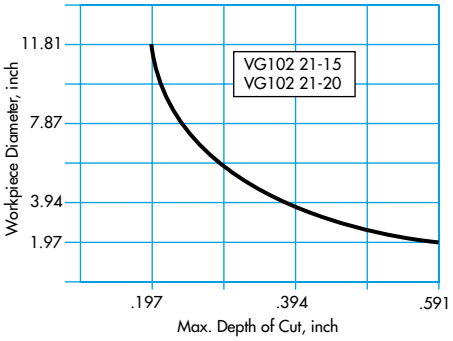
Part Number	Ar	Seat Size	Dimensions						EDP#
			W	A	T	B	C	H1	
VG104 R 25 20	.197 - .984	20	0.081	0.059	0.315	1.256	5.906	0.984	**52318**
VG104 L 25 20	.197 - .984	20	0.081	0.059	0.315	1.256	5.906	0.984	**52271**
VG104 R 25 25	.197 - .984	25	0.100	0.079	0.315	1.256	5.906	0.984	**52320**
VG104 L 25 25	.197 - .984	25	0.100	0.079	0.315	1.256	5.906	0.984	**52273**
VG104 R 25 30	.197 - .984	30	0.120	0.093	0.315	1.256	5.906	0.984	**52322**
VG104 L 25 30	.197 - .984	30	0.120	0.093	0.315	1.256	5.906	0.984	**52274**
VG104 R 25 40	.197 - 1.260	40	0.159	0.132	0.315	1.256	5.906	0.984	**52336**
VG104 L 25 40	.197 - 1.260	40	0.159	0.132	0.315	1.256	5.906	0.984	**52276**

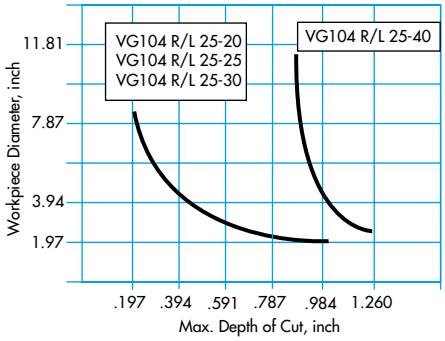
When using two edge VTG inserts, use the Ar of the insert for the maximum depth of cut.

APPLICATION INFORMATION

VG102 Insert Indexing







CUT-OFF BLADE SPARE PARTS

Spare Parts for VG104

Seat Size	Torx Wrench		Screw		Torque(ft lbs)
	Part#	EDP#	Part#	EDP#	
20	PT1204T	**62393**	PT1214T	**62400**	3.3
25 - 40	PT1204T	**62393**	PT1214T	**62400**	3.7

Spare Parts for VG101 & VG103

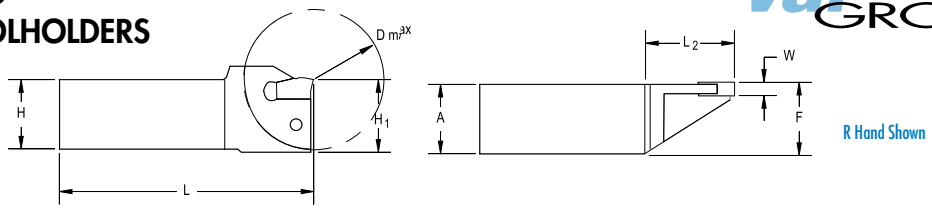
Seat Size	Insert Key	
	Part#	EDP#
15 - 30	PT1211	**62397**
40 - 60	PT1210	**62396**

Spare Parts for VG102

15 - 60	PT1202	**56817**

VG105 REINFORCED SPRING CLAMP TOOLHOLDERS

ValGROOVE™

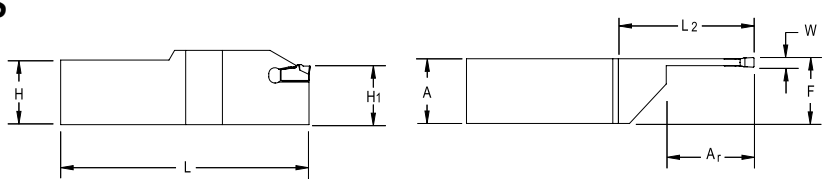


R Hand Shown

Part Number	Dmax	Seat Size	Dimensions							EDP#	
			W	A	F	H	H1	L	L2	R Hand	L Hand
VG105 R/L 06 20	0.76	20	.063 - .090	0.370	0.385	0.370	0.370	4.72	0.630	**58190**	**58187**
VG105 R/L 08 20	1.18	20	.063 - .090	0.500	0.510	0.500	0.500	5.91	0.810	**58191**	**58188**
VG105 R/L 10 20	1.18	20	.063 - .090	0.630	.0634	.0625	0.625	5.91	0.810	**56399**	**56395**
VG105 R/L 08 25	1.18	25	.094 - .130	0.500	0.510	0.500	0.500	5.91	0.810	**58192**	**58189**
VG105 R/L 10 25	1.18	25	.094 - .130	0.630	0.634	0.625	0.625	5.91	0.810	**56400**	**56396**
VG105 R/L 10 30	1.38	30	.094 - .130	0.630	0.638	0.625	0.625	4.00	1.020	**56401**	**56397**
VG105 R/L 12 30	1.77	30	.094 - .130	0.750	0.764	0.750	0.750	4.50	1.240	**56402**	**56398**

Note: Insert key must be ordered separately

VG107 TOOLHOLDERS



Part Number	Ar	Seat Size	Dimensions							EDP#	
			W	A	F	H	H1	L	L2	R Hand	L Hand
VG107 R/L 10 20	0.590	20	.063 - .090	0.630	0.634	0.625	0.625	4.00	0.810	**52402**	**52340**
VG107 R/L 10 25	0.590	25	.094 - .130	0.630	0.634	0.625	0.625	4.00	0.810	**52422**	**52344**
VG107 R/L 12 25	0.790	25	.094 - .130	0.750	0.634	0.750	0.750	4.50	1.020	**52423**	**50171**
VG107 R/L 12 30	0.790	30	.094 - .130	0.750	0.760	0.750	0.750	4.50	1.020	**52445**	**52345**
VG107 R/L 16 30	0.980	30	.123 - .163	1.000	1.012	1.000	1.000	6.00	1.260	**52704**	**52351**
VG107 R/L 12 40	0.980	40	.162 - .203	0.750	0.764	0.750	0.750	4.50	1.250	**52703**	**52350**
VG107 R/L 16 40	1.260	40	.162 - .203	1.000	1.012	1.000	1.000	6.00	1.640	**52705**	**52355**
VG107 R/L 20 40	1.260	40	.162 - .203	1.250	1.264	1.250	1.250	6.00	1.640	**52708**	**52371**
VG107 R/L 16 50	1.260	50	.202 - .236	1.000	1.012	1.000	1.000	6.00	1.640	**52706**	**52356**
VG107 R 20 50	1.260	50	.202 - .236	1.250	1.264	1.250	1.250	6.00	1.640	**52709**	
VG107 R/L 16 60	1.260	60	.241 - .312	1.000	1.012	1.000	1.000	6.00	1.630	**52707**	**52369**
VG107 R/L 20 60	1.260	60	.241 - .312	1.250	1.260	1.250	1.250	6.00	1.640	**52710**	**52392**

Note: Insert key must be ordered separately

Spare Parts

Seat Size	Insert Key	
	Part#	EDP#
20 - 30	PT1211	**62397**
40 - 60	PT1210	**62396**

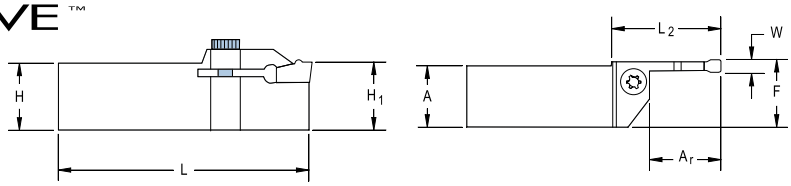
VSG insert seat interchangability:			
Insert seat size	Fits in Tool holder seat:	Insert seat size:	Fits in Tool holder seat:
15	15 & 20	40	40 & 50
20	20 & 15	50	50 & 40
25	25 & 30	60	60
30	30 & 25	80	80

Check for sufficient clearance between tool body & insert.

Inserts from ValMILL V350 system are also interchangeable with ValGROOVE inserts in the above chart.

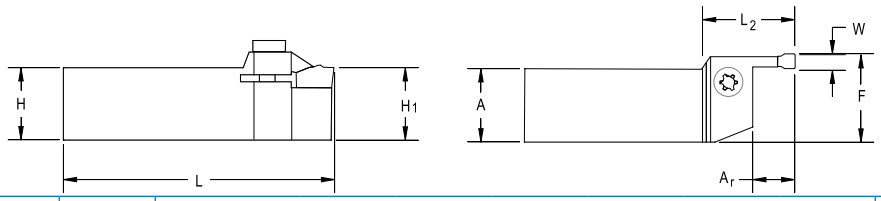
ValGROOVE™

VG109 TOOLHOLDERS



Part Number	Ar	Seat Size	Dimensions							EDP#	
			W	A	F	H	H1	L	L2	R Hand	L Hand
VG109 R/L 08 20	0.590	20	.073 - .088	0.500	0.750	0.500	0.500	4.50	1.319	**58443**	**58429**
VG109 R/L 10 20	0.590	20	.073 - .088	0.625	0.875	0.625	0.625	4.50	1.319	**58445**	**58431**
VG109 R/L 08 25	0.790	25	.098 - .133	0.500	0.750	0.500	0.500	4.50	1.575	**58444**	**58430**
VG109 R/L 10 25	0.790	25	.098 - .133	0.625	0.875	0.625	0.625	4.50	1.575	**58446**	**62416**
VG109 R/L 12 25	0.790	25	.098 - .133	0.750	1.000	0.750	0.750	5.00	1.575	**58447**	**58433**
VG109 R/L 12 30	0.790	30	.118 - .163	0.750	1.000	0.750	0.750	5.00	1.614	**58448**	**58434**
VG109 R/L 16 30	0.790	30	.118 - .163	1.000	1.250	1.000	1.000	6.00	1.614	**58450**	**58436**
VG109 R/L 12 40	0.980	40	.156 - .203	0.750	1.000	0.750	0.750	5.00	1.850	**58449**	**58435**
VG109 R/L 16 40	0.980	40	.156 - .203	1.000	1.250	1.000	1.000	6.00	1.850	**58451**	**58437**
VG109 R/L 20 40	0.980	40	.156 - .203	1.250	1.500	1.250	1.250	6.00	1.850	**58454**	**58440**
VG109 R/L 16 50	1.260	50	.197 - .250	1.000	1.250	1.000	1.000	6.00	2.244	**58452**	**58438**
VG109 R/L 16 60	1.260	60	.236 - .315	1.000	1.250	1.000	1.000	6.00	2.283	**58453**	**58439**
VG109 R/L 20 60	1.260	60	.236 - .315	1.250	1.500	1.250	1.250	6.00	2.283	**58455**	**58441**
VG109 R/L 24 80	1.500	80	.315 - .394	1.450	1.500	1.500	1.500	8.75	2.760	**58456**	**58442**

VG111 TOOLHOLDERS



R Hand Shown

Part Number	Ar	Seat Size	Dimensions							EDP#	
			W	A	F	H	H1	L	L2	R Hand	L Hand
VG111 R/L 10 20	0.320	20	.063 - .090	0.630	0.875	0.625	0.625	4.500	1.180	**52721**	**52712**
VG111 R/L 12 20	0.320	20	.073 - .088	0.750	1.000	0.750	0.750	4.50	1.180	**58203**	**58195**
VG111 R/L 16 20	0.320	20	.063 - .090	1.000	1.250	1.000	1.000	5.000	1.180	**52723**	**52714**
VG111 R/L 10 25	0.400	25	.098 - .133	0.630	0.875	0.625	0.625	4.50	1.300	**58202**	**58194**
VG111 R/L 12 25	0.400	25	.094 - .130	0.750	1.000	0.750	0.750	4.500	1.300	**52722**	**52713**
VG111 R/L 16 25	0.400	25	.094 - .130	1.000	1.250	1.000	1.000	5.000	1.300	**52724**	**52715**
VG111 R/L 12 30	0.400	30	.118 - .163	0.750	1.000	0.750	0.750	4.50	1.340	**58204**	**58196**
VG111 R/L 16 30	0.400	30	.118 - .163	1.000	1.250	1.000	1.000	5.00	1.340	**58206**	**58198**
VG111 R/L 20 30	0.400	30	.123 - .163	1.250	1.500	1.250	1.250	6.000	1.340	**52752**	**52717**
VG111 R/L 12 40	0.510	40	.156 - .203	0.750	1.000	0.750	0.750	4.50	1.430	**58205**	**58197**
VG111 R/L 16 40	0.510	40	.156 - .203	1.000	1.250	1.000	1.000	5.00	1.430	**58207**	**58199**
VG111 R/L 20 40	0.510	40	.162 - .203	1.250	1.500	1.250	1.250	6.000	1.430	**52812**	**50175**
VG111 R/L 16 50	0.510	50	.202 - .236	1.000	1.250	1.000	1.000	5.000	1.490	**52729**	**52716**
VG111 R/L 20 50	0.510	50	.202 - .236	1.250	1.500	1.250	1.250	6.000	1.490	**52909**	**52718**
VG111 R/L 16 60	0.630	60	.236 - .315	1.000	1.250	1.000	1.000	5.00	1.690	**58208**	**58200**
VG111 R/L 20 60	0.630	60	.241 - .312	1.250	1.500	1.250	1.250	6.000	1.690	**53228**	**52719**
VG111 R/L 24 80	0.930	80	.320 - .394	1.450	1.500	1.500	1.500	8.000	1.970	**53229**	**52720**

Spare Parts

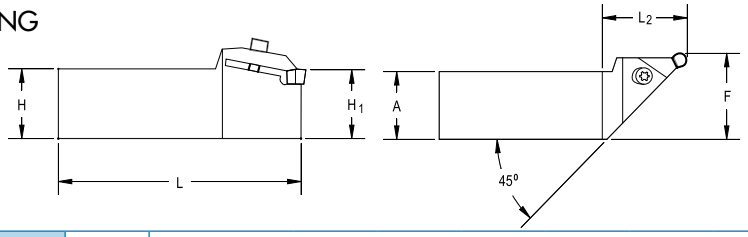
Seat Size	Torx Wrench*		Screw*		Torque(ft lbs)
	Part Number	EDP#	Part Number	EDP#	
20 - 30+	PT1204T	**62393**	PT1214T	**62400**	1.9
40	PT1206T	**62395**	PT1217T	**62403**	3.3
60	PT1206T	**62395**	PT1217T	**62403**	3.7
80	PT1206T	**62395**	PT1217T	**62403**	4.5

*Advanced Torx Plus® locking mechanism

+Note: VG109 seat size 30 toolholders use a Torx Wrench #PT1205T **EDP# 62394,** and Screw# PT1215T **EDP# 62401**

VG115 TOOLHOLDERS
UNDERCUT TURNING

ValGROOVE™



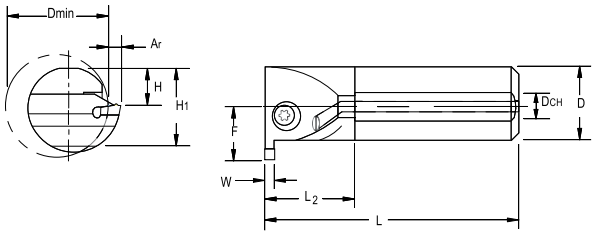
R Hand Shown

Part Number	Seat Size	Dimensions							EDP#	
		W	A	F	H	H1	L	L2	R Hand	L Hand
VG115 R/L 12 20	20	.073 - .088	0.750	1.000	0.750	0.750	4.50	1.190	**58219**	**58209**
VG115 R/L 12 25	25	.098 - .133	0.750	1.000	0.750	0.750	4.50	1.320	**58220**	**58210**
VG115 R/L 16 25	25	.098 - .133	1.000	1.250	1.000	1.000	5.00	1.320	**58222**	**58212**
VG115 R/L 12 30	30	.118 - .163	0.750	1.000	0.750	0.750	4.50	1.360	**58221**	**58211**
VG115 R/L 16 30	30	.118 - .163	1.000	1.250	1.000	1.000	5.00	1.360	**58223**	**58213**
VG115 R/L 16 40	40	.156 - .203	1.000	1.250	1.000	1.000	5.00	1.430	**58224**	**58214**
VG115 R/L 20 50	50	.197 - .250	1.250	1.500	1.250	1.250	6.00	1.490	**58227**	**58217**

Spare Parts

Seat Size	Torx Wrench*		Screw*		Torque (ft lbs)
	Part#	EDP#	Part#	EDP#	
20, 25, 30	PT1204T	**62393**	PT1214T	**62400**	1.9
40, 50	PT1206T	**62395**	PT1217T	**62403**	3.3

VG117 TOOLHOLDERS
ID TURNING/GROOVING/BORING BAR
Ar .197 - .394



R Hand Shown

Part Number	Ar	Seat Size	Dimensions							Dmin	EDP#	
			W	F	H	H1	L	L2	D		R Hand	L Hand
VG117 R/L 16 20	0.197	20	.073 - .088	0.697	0.450	0.910	8.00	1.270	1.000	1.26	**58342**	**58328**
VG117 R/L 20 20	0.197	20	.073 - .088	0.846	0.590	1.180	10.00	1.430	1.250	1.58	**58345**	**58331**
VG117 R/L 16 25	0.240	25	.098 - .133	0.732	0.450	0.910	8.00	1.270	1.000	1.97	**58343**	**58329**
VG117 R 20 25	0.240	25	.098 - .133	0.870	0.590	1.180	10.00	1.430	1.250	1.97	**58346**	-
VG117 R 24 25	0.236	25	.098 - .133	1.031	0.730	1.460	12.00	1.670	1.500	1.97	**58351**	-
VG117 R/L 16 30	0.236	30	.118 - .163	0.728	0.450	0.910	8.00	1.270	1.000	1.97	**58344**	**58330**
VG117 R/L 20 30	0.236	30	.118 - .163	0.870	0.590	1.180	10.00	1.430	1.250	1.97	**58347**	**58333**
VG117 R/L 24 30	0.236	30	.118 - .163	1.024	0.730	1.460	11.96	1.690	1.500	1.97	**58352**	**58338**
VG117 R/L 20 40	0.319	40	.156 - .203	0.949	0.590	1.180	10.00	1.430	1.250	2.36	**58348**	**58334**
VG117 R/L 24 40	0.319	40	.156 - .203	1.106	0.730	1.460	12.00	1.670	1.500	2.36	**58353**	**58339**
VG117 R/L 20 50	0.315	50	.197 - .250	0.945	0.590	1.180	10.00	1.430	1.250	2.36	**58349**	**58335**
VG117 R 24 50	0.315	50	.197 - .250	1.102	0.730	1.460	12.00	1.670	1.500	2.36	**58354**	-
VG117 R/L 20 60	0.394	60	.236 - .315	1.024	0.590	1.180	10.00	1.430	1.250	2.76	**58350**	**58336**
VG117 R/L 24 60	0.394	60	.236 - .315	1.181	0.730	1.460	12.00	1.670	1.500	2.76	**58355**	**58341**

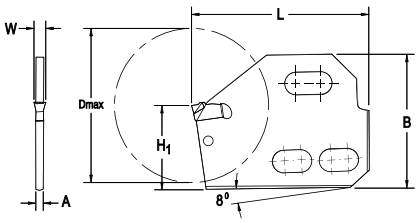
Spare Parts

Seat Size	Torx Wrench*		Screw*		Torque(ft lbs)
	Part#	EDP#	Part#	EDP#	
20, 25, 30	PT1204T	**62393**	PT1213T	**62399**	1.8
40, 50, 60	PT1206T	**62395**	PT1216T	**62402**	3.3

*Advanced Torx Plus® locking mechanism

ValGROOVE™

VG123 TOOLHOLDERS
MANCHESTER BLADES
Dmax 3.00 - 5.00



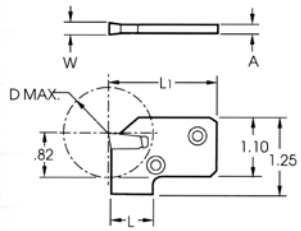
Part Number	Dmax	Seat Size	Dimensions					EDP#
			W	A	B	H1	L	
VG12340 20	3.00	20	.073 - .088	0.060	2.250	1.580	3.06	**58358**
VG12327 20	2.00	20	.073 - .088	0.060	1.750	1.060	2.34	**58364**
VG12340 30	3.00	30	.118 - .163	0.090	2.250	1.580	3.06	**58366**
VG12327 30	2.00	30	.118 - .163	0.090	1.750	1.060	2.34	**58360**
VG12336 30	3.00	30	.118 - .163	0.090	1.900	1.440	3.06	**58363**
VG12340 50	3.00	50	.197 - .250	0.170	2.250	1.580	3.06	**58368**
VG12327 50	2.00	50	.197 - .250	0.170	1.750	1.060	2.34	**58362**
VG12356 60	5.00	60	.236 - .315	0.210	3.130	2.210	4.43	**58370**

Spare Parts

Seat Size	Insert Key	
	Part Number	EDP#
20, 30	PT1211	**62397**
50, 60	PT1210	**62396**

Note: Insert key must be ordered separately

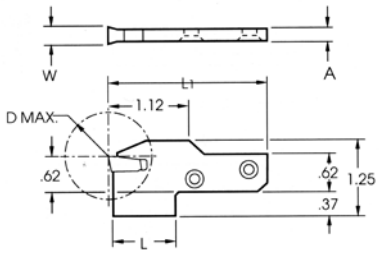
VGBT
MTS BLADES



Part Number	Dmax	Seat Size	V-Cut Cross Reference	Dimensions				EDP#
				W	A	L	L1	
VGBT25L58 30	0.79	30	VIBT32L3258B125	0.123	0.093	0.80	1.920	**50168**
VGBT25R58 30	0.79	30	VIBT32R3258B125	0.123	0.093	0.80	1.920	**50169**

Note: Insert key must be ordered separately

VGDG
VDGN BLADES

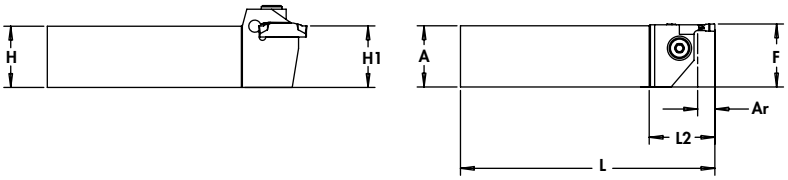


Part Number	Dmax	Seat Size	V-Cut Cross Reference	Dimensions				EDP#
				W	A	L	L1	
VGDGL125078 30	1.50	30	VIDGL125B078	0.123	0.093	0.78	2.250	**50173**
VGDGR125078 30	1.50	30	VIDGR125B078	0.123	0.093	0.78	2.250	**50184**
VGDGL188103 50	2.00	50	VIDGL188B103	0.202	0.171	1.03	2.500	**50188**
VGDGR188103 50	2.00	50	VIDGR188B103	0.202	0.171	1.03	2.500	**50179**
VGDG250153 60	3.00	60	VIDG250B153	0.241	0.211	1.53	3.000	**50177**

Note: Insert key must be ordered separately

VG110 TOOLHOLDERS

ValGROOVE™



Part Number	Ar	Seat Size	Dimensions							EDP#	
			W	A	F	H	H1	L	L2	R Hand	L Hand
VG110 R/L 08 20	0.320	20	0.079	0.500	0.512	0.500	0.500	4.50	1.004	**58408**	**58387**
VG110 R/L 10 20	0.320	20	0.079	0.625	0.669	0.625	0.625	4.50	1.004	**58409**	**58388**
VG110 R/L 12 20	0.320	20	0.079	0.750	0.827	0.750	0.750	4.50	1.004	**58411**	**58390**
VG110 R/L 16 20	0.320	20	0.079	1.000	1.028	1.000	1.000	5.00	1.004	**58415**	**58394**
VG110 R/L 10 25	0.400	25	.098 - .118	0.625	0.669	0.625	0.625	4.50	1.004	**58410**	**58389**
VG110 R/L 12 25	0.400	25	.098 - .118	0.750	0.827	0.750	0.750	4.50	1.142	**58412**	**58391**
VG110 R/L 16 25	0.400	25	.098 - .118	1.000	1.024	1.000	1.000	5.00	1.142	**58416**	**58395**
VG110 R/L 20 25	0.400	25	.098 - .118	1.250	1.299	1.250	1.250	6.00	1.142	**58422**	**58401**
VG110 R/L 12 30	0.400	30	.118 - .125	0.750	0.827	0.750	0.750	4.50	1.181	**58413**	**58392**
VG110 R/L 16 30	0.400	30	.118 - .125	1.000	1.024	1.000	1.000	5.00	1.181	**58417**	**58396**
VG110 R/L 20 30	0.400	30	.118 - .125	1.250	1.299	1.250	1.250	6.00	1.181	**58423**	**58402**
VG110 R/L 12 40	0.510	40	.157 - .187	0.750	0.827	0.750	0.750	4.50	1.338	**58414**	**58393**
VG110 R/L 16 40	0.510	40	.157 - .187	1.000	1.024	1.000	1.000	5.00	1.338	**58418**	**58397**
VG110 R/L 20 40	0.510	40	.157 - .187	1.250	1.299	1.250	1.250	6.00	1.338	**58424**	**58403**
VG110 R/L 16 50	0.510	50	.197 - .236	1.000	1.024	1.000	1.000	5.00	1.338	**58419**	**58398**
VG110 R/L 20 50	0.510	50	.197 - .236	1.250	1.299	1.250	1.250	6.00	1.338	**58425**	**58404**
VG110 R/L 24 50	0.510	50	.197 - .236	1.500	1.614	1.500	1.500	8.00	1.338	**58427**	**58406**
VG110 R/L 16 60	0.630	60	.236 - .250	1.000	1.024	1.000	1.000	5.00	1.535	**58200**	**58399**
VG110 R/L 20 60	0.630	60	.236 - .250	1.250	1.299	1.250	1.250	6.00	1.535	**58426**	**58405**
VG110 R/L 24 60	0.630	60	.236 - .250	1.500	1.614	1.500	1.500	8.00	1.535	**58428**	**58407**
VG110 R/L 16 80	0.630	80	0.315	1.000	1.028	1.000	1.000	6.00	1.614	**58422**	**58400**

Spare Parts

Seat Size	Shank Size	Torx Wrench		Screw		Torque ft/lbs
		Part#	EDP#	Part#	EDP#	
20	0.5	PT1204T	**62393**	PT1213T	**62399**	2.9
20	0.625 - 1.000	PT1204T	**62393**	PT1214T	**62400**	2.9
25	0.625 - 1.250	PT1204T	**62393**	PT1214T	**62400**	2.9
30	0.750 - 1.250	PT1205T	**62394**	PT1215T	**62401**	3.6
40	0.75	PT1206T	**62394**	PT1217T	**62403**	5.4
40	1.000 - 1.500	PT1206T	**62395**	PT1220T	**50130**	5.4
50	1.000 - 1.500	PT1206T	**62395**	PT1220T	**50130**	5.4
60	1.000 - 1.500	PT1206T	**62395**	PT1220T	**50130**	5.4
80	1.000 - 1.500	PT1206T	**62395**	PT1220T	**50130**	5.5

When using two edge VTG inserts, use the Ar of the insert for the maximum depth of cut.

VTG INSERT SEAT INTERCHANGABILITY:

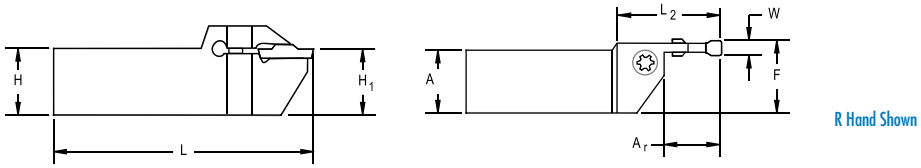
Insert seat size:	Fits in Toolholder seat:
15	15
20	20
25	25 & 20
30	30, 25 & 20

Insert seat size:	Fits in Toolholder seat:
40	40
50	50 & 40
60	60, 50 & 40
80	80

When using two edge VTG inserts, use the Ar of the insert for the maximum depth of cut.

ValGROOVE™

VG112 TOOLHOLDERS



R Hand Shown

Part Number	Ar	Seat Size	Dimensions							EDP#	
			W	A	F	H	H1	L	L2	Right Hand	Left Hand
VG112 R/L 08 20	0.590	20	0.081	0.500	0.512	0.500	0.500	4.50	1.319	**51311**	**51122**
VG112 R/L 10 20	0.590	20	0.081	0.625	0.669	0.625	0.625	4.50	1.319	**51313**	**51155**
VG112 R/L 12 20	0.590	20	0.081	0.750	0.827	0.750	0.750	5.00	1.319	**51316**	**51177**
VG112 R/L 16 20	0.590	20	0.081	1.000	1.024	1.000	1.000	5.00	1.319	**51322**	**51182**
VG112 R/L 10 25	0.790	25	0.100	0.625	0.669	0.625	0.625	4.50	1.575	**51314**	**51168**
VG112 R/L 12 25	0.790	25	0.100	0.750	0.827	0.750	0.750	5.00	1.575	**51319**	**51178**
VG112 R/L 16 25	0.790	25	0.100	1.000	1.024	1.000	1.000	6.00	1.575	**51323**	**51183**
VG112 R/L 20 25	0.790	25	0.100	1.250	1.299	1.250	1.250	6.00	1.575	**51332**	**51191**
VG112 R/L 12 30	0.790	30	0.120	0.750	0.827	0.750	0.750	5.00	1.614	**51320**	**51180**
VG112 R/L 16 30	0.790	30	0.120	1.000	1.024	1.000	1.000	6.00	1.614	**51324**	**51184**
VG112 R/L 20 30	0.790	30	0.120	1.250	1.299	1.250	1.250	6.00	1.614	**51333**	**51192**
VG112 R/L 24 30	0.790	30	0.120	1.500	1.614	1.500	1.500	8.00	1.614	**51340**	**51233**
VG112 R/L 12 40	0.980	40	0.159	0.750	0.827	0.750	0.750	5.00	1.850	**51321**	**51181**
VG112 R/L 16 40	0.980	40	0.159	1.000	1.024	1.000	1.000	6.00	1.850	**51326**	**51185**
VG112 R/L 20 40	0.980	40	0.159	1.250	1.299	1.250	1.250	6.00	1.850	**51334**	**51193**
VG112 R/L 24 40	0.980	40	0.159	1.500	1.614	1.500	1.500	8.00	1.850	**51341**	**51327**
VG112 R/L 16 50	1.260	50	0.199	1.000	1.024	1.000	1.000	6.00	2.244	**51327**	**51186**
VG112 R/L 20 50	1.260	50	0.199	1.250	1.299	1.250	1.250	6.00	2.244	**51335**	**51194**
VG112 R/L 24 50	1.260	50	0.199	1.500	1.614	1.500	1.500	8.00	2.244	**51342**	**51308**
VG112 R/L 16 60	1.260	60	0.238	1.000	1.024	1.000	1.000	6.00	2.283	**51329**	**51187**
VG112 R/L 20 60	1.260	60	0.238	1.250	1.299	1.250	1.250	6.00	2.283	**51310**	**51195**
VG112 R/L 24 60	1.260	60	0.238	1.500	1.614	1.500	1.500	8.00	2.283	**51341**	**51309**
VG112 R/L 16 80	1.000	80	0.317	1.000	1.028	1.000	1.000	6.00	2.047	**51330**	**51188**
VG112 R/L 20 80	1.000	80	0.317	1.250	1.300	1.250	1.250	7.000	2.047	**51338**	**51197**
VG112 R/L 20 80EX	1.380	80	0.317	1.250	1.300	1.250	1.250	7.000	2.362	**51339**	**51225**
VG112 R/L 24 80EX	1.380	80	0.317	1.500	1.614	1.500	1.500	7.000	2.362	**51344**	**51310**

Spare Parts

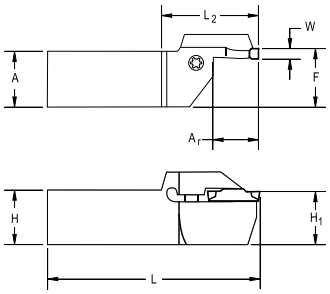
Seat Size	Shank Size	Torx Wrench		Screw		Torque ft/lbs
		Part#	EDP#	Part#	EDP#	
20	0.5	PT1204T	**62393**	PT1213T	**62399**	2.9
20	0.625 - 1.000	PT1204T	**62393**	PT1214T	**62400**	2.9
25	0.625 - 1.250	PT1204T	**62393**	PT1214T	**62400**	2.9
30	0.750 - 1.250	PT1205T	**62394**	PT1215T	**62401**	3.6
40	0.75	PT1206T	**62394**	PT1217T	**62403**	5.4
40	1.000 - 1.500	PT1206T	**62395**	PT1220T	**50130**	5.4
50	1.000 - 1.500	PT1206T	**62395**	PT1220T	**50130**	5.4
60	1.000 - 1.500	PT1206T	**62395**	PT1220T	**50130**	5.4
80	1.000 - 1.500	PT1206T	**62395**	PT1220T	**50130**	5.5

When using two edge VTG inserts, use the Ar of the insert for the maximum depth of cut.

VG114 TOOLHOLDERS

FACE GROOVING

Ar .470 - 1.000



R Hand Shown

Part Number	Ar	Seat Size	Dimensions							First Cut min -max	EDP#	
			W	A	F	H	H1	L	L2		R Hand	L Hand
VG114 R/L 16034 30	0.470	30	.118 - .125	1.000	1.039	1.000	1.000	6.00	1.257	1.34 - 1.73	**58276**	**58231**
VG114 R/L 16042 30	0.750	30	.118 - .125	1.000	1.039	1.000	1.000	6.00	1.577	1.65 - 2.36	**58285**	**58239**
VG114 R/L 16054 30	0.750	30	.118 - .125	1.000	1.039	1.000	1.000	6.00	1.577	2.13 - 2.95	**58289**	**58243**
VG114 R/L 16067 30	0.750	30	.118 - .125	1.000	1.039	1.000	1.000	6.00	1.577	2.64 - 3.94	**58297**	**58251**
VG114 R/L 16090 30	0.870	30	.118 - .125	1.000	1.039	1.000	1.000	6.00	1.697	3.54 - 6.30	**58303**	**58257**
VG114 R/L 16130 30	0.870	30	.118 - .125	1.000	1.039	1.000	1.000	6.00	1.697	5.12 - 11.80	**58309**	**58263**
VG114 R/L 16040 40	0.790	40	.157 - .187	1.000	1.039	1.000	1.000	6.00	1.656	1.58 - 2.36	**58281**	**58235**
VG114 R/L 16052 40	0.790	40	.157 - .187	1.000	1.039	1.000	1.000	6.00	1.656	2.05 - 2.84	**58287**	**58241**
VG114 R/L 16064 40	1.000*	40	.157 - .187	1.000	1.039	1.000	1.000	6.00	1.888	2.52 - 3.94	**58295**	**58249**
VG114 R/L 16092 40	1.000*	40	.157 - .187	1.000	1.039	1.000	1.000	6.00	1.888	3.62 - 5.51	**58305**	**58259**
VG114 R/L 16132 40	1.000*	40	.157 - .187	1.000	1.039	1.000	1.000	6.00	1.888	5.20 - 9.06	**58311**	**58265**
VG114 R/L 16220 40	1.000*	40	.157 - .187	1.000	1.039	1.000	1.000	6.00	1.888	8.66 - 19.69	**58319**	**58273**
VG114 R/L 16040 50	0.790	50	.197 - .236	1.000	1.039	1.000	1.000	6.00	1.696	1.58 - 2.76	**58282**	**58236**
VG114 R/L 16060 50	1.000*	50	.197 - .236	1.000	1.039	1.000	1.000	6.00	1.906	2.36 - 3.74	**58293**	**58247**
VG114 R/L 16085 50	1.000*	50	.197 - .236	1.000	1.039	1.000	1.000	6.00	1.906	3.35 - 5.12	**58299**	**58253**
VG114 R/L 16120 50	1.000*	50	.197 - .236	1.000	1.039	1.000	1.000	6.00	1.906	4.72 - 7.09	**58307**	**58261**
VG114 R/L 16175 50	1.000*	50	.197 - .236	1.000	1.039	1.000	1.000	6.00	1.906	6.89 - 19.69	**58315**	**58269**
VG114 R/L 16040 60	0.790	60	.236 - .250	1.000	1.039	1.000	1.000	6.00	1.735	1.58 - 2.76	**58283**	**58237**
VG114 R/L 16058 60	1.000*	60	.236 - .250	1.000	1.039	1.000	1.000	6.00	1.945	2.28 - 3.94	**58291**	**58245**
VG114 R/L 16088 60	1.000*	60	.236 - .250	1.000	1.039	1.000	1.000	6.00	1.945	3.47 - 7.09	**58301**	**58255**
VG114 R/L 16168 60	1.000*	60	.236 - .250	1.000	1.039	1.000	1.000	6.00	1.945	6.61 - 15.75	**58313**	**58267**

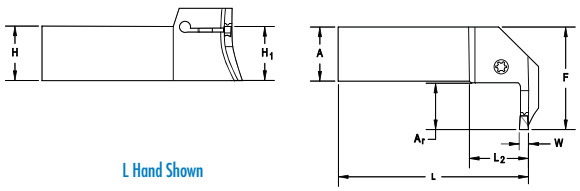
*Max. Ar can be limited by the Ar of GG & TG inserts

Spare Parts

Seat Size	Torx Wrench*		Screw*		Torque(ft lbs)
	Part#	EDP#	Part#	EDP#	
30	PT1205T	**62394**	PT1215T	**62401**	2.6
40	PT1206T	**62395**	PT1220T	**50130**	2.6
50	PT1206T	**62395**	PT1220T	**50130**	3.0
60	PT1206T	**62395**	PT1220T	**50130**	3.3

*Advanced Torx Plus® locking mechanism

ValGROOVE™



L Hand Shown

VG116 TOOLHOLDERS
90° FACE GROOVING
Ar .790

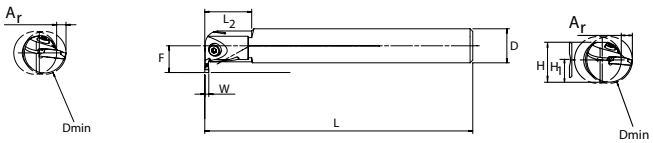
Part Number	Ar	Seat Size	Dimensions							First Cut min - max	EDP#	
			W	A	F	H	H1	L	L2		R Hand	L Hand
VG116 R/L 16064 40	0.790	40	.157 - .187	1.000	1.850	1.000	1.000	6.00	1.059	2.52 - 3.94	**62428**	**62419**
VG116 R/L 16092 40	0.790	40	.157 - .187	1.000	1.850	1.000	1.000	6.00	1.059	3.62 - 5.51	**62431**	**62422**
VG116 R/L 16132 40	0.790	40	.157 - .187	1.000	1.850	1.000	1.000	6.00	1.059	5.20 - 9.06	**62432**	**62423**
VG116 R/L 16058 60	0.790	60	.236 - .250	1.000	1.850	1.000	1.000	6.00	1.207	2.28 - 3.94	**62427**	**62418**
VG116 R/L 16088 60	0.790	60	.236 - .250	1.000	1.850	1.000	1.000	6.00	1.207	3.47 - 7.09	**62430**	**62421**
VG116 R/L 16168 60	0.790	60	.236 - .250	1.000	1.850	1.000	1.000	6.00	1.207	6.61 - 15.75	**62434**	**62425**
VG116 R/L 16050 80	0.790	80	0.315	1.000	1.850	1.000	1.000	6.00	1.630	1.97 - 3.15	**62426**	**62417**
VG116 R/L 16075 80	0.790	80	0.315	1.000	1.850	1.000	1.000	6.00	1.630	2.95 - 5.91	**62429**	**62420**
VG116 R/L 16140 80	0.790	80	0.315	1.000	1.850	1.000	1.000	6.00	1.630	5.51 - 15.75	**62433**	**62424**

Spare Parts

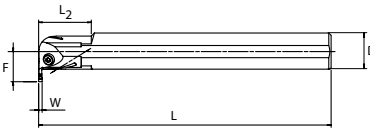
Seat Size	Torx Wrench*		Screw*		Torque(ft lbs)
	Part#	EDP#	Part#	EDP#	
40	PT1206T	**62395**	PT1220T	**50130**	2.6
60	PT1206T	**62395**	PT1220T	**50130**	3.3
80	PT1206T	**62395**	PT1220T	**50130**	3.7

*Advanced Torx Plus® locking mechanism

1 inch cylindrical



1.25 inch with flats



R Hand Shown

VG118 TOOLHOLDERS
ID TURNING/GROOVING/
BORING BARS

NEW Part Number	Ar	Seat Size	Dimensions							D Min	EDP#	
			W	F	H	H1	L	L2	D		R Hand	L Hand
VG 118 R/L 12-20	0.197	20	0.081-0.125	0.592	-	-	7.08	1.180	0.750	1.260	**52077**	**52001**
VG 118 R/L 16-20	0.276	20	0.081-0.125	0.785	-	-	7.87	1.370	1.000	1.260	**52098**	**52018**
VG 118 R/L 20-20	0.374	20	0.081-0.125	1.014	0.910	0.450	9.84	1.770	1.25	1.575	**52119**	**52035**
VG 118 R/L 12-30	0.197	30	0.120-0.125	0.592	-	-	7.08	1.180	0.750	1.260	**52097**	**52013**
VG 118 R/L 16-30	0.276	30	0.120-0.125	0.785	-	-	7.87	1.370	1.000	1.260	**52100**	**52021**
VG 118 R/L 20-30	0.374	30	0.120-0.125	1.014	0.910	0.450	9.84	1.770	1.250	1.575	**52123**	**52036**
VG 118 R/L 24-30	0.433	30	0.120-0.125	1.189	1.180	0.590	11.80	2.160	1.500	1.969	**52131**	**52043**
VG 118 R/L 16-40	0.276	40	0.157-0.250	0.785	-	-	7.87	1.370	1.000	1.260	**52101**	**52030**
VG 118 R/L 20-40	0.413	40	0.157-0.250	1.053	0.910	0.450	9.84	1.770	1.250	1.575	**52126**	**52037**
VG 118 R/L 24-40	0.433	40	0.157-0.250	1.189	1.180	0.590	11.80	2.160	1.500	1.969	**52134**	**52044**
VG 118 R/L 16-50	0.276	50	0.199-0.250	0.785	-	-	7.87	1.370	1.000	1.260	**52117**	**52031**
VG 118 R/L 20-50	0.433	50	0.199-0.250	1.073	0.910	0.450	9.84	1.770	1.250	1.575	**52130**	**52039**
VG 118 R/L 24-50	0.433	50	0.199-0.250	1.189	1.180	0.590	11.80	2.160	1.500	1.969	**52135**	**52049**
VG 118 R/L 24-60	0.433	60	0.238-0.250	1.189	1.460	0.730	11.80	2.160	1.500	1.969	**52136**	**52070**

Spare Parts

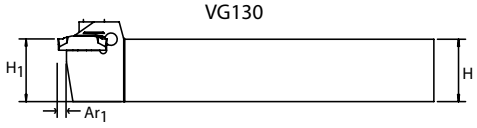
Seat Size	Bar Diameter	Torx Wrench*		Screw*		Torque(ft lbs)
		Part#	EDP#	Part#	EDP#	
20, 30	0.750	PT1203T	**56818**	PT1221T	**56819**	2.6
20	1.000-1.250	PT1204T	**62393**	PT1214T	**62400**	3.0
30	1.000-1.500	PT1205T	**62394**	PT1222T	**56820**	3.3
40, 50	1.000	PT1205T	**62394**	PT1222T	**56820**	3.5
40, 50	1.250	PT1206T	**62395**	PT1216T	**62402**	3.5
40, 50, 60	1.500	PT1206T	**62395**	PT1217T	**62403**	4.0

*Advanced Torx Plus® locking mechanism

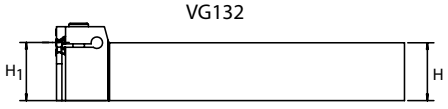
VG130/VG132 TOOLHOLDERS
SHALLOW GROOVING/FACE GROOVING

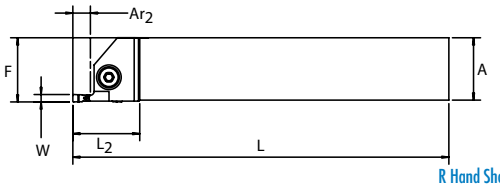
ValGROOVE™

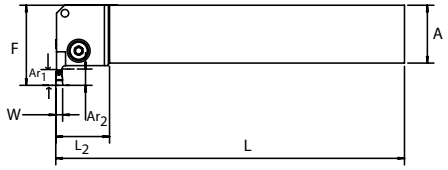
VG130



VG132







R Hand Shown

Notes: Use Ar1 for face grooves
Use Ar2 radial grooves

VG130/132 shallow groove holders use several insert sizes.

Seat size 30 tool holder can use insert seat sizes 30, 25 and 20.

Seat size 60 tool holder can use insert seat sizes 60, 50 and 40.

NEW

Part Number	Ar1	Ar2	Seat Size	Dimensions							EDP#	
				W	A	F	H	H1	L	L2	R Hand	L Hand
VG 130 R/L 16-30	0.138	0.275	30	0.081-0.120	1.000	1.024	1.000	1.000	6.000	1.063	**56509**	**56507**
VG 130 R/L 16-60	0.177	0.315	60	0.159-0.238	1.000	1.024	1.000	1.000	6.000	1.081	**56510**	**56508**
VG 132 R/L 16-30	0.138	0.275	30	0.081-0.120	1.000	1.378	1.000	1.000	6.000	0.925	**56513**	**56511**
VG 132 R/L 16-60	0.177	0.315	60	0.159-0.238	1.000	1.417	1.000	1.000	6.000	1.130	**56514**	**56512**

Spare Parts

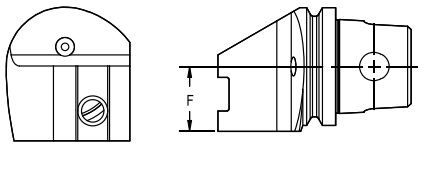
Seat Size	Torx Wrench*		Screw*		Torque(ft lbs)
	Part#	EDP#	Part#	EDP#	
30	PT1205T		PT1215T		2.6
60	PT1206T		PT1220T		3.3

*Advanced Torx Plus® locking mechanism

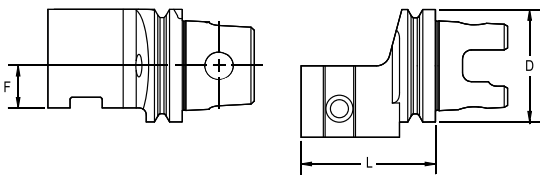
Face Grooving with VG130/132

Holder Seat	Insert Seat	First Cut Diameter	Ar1
30	**30**	2.244	**0.138**
30	**25**	3.268	**0.138**
30	**20**	3.937	**0.138**
60	**60, 50, 40**	1.811	**0.177**

VG120 TOOLHOLDERS
AXIAL VM CONNECTION



VG122 R Hand 40 Size Shown



VG120 R Hand 40 Size Shown

Part Number	Dimensions			EDP#	
	D	L	F	R Hand	L Hand
VG120 R/L 40	1.575	1.774	0.542	**61937**	**61934**
VG120 R/L 50	1.968	2.35	0.739	**61938**	**61935**
VG120 R/L 63	2.48	2.02	0.984	**61939**	**61936**

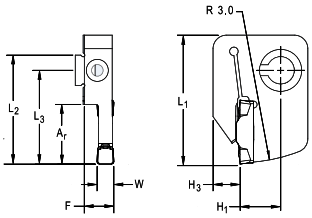
VG122 TOOLHOLDERS
90° VM CONNECTION

Part Number	Dimensions			EDP#	
	D	L	F	R Hand	L Hand
VG122 R/L 40	1.575	1.500	0.000	**61943**	**61940**
VG122 R/L 50	1.968	1.969	1.083	**61944**	**61941**
VG122 R/L 63	2.48	2.362	1.24	**61945**	**61942**

Spare Parts for VG120 & VG122

Part Number	Wrench		Screw		Torque(ft lbs)
	Part Number	EDP#	Part Number	EDP#	
All	516 HEXWRENCH	**57330**	PT527	**53003**	32

ValGROOVE™



R Hand Shown

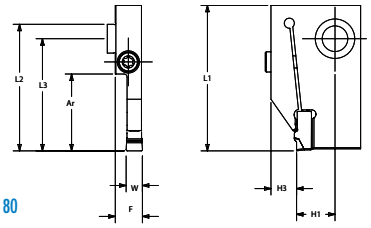
VGSCA TOOLHOLDERS
SCREW CLAMP ANVIL
Ar .875 - 1.100

Part Number	Ar	Seat Size	Dimensions							Max Ar	EDP#	
			W	F	H1	H3	L1	L2	L3		R Hand	L Hand
VGSCA R/L 20	0.810	20	0.079	.546	0.75	0.50	2.09	1.721	1.44	0.748	**58482**	**58475**
VGSCA R/L 25	0.810	25	.098 - .118	.546	0.75	0.50	2.09	1.721	1.44	0.744	**58483**	**58476**
VGSCA R/L 30	0.810	30	.118 - .125	.549	0.75	0.50	2.09	1.721	1.44	.740 .724	**58484**	**58477**
VGSCA R/L 40	1.000	40	.157 - .187	.548	0.75	0.50	2.28	1.911	1.63	.949 .921	**58485**	**58478**
VGSCA R/L 50	1.000	50	.197 - .236	.549	0.75	0.50	2.28	1.911	1.63	.949 .906	**58486**	**58479**
VGSCA R/L 60	1.000	60	.236 - .250	.548	0.75	0.50	2.28	1.911	1.63	.925 .906	**58487**	**58480**
VGSCA R/L 80	1.100	80	0.315	.567	0.75	0.50	2.38	2.011	1.73	1.087	**58488**	**58481**

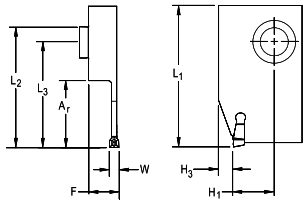
VGSCA Spare Parts

Wrench*		Screw	
Part Number	EDP#	Part Number	EDP#
PT1206T	**62395**	PT1217T	**62403**

VGWCA TOOLHOLDERS
WEDGE CLAMP ANVIL
Ar .875 - 1.500



VGWCA 80



VGWCA 20-60

R Hand Shown

Part Number	Ar	Seat Size	Dimensions							EDP#	
			W	F	H1	H3	L1	L2	L3	R Hand	L Hand
VGWCA R/L 20	0.875	20	.073 - .088	.523	0.75	0.25	2.215	1.845	1.564	**58496**	**58489**
VGWCA R/L 25	1.000	25	.098 - .133	.523	0.75	0.25	2.340	1.970	1.689	**58497**	**58490**
VGWCA R/L 30	1.125	30	.118 - .163	.525	0.75	0.25	2.465	2.095	1.814	**58498**	**58491**
VGWCA R/L 40	1.250	40	.156 - .203	.526	0.75	0.25	2.590	2.200	1.939	**58499**	**58492**
VGWCA R/L 50	1.250	50	.197 - .250	.526	0.75	0.25	2.590	2.200	1.939	**58500**	**58493**
VGWCA R/L 60	1.250	60	.236 - .315	.527	0.75	0.25	2.590	2.200	1.939	**58501**	**58494**
VGWCA R/L 80	1.500	80	.315 - .394	.530	0.75	0.25	2.840	2.470	2.189	**58502**	**58495**

VGSCA Spare Parts

Seat Size	Torx Wrench*		Screw*		Torque (ft lbs)
	Part Number	EDP#	Part Number	EDP#	
20	PT1206T	**62395**	PT1217T	**62403**	3.0
25	PT1206T	**62395**	PT1217T	**62403**	3.0
30	PT1206T	**62395**	PT1217T	**62403**	3.0
40	PT1206T	**62395**	PT1217T	**62403**	3.3
50	PT1206T	**62395**	PT1217T	**62403**	3.7
60	PT1206T	**62395**	PT1217T	**62403**	3.7
80	PT1206T	**62395**	PT1217T	**62403**	4.5

*Advanced Torx Plus® locking mechanism

VGWCA Spare Parts

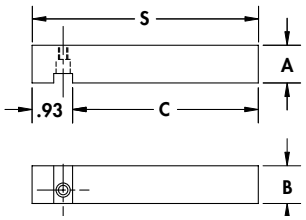
Seat Size	Insert Key	
	Part Number	EDP#
20	PT1211	**62393**
25	PT1211	**62393**
30	PT1211	**62394**
40	PT1210	**62395**
50	PT1210	**62395**
60	PT1210	**62395**

VGWCA 80 Spare Parts

Wrench*		Screw	
Part Number	EDP#	Part Number	EDP#
PT1206T	**62395**	PT1217T	**62403**

VHDBS R/L TOOLHOLDERS
AXIAL SHANK

ValGROOVE™

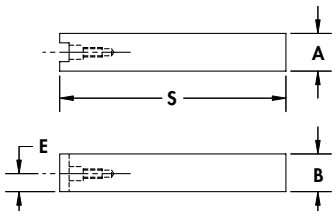


Part Number	Dimensions					EDP#	
	A	B	C	E	S	R Hand	L Hand
VHDBS 16 R/L	1.00	1.00	4.32	.25	5.25	**61773**	**61772**
VHDBS 20 R/L	1.25	1.25	5.32	.50	6.25	**61775**	**61774**
VHDBS 24	1.50	1.50	6.32	.75	7.25	**61776**	

Note: Shanks complete with screw & wrench. Anvils must be purchased separately

Note: For use with VGSCA & VGWCA anvils.

VHDBSN TOOLHOLDERS
90° SHANK



Part Number	Dimensions				EDP#
	A	B	C	E	
VHDBSN 16	1.00	1.00	6.00	.25	**61943**
VHDBSN 20	1.25	1.25	7.00	.50	**61944**
VHDBSN 24	1.50	1.50	8.00	.75	**61945**

Note: Shanks complete with screw & wrench. Anvils must be purchased separately

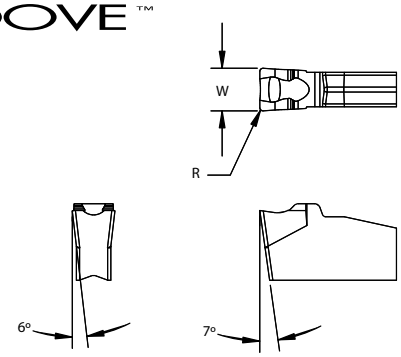
Note: For use with VGSCA & VGWCA anvils.

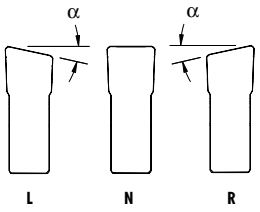
Spare Parts

Part Number	Wrench		Screw		Torque (ft lbs)
	Part #	EDP#	Part #	EDP#	
All	516 HEXWRENCH	**57330**	PT527	**53003**	32

ValGROOVE™

VSG-CG
GENERAL GROOVING/CUTOFF

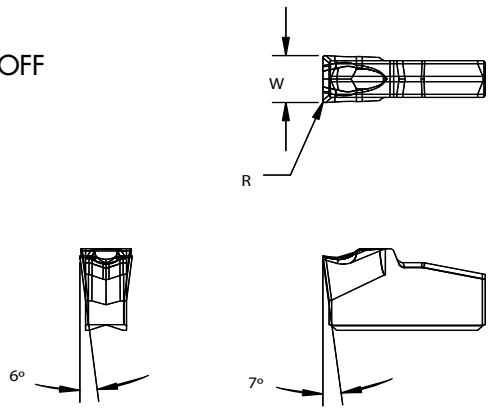


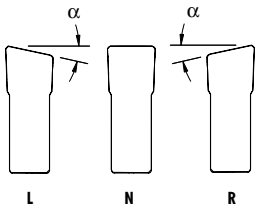


Part Numbers	Seat Size	Dimensions					Grades/EDP#			
		Width		R		α				
		inch	mm	inch	mm		VP5820	VP5735	VP5815	UK20
VSG 2.0 L5 20 CG	20	0.083	2.10	0.004	0.10	5°			17724	17723
VSG 2.0 N 20 CG	20	0.083	2.10	0.008	0.10	0°	17728	17726	17727	17725
VSG 2.0 R5 20 CG	20	0.083	2.10	0.004	0.10	5°			17730	17729
VSG 2.5 L12 25 CG	25	0.094	2.39	0.004	0.10	12°	17820	17818	17819	17817
VSG 2.5 L5 25 CG	25	0.094	2.39	0.004	0.10	5°	17738	17736	17737	17735
VSG 2.5 L8 25 CG	25	0.094	2.39	0.004	0.10	8°	17742	17740	17741	17739
VSG 2.5 N 25 CG	25	0.094	2.39	0.008	0.20	0°	17746	17744	17745	17743
VSG 2.5 R12 25 CG	25	0.094	2.39	0.004	0.10	12°	17824	17822	17823	17821
VSG 2.5 R5 25 CG	25	0.094	2.39	0.004	0.10	5°	17754	17752	17753	17751
VSG 2.5 R8 25 CG	25	0.094	2.39	0.004	0.10	8°	17758	17756	17757	17755
VSG 3.0 L12 30 CG	30	0.123	3.13	0.004	0.10	12°	17828	17826	17827	17825
VSG 3.0 L5 30 CG	30	0.123	3.13	0.004	0.10	5°	17766	17764	17765	17763
VSG 3.0 L8 30 CG	30	0.123	3.13	0.004	0.10	8°	17770	17768	17769	17767
VSG 3.0 N 30 CG	30	0.123	3.13	0.008	0.20	0°	17774	17772	17773	17771
VSG 3.0 R12 30 CG	30	0.123	3.13	0.004	0.10	12°	17832	17830	17831	17829
VSG 3.0 R5 30 CG	30	0.123	3.13	0.004	0.10	5°	17782	17780	17781	17779
VSG 3.0 R8 30 CG	30	0.123	3.13	0.004	0.10	8°	17786	17784	17785	17783
VSG 4.0 L5 40 CG	40	0.161	4.10	0.004	0.10	5°	17789	17971	17788	17787
VSG 4.0 L8 40 CG	40	0.161	4.10	0.004	0.10	8°	17794	17792	17793	17791
VSG 4.0 N 40 CG	40	0.123	4.13	0.008	0.20	0°	17798	17796	17797	17795
VSG 4.0 R5 40 CG	40	0.161	4.10	0.004	0.10	5°	17802	17800	17801	17799
VSG 4.0 R8 40 CG	40	0.161	4.10	0.004	0.10	8°	17806	17804	17805	17803
VSG 4.7 N 40 CG	40	0.189	4.80	0.008	0.20	0°	17810	17808	17809	17807
VSG 5.0 L5 50 CG	50	0.202	5.13	0.004	0.10	5°	17812		17811	
VSG 5.0 N 50 CG	50	0.202	5.13	0.008	0.20	0°	17814		17813	
VSG 5.0 R5 50 CG	50	0.202	5.13	0.004	0.10	5°	17972		17816	

Width Tolerance: ± 0.005" (± 0.125mm), Radius Tolerance ± 0.004" (± 0.1mm) * = ± .004" (± 0.10mm)

VSG-FG
GENERAL GROOVING/CUTOFF



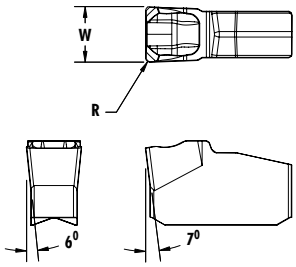


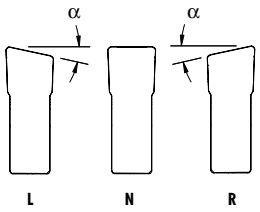
Part Numbers	Seat Size	Dimensions					Grades/EDP#			
		Width		R		α				
		inch	mm	inch	mm		VP5735	VP5815	VP5820	VPUK20
VSG 1.5 L5 15 FG	15	0.063	1.60	0.004	0.10	5°	-	04963	-	04960
VSG 1.5 R5 15 FG	15	0.063	1.60	0.004	0.10	5°	-	04985	04986	04979
VSG 2.0 L5 20 FG	20	0.084	2.13	0.008	0.20	5°	-	04995	05003	04993
VSG 2.0 N 20 FG	20	0.084	2.13	0.008	0.20	0°	-	05509	-	-
VSG 2.0 R5 20 FG	20	0.084	2.13	0.008	0.20	5°	-	05546	05552	05542
VSG 2.4 L5 25 FG	25	0.094	2.39	0.008	0.20	5°	-	05560	05564	05558
VSG 2.4 N 25 FG	25	0.094	2.39	0.008	0.20	0°	-	05572	05573	05569
VSG 2.4 R5 25 FG	25	0.094	2.39	0.008	0.20	5°	-	05716	05717	05574
VSG 3.0 L5 30 FG	30	0.123	3.13	0.008	0.20	5°	05812	05814	05815	05727
VSG 3.0 N 30 FG	30	0.123	3.13	0.008	0.20	0°	05876	05877	05891	05821
VSG 3.0 R5 30 FG	30	0.123	3.13	0.008	0.20	5°	06093	06097	06101	06092
VSG 4.0 L5 40 FG	40	0.162	4.13	0.008	0.20	5°	06117	06119	06122	06115
VSG 4.0 N 40 FG	40	0.162	4.13	0.008	0.20	0°	06129	06130	06132	06124
VSG 4.0 R5 40 FG	40	0.162	4.13	0.008	0.20	5°	06143	06144	06163	06138
VSG 4.7 L5 40 FG	40	0.189	4.80	0.008	0.20	5°	06243	06354	06362	06231
VSG 4.7 N 40 FG	40	0.189	4.80	0.008	0.20	0°	06366	06375	06377	06365
VSG 4.7 R5 40 FG	40	0.189	4.80	0.008	0.20	5°	06382	06387	06389	07013
VSG 5.0 L5 50 FG	50	0.202	5.13	0.008	0.20	5°	-	07014	07015	-
VSG 5.0 N 50 FG	50	0.202	5.13	0.008	0.20	0°	07031	07081	07226	07025
VSG 5.0 R5 50 FG	50	0.202	5.13	0.008	0.20	5°	-	07227	07234	-
VSG 6.0 L5 60 FG	60	0.241	6.13	0.008	0.20	5°	17684	07242	07303	07237
VSG 6.0 N 60 FG	60	0.241	6.13	0.008	0.20	0°	07309	07310	07324	07308
VSG 6.0 R5 60 FG	60	0.241	6.13	0.008	0.20	5°	07551	07673	07682	07481
VSG 6.4 N 60 FG	60	0.250	6.35	0.008	0.20	0°	07891	07892	07893	07858

Width Tolerance: ± 0.005" (± 0.125mm), Radius Tolerance ± 0.004" (± 0.1mm) * = ± .004" (± 0.10mm)

ValGROOVE™

VSG-GG ONE EDGE INSERTS
HEAVY GROOVING/CUT OFF

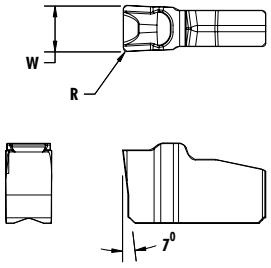


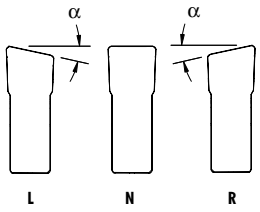


Part Numbers	Seat Size	Dimensions					Grades/EDP#		
		Width		R		α			
		inch	mm	inch	mm		VP5735	VP5820	VPUK20
VSG 2.5 N 25 GG	25	0.103	2.625	0.012	0.30	0°	02663	02697	02731
VSG 3.0 N 30 GG	30	0.123	3.125	0.012	0.30	0°	02667	02701	02735
VSG 3.0 L5 30 GG	30	0.123	3.125	0.012	0.30	5°	02665	02699	02733
VSG 3.0 R5 30 GG	30	0.123	3.125	0.012	0.30	5°	02669	02703	02737
VSG 4.0 N 40 GG	40	0.162	4.125	0.016	0.40	0°	02677	02711	02744
VSG 4.0 L5 40 GG	40	0.162	4.125	0.012	0.30	5°	12808	12835	12863
VSG 4.0 R5 40 GG	40	0.162	4.125	0.012	0.30	5°	02679	02713	02746
VSG 4.7 N 40 GG	40	0.189*	4.800	0.012	0.30	0°	02680	02714	02747
VSG 4.7 R5 40 GG	40	0.189*	4.800	0.012	0.30	5°	02681	02715	02748
VSG 5.0 N 50 GG	50	0.202	5.125	0.015	0.38	0°	02684	02718	02751
VSG 5.0 L5 50 GG	50	0.202	5.125	0.012	0.30	5°	12811	12840	12866
VSG 5.0 R5 50 GG	50	0.202	5.125	0.012	0.30	5°	12813	12842	12868
VSG 6.0 N 60 GG	60	0.241	6.125	0.015	0.38	0°	02688	02723	02754
VSG 6.0 L5 60 GG	60	0.241	6.125	0.012	0.30	5°	02686	02721	02752
VSG 6.0 R5 60 GG	60	0.241	6.125	0.012	0.30	5°	12816	12847	12871
VSG 8.0 N 80 GG	80	0.320	8.100	0.024	0.60	0°	02692	02727	02758

Width Tolerance: ± 0.005" (± 0.125mm), Radius Tolerance ± 0.004" (± 0.1mm) * = ± .004" (± 0.10mm)

VSG LG ONE EDGE INSERTS
LIGHT GROOVING/CUT OFF



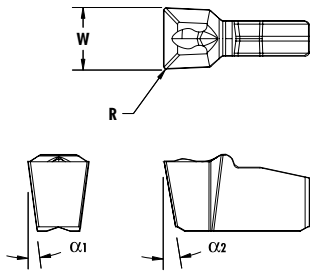


Part Numbers	Seat Size	Dimensions					Grades/EDP#		
		Width		R		α			
		inch	mm	inch	mm		VP5735	VP5820	VPUK20
VSG 1.5 N 15 LG	15	0.063*	1.570	0.008	0.20	0°	14668	14669	14670
VSG 2.0 N 20 LG	20	0.083	2.125	0.008	0.20	0°	14672	14673	14674
VSG 3.0 N 30 LG	30	0.123	3.125	0.012	0.30	0°	02668	02702	02736
VSG 3.0 L8 30 LG	30	0.123	3.125			8°	12804	12829	12859
VSG 3.0 R8 30 LG	30	0.123	3.125			8°	02670	02704	02738
VSG 3.0 L15 30 LG	30	0.123	3.125			15°	12803	12828	12858
VSG 3.0 R15 30 LG	30	0.123	3.125			15°	12806	12831	12861
VSG 4.0 N 40 LG	40	0.162	4.125	0.012	0.30	0°	02678	02712	02745
VSG 4.0 L15 40 LG	40	0.162	4.125			15°	12807	12834	12862
VSG 4.0 R15 40 LG	40	0.162	4.125	0.012	0.30	15°	12809	12836	12864

Width Tolerance: ± 0.004" (± 0.1mm), Radius Tolerance ± 0.004" (± 0.1mm) * ± 0.003" (± 0.076mm)

VSG PG ONE EDGE INSERTS
PRECISION GROOVING

ValGROOVE™



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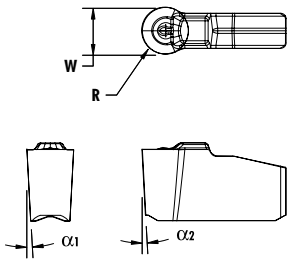
Part Numbers	Seat Size	Dimensions					Grades/EDP#			
		Width		R		α				
		inch	mm	inch	mm		VP5735	VP5820	VPUK20	VP5815
VSG 1.85 N 20 PG	20	0.073	1.85	0.0075	0.19	7°	**14702**	**14703**	**14704**	-
VSG 1.98 N 20 PG	20	0.078	1.98	0.0075	0.19	7°	**14671**	**12822**	**12856**	-
VSG 2.24 N 20 PG	20	0.088	2.24	0.0075	0.19	7°	**12802**	**12825**	**12857**	-
VSG 2.29 N 20 PG	20	0.090	2.29	0.0075	0.19	7°	**01235**	**01240**	-	-
VSG 2.39 N 25 PG	25	0.094	2.39	0.0075	0.19	7°	-	**01248**	-	**01243**
VSG 2.46 N 25 PG	25	0.097	2.46	0.0130	0.32	7°	-	**01250**	-	-
VSG 2.67 N 25 PG	25	0.105	2.67	0.0075	0.19	7°	**02664**	**02698**	**02732**	-
VSG 2.79 N 25 PG	25	0.110	2.79	0.0130	0.32	7°	**06495**	-	-	-
VSG 2.90 N 25 PG	25	0.114	2.90	0.031	0.80	7°	-	**06837**	-	-
VSG 3.00 N 25 PG	25	0.118	3.00	0.0080	0.20	7°	-	**01252**	-	**01251**
VSG 3.10 N 25 PG	25	0.122	3.10	0.0075	0.19	7°	**02671**	**02705**	**02739**	-
VSG 3.18 N 25 PG	25	0.125	3.18	0.0075	0.19	7°	**02672**	**02706**	**02740**	-
VSG 3.30 N 25 PG	25	0.130	3.30	0.0075	0.19	7°	**02673**	**02707**	**02741**	**01254**
VSG 3.61 N 30 PG	30	0.142	3.61	0.0130	0.32	7°	-	**01256**	-	**01257**
VSG 3.96 N 30 PG	30	0.156	3.96	0.0075	0.19	7°	**02675**	**02709**	**02742**	-
VSG 4.00 N 30 PG	30	0.157	4.00	0.0075	0.19	7°	-	**01258**	-	**01257**
VSG 4.00 0.40 N 30 PG	30	0.157	4.00	0.0016	0.41	7°	-	**17844**	-	**17843**
VSG 4.15 N 30 PG	30	0.163	4.15	0.0075	0.19	7°	**12810**	**12839**	**12865**	-
VSG 4.32 N 40 PG	40	0.170	4.32	0.0150	0.38	7°	-	**01261**	-	**01259**
VSG 4.50 N 40 PG	40	0.178	4.50	0.0160	0.41	7°	**01262**	**01274**	-	**01268**
VSG 4.52 N 40 PG	40	0.178	4.52	0.0075	0.19	7°	-	**01280**	**01277**	**01278**
VSG 4.70 N 40 PG	40	0.185	4.70	0.0225	0.57	7°	-	**01286**	**01284**	**01285**
VSG 4.80 N 40 PG	40	0.189	4.80	0.0225	0.57	7°	**02682**	**02716**	**02749**	**01287**
VSG 5.00 0.40 N 40 PG	40	0.197	5.00	0.0160	0.41	7°	-	**01293**	-	-
VSG 5.00 N 40 PG	40	0.197	5.00	0.0075	0.19	7°	-	**01288**	-	-
VSG 5.15 N 40 PG	40	0.203	5.15	0.0075	0.19	7°	**12814**	**12845**	**12869**	-
VSG 5.33 N 50 PG	50	0.210	5.33	0.0240	0.61	7°	-	**01332**	-	**01329**
VSG 5.41 N 50 PG	50	0.213	5.41	0.0075	0.19	7°	-	**01433**	-	**01432**
VSG 5.56 N 50 PG	50	0.219	5.56	0.0225	0.57	7°	-	**01435**	-	-
VSG 6.00 N 50 PG	50	0.236	6.00	0.0080	0.20	7°	**02685**	**12848**	**12872**	-
VSG 6.35 N 60 PG	60	0.250	6.35	0.0225	0.57	7°	**02689**	**02724**	**02755**	**01442**
VSG 6.48 N 60 PG	60	0.255	6.48	0.0225	0.57	7°	**02690**	**02725**	**02756**	-
VSG 7.92 N 60 PG	60	0.312	7.92	0.0325	0.83	7°	**12817**	**12851**	**12873**	-
VSG 9.52 N 80 PG	80	0.375	9.52	0.0325	0.83	7°	**12818**	**12852**	**12874**	-
VSG 10.0 N 80 PG	80	0.394	10.00	0.0120	0.30	7°	**12798**	**12819**	**12853**	-

Width Tolerance ± 0.0008" (± 0.02mm), Radius Tolerance ± 0.0004" (± 0.01mm)

ValGROOVE™

VSG RG ONE EDGE INSERTS
RADIUS GROOVING

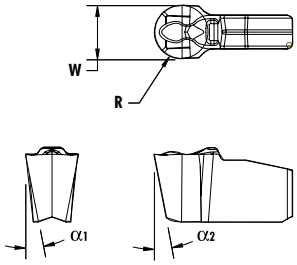


$\alpha 1 = \alpha 2$

Part Numbers	Seat Size	Dimensions					Grades / EDP#			
		Width		R		α				
		inch	mm	inch	mm		VP5735	VP5820	VPUK20	VP5815
VSG 3.0 N 30 RG	30	0.118	3.00	0.059	1.50	7°	12805	12830	12860	-
VSG 3.18 N 30 RG	30	0.125	3.18	0.0625	1.59	7°	14675	14676	14677	-
VSG 3.30 N 30 RG	30	0.130	3.30	0.065	1.65	7°	02674	02708	14678	-
VSG 3.96 N 40 RG	40	0.156	3.96	0.078	1.98	7°	14679	14680	14681	-
VSG 4.0 N 40 RG	40	0.157	4.00	0.079	2.00	7°	14682	14683	14684	-
VSG 4.32 N 40 RG	40	0.170	4.32	0.085	2.16	7°	-	01261	-	01259
VSG 4.75 N 40 RG	40	0.187	4.75	0.0935	2.37	7°	14685	14686	14687	-
VSG 5.0 N 40 RG	40	0.197	5.00	0.098	2.50	7°	12812	12841	12867	-
VSG 5.33 N 50 RG	50	0.210	5.33	0.105	2.67	7°	-	01332	-	01329
VSG 6.0 N 50 RG	50	0.236	6.00	0.118	3.00	7°	12815	12846	12870	-
VSG 6.35 N 50 RG	50	0.250	6.35	0.125	3.18	7°	14688	14689	14690	-
VSG 6.48 N 50 RG	50	0.255	6.48	0.1275	3.24	7°	02690	02725	02756	02720
VSG 7.93 N 60 RG	60	0.312	7.93	0.156	3.96	7°	14691	14692	14693	-
VSG 9.53 N 80 RG	80	0.375	9.53	0.1875	4.76	7°	14694	14695	14696	-
VSG 10.0 N 80 RG	80	0.394	10.00	0.197	5.00	7°	12799	12820	12854	-

Width Tolerance ± 0.0008" (± 0.02mm), Radius Tolerance ± 0.0004" (± 0.01mm)

VSG UG ONE EDGE INSERTS
UNDERCUT GROOVING



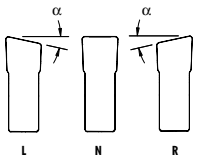
$\alpha 1 = \alpha 2$

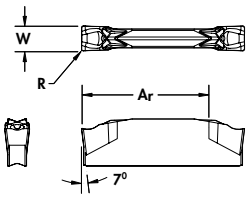
Part Numbers	Seat Size	Dimensions					EDP#Grades		
		Width		R		α1 = α2			
		inch	mm	inch	mm		VP5735	VP5820	VPUK20
VSG 2.0 N 20 UG	20	0.079	2.00	0.039	1.00	5°	02662	02696	02730
VSG 3.0 N 25 UG	25	0.118	3.00	0.059	1.50	7°	02666	02700	02734
VSG 4.0 N 30 UG	30	0.157	4.00	0.079	2.00	11°	02676	02710	02743
VSG 5.0 N 40 UG	40	0.197	5.00	0.098	2.50	11°	02683	02717	02750
VSG 6.0 N 50 UG	50	0.236	6.00	0.118	3.00	11°	02687	02722	02753
VSG 8.0 N 60 UG	60	0.315	8.00	0.158	4.00	11°	02691	02726	02757

Width Tolerance ± 0.0008" (± 0.02mm)

VTG GG TWO EDGE INSERTS
GENERAL GROOVING/CUT OFF

ValGROOVE™

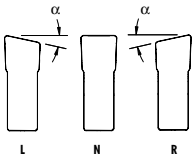


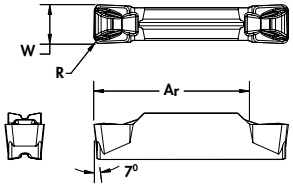


Part Numbers	Seat Size	Dimensions							EDP#Grades	
		Width		R		A_r		α		
		inch	mm	inch	mm	inch	mm		VP5735	VP5820
VTG 2.0 N 20 GG	20	0.081	2.05	0.008	0.20	0.748	19.0	0°	02759	02777
VTG 2.0 L5 20 GG	20	0.081	2.05	0.008	0.20	0.748	19.0	5°		02776
VTG 2.0 R5 20 GG	20	0.081	2.05	0.008	0.20	0.748	19.0	5°		02778
VTG 2.5 N 25 GG	25	0.100	2.55	0.008	0.20	0.744	18.9	0°	02761	02780
VTG 2.5 L5 25 GG	25	0.100	2.55	0.008	0.20	0.744	18.9	5°		02779
VTG 2.5 R5 25 GG	25	0.100	2.55	0.008	0.20	0.744	18.9	5°		02781
VTG 3.0 N 30 GG	30	0.120	3.05	0.008	0.20	0.744	18.9	0°	02763	02783
VTG 3.0 L5 30 GG	30	0.120	3.05	0.008	0.20	0.740	18.8	5°	02762	02782
VTG 3.0 R5 30 GG	30	0.120	3.05	0.008	0.20	0.740	18.8	5°	02765	02785
VTG 4.0 N 40 GG	40	0.159	4.05	0.008	0.20	0.949	24.1	0°	02767	02787
VTG 4.0 L5 40 GG	40	0.159	4.05	0.008	0.20	0.949	24.1	5°	02766	02786
VTG 4.0 R5 40 GG	40	0.159	4.05	0.008	0.20	0.949	24.1	5°	02769	02789
VTG 5.0 N 50 GG	50	0.199	5.05	0.008	0.20	0.949	24.1	0°	02770	02790
VTG 6.0 N 60 GG	60	0.238	6.05	0.016	0.40	0.925	23.5	0°	02772	02792

Width Tolerance ± 0.002" (± 0.05mm), Radius Tolerance ± 0.004" (± 0.1mm)

VTG TG TWO EDGE INSERTS
TURN GROOVING



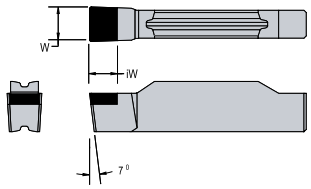


Part Numbers	Seat Size	Dimensions							Grades/EDP#	
		Width		R		A_r		α		
		inch	mm	inch	mm	inch	mm		VP5735	VP5820
VTG 3.0 N 30 TG	30	0.120	3.05	0.016	0.40	0.724	18.4	0°	**02764**	**02784**
VTG 4.0 N 40 TG	40	0.159	4.05	0.031	0.80	0.921	23.4	0°	**02768**	**02788**
VTG 5.0 N 50 TG	50	0.199	5.05	0.031	0.80	0.906	23.0	0°	**02771**	**02791**
VTG 6.0 N 60 TG	60	0.238	6.05	0.031	0.80	0.906	23.0	0°	**02773**	**02793**
VTG 8.0 N 80 TG	80	0.317	8.05	0.047	1.20	1.090	27.60	0°	**02774**	**02794**

Width Tolerance ± 0.002" (± 0.05mm), Radius Tolerance ± 0.004" (± 0.1mm)

ValGROOVE™

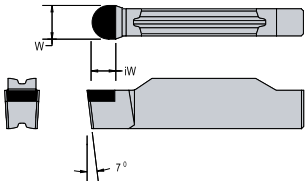
VTG CBNG TIPPED INSERTS
CBN GROOVING



Part Numbers	Seat Size	Dimensions					Grade EDP#
		Width		R		iW	
		inch	mm	inch	mm		VPB125
VTG 2.39 N 25 CBNG	25	0.094	2.39	0.008	0.20	0.126	**40227**
VTG 3.00 N 30 CBNG	30	0.118	3.00	0.008	0.20	0.126	**40228**
VTG 3.18 N 30 CBNG	30	0.125	3.18	0.008	0.20	0.126	**40229**
VTG 4.00 N 40 CBNG	40	0.157	4.00	0.008	0.20	0.126	**40230**
VTG 4.75 N 40 CBNG	40	0.187	4.75	0.008	0.20	0.126	**40233**
VTG 5.00 N 40 CBNG	40	0.197	5.00	0.008	0.20	0.126	**40254**
VTG 6.00 N 50 CBNG	50	0.236	6.00	0.008	0.20	0.126	**40263**
VTG 6.35 N 60 CBNG	60	0.250	6.35	0.008	0.20	0.126	**40271**
VTG 7.94 N 80 CBNG	80	0.312	7.93	0.008	0.20	0.126	**40273**
VTG 8.00 N 80 CBNG	80	0.315	8.00	0.008	0.20	0.126	**40276**

Width Tolerance ± 0.0008" (± 0.02mm), Radius Tolerance ±0.002" (± 0.05mm)

VTG CBNP TIPPED INSERTS
CBN PROFILING

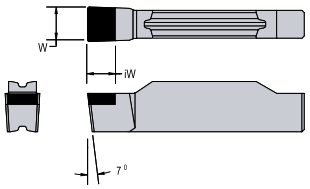


Part Numbers	Seat Size	Dimensions					Grade EDP#
		Width		R		iW	
		inch	mm	inch	mm		VPB125
VTG 2.39 N 25 CBNP	25	0.094	2.39	0.047	1.19	0.126	**40277**
VTG 3.00 N 30 CBNP	30	0.118	3.00	0.059	1.50	0.098	**40278**
VTG 3.18 N 30 CBNP	30	0.125	3.18	0.063	1.59	0.098	**40288**
VTG 4.00 N 40 CBNP	40	0.157	4.00	0.079	2.00	0.118	**40291**
VTG 4.75 N 40 CBNP	40	0.187	4.75	0.093	2.375	0.138	**40292**
VTG 5.00 N 40 CBNP	40	0.197	5.00	0.098	2.50	0.138	**40295**
VTG 6.00 N 50 CBNP	50	0.236	6.00	0.118	3.00	0.157	**40300**
VTG 6.35 N 50 CBNP	50	0.250	6.35	0.125	3.18	0.157	**40302**
VTG 7.94 N 80 CBNP	80	0.312	7.93	0.156	3.97	0.197	**40304**
VTG 8.00 N 80 CBNP	80	0.315	8.00	0.157	4.00	0.197	**40305**

Width Tolerance ± 0.0008" (± 0.02mm), Radius Tolerance ±0.002" (± 0.05mm)

VTG PCDG TIPPED INSERTS
PCD GROOVING

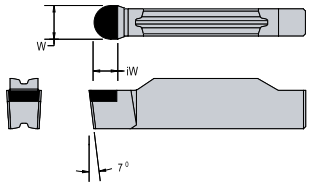
ValGROOVE™



Part Numbers	Seat Size	Dimensions					Grade EDP#
		Width		R		iW	
		inch	mm	inch	mm		VPD720
VTG 3.00 N 30 PCDG	30	0.118	3.00	0.008	0.20	0.126	**40056**
VTG 3.18 N 30 PCDG	30	0.125	3.18	0.008	0.20	0.126	**40064**
VTG 4.00 N 40 PCDG	40	0.157	4.00	0.008	0.20	0.126	**40073**
VTG 4.75 N 40 PCDG	40	0.187	4.75	0.008	0.20	0.126	**40084**
VTG 5.00 N 40 PCDG	40	0.197	5.00	0.008	0.20	0.126	**40086**
VTG 6.00 N 50 PCDG	50	0.236	6.00	0.008	0.20	0.126	**40091**
VTG 6.35 N 60 PCDG	60	0.250	6.35	0.008	0.20	0.126	**40105**
VTG 7.94 N 80 PCDG	80	0.312	7.94	0.008	0.20	0.126	**40148**
VTG 8.00 N 80 PCDG	80	0.315	8.00	0.008	0.20	0.126	**40154**

Width Tolerance ± 0.0008" (± 0.02mm), Radius Tolerance ±0.002" (± 0.05mm)

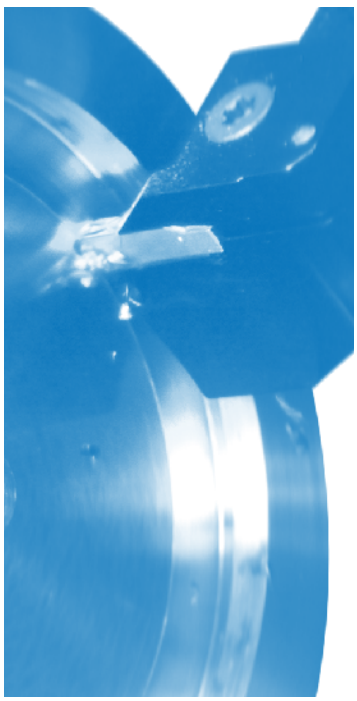
VTG PCDP TIPPED INSERTS
PCD PROFILING



Part Numbers	Seat Size	Dimensions					Grade EDP#
		Width		R		iW	
		inch	mm	inch	mm		VPD720
VTG 3.00 N 30 PCDP	30	0.118	3.00	0.059	1.50	0.098	**40213**
VTG 3.18 N 30 PCDP	30	0.125	3.18	0.063	1.59	0.098	**40214**
VTG 4.00 N 40 PCDP	40	0.157	4.00	0.079	2.00	0.118	**40215**
VTG 4.75 N 40 PCDP	40	0.187	4.75	0.093	2.38	0.138	**40216**
VTG 5.00 N 40 PCDP	40	0.197	5.00	0.098	2.50	0.138	**40217**
VTG 6.00 N 50 PCDP	50	0.236	6.00	0.118	3.00	0.157	**40218**
VTG 6.35 N 50 PCDP	50	0.250	6.35	0.125	3.18	0.157	**40219**
VTG 7.94 N 80 PCDP	80	0.312	7.94	0.156	3.97	0.197	**40220**
VTG 8.00 N 80 PCDP	80	0.315	8.00	0.157	4.00	0.197	**40221**

Width Tolerance ± 0.0008" (± 0.02mm), Radius Tolerance ±0.002" (± 0.05mm)

INDEX FOR TECHNICAL SECTION



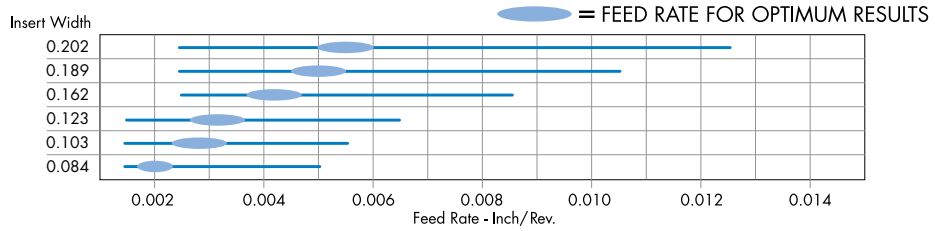
If you have any questions about the ValGROOVE™ system, please call Valenite Technical Support at ***1.800.488.9073.***

PARTING & GROOVING FEED RATE RECOMMENDATIONS

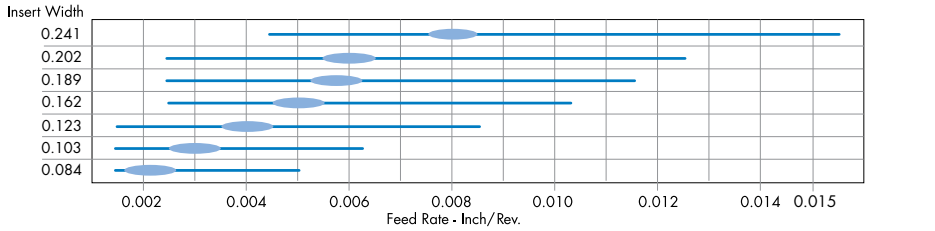
ValGROOVE™

ONE EDGE

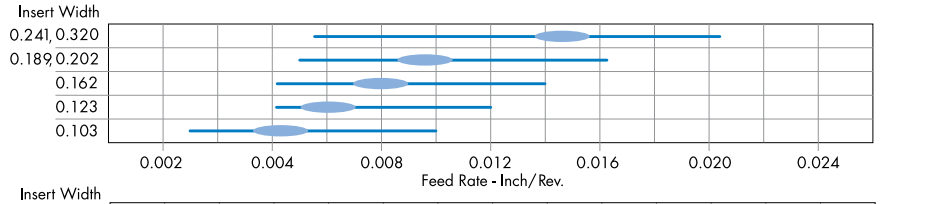
VSG CG



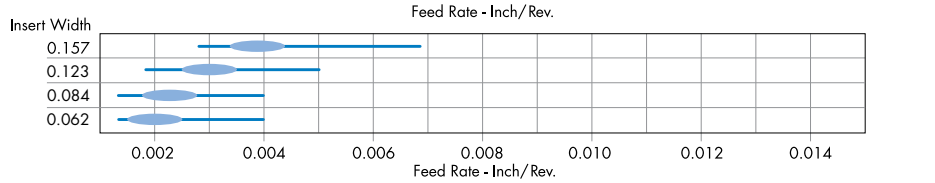
VSG FG



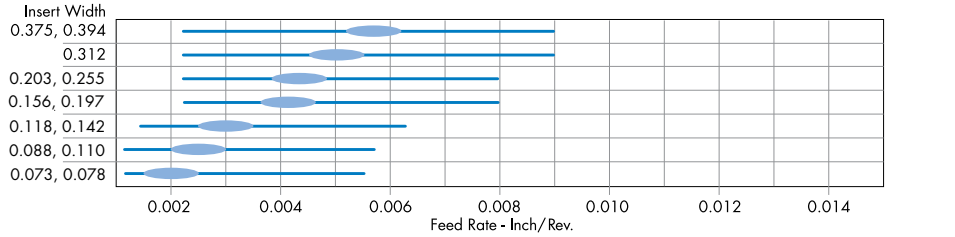
VSG GG



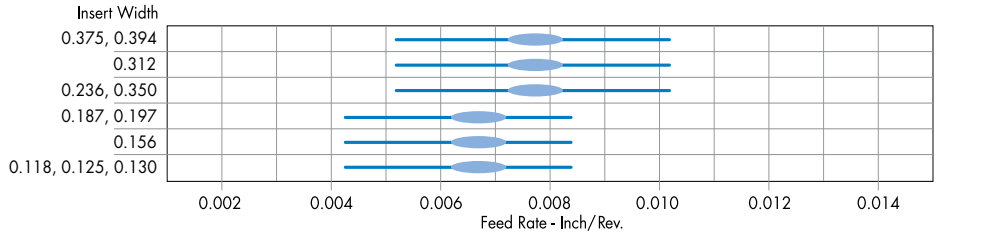
VSG LG



VSG PG

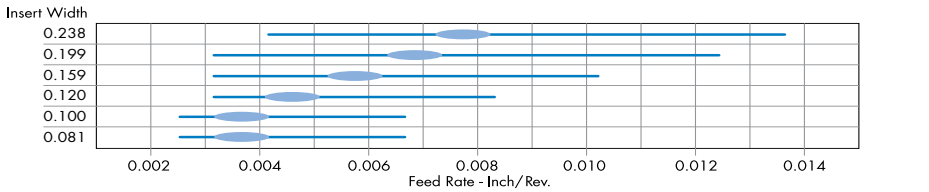


VSG RG

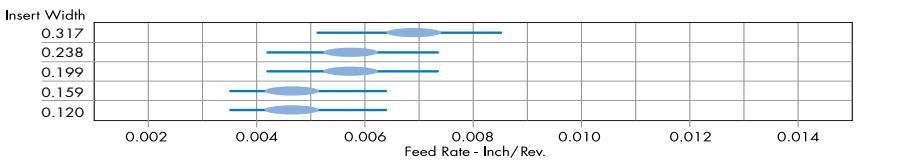


TWO EDGE

VTG GG



VTG TG



ValGROOVE™

PARTING & GROOVING SPEED AND GRADE RECOMMENDATIONS

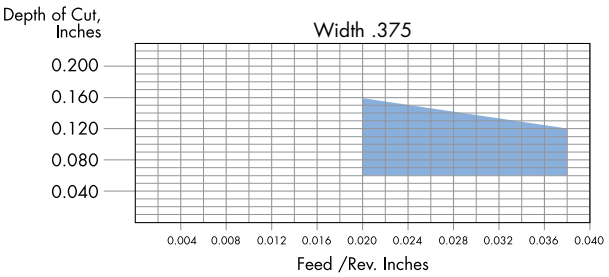
MATERIAL		FEED/REV Light Machining General Machining	Grade/SFM				
			COATED Grades			UNCOATED	PCD/CBN
			VP5815	VP5820	VP5735	VPUK20	
STEELS	Free Machining and Low Carbon Steels 120 - 170 Bhn	.002 - 006 .007 - .018	1100 - 800 900 - 600	1000 - 800 800 - 600	800 - 700 700 - 500		
	Medium Carbon and High Carbon Steels 180 - 220 Bhn	.002 - .005 .006 - .015	900 - 700 700 - 500	800 - 650 650 - 500	700 - 600 600 - 400		
	Alloy Steels and Easy to Machine Tool Steels 200 - 240Bhn	.002 - .005 .006 - .012	800 - 600 600 - 400	700 - 500 500 - 400	600 - 450 450 - 350		
	Tool Steels and Die Steels 220 - 260Bhn	.002 - .004 .005 .008	600 - 450 450 - 350	500 - 400 400 - 350	400 - 300 300 - 250		
STAINLESS STEELS	Ferritic and Martensitic Stainless Steels 180 - 240Bhn	.002 - .006 .007 - .012	700 - 550 550 - 450	650 - 500 500 - 400	600 - 450 450 - 350		
	Austenitic Stainless Steels 140 - 180Bhn	.002 - .004 .005 - .010	700 - 500 500 - 400	600 - 450 450 - 350	500 - 400 400 - 350	300 - 250 250 - 200	
	PH and Duplex Stainless Steels 220 - 260 Bhn	.002 - .004 .005 - .010	500 - 400 400 - 300	450 - 350 350 - 250	400 - 300 300 - 200	250 - 200 200 - 175	
							VPB 125
CAST IRONS	Gray Cast Irons 180 - 220 Bhn	.002 - .006 .007 - .016	700 - 550 550 - 400	700 - 550 550 - 400		300 - 250 250 - 200	3000 - 2000
	Gray Cast Irons 220 - 260 Bhn	.002 - .006 .007 - .016	550 - 400 400 - 300	550 - 400 400 - 300		275 - 225 225 - 175	2000 - 1500
	Ductile and Malleable Cast Irons 140 - 180 Bhn	.002 - .005 .006 - .012	500 - 350 350 - 250	500 - 350 350 - 250		250 - 200 200 - 150	1500 - 1000*
	Ductile and Malleable Cast Irons 220 - 260 Bhn	.002 - .005 .006 - .010	400 - 300 300 - 225	400 - 300 300 - 225		225 - 175 175 - 150	Not Recommended
							PCD VPD720
ALUMINUMS AND NON-FERROUS MATERIALS	Aluminum Alloys <7% Silicon	.002 - .008 .009 - .020	3500 - 2500 3000 - 2000	3000 - 2500 2500 - 1750		2500 - 1750 750 - 1000	6000 - 2000 6000 - 2000
	Aluminum Alloys 7% 12% Silicon	.002 - .008 .009 - .020	3000 - 2000 2000 - 1500	2500 - 1750 1750 - 1250		1750 - 1250 1250 1000	6000 - 2000 6000 - 2000
	Aluminum Alloys 12% 18% Silicon	.002 - .008 .009 - .014	2000 - 1500 1500 - 800	1500 - 1250 1250 - 800		1000 - 800 800 - 600	3000 - 1500 2000 - 1000
	Copper Alloys	.002 - .008 .009 - .014	1300 - 900 1000 - 600	1200 - 800 800 - 500		800 - 600 600 - 400	1800 - 1200 1200 - 600
HIGH TEMPERATURE ALLOYS	Iron and Nickel Based Alloys Monel, Hastelloy Inconel, Waspaloy	.002 - .004 .005 - .008	350 - 250 300 - 200	250 - 200 200 - 150	200 - 125 125 - 100	150 - 125 125 - 80	
	Cobalt Based Alloys Haynes Stellite,	.002 - .004 .005 - .008	200 - 175 175 - 125	175 - 150 150 - 100	125 - 100 100 - 80	100 - 80 80 - 60	
	Titanium Alloys 6Al 4V	.002 - .004 .005 - .008	325 - 275 275 - 225	275 - 250 250 - 200		200 - 150 150 - 100	
							CBNVPB125
HARDENED MATERIALS	Steels 45 - 50 Re	.002 - .004					450 - 350
	Steels 50 - 55 Re	.002 - .004					450 - 350
	Chilled Irons 40 - 50 Re	.002 - .004					500 - 300

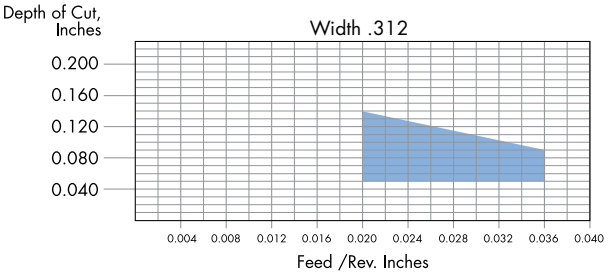
*** for low pearlitic ductile irons.**

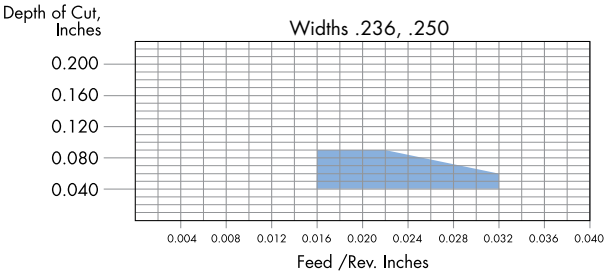
TURNING & PROFILING FEED / DEPTH OF CUT

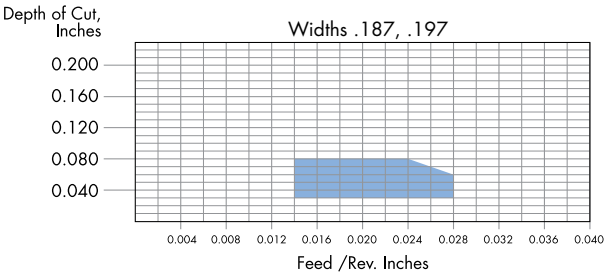
ValGROOVE™

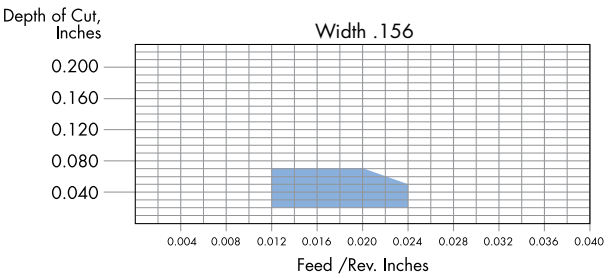
VSG RG INSERTS

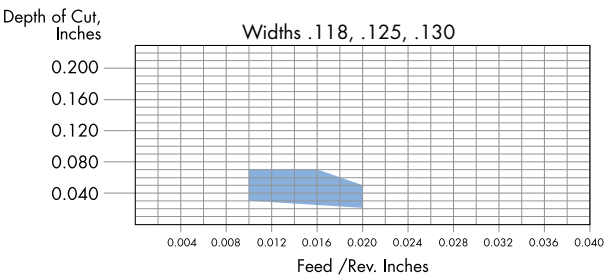




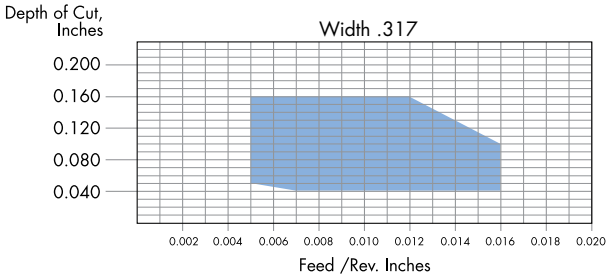


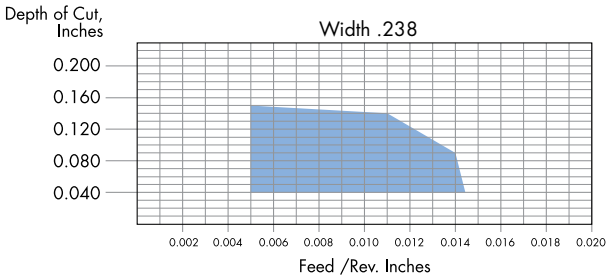


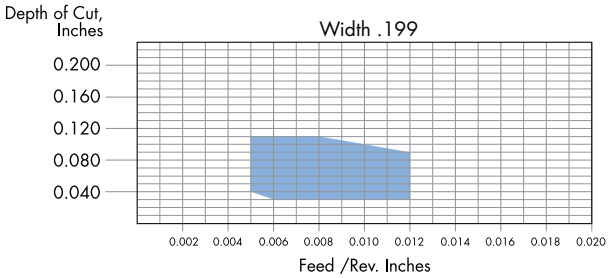


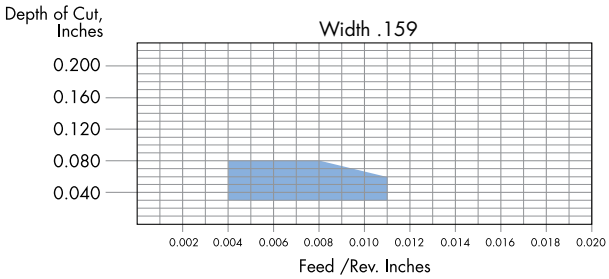


VTG TG INSERTS









ValGROOVE™

TURNING & PROFILING SPEED AND GRADE RECOMMENDATIONS

MATERIAL		FEED/REV Light Machining General Machining	Grade/SFM				
			COATED Grades			UNCOATED	PCD/CBN
			VP5815	VP5820	VP5735	VPUK20	
STEELS	Free Machining and Low Carbon Steels 120 - 170 Bhn	.002 - 006 .007 .018	1100-800 900-600	1000 - 800 800 - 600	800 700 700 500		
	Medium Carbon and High Carbon Steels 180 - 220 Bhn	.002 - .005 .006 - .015	900-700 700-500	800 - 650 650 - 500	700 600 600 400		
	Alloy Steels and Easy to Machine Tool Steels 200 - 240Bhn	.002 - .005 .006 - .012	800-600 600-400	700 - 500 500 - 400	600 450 450 350		
	Tool Steels and Die Steels 220 - 260Bhn	.002 - .004 .005 .008	600-450 450-350	500 - 400 400 - 350	400 300 300 250		
STAINLESS STEELS	Ferritic and Martensitic Stainless Steels 180 - 240Bhn	.002 - .006 .007 - .012	700-550 550-450	650 - 500 500 - 400	600 - 450 450 - 350		
	Austenitic Stainless Steels 140 - 180Bhn	.002 - .004 .005 - .010	700-500 500-400	600 - 450 450 - 350	500 - 400 400 - 350	300 - 250 250 - 200	
	PH and Duplex Stainless Steels 220 - 260 Bhn	.002 - .004 .005 - .010	500-400 400-300	450 - 350 350 - 250	400 - 300 300 - 200	250 - 200 200 - 175	
							VPB 125
CAST IRONS	Gray Cast Irons 180 - 220 Bhn	.002 - .006 .007 - .016	700-550 550-400	700 - 550 550 - 400		300 - 250 250 - 200	3000 - 2000
	Gray Cast Irons 220 - 260 Bhn	.002 - .006 .007 - .016	550-400 400-300	550 - 400 400 - 300		275 - 225 225 - 175	2000 - 1500
	Ductile and Malleable Cast Irons 140 - 180 Bhn	.002 - .005 .006 - .012	500-350 350-250	500 - 350 350 - 250		250 - 200 200 - 150	1500 - 1000*
	Ductile and Malleable Cast Irons 220 - 260 Bhn	.002 - .005 .006 - .010	400-300 300-225	400 - 300 300 - 225		225 - 175 175 - 150	Not Recommended
							PCD VPD720
ALUMINUMS AND NON-FERROUS MATERIALS	Aluminum Alloys <7% Silicon	.002 - .008 .009 - .020	3500-2500 3000-2000	3000 - 2500 2500 - 1750		2500 - 1750 750 - 1000	6000 - 2000 6000 - 2000
	Aluminum Alloys 7% 12% Silicon	.002 - .008 .009 - .020	3000-2000 2000-1500	2500 - 1750 1750 - 1250		1750 - 1250 1250 1000	6000 - 2000 6000 - 2000
	Aluminum Alloys 12% 18% Silicon	.002 - .008 .009 - .014	2000-1500 2600-800	1500 - 1250 1250 - 800		1000 - 800 800 - 600	3000 - 1500 2000 - 1000
	Copper Alloys	.002 - .008 .009 - .014	1300-900 1000-600	1200 - 800 800 - 500		800 - 600 600 - 400	1800 - 1200 1200 - 600
HIGH TEMPERATURE ALLOYS	Iron and Nickel Based Alloys Monel, Hastelloy Inconel, Waspaloy	.002 - .004 .005 - .008	350-250 300-200	250 - 200 200 - 150	200 - 125 125 - 100	150 - 125 125 - 80	
	Cobalt Based Alloys Haynes Stellite,	.002 - .004 .005 - .008	200-175 175-125	175 - 150 150 - 100	125 - 100 100 - 80	100 - 80 80 - 60	
	Titanium Alloys 6Al 4V	.002 - .004 .005 - .008	325-275 275-225	275 - 250 250 - 200		200 - 150 150 - 100	
							CBNVPB125
HARDENED MATERIALS	Steels 45 - 50 Re	.002 - .004					450 - 350
	Steels 50 - 55 Re	.002 - .004					450 - 350
	Chilled Irons 40 - 50 Re	.002 - .004					500 - 300

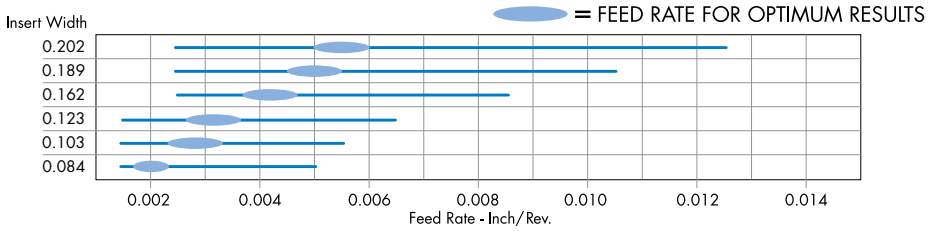
*** for low pearlitic ductile irons.**

INTERNAL, UNDERCUT & FACE GROOVING FEED RATE RECOMMENDATIONS

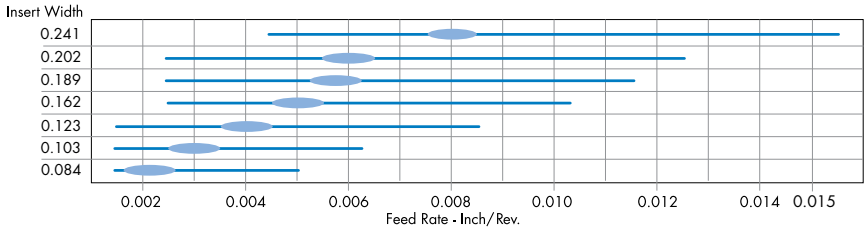
ValGROOVE™

ONE EDGE

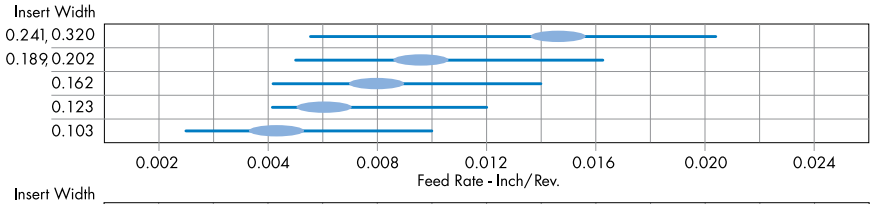
VSG CG



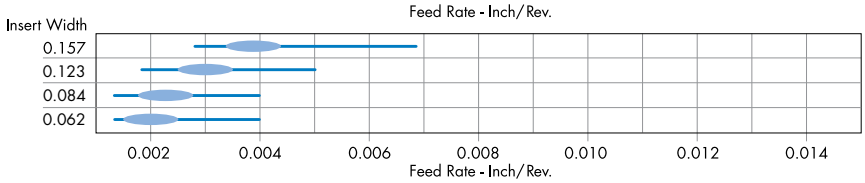
VSG FG



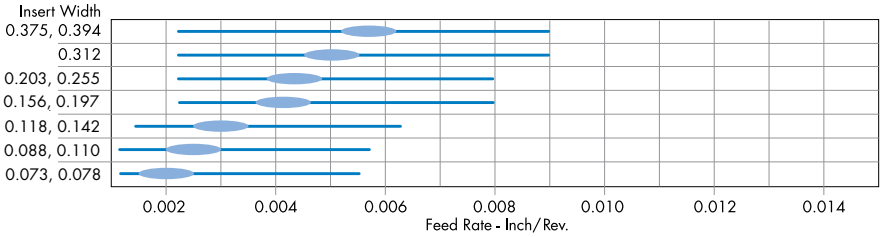
VSG GG



VSG LG

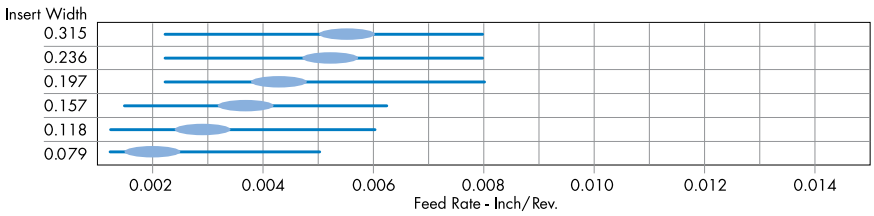


VSG PG



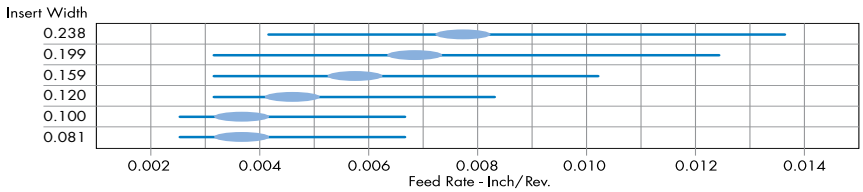
UNDERCUTTING

VSG
UG

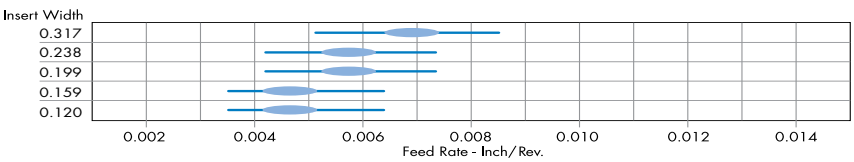


TWO EDGE

VTG GG



VTG TG



ValGROOVE™

INTERNAL, UNDERCUT & FACE GROOVING SPEED AND GRADE RECOMMENDATIONS

MATERIAL		FEED/REV Light Machining General Machining	Grade/SFM				
			COATED Grades			UNCOATED	PCD/CBN
			VP5815	VP5820	VP5735	VPUK20	
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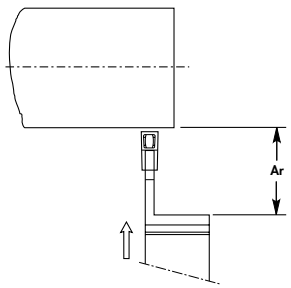
	Medium Carbon and High Carbon Steels 180 - 220 Bhn	.002 - .005 .006 - .015	900 - 700 700 - 500	800 - 650 650 - 500	700 - 600 600 - 400		
	Alloy Steels and Easy to Machine Tool Steels 200 - 240Bhn	.002 - .005 .006 - .012	800 - 600 600 - 400	700 - 500 500 - 400	600 - 450 450 - 350		
	Tool Steels and Die Steels 220 - 260Bhn	.002 - .004 .005 .008	600 - 450 450 - 350	500 - 400 400 - 350	400 - 300 300 - 250		
STAINLESS STEELS	Ferritic and Martensitic Stainless Steels 180 - 240Bhn	.002 - .006 .007 - .012	700 - 550 550 - 450	650 - 500 500 - 400	600 - 450 450 - 350		
	Austenitic Stainless Steels 140 - 180Bhn	.002 - .004 .005 - .010	700 - 500 500 - 400	600 - 450 450 - 350	500 - 400 400 - 350	300 - 250 250 - 200	
	PH and Duplex Stainless Steels 220 - 260 Bhn	.002 - .004 .005 - .010	500 - 400 400 - 300	450 - 350 350 - 250	400 - 300 300 - 200	250 - 200 200 - 175	
							VPB 125
CAST IRONS	Gray Cast Irons 180 - 220 Bhn	.002 - .006 .007 - .016	700 - 550 550 - 400	700 - 550 550 - 400		300 - 250 250 - 200	3000 - 2000
	Gray Cast Irons 220 - 260 Bhn	.002 - .006 .007 - .016	550 - 400 400 - 300	550 - 400 400 - 300		275 - 225 225 - 175	2000 - 1500
	Ductile and Malleable Cast Irons 140 - 180 Bhn	.002 - .005 .006 - .012	500 - 350 350 - 250	500 - 350 350 - 250		250 - 200 200 - 150	1500 - 1000*
	Ductile and Malleable Cast Irons 220 - 260 Bhn	.002 - .005 .006 - .010	400 - 300 300 - 225	400 - 300 300 - 225		225 - 175 175 - 150	Not Recommended
							PCD VPD720
ALUMINUMS AND NON-FERROUS MATERIALS	Aluminum Alloys <7% Silicon	.002 - .008 .009 - .020	3500 - 2500 3000 - 2000	3000 - 2500 2500 - 1750		2500 - 1750 750 - 1000	6000 - 2000 6000 - 2000
	Aluminum Alloys 7% 12% Silicon	.002 - .008 .009 - .020	3000 - 2000 2000 - 1500	2500 - 1750 1750 - 1250		1750 - 1250 1250 1000	6000 - 2000 6000 - 2000
	Aluminum Alloys 12% 18% Silicon	.002 - .008 .009 - .014	2000 - 1500 1500 - 800	1500 - 1250 1250 - 800		1000 - 800 800 - 600	3000 - 1500 2000 - 1000
	Copper Alloys	.002 - .008 .009 - .014	1300 - 900 1000 - 600	1200 - 800 800 - 500		800 - 600 600 - 400	1800 - 1200 1200 - 600
HIGH TEMPERATURE ALLOYS	Iron and Nickel Based Alloys Monel, Hastelloy Inconel, Waspaloy	.002 - .004 .005 - .008	350 - 250 300 - 200	250 - 200 200 - 150	200 - 125 125 - 100	150 - 125 125 - 80	
	Cobalt Based Alloys Haynes Stellite,	.002 - .004 .005 - .008	200 - 175 175 - 125	175 - 150 150 - 100	125 - 100 100 - 80	100 - 80 80 - 60	
	Titanium Alloys 6Al 4V	.002 - .004 .005 - .008	325 - 275 275 - 225	275 - 250 250 - 200		200 - 150 150 - 100	
							CBNVPB125
HARDENED MATERIALS	Steels 45 - 50 Re	.002 - .004					450 - 350
	Steels 50 - 55 Re	.002 - .004					450 - 350
	Chilled Irons 40 - 50 Re	.002 - .004					500 - 300

*** for low pearlitic ductile irons.**

MACHINING GUIDELINES

ValGROOVE™

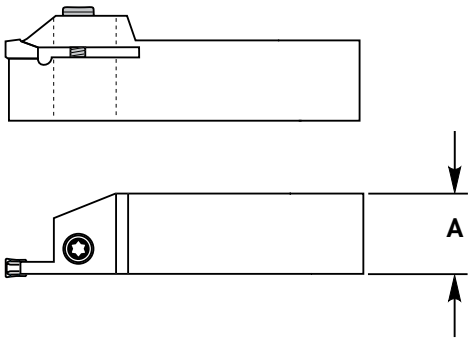


Toolholder Overhang

To minimize deflection and vibration, choose the toolholder size with the least possible overhang, A_r, part configuration will allow.

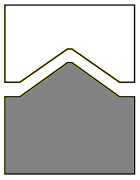
Choose a Shank Size with Adequate Strength

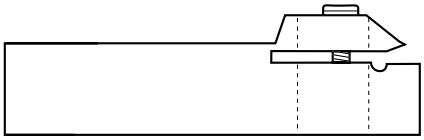
The larger the shank size, the more rigid the toolholder. If the shank is too small in relation to feed rate and width of cut, deflection and vibration can occur.



Choose an Insert Size with Adequate Strength

The wider the insert, the more secure the seating in the pocket. The insert should be as large as possible, relative to the dimensions of the workpiece. Make sure the insert is wide enough for the cutting conditions. For small parts and thin walls choose a smaller width to minimize cutting forces. For profiling when the depth of cut is small, the width of the insert should be proportionately smaller to guarantee the required deflection (see Turning Guidelines).





Match the Toolholder Seat Size to the Insert Seat Size

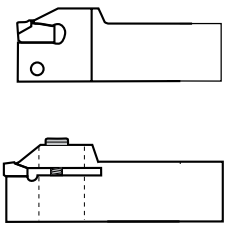
Example: Toolholder **VG 111 R 16 30**

Insert Number **VSG 3.0 N 30 GG**

ValGROOVE™

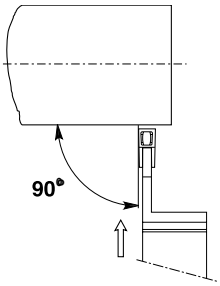
MACHINING GUIDELINES

Correct Insert Clamping



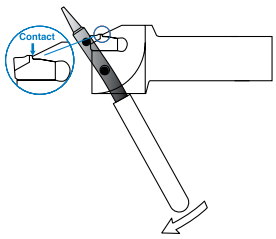
Choose the correct toolholder style for the operation. Screw clamp toolholders provide the most secure clamping for both radial (plunging) and axial (turning) machining. Wedge clamp toolholders are recommended only for radial machining.

Positioning the Tool in the Tool Block

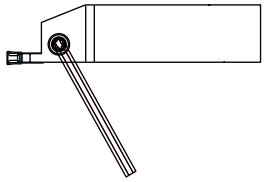


It is essential that the tool be correctly positioned in the tool block. The toolholder must be perpendicular to the workpiece. Deviation will cause part distortion. The front edge of the insert should be parallel to the workpiece to minimize vibration.

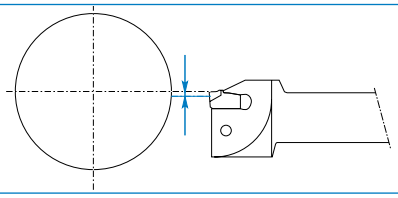
Installing and Extracting the Insert



Wedge Style
Clean holder seat and insert seat. Lubricate (light oil) the seat surfaces. Slide the insert into pocket; make sure angle surfaces match. Locate with wrench to a positive stop.



Screw Style
Clean holder seat and insert.
Slide insert into contact position. Tighten torque screw. Do not overtighten. (see torque values for each toolholder).

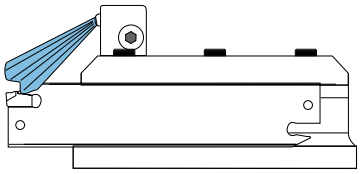


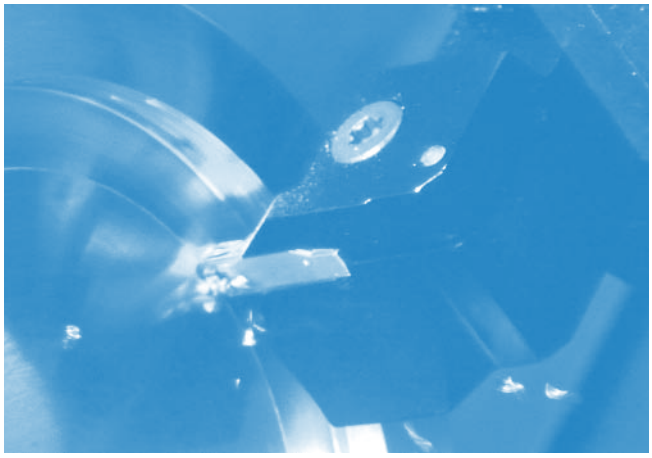
Check the Center Height of the Edge of the Insert

To optimize tool performance, the center height of the insert should be maintained within ±.004 inch. This is critical when machining parts with a smaller diameter.

Cutting Fluid

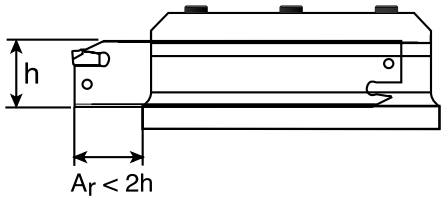
Cutting fluid must be continuously applied throughout the operation with adequate volume and pressure. It is critical that the cutting fluid be directed at the cutting edge.





Choosing Blade Size

For maximum stability, the insertion depth, Ar, should not exceed twice the blade height, h.



PARTING MACHINING GUIDELINES

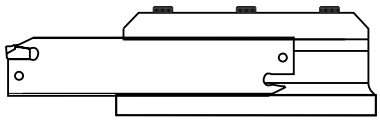
ValGROOVE™

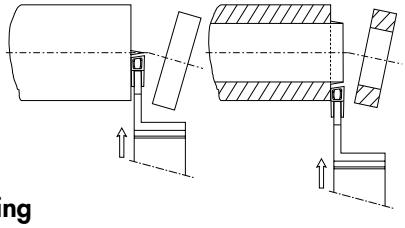
Minimize Overhang

For maximum stability, position the blade for the least possible overhang.

Parting Large Diameters

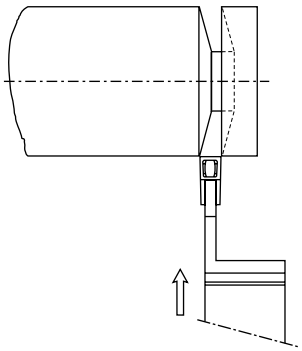
Use double ended blades for large depths.





Clean Parting

To minimize pips when parting solid parts, or burrs when parting tubing, use R or L inserts (point toward finished surface).

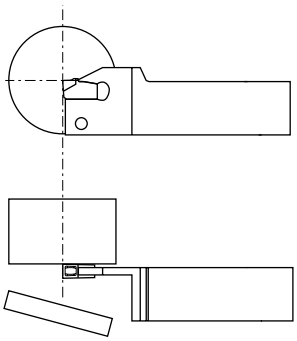


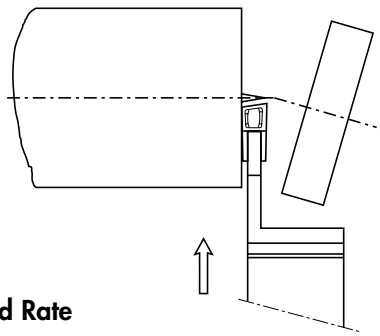
Convex or Concave Surfaces

If convex or concave surfaces are produced, reduce the feed rate or use a wider insert.

Parting to Center

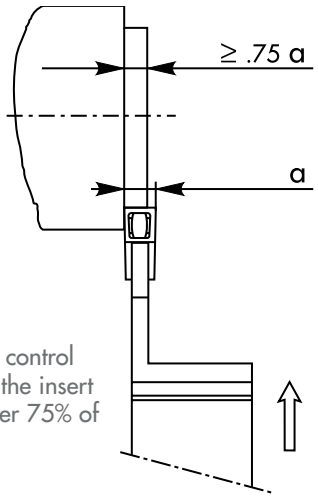
Exceeding the center line of the workpiece after parting will damage the insert.





Reduce Feed Rate

The tool life of the insert will be improved by reducing the feed rate in the final revolutions just before separating the workpiece.



Facing Cuts

To ensure good chip control when facing a part, the insert must be engaged over 75% of its width.

ValGROOVE™

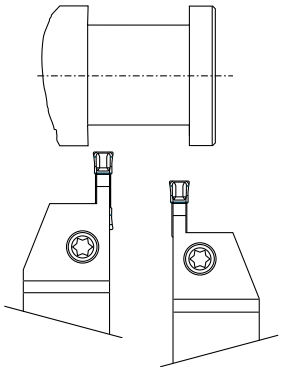
TURNING AND PROFILING MACHINING GUIDELINES

Toolholder Selection

A screw clamp toolholder provides maximum insert stability for turning and profiling operations. Wedge style holders are not recommended.

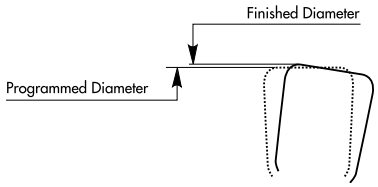
Turning and Profiling Machining Practice

VTG style holders provide maximum insert security for turning and profiling operations. VSG system screw clamp style toolholders can also be used for turning and profiling operations at reduced feed rates and depths of cut.

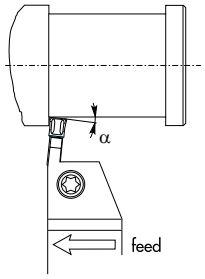


Compensation for Deflection when Axial Turning

The cutting force from axial turning causes a slight deflection of the tool, resulting in a difference between the finished diameter and programmed diameter



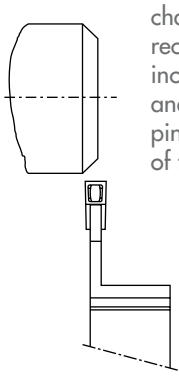
Determine the compensation during set up by measuring the difference between the programmed diameter and the finished diameter. Values will vary depending on workpiece material as well as feed and depth of cut.



Turning Depth of Cut and Feed Rate

Sufficient axial force is required to guarantee adequate frontal clearance angle (α). It is normally recommended to use larger depths of cut and higher feed rates with ValGROOVE™ inserts than with conventional turning inserts. When the depth of cut and feed rate are too small, the low axial force is not sufficient to cause the required deflection and vibration can result.

Entering Chamfer



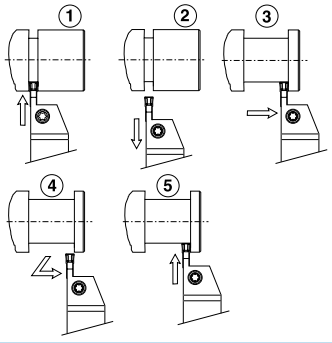
An entering chamfer cut is recommended for increased tool life and to reduce chipping and notching of the cutting edge.

Roughing a Wide Groove

In order to avoid insert damage it is necessary to release the axial cutting forces on the insert when turning before beginning a grooving cut.

The following machining sequence is suggested:

1. Radial feed to DOC
2. Retract to compensate
3. Turn along axis
4. Retract on an angle and feed to finish position
5. Radial feed to DOC



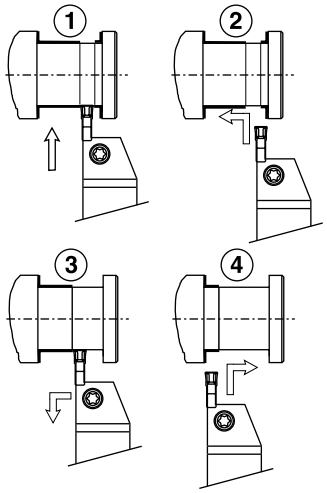
TURNING AND PROFILING MACHINING GUIDELINES

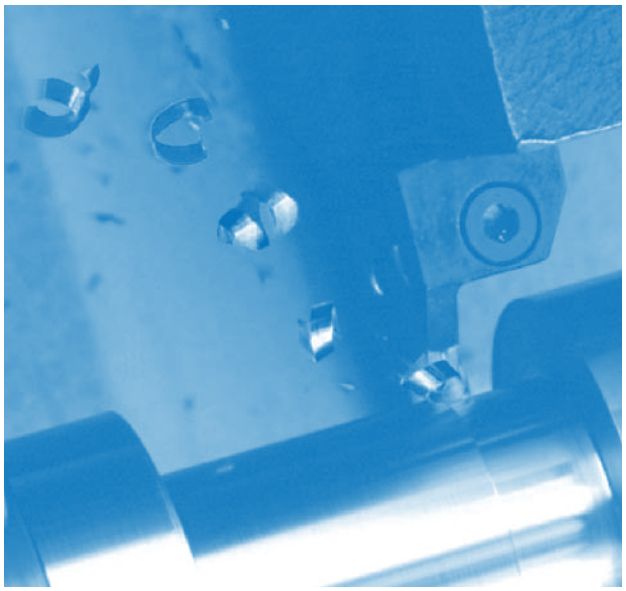
ValGROOVE™

Finishing a Wide Groove

Generating a radius at the bottom of a wide groove produces a very thin chip. The result is vibration and tool wear which can be addressed by the following actions:

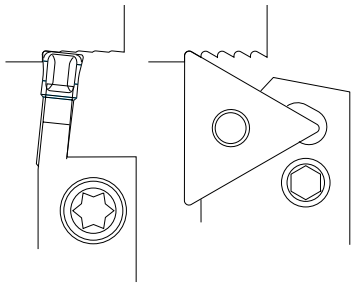
1. Plunge parallel to finished surface
2. Retract and finish wall and radius
3. Turn diameter and retract tool
4. Radially feed and generate radius to finish diameter





Surface Finish

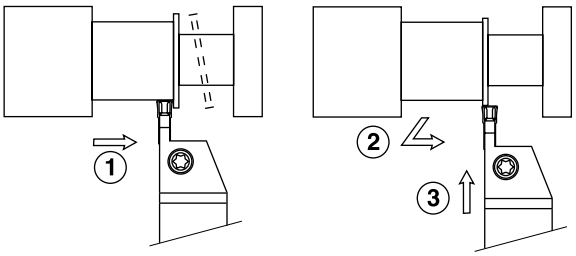
The wiper effect from deflecting the insert produces surface finishes much superior to those produced by conventional inserts. This wiper effect makes it possible to increase the feed rate resulting in productivity gain.

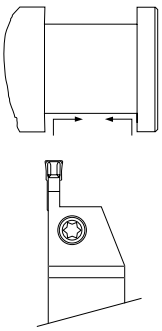


Trapped Ring

An unwanted trapped ring of material can result when turning toward the end of a bar or a recess between two walls.To prevent a trapped ring:

1. Turn toward the recess
2. Pull back and reposition
3. Radially feed to finish the side wall





In Copying

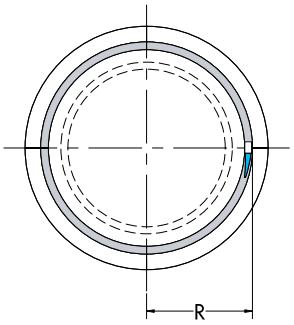
For increased tool life and better chip control, in copying is recommended. Doing so uses both corners of the insert, minimizing tool wear.

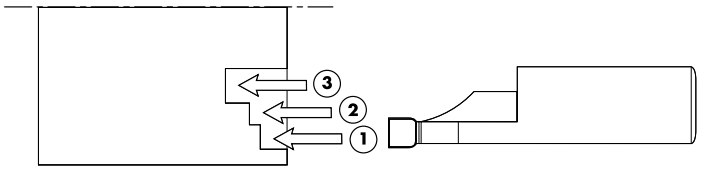
ValGROOVE™

FACE GROOVING MACHINING GUIDELINES

General Recommendations

- Always start with the largest possible diameter and work inward.
- Use the tool with the largest possible diameter range.
- To avoid chatter minimize overhang.



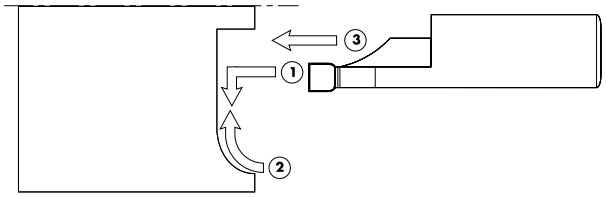


Roughing

1. Starting cut chip control but no breaking.
2. and 3 width of cut should be 50% to 80% of insert width - insert will break chips.

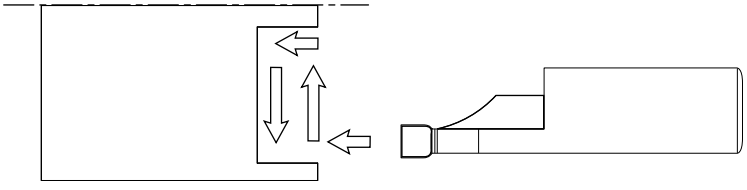
Finishing

1. Position within diameter range and feed toward the radius.
2. Finish the outside diameter and radius and face turn inward.
3. Finish the inside diameter to the correct dimension.



Plunge Turning

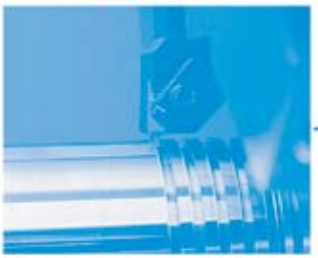
Axial depth of cut should not be deeper than 75% width of insert.



ValGROOVE™

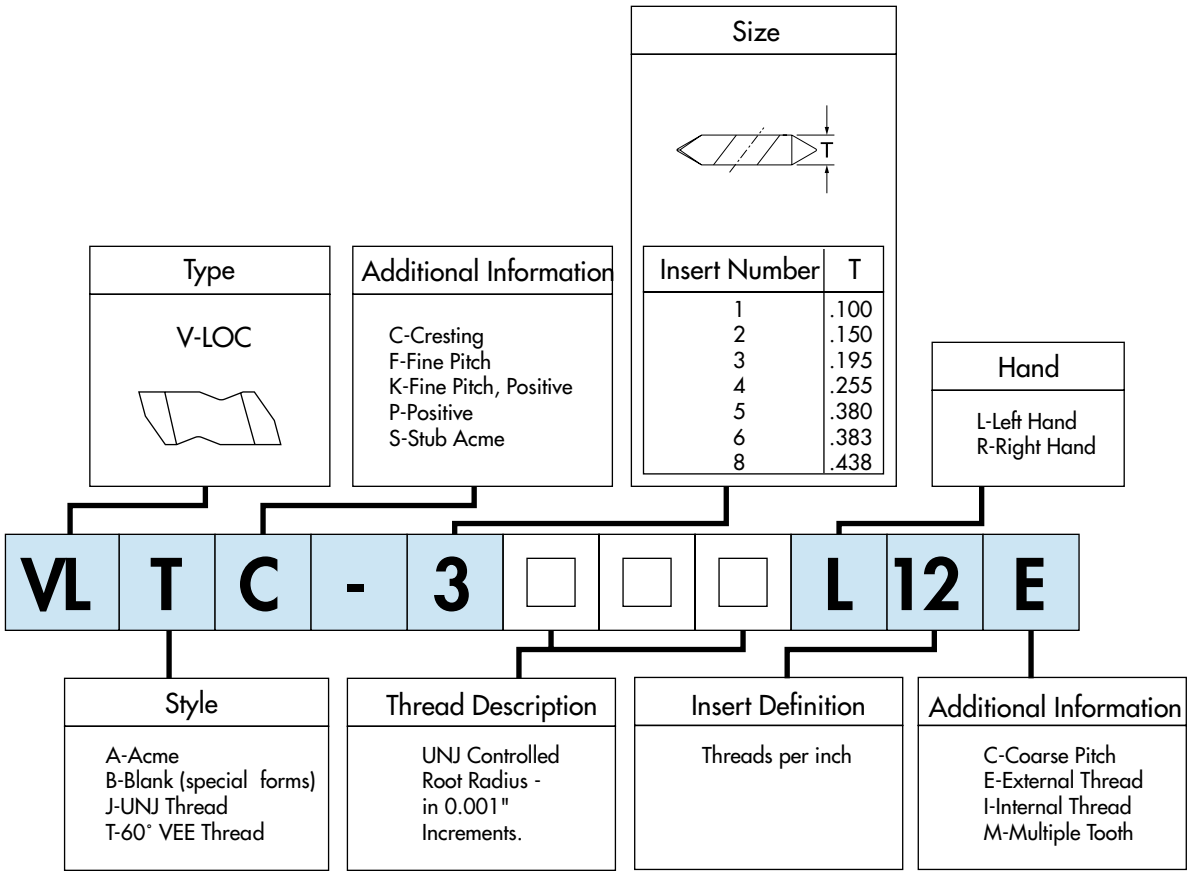
V-LOC

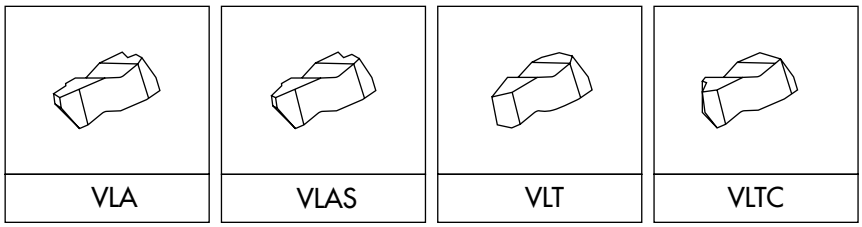
ValGROOVE™

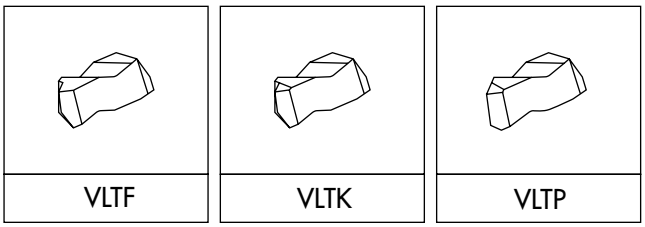
OPERATION	SYSTEM	FEATURE
THREADING		
	 V-LOC™	**V-LOC™** A simple, strong, and extremely flexible system that provides exceptionally rigid insert clamping to handle the high cutting forces encountered in heavy-duty threading applications. V-LOC is an excellent choice for cutting partial profile and full topping thread forms including Unified, Acme, and Stub Acme threads. It also gives outstanding performance in high-feed coarse threading operations. V-LOC threading inserts are available in Valenite's most advanced grades and geometries.
GROOVING		
	 V-LOC™	**V-LOC™** The outstanding strength and versatility of the V-LOC system is also applicable to grooving operations simply by changing inserts. V-LOC toolholders and boring bars handle either threading or grooving inserts with the same strength and precision.

ValGROOVE™

NOMENCLATURE FOR V-LOC® THREADING INSERTS



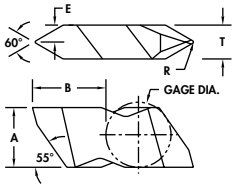




V-LOC® VLT INSERTS - R/L

60° VEE THREADING, GENERAL PURPOSE
3° LEAD NEUTRAL

ValGROOVE™

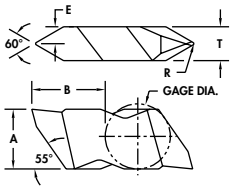


Part Number		Dimensions					Gage Dia.	TPI Range External/Internal	Available Grades/EDP#				
Right Hand	Left Hand	A	T	R	E	B			VC29	SV210	V1N	VC901	VC929
VLT-2R		0.219	0.15	.003/.005	0.075	0.2661	0.1875	36-8 / 20-7	-	07091	07092	-	06534
	VLT-2L	0.219	0.15	.003/.005	0.075	0.2661	0.1875	36-8 / 20-7	-	07088	07089	-	06533
VLT-3R		0.344	0.195	.005/.008	0.098	0.3999	0.3750	20-6 / 12-5	14051	07204	-	06687	06688
	VLT-3L	0.344	0.195	.005/.008	0.098	0.3999	0.3750	20-6 / 12-5	14050	07203	-	06535	06686
VLT-4R		0.453	0.255	.005/.008	0.128	0.6293	0.3750	20-4 / 12-4	10779	07094	-	06537	06538
	VLT-4L	0.453	0.255	.005/.008	0.128	0.6293	0.3750	20-4 / 12-4	10778	07093	-	•	06536

5 digit EDP/Order No. indicates stock standard
• Non stock standard - 2 week delivery
- Special subject to quote.

V-LOC® VLTP INSERTS - R/L

60° VEE THREADING, GENERAL PURPOSE
3° LEAD
5° POSITIVE



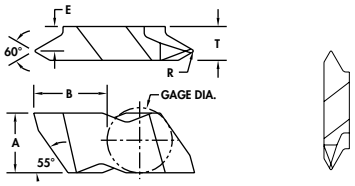
Part Number		Dimensions					Gage Dia.	TPI Range External/Internal	Available Grades/EDP#				
Right Hand	Left Hand	A	T	R	E	B			VC29	SV210	V1N	VC901	VC929
VLTP-2R		0.219	0.153	.003/.005	0.075	0.2661	0.1875	36-8 / 20-7	-	07107	07108	-	06548
	VLTP-2L	0.219	0.153	.003/.005	0.075	0.2661	0.1875	36-8 / 20-7	-	07105	07106	-	06547
VLTP-3R		0.344	0.195	.005/.008	0.098	0.3999	0.3750	20-6 / 12-5	10782	07210	-	06724	06725
	VLTP-3L	0.344	0.195	.005/.008	0.098	0.3999	0.3750	20-6 / 12-5	•	07209	-	06722	06723
VLTP-4R		0.453	0.255	.005/.008	0.128	0.6293	0.3750	20-4 / 12-4	10784	07110	-	•	•
	VLTP-4L	0.453	0.255	.005/.008	0.128	0.6293	0.3750	20-4 / 12-4	10783	07109	-	•	•

5 digit EDP/Order No. indicates stock standard
• Non stock standard - 2 week delivery
- Special subject to quote.

ValGROOVE™

V-LOC® VLTF INSERTS - R/L

60° VEE THREADING, FINE PITCHES
3° LEAD
NEUTRAL

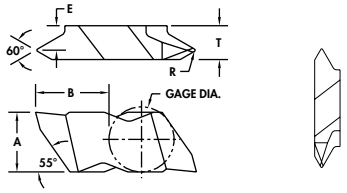


Part Number		Dimensions					Gage Dia.	TPI Range External/Internal	Available Grades/EDP#				
Right Hand	Left Hand	A	T	R	E	B			VC29	SV210	V1N	VC901	VC929
VLTF-2R		0.219	0.150	.002/.004	0.110	0.2679	0.1875	44-14 / 24-12	-	07099	07100	-	06544
	VLTF-2L	0.219	0.150	.002/.004	0.110	0.2679	0.1875	44-14 / 24-12	-	07096	07097	-	06543
VLTF-3R		0.344	0.195	.002/.004	0.141	0.4022	0.3750	44-10 / 24-9	10780	07206	-	06717	06718
	VLTF-3L	0.344	0.195	.002/.004	0.141	0.4022	0.3750	44-10 / 24-9	•	07205	-	06715	06716

5 digit EDP/Order No. indicates stock standard
• Non stock standard - 2 week delivery
- Special subject to quote.

V-LOC® VLTK INSERTS - R/L

60° VEE THREADING, FINE PITCHES
3° LEAD
5° POSITVE



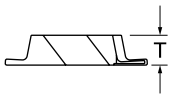
Part Number		Dimensions					Gage Dia.	TPI Range External/Internal	Available Grades/EDP#				
Right Hand	Left Hand	A	T	R	E	B			VC29	SV210	V1N	VC901	VC929
VLTK-3R		0.344	0.195	.002/.004	0.141	0.4022	0.3750	44-10 / 24-9	10781	07208	-	06720	06721
	VLTK-3L	0.344	0.195	.002/.004	0.141	0.4022	0.3750	44-10 / 24-9	•	07207	-	•	06719

5 digit EDP/Order No. indicates stock standard
• Non stock standard - 2 week delivery
- Special subject to quote.

NOMENCLATURE FOR V-LOC® GROOVING INSERTS

ValGROOVE™

Size



Insert Number	T
1	.100
2	.150
3	.195
4	.255
5	.380
6	.383
8	.438

Type

V-LOC

Additional Information

P-Positive

Hand

L-Left Hand
R-Right Hand

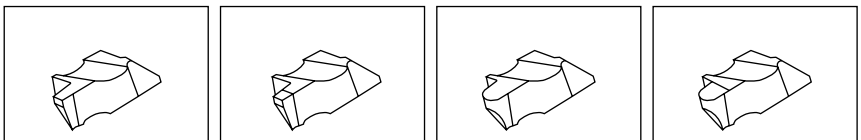
VL	G	P	-	3	031	L

Style

B-Blank (for special forms)
G-Grooving
R-Full Radius
U-Undercutting

Groove Width

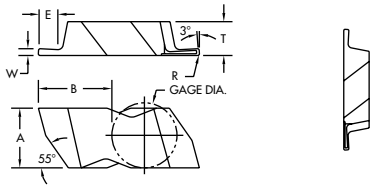
Groove width or radius in .001" increments



VLG | VLGP | VLR | VLRP

ValGROOVE™

V-LOC® VLG - R/L
GROOVING, GENERAL PURPOSE
3° LEAD
NEUTRAL



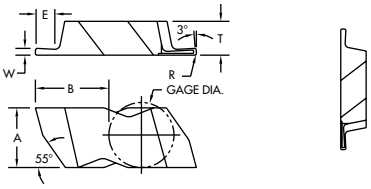
Part Number		Dimensions						Gage Dia.	Available Grades/EDP#				
Right Hand	Left Hand	W	R	E	A	T	B		VC29	SV230	V1N	VC901	VC929
VLG-2031R		0.031	.002/.005	0.05	0.219	0.15	0.27	0.1875	-	07120	07121	-	06599
	VLG-2031L								-	07118	07119	-	06598
VLG-2041R		0.041	.002/.005	0.05	0.219	0.15	0.27	0.1875	-	07124	07125	-	06601
	VLG-2041L								-	07122	07123	-	06600
VLG-2047R		0.047	.002/.005	0.05	0.219	0.15	0.27	0.1875	-	07128	07129	-	06603
	VLG-2047L								-	07126	07127	-	06602
VLG-2058R		0.058	.005/.010	0.05	0.219	0.15	0.27	0.1875	-	07132	07133	-	06605
	VLG-2058L								-	07130	07131	-	06604
VLG-2062R		0.062	.005/.010	0.11	0.219	0.15	0.27	0.1875	-	07136	07137	-	06607
	VLG-2062L								-	07134	07135	-	06606
VLG-2094R		0.094	.005/.010	0.11	0.219	0.15	0.27	0.1875	-	07140	07141	-	06609
	VLG-2094L								-	07138	07139	-	06608
VLG-2125R		0.125	.005/.010	0.11	0.219	0.15	0.27	0.1875	-	07144	07145	-	06611
	VLG-2125L								-	07142	07143	-	06610
VLG-3047R		0.047	.005/.010	0.075	0.344	0.195	0.405	0.3750	14059	07147	-	06614	06615
	VLG-3047L								•	07146	-	06612	06613
VLG-3062R		0.062	.005/.010	0.094	0.344	0.195	0.405	0.3750	10811	07149	-	06618	06619
	VLG-3062L								14060	07148	-	06616	06617
VLG-3072R		0.072	.005/.010	0.094	0.344	0.195	0.405	0.3750	14061	07151	-	•	06621
	VLG-3072L								•	07150	-	•	06620
VLG-3078R		0.078	.005/.010	0.094	0.344	0.195	0.405	0.3750	14063	07153	-	06624	06625
	VLG-3078L								14062	07152	-	06622	06623
VLG-3088R		0.088	.005/.010	0.094	0.344	0.195	0.405	0.3750	-	07155	-	•	06627
	VLG-3088L								-	07154	-	•	06626
VLG-3094R		0.094	.005/.0100	0.15	0.344	0.195	0.405	0.3750	14064	07157	-	06630	06631
	VLG-3094L								•	07156	•	06628	06629
VLG-3097R		0.097	.010/.015	0.15	0.344	0.195	0.405	0.3750	-	07159	-	•	•
	VLG-3097L								-	07158	•	•	•

5 digit EDP/Order No. indicates stock standard
• Non stock standard - 2 week delivery
- Special subject to quote.

V-LOC® VLG - R/L

GROOVING, GENERAL PURPOSE
3° LEAD
NEUTRAL

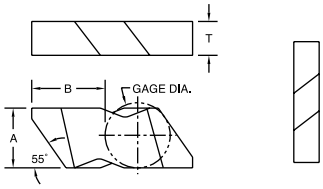
ValGROOVE™



Part Number		Dimensions						Gage Dia.	Available Grades/EDP#				
Right Hand	Left Hand	W	R	E	A	T	B		VC29	SV230	V1N	VC901	VC929
VLG-3105R		0.105	.005 / .010	0.15	0.344	0.195	0.405	0.3750	•	07161	-	•	06633
	VLG-3105L	0.105	.005 / .010	0.15	0.344	0.195	0.405	0.3750	•	07160	-	•	06632
VLG-3125R		0.125	.005 / .010	0.15	0.344	0.195	0.405	0.3750	14066	07163	-	06636	06637
	VLG-3125L	0.125	.005 / .010	0.15	0.344	0.195	0.405	0.3750	14065	07162	-	06634	06635
VLG-3156R		0.156	.005 / .010	0.15	0.344	0.195	0.405	0.3750	•	07166	-	•	06639
	VLG-3156L	0.156	.005 / .010	0.15	0.344	0.195	0.405	0.3750	•	07165	-	•	06638
VLG-3189R		0.189	.020 / .025	0.15	0.344	0.195	0.405	0.3750	14067	07168	-	06642	06643
	VLG-3189L	0.189	.020 / .025	0.15	0.344	0.195	0.405	0.3750	10819	07167	-	•	06641
VLG-4189R		0.189	.020 / .025	0.25	0.453	0.255	0.636	0.3750	•	07170	-	•	•
	VLG-4189L	0.189	.020 / .025	0.25	0.453	0.255	0.636	0.3750	•	•	-	•	06645
VLG-4250R		0.25	.020 / .025	0.25	0.453	0.255	0.636	0.3750	-	07171	-	•	06647
	VLG-4250L	0.25	.020 / .025	0.25	0.453	0.255	0.636	0.3750	14068	-	-	•	•

V-LOC® VLB - R/L

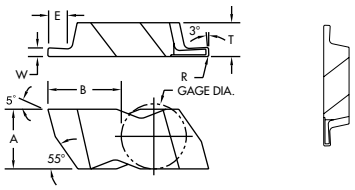
SEMI FINISHED BLANK



Part Number		Dimensions						Gage Dia.	Available Grades/EDP#			
Right Hand	Left Hand	W	R	E	A	T	B		VC29	VC5	VC2	VC101
VLB-3R		-	-	-	0.344	0.195	0.414	.3750	14055	•	10803	14056
	VLB-3L	-	-	-	0.344	0.195	0.414	.3750	14053	•	14052	•
VLB-4R		-	-	-	0.453	0.255	0.653	.3750	14058	•	-	-
	VLB-4L	-	-	-	0.453	0.255	0.653	.3750	10807	14057	-	-

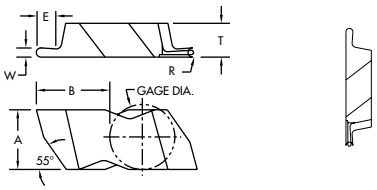
ValGROOVE™

V-LOC® VLGP - R/L
GROOVING, GENERAL PURPOSE
3˚ LEAD
5˚ POSITIVE



Part Number		Dimensions						Gage Dia.	Available Grades/EDP#			
Right Hand	Left Hand	W	R	E	A	T	B		VC29	SV230	VC901	VC929
VLGP-2031R		0.031	.002 / .005	0.05	0.219	0.15	0.27	0.1875	-	**07173**	-	**06649**
	VLGP-2031L	0.031	.002 / .005	0.05	0.219	0.15	0.27	0.1875	-	**07172**	-	**06648**
VLGP-2062R		0.062	.005 / .010	0.11	0.219	0.15	0.27	0.1875	-	**07175**	-	**06652**
	VLGP-2062L	0.062	.005 / .010	0.11	0.219	0.15	0.27	0.1875	-	**07174**	**06650**	**06651**
VLGP-2125R		0.125	.005 / .010	0.11	0.219	0.15	0.27	0.1875	-	**07177**	-	**06654**
	VLGP-2125L	0.125	.005 / .010	0.11	0.219	0.15	0.27	0.1875	-	**07176**	-	**06653**
VLGP-3088R		0.088	.005 / .010	0.094	0.344	0.195	0.405	0.375	•	•	**06656**	**06657**
	VLGP-3088L	0.088	.005 / .010	0.094	0.344	0.195	0.405	0.375	-	**07178**	•	**06655**
VLGP-3125R		0.125	.005 / .010	0.15	0.344	0.195	0.405	0.3750	•	**07180**	**06660**	**06661**
	VLGP-3125L	0.125	.005 / .010	0.15	0.344	0.195	0.405	0.3750	•	**07179**	**06658**	**06659**

V-LOC® VLR - R/L
FULL RADIUS GROOVING, GENERAL PURPOSE
3˚ LEAD

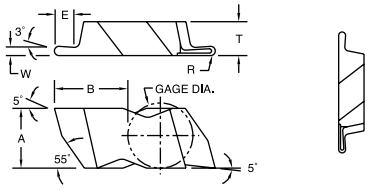


Part Number		Dimensions						Gage Dia.	Available Grades/EDP#			
Right Hand	Left Hand	W	R	E	A	T	B		VC29	SV230	VC901	VC929
VLR- 3031 R		0.062	0.031	0.094	0.344	0.195	0.4033	0.3750	**10823**	**07188**	**06669**	**06670**
	VLR-3031L	0.062	0.031	0.094	0.344	0.195	0.4033	0.3750	•	**07187**	•	•
VLR-3047R		0.094	0.047	0.15	0.344	0.195	0.4025	0.3750	•	**07189**	•	•
VLR-3062R		0.125	0.062	0.15	0.344	0.195	0.4017	0.3750	•	**07191**	**06673**	**06674**
	VLR-3062L	0.125	0.062	0.15	0.344	0.195	0.4017	0.3750	•	**07190**	**06671**	**06672**
VLR-3078R		0.156	0.078	0.15	0.344	0.195	0.4008	0.3750	-	**07192**	•	**06675**
	VLR-3078L	0.156	0.078	0.15	0.344	0.195	0.4008	0.3750	**14072**	•	-	•
VLR-3094R		0.188	0.094	0.15	0.344	0.195	0.4	0.3750	**14074**	•	•	**06677**
	VLR-3094L	0.188	0.094	0.15	0.344	0.195	0.4	0.3750	•	**07193**	•	**06676**
VLR-4094R		0.188	0.094	0.25	0.453	0.255	0.631	0.3750	**14077**	•	•	•
	VLR-4094L	0.188	0.094	0.25	0.453	0.255	0.631	0.3750	**14076**	**07195**	**06678**	•

V-LOC® VLRP - R/L

FULL RADIUS GROOVING, GENERAL PURPOSE
3° LEAD
5° POSITIVE

ValGROOVE™

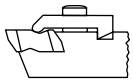


Part Number		Dimensions						Gage Dia.	Available Grades/EDP#			
Right Hand	Left Hand	W	R	E	A	T	B		VC29	SV230	VC901	VC929
VLRP- 3031 R		0.062	0.031	0.094	0.344	0.195	0.4033	0.3750	**14079**	**07197**	**06680**	**06681**
	VLRP-3031L	0.062	0.031	0.094	0.344	0.195	0.4033	0.3750	-	-	-	**06679**
VLRP-3062R		0.125	0.062	0.15	0.344	0.195	0.4017	0.3750	**14081**	**07200**	**06684**	**06685**
	VLRP-3062L	0.125	0.062	0.15	0.344	0.195	0.4017	0.3750	**14080**	**07199**	**06683**	-

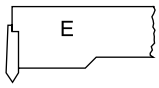
ValGROOVE™ NOMENCLATURE FOR V-LOC® THREADING & GROOVING TOOLHOLDERS

Holding Method

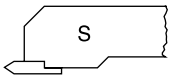
V-LOC



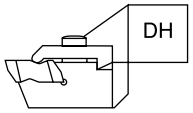
Insert Location



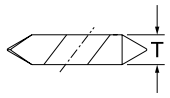
Side Mount Offset



Drop Head



Insert Size



Insert Number	T
1	.100
2	.150
3	.195
4	.255
5	.380
6	.383
8	.438

VL	S	R	-	□	-	16	3	D

Hand of Tool

End Mount

Side Mount

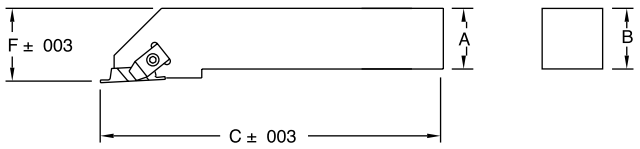
Shank Size

For shanks 5/8"square and larger, the number will represent 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

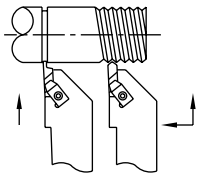
Qualified Back and End

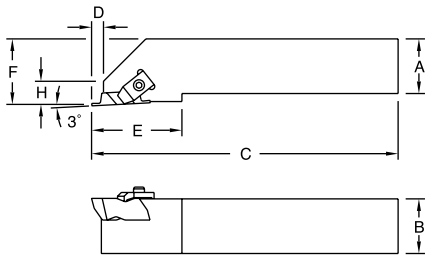


Toolholders and qualified over sharp corner of gage grooving insert

V-LOC® VLS - R/L

OFFSET THREADING & GROOVING
3° LEAD





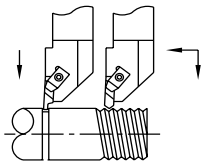
Right hand shown, left hand opposite.

Part Number		Insert	Dimensions							Shim Seat	Shim Screw	R.H. Clamp	L.H. Clamp	Clamp Screw	EDP#
Right Hand	Left Hand		A	B	C	D	E	F(2)	H						
VLSR-062		VLG-2R	3/8	3/8	2 1/2	0.138	0.75	0.562	0.35	-	-	VL-74	-	(4)	**58681**
	VLSL-062	VLG-2L	3/8	3/8	2 1/2	0.138	0.75	0.562	0.35	-	-	-	VL-75	(4)	**58671**
VLSR-082V		VLG-2R	1/2	1/2	3 1/2	0.138	0.75	0.750	0.35	-	-	VL-74	-	(4)	**58682**
	VLSL-082V	VLG-2L	1/2	1/2	3 1/2	0.138	0.75	0.750	0.35	-	-	-	VL-75	(4)	**58672**
VLSR-122B		VLG-2R	3/4	3/4	4 1/2	0.138	0.75	1.000	0.35	-	-	-	-	(4)	**58683**
	VLSL-122B	VLG-2L	3/4	3/4	4 1/2	0.138	0.75	1.000	0.35	-	-	-	VL-75	(4)	**58673**
VLSR-162C		VLG-2R	1	1	5	0.138	0.75	1.250	0.35	-	-	VL-74	-	(3)	**58685**
	VLSL-162C	VLG-2L	1	1	5	0.138	0.75	1.250	0.35	-	-	-	VL-75	(3)	**58675**
VLSR-123B		VLG-3R	3/4	3/4	4 1/2	0.210	1.25	1.000	0.50	-	-	VL-72	-	(3)	**58684**
	VLSL-123B	VLG-3L	3/4	3/4	4 1/2	0.210	1.25	1.000	0.50	-	-	-	VL-73	(3)	**58674**
VLSR-163C		VLG-3R	1	1	5	0.210	1.25	1.250	0.50	-	-	VL-72	-	(3)	**58686**
	VLSL-163C	VLG-3L	1	1	5	0.210	1.25	1.250	0.50	-	-	-	VL-73	(3)	**58676**
VLSR-163D		VLG-3R	1	1	6	0.210	1.25	1.250	0.50	-	-	VL-72	-	(3)	**58687**
	VLSL-163D	VLG-3L	1	1	6	0.210	1.25	1.250	0.50	-	-	-	VL-73	(3)	**58677**
VLSR-203D		VLG-3R	1 1/4	1 1/4	6	0.210	1.25	1.500	0.50	-	-	-	-	(3)	**58689**
	VLSL-203D	VLG-3L	1 1/4	1 1/4	6	0.210	1.25	1.500	0.50	-	-	-	VL-73	(3)	**58678**
VLSR-164D		VLG-4R	1	1	6	0.294	1.33	1.250	0.54	SM420	SL-344	VL-72	-	(3)	**58688**
	VLSL-164D	VLG-4L	1	1	6	0.294	1.33	1.250	0.54	SM420	SL-344	-	VL-73	(3)	**61906**

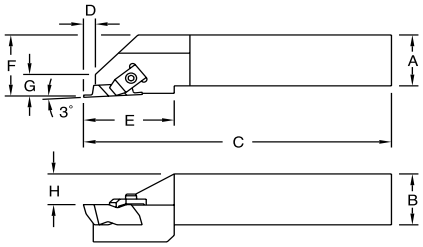
1) Clamp screw required is Part Number 10-32x3/4 SHCS.
2) Clamp screw required is Part Number 6-32 x 1/2 SHCS.
Metric dimensions are for reference only
5 digit EDP/Order No. indicates: stock standard

ValGROOVE™

V-LOC® VLSR - DH
DROP HEAD
THREADING &
GROOVING
3° LEAD



Left hand shown

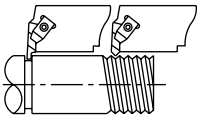


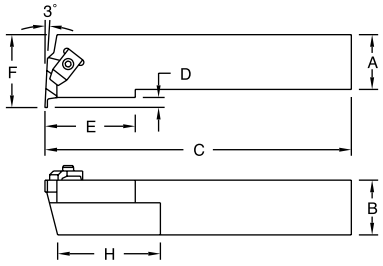
Right hand shown, left hand opposite

Part Number		Insert (1)	Dimensions								R.H. Clamp	L.H. Clamp	Clamp Screw	Set Screw	EDP#
Right Hand	Left Hand		A	B	C	D	E	F(2)	G	H					
VLSR-DH-123A		VLG-3R	3/4	3/4	4	0.180	1.50	1.250	0.58	0.750	VL-72	-	(3)	(4)	**58692**
VLSR-DH-204D		VLG-4R	1 1/4	1 1/4	6	0.280	1.63	2.000	1.00	1.500	VL-72	-	(3)	(4)	**61909**

1) Clamp screw required is Part Number 10-32x3/4 SHCS **EDP#51991**.
2) Set screw required is Part Number 3/8 - 16 x 1 OPSS.
5 digit EDP/Order No. indicates: stock standard

V-LOC® VLE R/L
END POCKET THREADING & GROOVING
3° LEAD





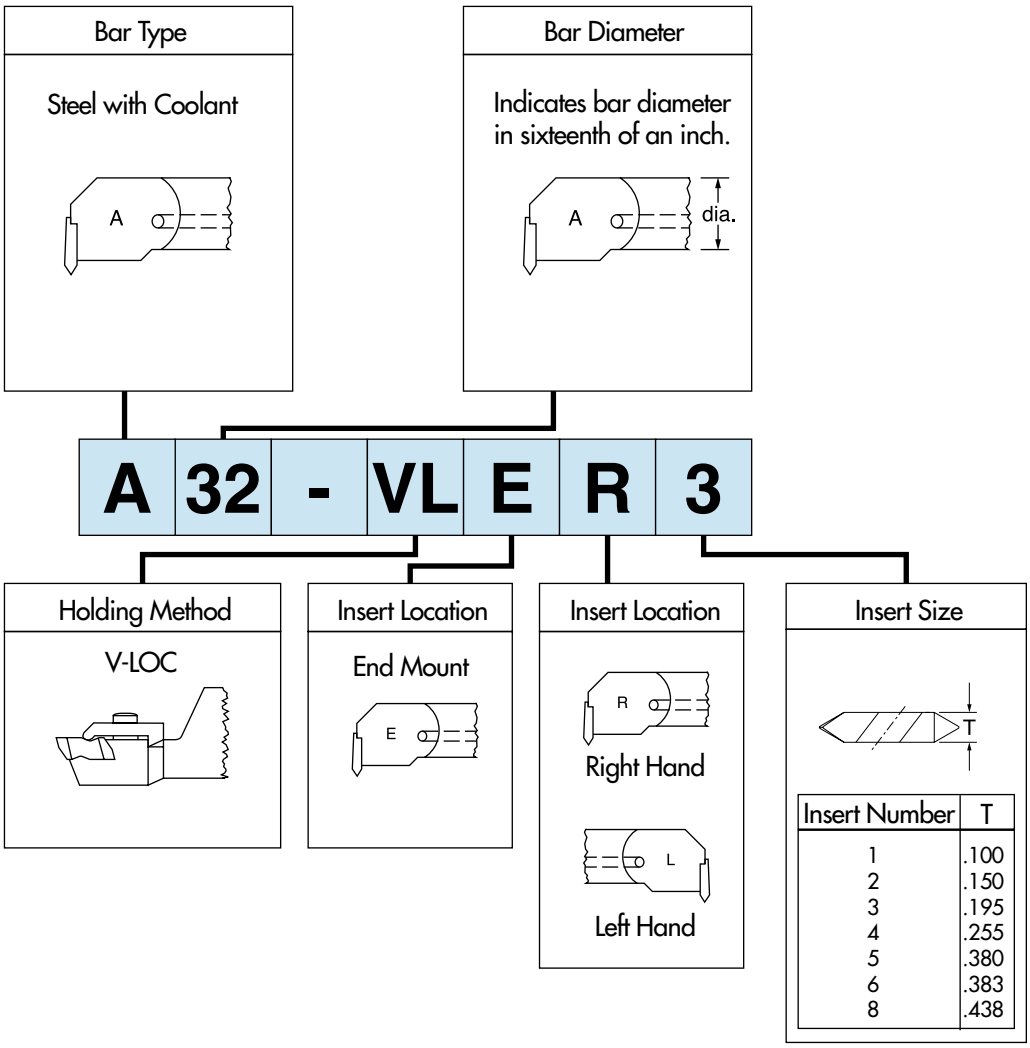
Right hand shown, left hand opposite.

Part Number		Insert	Dimensions							Shim Seat	Shim Screw	R.H. Clamp	L.H. Clamp	Clamp Screw	EDP#
Right Hand	Left Hand		A	B	C	D	E	F(2)	H						
VLER-123B		VLG-3L	3/4	3/4	4 1/2	0.210	0.75	1.125	2	-	-	-	VL-73	(3)	**58666**
	VLEL-123B	VLG-3R	3/4	3/4	4 1/2	0.210	0.75	1.125	2	-	-	VL-72	-	(3)	**58659**
VLER-163D		VLG-3L	1	1	6	0.210	0.75	1.250	2	-	-	-	VL-73	(3)	**58669**
	VLEL-163D	VLG-3R	1	1	6	0.210	0.75	1.250	2	-	-	VL-72	-	(3)	**58662**
VLER-164D		VLG-4L	1	1	6	0.294	0.75	1.375	2	-	-	-	VL-73	(3)	**61904**
	VLEL-164D	VLG-4R	1	1	6	0.294	0.75	1.375	2	-	-	VL-72	-	(3)	**61902**

1) Clamp screw required is Part Number 10-32 x 3/4 SHCS **EDP#51991**.
Metric dimensions are for reference only
5 digit EDP/Order No. indicates: stock standard

NOMENCLATURE FOR V-LOC® BORING BARS

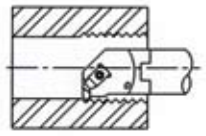
ValGROOVE™

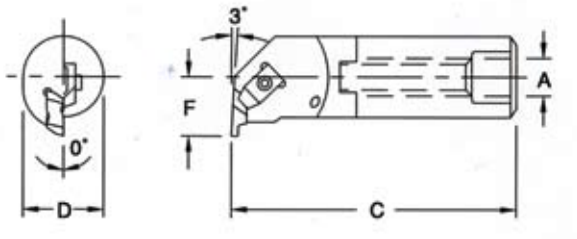


Right-hand bars use left-hand threading and grooving inserts and clamps.
Left-hand bars use right-hand threading and grooving inserts and clamps.

ValGROOVE™

V-LOC® A - VLER/L
THREADING & GROOVING
WITH COOLANT HOLE
3˚ LEAD



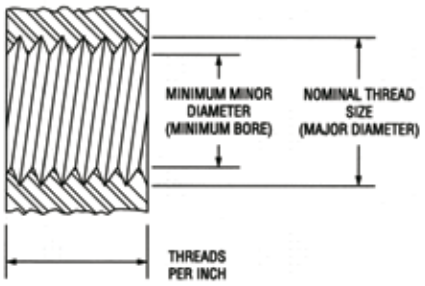


Part Number		Insert (1)	Dimensions				Minimum Bore	R.H. Clamp (3)	L.H. Clamp (3)	Clamp Screw	EDP#
Right Hand	Left Hand		D	C	F	A					
A10-VLER2		VLG-2L	5/8	10	0.500	1/8-27NPT	1.000	—	VL-75	(2)	**58698**
	A10-VLEL2	VLG-2R	5/8	10	0.500	1/8-27NPT	1.000	VL-74	—	(2)	**58697**
A12-VLER2		VLG-2L	3/4	10	0.562	1/8-27NPT	1.125	...	VL-75	(2)	**58700**
A16-VLER2		VLG-2L	1	12	0.688	1/4-1 8NPT	1.375	...	VL-75	(2)	**58703**
	A16-VLEL2	VLG-2R	1	12	0.688	1/4-1 8NPT	1.375	VL-74	—	(2)	**58701**
A16-VLER3		VLG-3L	1	12	0.688	1/4-18NPT	1.375	—	VL-73	(1)	**58704**
	A16-VLEL3	VLG-3R	1	12	0.688	1/4-18NPT	1.375	VL-72	...	(1)	**58702**
A20-VLER3		VLG-3L	1 1/4	14	0.875	1/4-1 8NPT	1.750	—	VL-73	(1)	**58706**
	A20-VLEL3	VLG-3R	1 1/4	14	0.875	1/4-1 8NPT	1.750	VL-72	...	(1)	**58705**
A24-VLER3		VLG-3L	1 1/2	14	1.000	1/4-1 8l\IPT	2.000	—	VL-73	(1)	**58708**
	A24-VLEL3	VLG-3R	1 1/2	14	1.000	1/4-1 8NPT	2.000	VL-72	...	(1)	**58707**

1) Clamp screw required is Part Number 10-32 x 3/4 SHCS **EDP#51991**.
2) Clamp screw required is Part Number 6-32 x 1/2 SHCS **EDP#52090**.

V-LOC® TECHNICAL DATA - INTERNAL THREADING LIMITS WITH STANDARDS

ValGROOVE™



The following charts list the largest pitch that can be applied for Acme threads using V-LOC Threading insert sizes 3,4 and 6, and 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	Notes
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	1

1) 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	Notes
4	3	2.729	1
4 1/2	27/8	2.634	1
5	23/4	2.534	
6	2 1/2	2.230	
7	21/4	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	2

1) VLT-4 insert only.
2) Sixteen threads per inch and finer can be cut providing minor diameter is 1 .000" or larger.

V-LOC® REPLACEMENT PARTS FOR GROOVING TOOLHOLDERS

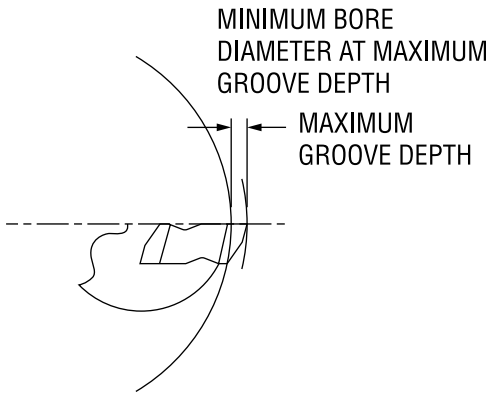
Spare Parts

Insert Size & Style	Clamp		Clamp Screw		Shim		Shim Screw	
	Part#	EDP#	Part#	EDP#	Part#	EDP#	Part#	EDP#
VLG-2R	VL-74	**58721**	6-32 X 1/2SHCS	**52090**	-	-	-	-
VLG-2L	VL-75	**58722**	6-32 X 1/2SHCS	**52090**	-	-	-	-
VLG-3R	VL-72	**58719**	10-32 X 3/4 SHCS	**51991**	-	-	-	-
VLG-3L	VL-73	**58720**	10-32 X 3/4 SHCS	**51991**	-	-	-	-
VLG-4R	VL-72	**58719**	10-32 X 3/4 SHCS	**51991**	**SM-420**	**58712**	**SL-344**	**58711**
VLG-4L	VL-73	**58720**	10-32 X 3/4 SHCS	**51991**	**SM-420**	**58712**	**SL-344**	**58711**

ValGROOVE™

V-LOC® TECHNICAL DATA

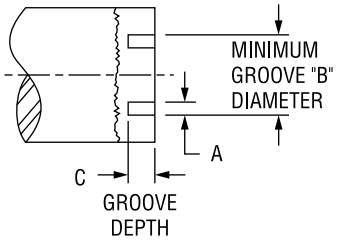
INTERNAL GROOVE DEPTH VS. BAR INTERFERENCE



Internal grooving depth limits are a function of insert size, bar clearance and bore diameter. The groove depth increases with increasing bore diameter.
For example, with insert size 3, to produce a grooving depth of 0.125" minimum bore diameter is 1.625".
To produce a grooving depth of 0.150", the minimum bore diameter is 2.375"

Insert	Maximum Groove	Minimum Bore
VLG-2031 R/L VLG-2041 R/L VLG-2047 R/L VLG-2058 R/L	.050	1.000
VLG-2062 R/L VLG-2094 R/L VLG-2125-R/L	.110 .102 .098 .080	2.500 1.750 1.500 1.000
VLG-3047 R/L VLG-3062 R/L VLG-3072 R/L VLG-3078 R/L VLG-3088 R/L	.094 .090 .075	1.750 1.625 1.375
VLG-3094 R/L VLG-3097 R/L VLG-3105R/L VLG-3110R/L VLG-3122R/L VLG-3125R/L VLG-3142 R/L VLG-3156R/L VLG-3178R/L VLG-3185R/L VLG-3189R/L	.150 .145 .138 .125 .110	2.375 2.125 1.875 1.625 1.375
VLG-4125R/L	.150	2.750
VLG-4189R/L VLG-4250 R/L	.250 .245 .240 .218 .200	5.750 5.000 4.500 3.250 2.500

MACHINING GUIDELINES FOR FACE GROOVING OPERATIONS WITH STANDARD VLG INSERTS



A = WIDTH OF INSERT

Insert Family	Groove Depth "C"	Min. Groove Dia. "B"
VLG-2	0.050	2.125
VLG-2	0.110	3.500
VLG-3	0.094	4.000
VLG-3	0.125	5.000
VLG-3	0.150	5.500
VLG-4	0.150	6.000
VLG-4	0.250	8.250
VLG-5	0.375	13.000

Clockwise rotation of the workpiece requires left-hand holder and right-hand insert. Counter-clockwise rotation of the workpiece requires right-hand holder with left-hand insert.

V-LOC® TECHNICAL DATA

ValGROOVE™

THREADING - RECOMMENDED GRADES AND SPEEDS

MATERIALS	Grade					
	VC29	V1N	VC901	VC902	VC929	SV210
	ft/min (m / min)	ft/min (m / min)	ft/min (m / min)	ft/min (m / min)	ft/min (m / min)	ft / min (m / min)
Low and Medium Carbon Steels		65 - 270	70 - 300	275 - 600	300 - 760	400 - 800
		120 - 80)	(20 - 90)	(75 - 180)	(90 - 230)	(120 - 250)
Alloy Steels, <330 BHN		110-270	125 - 300	200 - 500	230 - 550	330 - 600
		(35 - 80)	(40 - 90)	(60 - 150)	(70 - 170)	(100 - 180)
Alloy Steels, >330 BHN		90 - 225	100-250	150 - 300	175 - 400	225 - 430
		(30 - 70)	(30 - 80)	(40 - 110)	(50 - 120)	(70 - 130)
Gray Cast Iron	220 - 350	135 - 270	150 - 300	250 - 450	300 - 500	350 - 700
	(70 - 110)	(40 - 80)	140 - 90)	(80 - 140)	(90 - 150)	(110 - 210)
Alloyed/Ductile Cast Iron	200 - 300	120 - 225	130 - 250	200 - 400	230 - 425	300 - 600
	160 - 90)	135 - 70)	(40 - 80)	(60 - 120)	(70 - 120)	(90 - 180)
Austenitic Stainless Steels 300 Series	200 - 320	1 80 - 250	200 - 275	225 - 350	250 - 400	250 - 500
	160 - 100)	(55 - 70)	160 - 90)	(70 - 110)	(80 - 120)	(70 - 150)
Martensitic Stainless Steels 400/500 Series	200 - 360	1 80 - 300	200-330	275 - 450	300 - 525	300 - 600
	(60- 110)	(55 - 90)	(60- 100)	(75 - 140)	(90 - 160)	(90 - 180)
High Temperature Alloys, < 260 BHN	75 - 130	60 - 90	65- 100	100 - 150	110 - 160	
	(20 - 40)	120 - 30)	(20 - 30)	(30 - 40)	(30 - 50)	
High Temperature Alloys, >260 BHN	50 - 1OO	50 - 75	55 - 80	80 - 125	90 - 125	
	(10 - 30)	(15 - 25)	(15-20)	(25 - 40)	(30 - 40)	
Titanium Alloys Ti-6Al-4V	80 - 130	80 - 130	90 - 140	120 - 170	1 30 - 1 80	
	(25 - 40)	125 - 40)	(30 - 40)	(35 - 50)	(40 - 55)	
Aluminum and Non -Ferrous Alloys	400 - 650	90 - 450	100 - 500	500 - 900	500 - 900	
	(120 - 200)	130 - 140)	(30 - 150)	(150 - 280)	(150 - 280)	

GROOVING - RECOMMENDED GRADES AND SPEEDS

MATERIALS	Grade					FEED RATES in / rev (mm / rev)
	VC29	V1N	VC901	VC929	SV230	
	ft / min (m / min)	ft/min (m / min)	ft / min (m / min)	ft/ min (m / min)	ft/min (m / min)	
Low and Medium Carbon Steels		90 - 340	100 - 375	325 - 800	400 - 850	0.005 - 0.011
		(30 - 100)	(30 - 120)	(100 - 240)	(120 - 260)	(0,13 - 0,28)
Alloy Steels, <330 BHN		110 - 300	125 - 330	250 - 600	300 - 700	0.005 - 0.010
		(35 - 90)	(40 - 100)	(75 - 180)	(90 - 210)	(0,13 - 0,25)
Alloy Steels, >330 BHN		105 - 240	1 20 - 260	200 - 450	200 - 400	0.003 - 0.008
		(30 - 75)	(40 - 80)	(60- 140)	(60 - 120)	(0,08 - 0,20)
Gray Cast Iron	250 - 425	150 - 315	170 - 350	325-550	300 - 700	0.005 - 0.012
	(70 - 130)	(5 - 100)	(50 - 110)	(100 - 170)	(90 - 220)	(0,13 - 0,31)
Alloyed/Ductile Cast Iron	200 - 400	135 - 250	1 50 - 275	250 - 450	200 - 450	0.005 - 0.011
	(60 - 120)	(40 - 70)	(45 - 85)	(75 - 140)	(60 - 140)	(0,13 - 0,28)
Austenitic Stainless Steels 300 Series	200 - 350	180 - 270	200 - 300	300 - 430	300 - 700	0.003 - 0.009
	(60 - 110)	(55 - 80)	(60 - 90)	(90 - 130)	(90 -210)	(0,08 - 0,23)
Martensitic Stainless Steels 400/500 Series	220 - 400	200 - 325	225 - 360	325 - 550	300 - 750	0.005 - 0.010
	(65 - 120)	(60 - 100)	(70 - 110)	(100 - 170)	(90 - 230)	(0,13 - 0,25)
High Temperature Alloys, < 260 BHN	80 - 140	70 - 110	80 - 1 20	120 - 170	100 - 150	0.003 - 0.008
	(25 - 40)	(20 - 35)	(25 - 35)	(40 - 50)	(30 - 50)	(0,08 - 0,20)
High Temperature Alloys, >260 BHN	60 - 1 20	55 - 90	60 - 100	100 - 130	80-110	0.003 - 0.007
	(20 - 35)	(20 - 30)	(20 - 30)	(30 - 40)	(25 - 30)	(0,08 - 0,18)
Titanium Alloys Ti-6Al-4V	100 - 150	80 - 1 35	90 - 150	140 - 190		0.003 - 0.008
	(30 - 50)	(25-40)	(30 - 45)	(40 - 60)		(0,08 - 0,20)
Aluminum and Non-Ferrous Alloys	450 - 700	1 80 - 500	200 - 550	500 - 1000		0.005 - 0.012
	(140 - 210)	(55 - 150)	(60 - 170)	(150 - 31O)		(0,13 - 0,31)

ValGROOVE™

V-LOC® TECHNICAL DATA

CUTTING MATERIALS

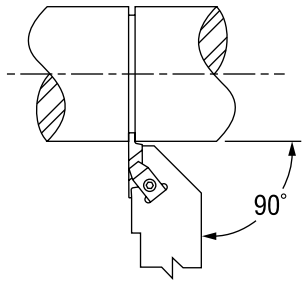
VALENITE Grade	ISO Class	Industry Class	Materials	Description and Applications
Uncoated Carbide				
VC29	K10 - 20 M10 - 20	C2, C3	Stainless Steels Cast Irons High Temperature Alloys Aluminum Other Non-ferrous Alloys	A micrograin carbide with medium toughness and very good wear resistance Good for medium to high speed operations
Physical Vapor Deposition (PVD) Coated Grades				
VC901	K20 - 30 M20 - 30	C1	Stainless Steels High Temperature Alloys	A micrograin carbide with high toughness and good wear resistance Suitable for severe applications in low to medium cutting speeds
VC902	K10 -20 M15 - 20	C2	Stainless Steels High Temperature Alloys Other Non-ferrous Alloys	Excellent balance of toughness and wear resistance Suitable for a wide range of speeds and conditions
VC929	K05 - 15 M10 - 15	C2,C3	Stainless Steels High Temperature Alloys Other Non-ferrous Alloys	Excellent wear resistance Suitable for medium to high speed operations
SpectraTurn Coated (CVD) Coated Grades				
SV210	P05 - 15 M01 - 15	C7, C8 C3,C4	Steels Cast Irons Stainless Steels	Good wear resistance Medium toughness High speed finishing Grade
SV230	P10 - 30 M10 - 30	C6,C7 C2,C3	Stainless Steels Carbon Steels Alloy Steels Cast Steels Tool Steels Some High Temperature Alloys	A Grade with high toughness and excellent wear resistance Suitable for severe operations at medium to high speeds
V1N	P13 -45 M30 - 40 K35- 45	C5 C1,C2	Stainless Steels Carbon Steels Alloy Steels Cast Steels Tool Steels Some High Temperature Alloys	An excellent Grade with high toughness and good wear resistance Suitable for severe operations at low to medium speeds on a wide range of materials

V-LOC® TECHNICAL DATA

ValGROOVE™

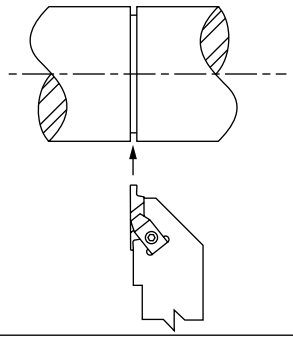
GROOVING OPERATION TECHNIQUES

Tool Holder Set-Up

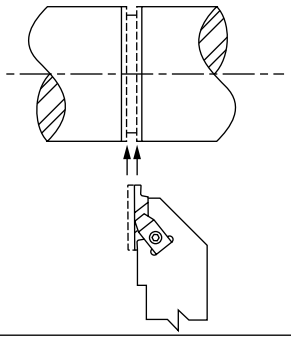


Cut groove to insert width.

Machining Slightly Wider Grooves Than The Tool

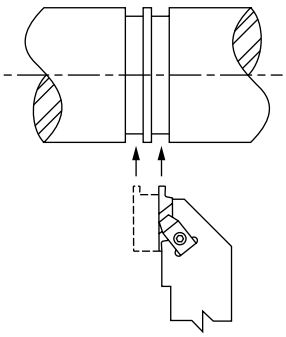


Plunge the center of the desired groove.

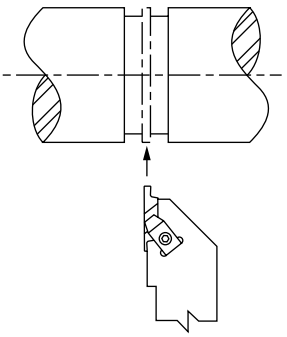


Using a slower feed rate, plunge both sides of the groove to obtain the required width.

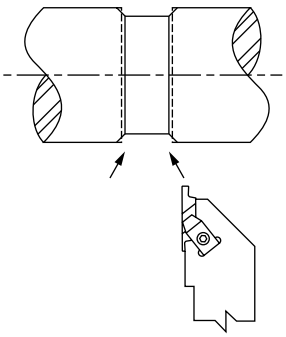
Machining Wide Grooves



Plunge both sides of the groove width.

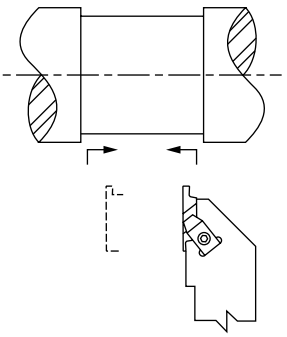


Plunge the center area to remove web of the remaining material.



Plunge the sides of the groove at the required angle. The width of the cut should be half of the width of the grooving tool.

Finishing The Groove



Plunge the center area to remove web of the remaining material.

ValGROOVE™

SOLUTIONS TO COMMON GROOVING PROBLEMS

Problem	Solution
Poor Tool Life	Decrease speed
	Select proper grade for workpiece material
	Use positive rake tools
	Adjust coolant flow and concentration
Side Walls Not Straight	Check set-up, overhang of tool
	Check tool alignment for square
	Use a correct hand insert
	Use sharp tool
Groove Bottom Not Straight	Decrease feed
	Use sharp tool
	Adjust tool center height
	Dwell at bottom of groove (3 rev. max.)
	Use a wider insert
Poor Chip Control	Increase feed
	Use sharp tool
	Adjust coolant flow and concentration
Built-Up Edge	Select a PVD coated grade
	Increase speed
	Decrease feed
	Use sharp tool
	Use positive rake tools
	Adjust coolant flow and concentration
Insert Edge Chipping	Select a tougher grade
	Check for built-up edge
	Increase speed
	Decrease feed
	Check set-up, overhang of tool
Chatter	Increase speed
	Increase feed
	Adjust tool center height
	Check set-up, overhang of tool
Burr	Use sharp tool
	Use positive rake tools
	Adjust tool center height
	Select a PVD coated grade
Poor Surface Finish	Increase speed
	Use sharp tool
	Use positive rake tools
	Adjust coolant flow and concentration
	Check set-up, overhang of tool
	Dwell at bottom of groove (3 rev. max.)

V-LOC® TECHNICAL DATA

ValGROOVE™

SOLUTION TO COMMON THREADING PROBLEMS

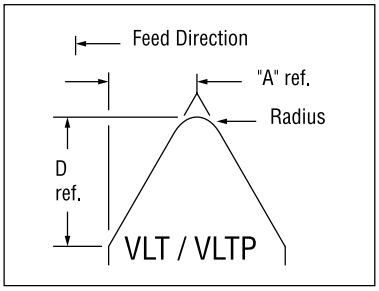
Problem	Solution
Shallow Thread Profile	Adjust center height
	Replace insert
Poor Tool Life	Decrease speed (SFM)
	Select wear resistant grade
	Apply coolant
Deformation	Decrease speed (SFM)
	Select wear resistant grade
	Apply coolant
	Reduce DOC on first pass
Uneven Flank Wear	Decrease number of passes
	Change infeed angle
Excessive Flank Wear	Decrease speed (SFM)
	Select wear resistant grade
	Change infeed angle
Trailing Edge Chipping	Select tougher grade
	Change infeed angle
Leading Edge Chipping	Reduce DOC on first pass
	Select tougher grade
Broken Nose	Reduce DOC on first pass
	Change infeed angle
	Adjust center height
	Select tougher grade
Built-Up Edge	Increase speed (SFM)
	Decrease number of passes
	Apply coolant
	Select positive rake angle
	Use PVD coated insert
Chatter	Reduce tool overhang
	Adjust center height
	Check insert for movement and reseat
	Increase speed (SFM)
Crest Burr or Torn Finish	Use topping insert
	Change infeed angle

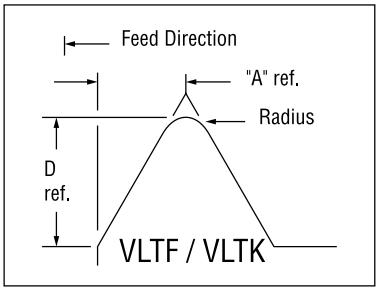
THREADING LIMITS WITH STANDARD INSERTS

60° VEE Threading Application Data

INSERT	Ref. D	Ref. A	Recommended threads per inch (tpi) 1)	
			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 4 1/2 tpi	6 tpi to 4 1/2 tpi
VLT-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	.040	44 tpi to 14 tpi	24 tpi to 12 tpi
VLTK-3	.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	36 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

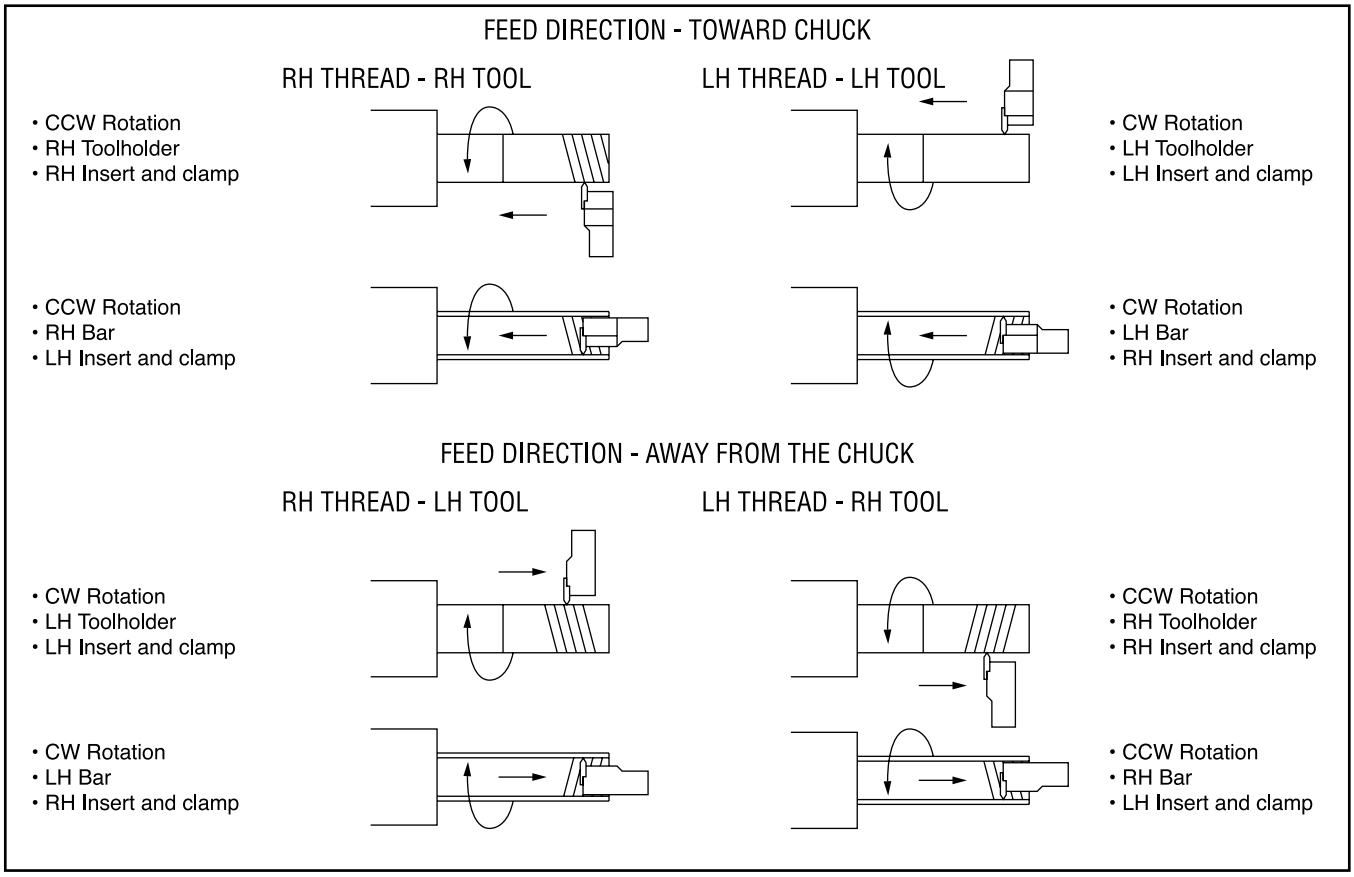
1) Recommended threads per inch are based on the maximum insert radius and class 2A and 2B thread specifications.





ValGROOVE™

DIFFERENT WAYS OF TURNING A THREAD



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	Tool Holder / Bar 1)	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

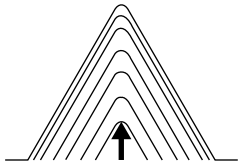
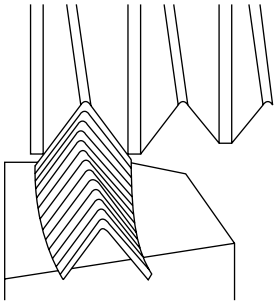
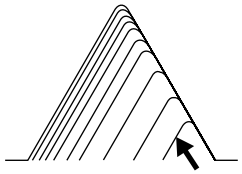
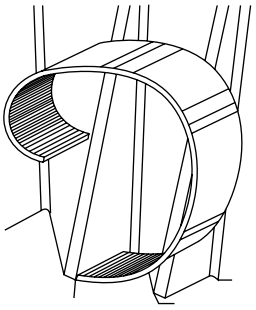
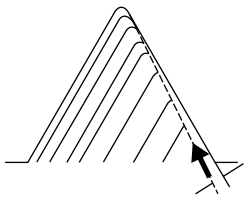
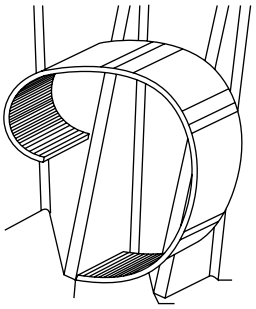
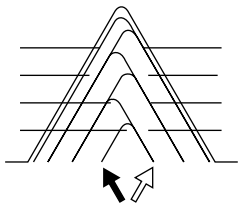
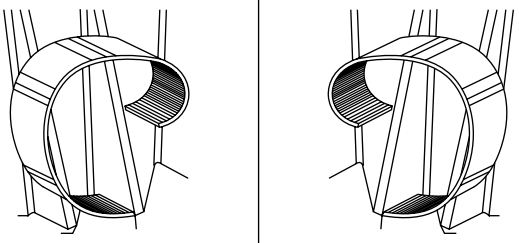
1) Right-hand bars use left-hand threading and grooving inserts and clamps.
Left-hand bars use right-hand threading and grooving inserts and clamps.

V-LOC® TECHNICAL DATA

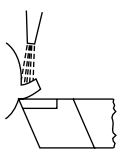
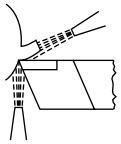
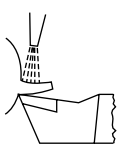
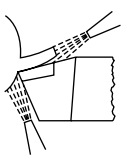
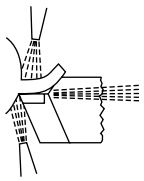
ValGROOVE™

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:

1. Fast heat removal.	2. Good surface coverage.	3. Non-corrosiveness.	4. Homogeneity and stability.	5. Good lubricant qualities.
				

Econ-O-Groove®

ValGROOVE™

General Purpose and Heavy Duty Econ-O-Groove® Grooving Tools

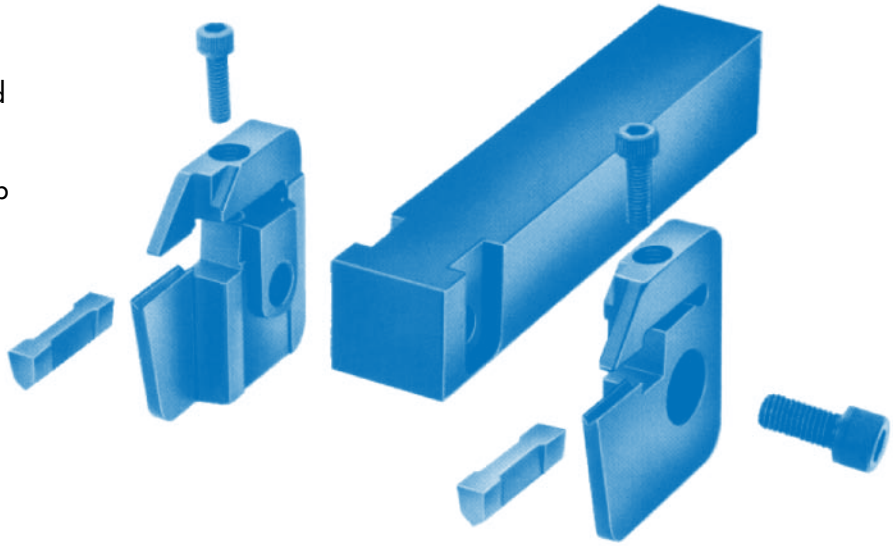
Valenite Econ-O-Groove® grooving tools are designed for basic O.D. operations. In addition, Heavy Duty Econ-O-Groove® holders accept anvils which can be used for trepanning and face grooving operations.

All Econ-O-Groove® grooving tools feature an integral clamp construction which is strong and versatile, and uses relatively few components. Only shanks, anvils, inserts, insert clamping screws, and anvil holding screws are required.

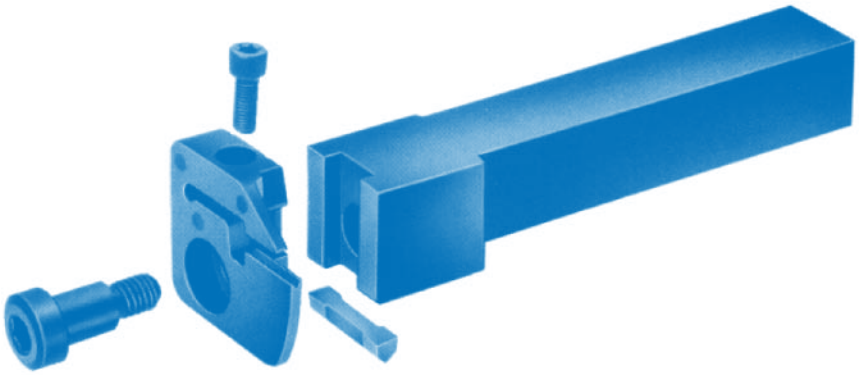
Econ-O-Groove® grooving tools are designed for better performance. The double ended indexable dogbone inserts used have a "V" bottom design which provides for precise indexing and positive retention. Both plain and chip control inserts are available in widths from 1/8" to 3/8", providing a maximum 13/16" depth of cut.

Note: The General Purpose designs and the Heavy Duty designs are not interchangeable.

General Purpose Econ-O-Groove® tool shanks offer the flexibility and economy of two way use, since the shanks are designed for both left and right side anvil mounting. The tools are appropriate for lighter fee rates and non-interrupted cuts. Plain or chip control inserts can be used.

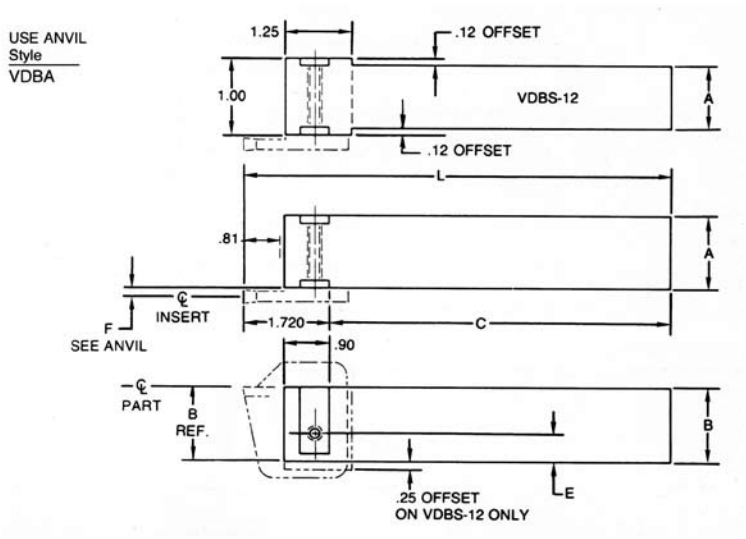


Heavy Duty Econ-O-Groove® tool shanks are designed for front anvil mounting, as shown, or for anvil mounting on left or right side only. These tools have a deeper keyway supported by a shoulder screw for anvil location, and perform well at heavier feed rates and in interrupted cuts. Plain or chip control inserts can be used.



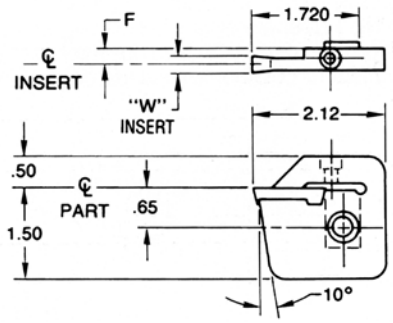
ValGROOVE™

Econ-O-Groove® GENERAL PURPOSE- VDBS
SIDE MOUNTING SHANKS



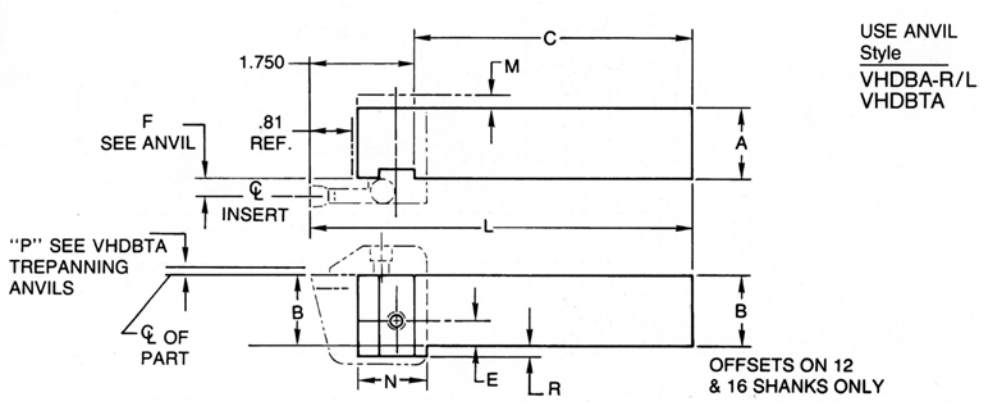
Part Number	Dimensions					Mounting Screw	EDP#
	A	B	C	E	L		
VDBS-12	0.75	0.75	4.28	0.09	6.00	5/16- 24 x 5/8 SHCS, H=1/4	**61759**
VDBS-16	1.00	1.00	4.28	0.34	6.00	5/16- 24 x 5/8 SHCS, H=1/4	**61760**
VDBS-20	1.25	1.25	5.28	0.59	7.00	5/16- 24 x 5/8 SHCS, H=1/4	**61761**
VDBS-24	1.50	1.50	6.28	0.84	8.00	5/16- 24 x 5/8 SHCS, H=1/4	**61762**

Econ-O-Groove® GENERAL PURPOSE- VDBA
ANVIL



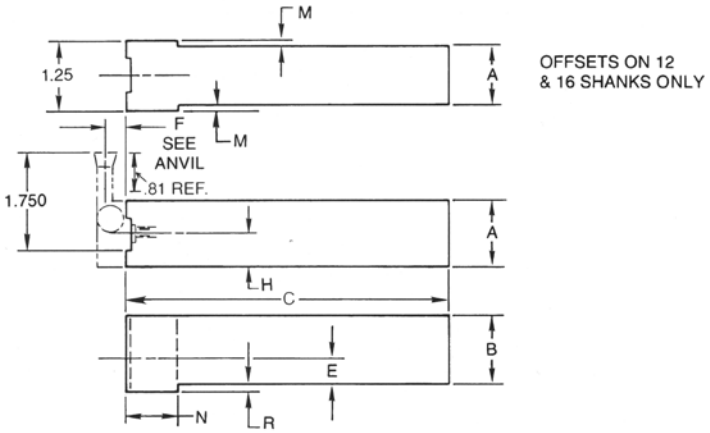
Part Number	Dimensions					Insert Series	Clamp Screw	EDP#	
	F	"W" Inch		"W" Metric					
		Min.	Max	Min.	Max.			Right Hand	Left Hand
VDBA 125 188 R/LA	0.337	0.125	0.188	-	0.157	'A'	10-32 x 5/8 SHCS, H=5/32	**61800**	**61799**
VDBA 188 218 R/LA	0.318	0.188	0.250	0.197	0.236	'A'	10-32 x 5/8 SHCS, H=5/32	**61802**	**61801**
VDBA 250 281 R/LB	0.318	0.250	0.281	0.236	0.276	'B'	10-32 x 5/8 SHCS, H=5/32	**61804**	**61803**
VDBA 281 344 R/LB	0.289	0.281	0.344	0.275	0.315	'B'	10-32 x 5/8 SHCS, H=5/32	**61806**	**61805**
VDBA 344 375 R/LB	0.250	0.344	0.375	-	0.354	'B'	10-32 x 5/8 SHCS, H=5/32	**61808**	**61807**

Econ-O-Groove® HEAVY DUTY VHDBS
SIDE MOUNTING SHANKS



Part Number	Dimensions								Mounting Screw	EDP#	
	A	B	C	E	L Ref.	M	N	R		Right Hand	Left Hand
VHDBS 12 R/L	0.75	0.75	4.32	0.0	6.00	0.25	1.30	0.50	PT-527, H= 5/16	**61771**	**61770**
VHDBS 16 R/L	1.00	1.00	4.32	0.25	6.00	-	1.30	0.25	PT-527, H= 5/16	**61773**	**61772**
VHDBS 20 R/L	1.25	1.25	5.32	0.50	7.00	-	-	-	PT-527, H= 5/16	**61775**	**61774**
VHDBS 24	1.50	1.50	6.32	0.75	8.00	-	-	-	PT-527, H= 5/16	**61776**	-

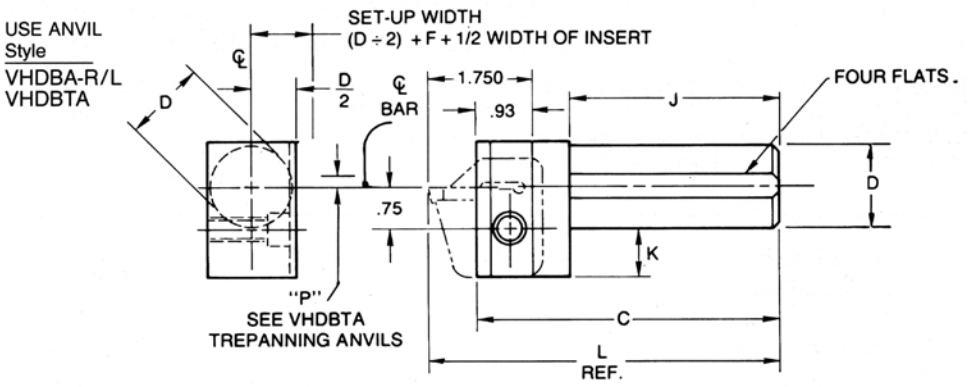
Econ-O-Groove® HEAVY DUTY VHDBSN
SIDE MOUNTING SHANKS



Part Number	Dimensions								Mounting Screw	EDP#
	A	B	C	E	H	M	N	R		
VHDBSN 12	.75	.75	6.00	.00	.38	.25	1.25	.50	PT-527, H= 5/16	**61782**
VHDBSN 16	1.00	1.00	6.00	0.25	0.50	0.12	1.25	0.25	PT-527, H= 5/16	**61783**
VHDBSN 20	1.25	1.25	7.00	0.50	0.62	-	-	-	PT-527, H= 5/16	**61784**
VHDBSN 24	1.50	1.50	8.00	0.75	0.87	-	-	-	PT-527, H= 5/16	**61785**

ValGROOVE™

Econ-O-Groove® HEAVY DUTY VHDBBR
FRONT MOUNTING SHANKS

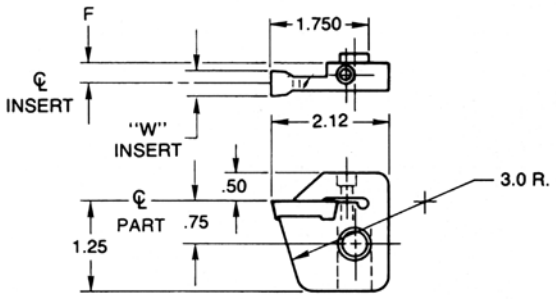


Part Number	Dimensions					Mounting Screw	EDP#	
	C	D	J	K	L		Right Hand	Left Hand
VHDBBR/L-150	8.00	1.50	6.50	0.50	8.82	PT-527, H= 5/16	**61794**	**61793**
VHDBBR-200	8.00	2.00	6.50	0.25	8.82	PT-527, H= 5/16	**61796**	-

Econ-O-Groove® VHDBA R/L
ANVILS

Dogbone Insert

USE INSERT
Style
VDB-A
VDB-B
VDB-RA
VDB-RB



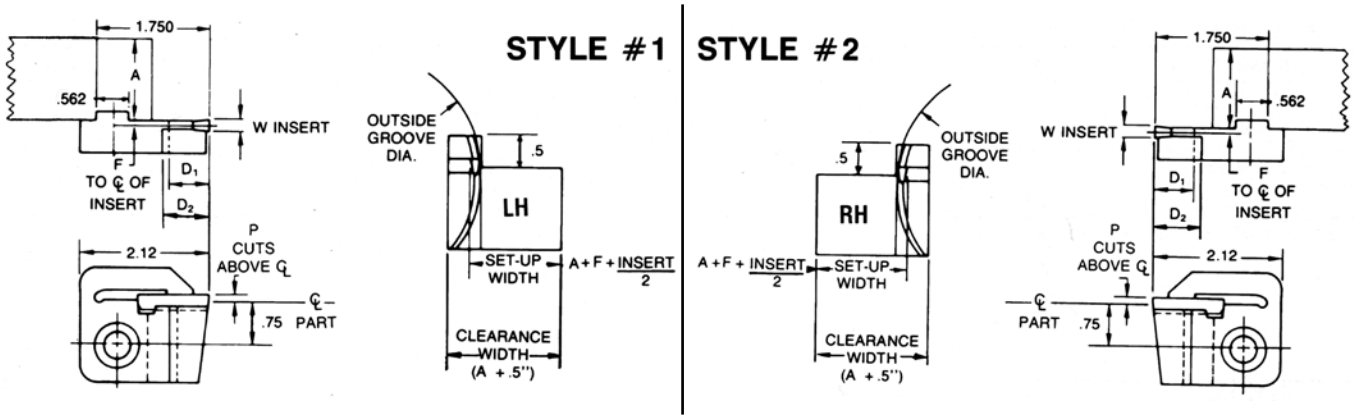
Part Number	Dimensions					Insert Series	Clamp Screw	EDP#	
	F	"W" Inch		"W" Metric					
		Min.	Max	Min.	Max.			Right Hand	Left Hand
VHDBA 125 188 R/L A	0.458	0.125	0.188	4.0	4.8	'A'	1/4-28 x 5/8SHCS	**61883**	**61882**
VHDBA 188 250 R/L A	0.438	0.188	0.250	4.8	6.0	'A'	1/4-28 x 5/8SHCS	**61885**	**61884**
VHDBA 250 375 R/L B	0.401	0.250	0.375	6.4	9.0	'B'	1/4-28 x 5/8SHCS	**61887**	**61886**

Econ-O-Groove® FACE GROOVING & TREPANNING ANVILS

FOR H.D. Econ-O-Groove® SHANKS

ValGROOVE™

These anvils and inserts designed to be used with Valenite Heavy Duty Econ-O-Groove® tool shanks, now make it possible to peform basic face grooving and tepanning operations with the convenience and cost efficiency of indexable inserts. Face grooving and trepanning can be preformed on any parts, such as oil seals which require a circular groove in the face.



Part Number		Dimensions						Clamp Screw	EDP#
		F	P	Outside Groove Dia		Maximum Depth of Cut			
Style 1	Style 2			Min.	Max.	D1	D2		
VHDBTA 1215 1 020		0.110	0.094	2.00	2.38	0.50	0.62	1/4-28 x 5/8SHCS	**61821**
	VHDBTA 1215 2 020	0.110	0.094	2.00	2.38	0.50	0.62	1/4-28 x 5/8SHCS	**61827**
VHDBTA 1215 1 0238		0.110	0.094	2.38	3.00	0.50	0.62	1/4-28 x 5/8SHCS	**61822**
	VHDBTA 1215 2 0238	0.110	0.094	2.38	3.00	0.50	0.62	1/4-28 x 5/8SHCS	**61828**
VHDBTA 1215 1 030		0.110	0.094	3.00	4.00	0.50	0.62	1/4-28 x 5/8SHCS	**61823**
	VHDBTA 1215 2 030	0.110	0.094	3.00	4.00	0.50	0.62	1/4-28 x 5/8SHCS	**61829**
VHDBTA 1215 1 040		0.110	0.094	4.00	6.00	0.50	0.62	1/4-28 x 5/8SHCS	**61824**
	VHDBTA 1215 2 040	0.110	0.094	4.00	6.00	0.50	0.62	1/4-28 x 5/8SHCS	**61830**
VHDBTA 1215 1 060		0.110	0.094	6.00	12.00	0.50	0.62	1/4-28 x 5/8SHCS	**61825**
	VHDBTA 1215 2 060	0.110	0.094	6.00	12.00	0.50	0.62	1/4-28 x 5/8SHCS	**61831**
VHDBTA 1215 1 120		0.110	0.094	12.00	18.00	0.50	0.62	1/4-28 x 5/8SHCS	**61826**
	VHDBTA 1215 2 120	0.110	0.094	12.00	18.00	0.50	0.62	1/4-28 x 5/8SHCS	**61832**

Inserts to be used with these anvils:
VDB 125 A 015
VDB 156 A 015
VDB 188 A 015
VDB 125R A
VDB 156R A
VDB 188R A
CAUTION
Do not use the following chip control inserts:
VDB 125 A 015C
VDB 156 A 015C
VDB 188 A 015C

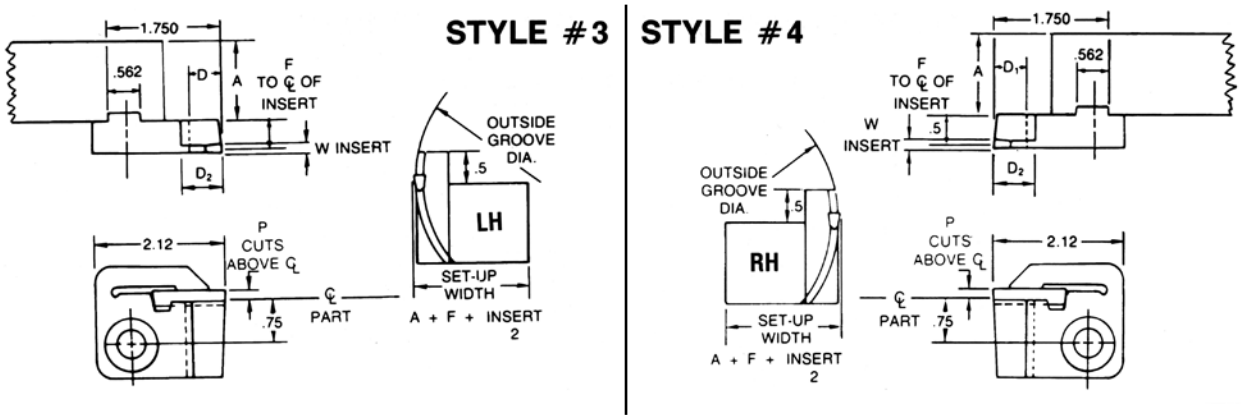
Anvils for .188 to .250 wide inserts

VHDBTA 1825 1 0238		0.140	0.094	2.38	3.00	0.62	0.75	1/4-28 x 5/8SHCS	**61846**
	VHDBTA 1825 2 0238	0.140	0.094	2.38	3.00	0.62	0.75	1/4-28 x 5/8SHCS	**61853**
VHDBTA 1825 1 030		0.140	0.094	3.00	4.00	0.62	0.75	1/4-28 x 5/8SHCS	**61847**
	VHDBTA 1825 2 030	0.140	0.094	3.00	4.00	0.62	0.75	1/4-28 x 5/8SHCS	**61854**
VHDBTA 1825 1 040		0.140	0.094	4.00	6.00	0.62	0.75	1/4-28 x 5/8SHCS	**61848**
	VHDBTA 1825 2 040	0.140	0.094	4.00	6.00	0.62	0.75	1/4-28 x 5/8SHCS	**61855**
VHDBTA 1825 1 060		0.140	0.094	6.00	12.00	0.62	0.75	1/4-28 x 5/8SHCS	**61849**
	VHDBTA 1825 2 060	0.140	0.094	6.00	12.00	0.62	0.75	1/4-28 x 5/8SHCS	**61856**
VHDBTA 1825 1 120		0.140	0.094	12.00	18.00	0.62	0.75	1/4-28 x 5/8SHCS	**61850**
	VHDBTA 1825 2 120	0.140	0.094	12.00	18.00	0.62	0.75	1/4-28 x 5/8SHCS	**61857**
VHDBTA 1825 1 180		0.140	0.094	18.00	40.00	0.62	0.75	1/4-28 x 5/8SHCS	**61851**

Inserts to be used with these anvils:
VDB 188 A 015
VDB 218 A 015
VDB 250 A 015
VDB 188R A
VDB 218R A
VDB 250R A
CAUTION
Do not use the following chip control inserts:
VDB 125 A 015C
VDB 156 A 015C
VDB 188 A 015C

ValGROOVE™

Econ-O-Groove® FACE GROOVING & TREPANNING ANVILS
FOR H.D. Econ-O-Groove® SHANKS



Part Number		Dimensions						Clamp Screw	EDP#
		F	P	Outside Groove Dia.		Maximum Depth of Cut			
Style 3	Style 4			Min.	Max.	D1	D2		
VHDBTA-12-15-2-020		.460	.094	2.00	2.38	.50	.62	1/4-28 x 5/8SHCS	**61833**
	VHDBTA-12-15-4-020	.460	.094	2.00	2.38	.50	.62	1/4-28 x 5/8SHCS	**61839**
VHDBTA-12-15-3-030		.460	.094	3.00	4.00	.50	.62	1/4-28 x 5/8SHCS	**61822**
	VHDBTA-12-15-4-030	.460	.094	3.00	4.00	.50	.62	1/4-28 x 5/8SHCS	**61841**
VHDBTA-12-15-3-040		.460	.094	4.00	6.00	.50	.62	1/4-28 x 5/8SHCS	**61836**
	VHDBTA-12-15-4-040	.460	.094	4.00	6.00	.50	.62	1/4-28 x 5/8SHCS	**61842**
VHDBTA-12-15-3-060		.460	.094	6.00	12.00	.50	.62	1/4-28 x 5/8SHCS	**61837**
	VHDBTA-12-15-4-060	.460	.094	6.00	12.00	.50	.62	1/4-28 x 5/8SHCS	**61843**
VHDBTA-12-15-3-120		.460	.094	12.00	18.00	.50	.62	1/4-28 x 5/8SHCS	**61838**
	VHDBTA-12-15-4-180	.460	.094	18.00	48.00	.50	.62	1/4-28 x 5/8SHCS	**61844**
Anvils for .188 to .250 wide inserts									
VHDBTA-18-25-3-020		.430	.094	2.00	3.00	.62	.75	1/4-28 x 5/8SHCS	**61858**
	VHDBTA-18-25-4-020	.430	.094	2.00	3.00	.62	.75	1/4-28 x 5/8SHCS	**61864**
VHDBTA-18-25-3-030		.430	.094	3.00	4.00	.62	.75	1/4-28 x 5/8SHCS	**61860**
	VHDBTA-18-25-4-030	.430	.094	3.00	4.00	.62	.75	1/4-28 x 5/8SHCS	**61866**
VHDBTA-18-25-3-040		.430	.094	4.00	6.00	.62	.75	1/4-28 x 5/8SHCS	**61861**
	VHDBTA-18-25-4-040	.430	.094	4.00	6.00	.62	.75	1/4-28 x 5/8SHCS	**61867**
VHDBTA-18-25-3-060		.430	.094	6.00	12.00	.62	.75	1/4-28 x 5/8SHCS	**61862**
	VHDBTA-18-25-4-060	.430	.094	6.00	12.00	.62	.75	1/4-28 x 5/8SHCS	**61868**
VHDBTA-18-25-3-120		.430	.094	12.00	18.00	.62	.75	1/4-28 x 5/8SHCS	**61863**
	VHDBTA-18-25-4-120	.430	.094	12.00	18.00	.62	.75	1/4-28 x 5/8SHCS	**61869**
	VHDBTA-18-25-4-180	.430	.000	18.00	48.00	.62	.75	1/4-28 x 5/8SHCS	**61870**

Inserts to be used with these anvils:
VDB 125 A 015
VDB 156 A 015
VDB 188 A 015
VDB 125R A
VDB 156R A
VDB 188R A

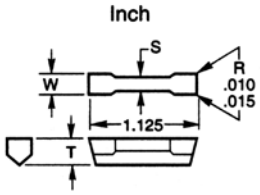
CAUTION
Do not use the following chip control inserts:
VDB 125 A 015C
VDB 156 A 015C
VDB 188 A 015C

Inserts to be used with these anvils:
VDB 188 A 015
VDB 218 A 015
VDB 250 A 015
VDB 188R A
VDB 218R A
VDB 250R A

CAUTION
Do not use the following chip control inserts:
VDB 125 A 015C
VDB 156 A 015C
VDB 188 A 015C

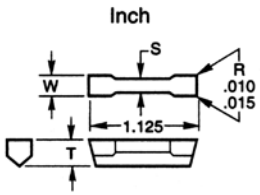
Econ-O-Groove® VDB INSERTS

ValGROOVE™



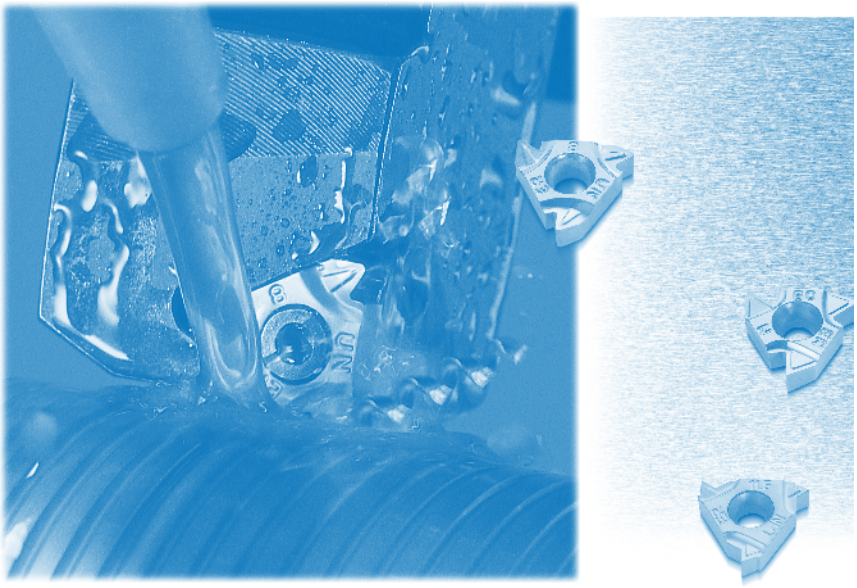
Part Number	Dimensions			Available Grades / EDP#								
	W	S	T	VN5	VN8	V1N	ST145	VC2	VC5	VC7	VC29	VC101
VDB 125 A 015	.125	.106	.250	**07034**	**07035**	**07033**	**07274**	**13988**	**13989**	**13990**	**13992**	**13991**
VDB 125 A 015C	.125	.106	.250	**07037**	**07038**	**07036**	**07275**	**13993**	**13994**	-	-	-
VDB 125 RA	.125	.106	.250	-	**07040**	**07039**	**07276**	**10700**	**10701**	-	-	**10703**
VDB 156 A 015	.156	.106	.250	-	**07042**	**07401**	-	**10704**	**10705**	-	-	-
VDB 156 A 015C	.156	.106	.250	-	**07044**	**07043**	-	-	-	-	-	-
VDB 156 RA	.156	.106	.250	-	**07045**	-	-	**10707**	-	-	-	-
VDB 188 A 015	.188	.144	.250	**07047**	**07048**	**07046**	**07278**	**10708**	**10709**	**10710**	-	**10711**
VDB 188 A 015C	.188	.144	.250	**07050**	**07051**	**07049**	**07279**	**10712**	-	-	-	-
VDB 188 RA	.188	.144	.250	-	**07053**	**07052**	**07280**	**10713**	**10714**	**10715**	-	-
VDB 218 A 015	.218	.144	.250	-	**07055**	**07054**	-	**13997**	**13998**	-	-	-
VDB 218 RA	.218	.144	.250	-	**07057**	-	-	**13999**	-	-	-	-
VDB 250 A 015	.250	.144	.250	**07059**	**07060**	**07058**	**07281**	**14000**	**14001**	-	-	-
VDB 250 A 015C	.250	.144	.250	**07062**	**07063**	**07061**	-	-	**10722**	-	-	-
VDB 250 B 015	.250	.144	.337	**07065**	**07066**	**07064**	**07282**	**10723**	**14003**	**14055**	-	**14007**
VDB 250 B 015C	.250	.144	.337	**07068**	**07069**	**07067**	-	**14009**	-	-	-	-
VDB 250 RA	.250	.144	.250	-	**07071**	**07070**	**07284**	**14013**	-	-	-	-
VDB 250 RB	.250	.144	.337	-	**07073**	**07072**	**07285**	**10730**	**10731**	-	-	-
VDB 281 B 01 5	.281	.202	.337	-	-	-	-	**14017**	-	-	-	-
VDB 312 B 015	.312	.202	.337	-	-	**07074**	-	**14019**	**14021**	-	-	-
VDB 312 B 015C	.312	.202	.337	**07076**	**07077**	-	-	-	-	-	-	-
VDB 312 RB	.312	.202	.337	-	-	-	-	**14022**	**14023**	-	-	-
VDB 375 B 01 5	.375	.276	.337	-	**07079**	**07078**	-	**10738**	**10739**	-	-	-
VDB 375 RB	.375	.276	.337	-	-	-	-	**14025**	**14026**	-	-	-

Econ-O-Groove® VDB INSERTS



Part Number	Dimensions			Available Grades / EDP#		
	W	S	T	VC2	VC5	VC7
VDB 4 A	.157	106	.250	**14027**	**14028**	-
VDB 4 R A	.157	.106	.250	**10746**	-	-
VDB 5 A	.197	.144	.250	**10747**	**14030**	**14031**
VDB 5 RA	.197	.144	.250	**14032**	-	-
VDB 6 A	.236	.144	.250	**14034**	-	-
VDB 6 RB	.236	.170	.337	**14036**	-	**14037**
VDB 8 B	.315	.202	.337	**10758**	-	-

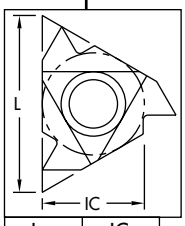
VTHREAD®



NOMENCLATURE FOR VThread® INSERTS

ValTHREAD™

16 E R M 12 UN M



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

E = External
I = Internal

R = Right Hand
L = Left Hand

M= Chipbreaker

Partial Profile Insert Type			
		Pitch Range	
Type	L	(mm)	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 - 12	72 - 2

PARTIAL PROFILES
60 - Partial Profile
55 - 55 Partial Profile

FULL PROFILE THREAD STANDARDS
ISO - ISO Metric
UN - American UN
W - Whitworth, BSW
NPT - American National Pipe Thread
NPTF - American National Pipe Thread (Dryseal)
BSPT - British Standard Pipe Thread
ACME - American Acme
STACME - American Stub Acme
UNJ - Controled Root Radius
TR - Trapez Din 103
RD - Round Din 405
ABUT - American Buttress
API - API Round
- API Buttress Casing
- API Rotary Shoulder
- Extreme Line

Multi-tooth Style
& # of Teeth
API Size & Taper

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:
METRIC:
2020 = 20mm x 20mm
INCH:
1500 = 1.5" x 1.5"

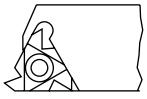
INTERNAL TOOLHOLDERS
Round Shank:
METRIC:
0025 = 25mm Diameter
INCH:
0750 = 0.75" Diameter

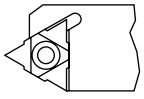
TOOLHOLDER LENGTH			
		mm	Inch
D	=	60	2.5
F	=	80	3.25
H	=	100	4.0
K	=	125	5.0
L	=	140	5.5
M	=	150	6.0
P	=	170	7.0
R	=	200	8.0
S	=	250	10.0
T	=	300	12.0
U	=	350	14.0
V	=	400	16.0

Pocket Size	
Lmm	IC
06	5/32
08	3/16
11	1/4
16	3/8
22	1/2
27	5/8
22U	1/2U (1)
27U	5/8U (1)

B = Coolant Bore
C = Carbide Shank
O = Offset Style
A = API (Oil)
D = Drop Head

Standard Style Insert and Toolholder Pocket



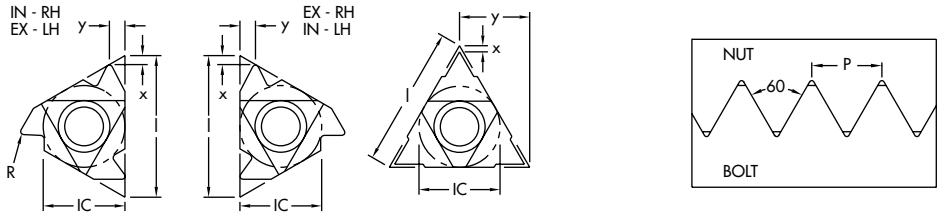


U-Style Insert and Toolholder Pocket

(1) NOTE: U STYLE Insert and Toolholder Pocket

ValTHREAD™

VThread® PARTIAL PROFILE INSERTS - 60°



STANDARD STYLE (1) U-STYLE (2)

External

Part Number		Dimensions				Pitch TPI	Available Grades / EDP#					
Right Hand	Left Hand	IC (in.)	X	Y	R		VC5	VC29	VC901	VC905	VC929	VC942
16 ER A 60		.375	.031	.035	.002	48-16	08001	08002	-	01821	01822	10948
16 ER AG 60			.047	.067	.002	48-8	08004	08005	01825	01826	01827	10949
	16 EL AG 60		.047	.067	.002	48-8	07998	•	-	01818	•	-
16 ER G 60			.047	.067	.007	14-8	08007	08008	01829	01830	01831	•
	16 EL G 60		.047	.067	.007	14-8	07999	•	-	•	•	-

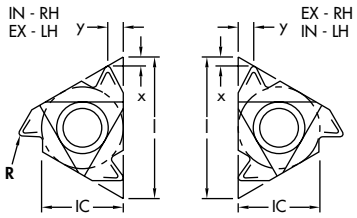
Internal

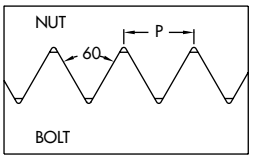
Part Number		Dimensions				Pitch TPI	Available Grades / EDP#					
Right Hand	Left Hand	IC (in.)	X	Y	R		VC5	VC29	VC901	VC905	VC929	VC942
11 IR A 60		.250	.031	.035	.002	48-16	07996	07997	-	01816	01817	-
	11 IL A 60						•	•	-	01814	01815	-
16 IR A 60		.375	.031	.035	.002	48-16	•	•	01835	01836	01837	14084
	16 IL A 60						•	•	-	-	01832	-
	16 IR G 60			.047	.067	.005	14-8	08012	08013	01842	01843	01844
	16 IL G 60						•	•	-	01834	•	-
22 IR N 60		.500	.067	.098	.009	7-5	08018	08019	-	01852	01853	-

• Denotes non stock standard - 2 week delivery Order Example - If a 1/2 (.500) I.C. insert is selected to make a 60 degree external right hand thread for a pitch in the range of 7 to 5 threads per inch (TPI) **Order Item: 22 ER N 60**

VThread® PARTIAL PROFILE 60° INSERTS
CHIPBREAKER STYLE

ValTHREAD™





STANDARD STYLE (1)

External

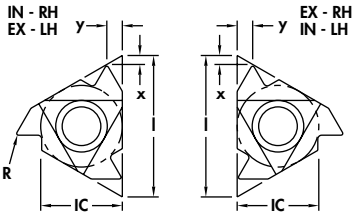
Part Number		Dimensions				Pitch TPI	Available Grades / EDP#			
Right Hand	Left Hand	IC (in.)	X	Y	R		VC901	VC905	VC922	VC929
16 ERM A 60		.375	.031	.035	.002	48-16	-	01752	-	-
16 ERM AG 60		.375	.047	.067	.002	48-8	-	01753	01754	01755
16 ERM G 60		.375	.047	.067	.007	14-8	-	01756	-	01757
22 ERM N 60		.500	.067	.098	.013	7-5	-	01763	-	-

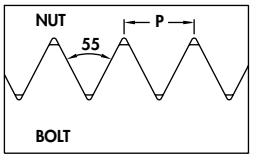
Internal

Part Number		Dimensions				Pitch TPI	Available Grades / EDP#			
Right Hand	Left Hand	IC (in.)	X	Y	R		VC901	VC905	VC922	VC929
06 IRM A 60		.156	.024	.024	.002	48-20	01748	-	-	-
16 IRM AG 60		.375	.047	.067	.002	48-8	-	01758	01759	01760
16 IRM G 60		.375	.047	.067	.005	14-8	-	01761	-	01762

- Special subject to quote

VThread® PARTIAL PROFILE 55° INSERTS





STANDARD STYLE (1)

External

Part Number		Dimensions				Pitch TPI	Available Grades / EDP#			
Right Hand	Left Hand	IC (in.)	X	Y	R		VC5	VC29	VC905	VC929
16 ER AG 55		.375	.047	.067	.002	48-8	08003	•	01823	01824
16 ER G 55			.047	.067	.008	14-8	08006	•	01828	•
22 ER N 55		.500	.067	.098	.017	7-5	•	•	01847	•

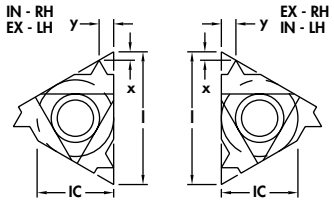
Internal

Part Number		Dimensions				Pitch TPI	Available Grades / EDP#			
Right Hand	Left Hand	IC (in.)	X	Y	R		VC5	VC29	VC905	VC929
16 IR AG 55		.375	.047	.067	.002	48-8	08009	•	01838	
	16 IL AG 55						•	•	•	••

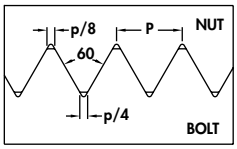
• Denotes non stock standard

ValTHREAD™

VThread® ISO - 60° EXTERNAL INSERTS



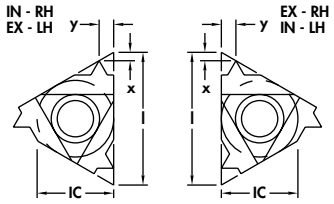
STANDARD STYLE (1)



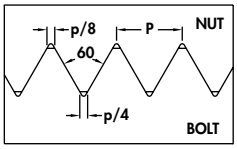
Part Number		Dimensions			Pitch	Available Grades / EDP#			
Right Hand	Left Hand	IC (in.)	X	Y		VC5	VC29	VC905	VC929
16 ER 1,0 ISO		.375	.028	.028	1.0	•	08126	02060	02061
16 ER 1,5 ISO			.031	.039	1.5	08128	08129	02064	02065
	16 EL 1,5 ISO		.031	.039	1.5	•	•	02055	•
16 ER 2,0 ISO			.039	.051	2.0	•	08131	02068	02069
16 ER 3,0 ISO			.047	.063	3.0	•	•	02072	02073
	16 EL 3,0 ISO		.047	.063	3.0	•	•	02056	•

• Denote non stock standard

VThread® ISO - 60° INTERNAL INSERTS



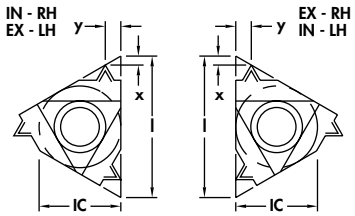
STANDARD STYLE (1)



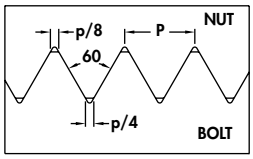
Part Number		Dimensions			Pitch	Available Grades / EDP#			
Right Hand	Left Hand	IC (in.)	X	Y		VC5	VC29	VC905	VC929
11 IR 1,5 ISO		.250	.031	.039	1.5			02054	
16 IR 1,5 ISO		.375	.031	.039	1.5	08141	08142	02080	02081
16 IR 2,0 ISO			.039	.051	2.0	08145	08146	02084	02085
16 IR 3,0 ISO			.043	.059	3.0			02088	02089

• Denote non stock standard

VThread® 60° ISO INSERTS
CHIPBREAKER STYLE



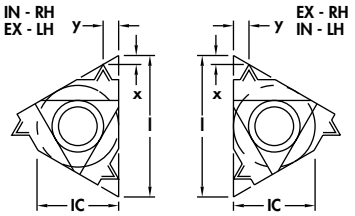
STANDARD STYLE (1)



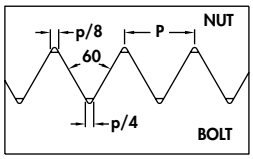
Part Number		Dimensions			Pitch	Available Grades / EDP#				
Right Hand	Left Hand	IC (in.)	X	Y		VC5	VC29	VC905	VC922	VC929
16 ERM 1,5 ISO		.375	.031	.039	1.5	-	-	**01793**	-	**01794**
16 ERM 3,0 ISO			.047	.063	3.0	-	-	**01798**	-	-

- Special subject to quote

VThread® 60° UN EXTERNAL INSERTS
CHIPBREAKER STYLE



STANDARD STYLE (1)

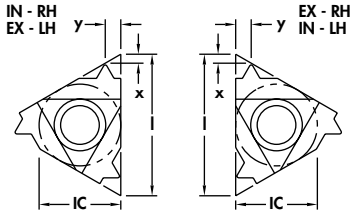


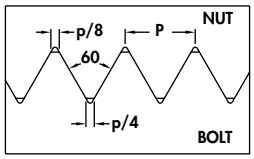
Part Number		Dimensions			Pitch	Available Grades / EDP#				
Right Hand	Left Hand	IC (in.)	X	Y		VC5	VC29	VC905	VC922	VC929
16 ERM 16 UN		.375	.035	.043	**16**	-	-	**01770**	**01771**	**01772**
16 ERM 12 UN			.043	.055	**12**	-	-	**01765**	**01766**	**01767**
16 ERM 8 UN			.043	.059	**8**	-	-	**01781**	-	**01782**

- Special subject to quote

ValTHREAD™

VThread® UN - 60° EXTERNAL



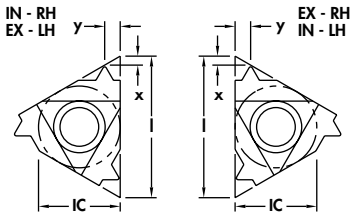


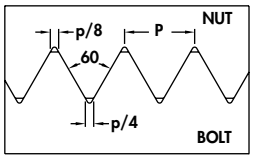
STANDARD STYLE (1)

Part Number		Dimensions			Pitch TPI	Available Grades / EDP#			
Right Hand	Left Hand	IC (in.)	X	Y		VC5	VC29	VC905	VC929
16 ER 32 UN		.375 (16,5)	.024	.024	32	08061	08062	01941	01942
16 ER 20 UN			.031	.035	20	08055	08056	01934	01935
16 ER 18 UN			.031	.039	18	08053	08054	01932	01933
16 ER 16 UN			.035	.043	16	08051	08052	01929	01930
	16 EL 16 UN		.035	.043	16	•	•	01914	01915
16 ER 14 UN			.039	.047	14	08049	08050	01927	01928
16 ER 12 UN			.043	.055	12	•	08048	01923	01924
	16 EL 12 UN					•	•	01912	01913
16 ER 10 UN			.043	.059	10	08046	•	01917	01918
	16 EL 10 UN					•	•	01911	•
16 ER 8 UN			.047	.063	8	08074	•	01951	01952
	16 EL 8 UN					•	•	01916	•

• Denote non stock standard

VThread® UN - 60° INTERNAL



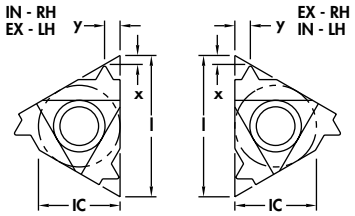


STANDARD STYLE (1)

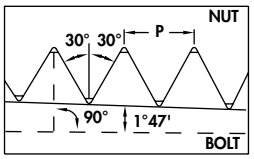
Part Number		Dimensions			Pitch TPI	Available Grades / EDP#			
Right Hand	Left Hand	IC (in.)	X	Y		VC5	VC29	VC905	VC929
11 IR 20 UN		.250 (Mj	.031	.035	20	•	•	01902	01903
11 IR 18 UN			.031	.039	18	08040	08041	01900	01901
11 IR 14 UN			.035	.043	14	08036	08037	01896	01897
16 IR 20 UN		.375 (16,5)	.031	.035	20	•	08084	01975	01976
16 IR 18 UN			.031	.039	18	•	08083	01973	01974
16 IR 16 UN			.035	.043	16	08081	08082	01971	01972
	16 IL 16 UN		.043	.055	12	•	•	•	01957
16 IR 12 UN						08077	08078	01965	01966
	16 IL 12 UN		.043	.059	8	a	a	01955	01956
16 IR 8 UN						08120	08083	01973	01974
	16 IL 8 UN					•	•	•	01959

• Denote non stock standard

VThread® NPT INSERTS
NATIONAL PIPE THREAD



STANDARD STYLE (1)



External

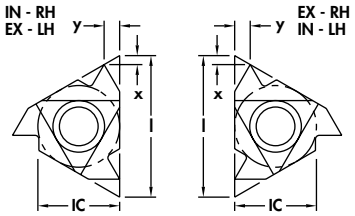
Part Number		Dimensions			Pitch TPI	Available Grades / EDP#			
Right Hand	Left Hand	IC (in.)	X	Y		VC5	VC29	VC905	VC929
16 ER 14 NPT		.375	.035	.047	14	08180	08181	02182	02183
16 ER 11.5 NPT			.043	.059	11.5	08178	08179	02179	02180
	16 EL 11.5 NPT					•	•	•	02178
16 ER 8 NPT			.051	.071	8	08184	08185	02188	02189

Internal

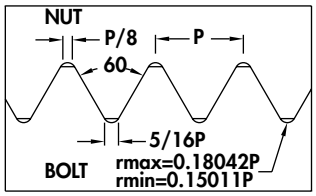
Part Number		Dimensions			Pitch TPI	Available Grades / EDP#			
Right Hand	Left Hand	IC (in.)	X	Y		VC5	VC29	VC905	VC929
16 IR 14 NPT		.375	.035	.047	14	08187	08188	02194	02195
16 IR 11.5 NPT			.043	.059	11.5	•	08186	02190	02191
16 IR 8 NPT			.051	.071	8	•	08189	02196	02197

• Denote non stock standard

VThread® UNJ INSERTS
EXTERNAL - 60°



STANDARD STYLE (1)

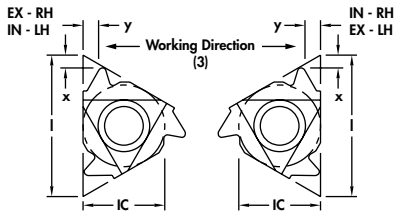


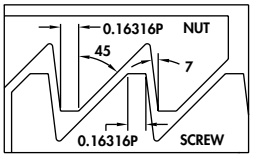
External

Part Number		Dimensions			Pitch TPI	Available Grades / EDP#			
Right Hand	Left Hand	IC (in.)	X	Y		VC5	VC29	VC905	VC929
16ER20UNJ		.375(16,5)	.031	.035	20	08245	08246	02326	02327
16 ER 18 UNJ			.031	.039	18	08243	08244	02324	02325
16 ER 16 UNJ			.031	.039	16	08241	08242	02322	02323
16 ER 12 UNJ			.043	.055	12	08237	08238	02318	02319

ValTHREAD™

VThread® AMERICAN BUTTRESS THREAD FORM INSERTS





STANDARD STYLE (1)

External

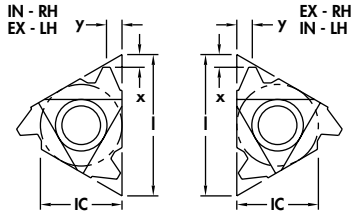
Part Number		Dimensions			Pitch	Available Grades / EDP#			
Right Hand	Left Hand	IC (in.)	X	Y	TPI	VC5	VC29	VC905	VC929
16 ER 12 ABUT		.375	.055	.079	12	08256	•	02386	02387
22 ER 8 ABUT		.500	.083	.130	8	•	•	02391	•
22 ER 6 ABUT			.083	.134	6	•	08258	•	02390

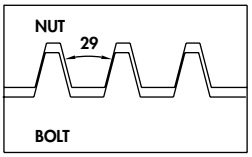
Internal

Part Number		Dimensions			Pitch	Available Grades / EDP#			
Right Hand	Left Hand	IC (in.)	X	Y	TPI	VC5	VC29	VC905	VC929
16 IR 12 ABUT		.375	.055	.079	12	08257	•	02388	02389
16 IR 8 ABUT		.500	.083	.130	8	•	•	•	02392

• Denote non stock standard

VThread® 29° ACME INSERTS





STANDARD STYLE (1)

External

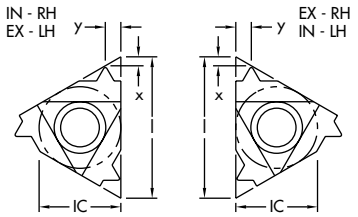
Part Number		Dimensions			Pitch	Available Grades / EDP#			
Right Hand	Left Hand	IC (in.)	X	Y	TPI	VC5	VC29	VC905	VC929
16 ER 12 ACME		.375	.043	.047	12	•	08192	02222	02223
16 ER 8 ACME		.375	.059	.059	8	08194	08195	02226	02227
22 ER 6 ACME		.500	.071	.083	6	•	08203	02242	02243
	22 EL 6 ACME	.500	.071	.083	6	•	•	•	02239

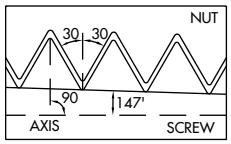
Internal

Part Number		Dimensions			Pitch	Available Grades / EDP#			
Right Hand	Left Hand	IC (in.)	X	Y	TPI	VC5	VC29	VC905	VC929
16 IR 8 ACME		.375	.059	.059	8	08200	08201	02236	02237
	16 IL 8 ACME	.375	.059	.059	8	•	•	•	02228
22 IR 5 ACME		.500	.079	.091	5	08205	08206	02246	02247
	22 IL 5 ACME	.500	.079	.091	5	•	•	02244	•

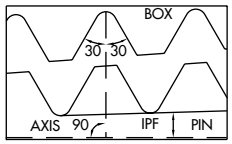
• Denote non stock standard

VThread® API OIL THREADS





API ROUND



ROTARY SHOULDERED CONNECTIONS

API (OIL) - Round

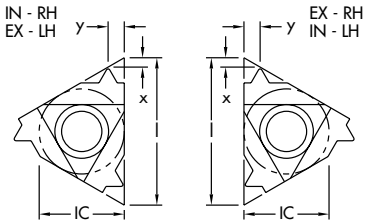
Part Number		Dimensions			Pitch TPI	Taper IPF	Size or Connection#	Available Grades / EDP#			
External	Internal	IC (in.)	X	Y				VC5	VC29	VC905	VC929
16 ER 8 API RD		.375	.051	.063	8	0.75	4 1/2-20	•	•	**02360**	**02361**
	16 ER 8 API RD	.375	.051	.063	8	0.75	4 1/2-20	•	•	**02364**	**02365**
16 ER 10 API RD		.375	.059	.055	10	0.75	1.050-3 1/2	•	•	**02359**	•
	16 ER 10 API RD	.375	.059	.055	10	0.75	1.050-3 1/2	•	•	**02362**	**02363**

Rotary Shouldered Connections

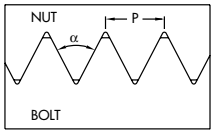
Part Number		Dimensions			Pitch TPI	Taper IPF	Size or Connection#	Available Grades / EDP#			
External	Internal	IC (in.)	X	Y				VC5	VC29	VC905	VC929
22 ER 5 API 403		.500	.071	.098	5	3	2 3/8- 4 1/2REG	•	•	•	**02367**
	22 ER 5 API 403	.500	.071	.098	5	3		•	•	**02370**	**02371**

• Denote non stock standard

VThread® MINIATURE AND ULTRA MINIATURE INSERTS



STANDARD STYLE (1)



Partial Profile

Partial Profile - 60 and 55 Degrees

Part Number		Dimensions			Pitch TPI	Grades / EDP#	
Right Hand	Left Hand	IC (in.)	X	Y		VC901	VC942
06 IR A60		.156	.020	.024	48-20	**01807**	**10945**
08 IR A55		.187	.024	.028	48-20	**01808**	•
08 IR A60		.187	.024	.028	48-20	**01809**	**14083**

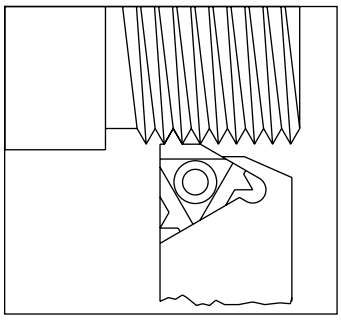
Partial Profile - 60 Degrees, Chipbreaker Style

Part Number		Dimensions			Pitch TPI	Grades / EDP#	
Right Hand	Left Hand	IC (in.)	X	Y		VC901	VC942
06 IRM A60		.156	.024	.024	48-20	**01748**	-
08 IRM A60		.187	.024	.028	48-20	**01749**	-

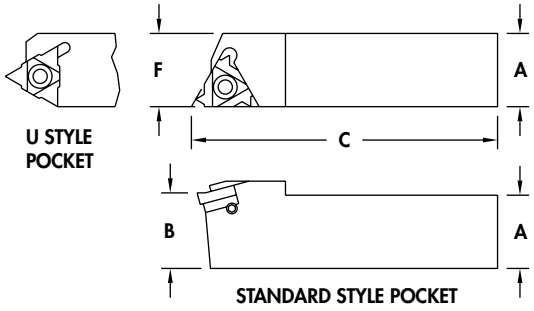
• Denote non stock standard - Special subject to quote

ValTHREAD™

VThread® EXTERNAL TOOLHOLDERS



Right hand shown, left hand opposite



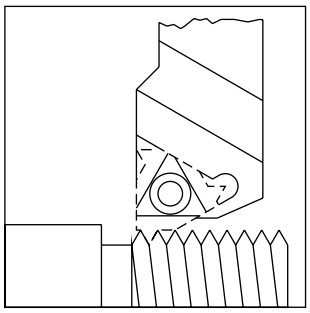
Inch Toolholders

Part Number	Dimensions				EDP#
	IC	A=B	C	F	
SER 0500 F16	.375	0.500	3.25	0.630	**58521**
SER 0625 H16	.375	0.625	4.00	0.630	**58522**
SER 0750 K16	.375	0.750	5.00	0.750	**58523**
SER 1000 M16	.375	1.000	6.00	1.000	**58525**

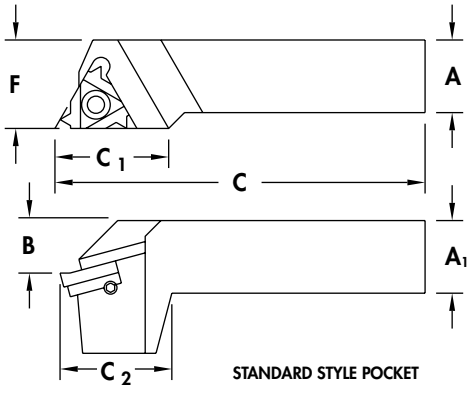
Metric Toolholders

Part Number	Dimensions				EDP#
	IC mm	A=B mm	C mm	F mm	
SER 12 12 F16	16	12	80	16	**58533**
SER 25 25 M16	16	25	150	25	**58546**

VThread® EXTERNAL DROPHEAD TOOLHOLDERS



Right hand shown, left hand opposite

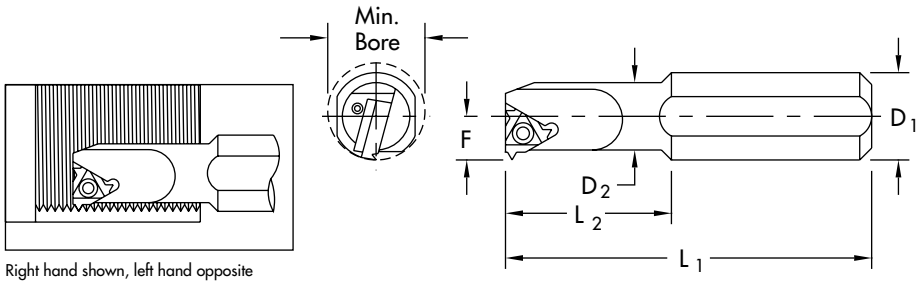


Inch Toolholders

Part Number		Dimensions							EDP#
Right Hand	Left Hand	IC (in)	A mm	A1 mm	C mm	C1 mm	C2 mm	F mm	
SER 1000 M16D		0.375	1.000	1.000	6.00	0.840	1.500	1.25	**58526**
	SER 1000 M16D	0.375	1.000	1.000	6.00	0.840	1.500	1.25	•

• Denote non stock standard

VThread® INTERNAL BORING BARS



Right hand shown, left hand opposite

STANDARD STYLE POCKET

Inch Boring Bars

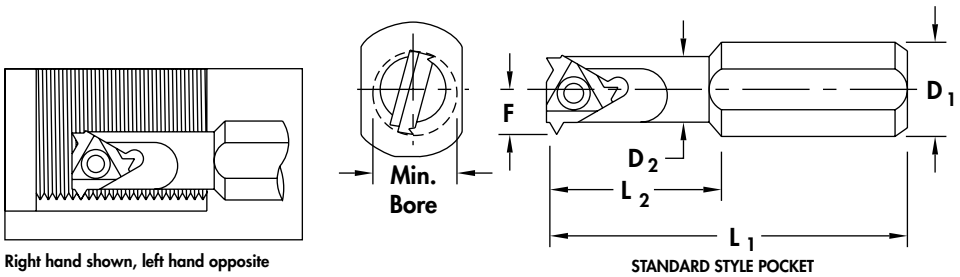
Part Number	*	Dimensions							EDP#
		IC (in)	D1	D2	Min. Bore	L1	L2	F	
SIR 0375 K11		0.250	0.625	0.380	0.470	5.00	1.00	0.280	**58606**
SIR 0500 M16		0.375	0.625	0.500	0.640	6.00	1.25	0.390	**58609**
SIR 0625 P16		0.375	0.750	0.620	0.750	7.00	1.57	0.450	**58611**
SIR 0750 P16		0.375	0.750	0.750	0.900	7.00		0.510	**58613**
SIR 1000 R16		0.375	1.000	1.000	1.160	8.00		0.650	**58615**

Metric Boring Bars

Part Number	*	Dimensions							EDP#
		IC mm	D1 mm	D2 mm	Min. Bore	L1 mm	L2 mm	F mm	
SIR 0016 P16	*	16	20	16	19	170	40	11,7	**58584**
SIR 0020 P16		16	20	20	24	170		13,7	**58586**
SIR 0025 R16		16	25	25	29	200		16,2	**58588**

* Items complete without anvil

VThread® MINIATURE AND ULTRA MINIATURE INTERNAL BORING BARS



Right hand shown, left hand opposite

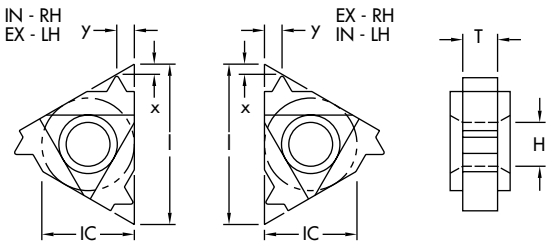
STANDARD STYLE POCKET

Inch Boring Bars

Part Number	Dimensions							Shank Type	EDP#
	IC (in)	D1	D2	Min. Bore	L1	L2	F		
SIR 0205 H06	0.156	0.500	0.200	0.240	4.00	0.470	0.170	**Steel**	**58599**
SIR 0205 H06C	0.156	0.250	0.200	0.240	4.00	1.020	0.170	**Carbide**	**58600**
SIR 0205 H06	0.187	0.625	0.260	0.310	5.00	0.700	0.210	**Steel**	**58601**
SIR 0205 H06C	0.187	0.312	0.260	0.310	5.00	1.220	0.210	**Carbide**	**58602**

ValTHREAD™

VThread® COMMON INSERT DIMENSIONS CHART



Nomenclature

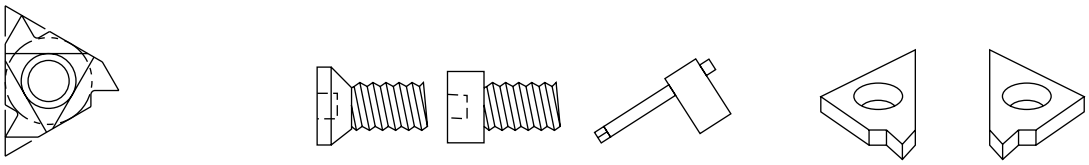
IC = Inscribed Circle
L = Theoretical Cutting Edge Length
T = Insert Thickness
H = Insert Hole Size

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



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	CAE27U
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

VThread® APPLICATION DATA

ValTHREAD™

CUTTING MATERIALS - PHYSICAL VAPOR DEPOSITION (PVD) COATED GRADES

Valenite Grade	ISO Class	Industry Class	Description	Materials	Working Methods & Conditions
VC901	P40-50 M30-40 K30-40	C5 C1	TiN PVD Coated Heavy Duty Grade For Excellent Toughness	Carbon Steels, Alloy Steels Stainless Steels, Cast Irons Non-Ferrous Materials	General purpose grade for low cutting speeds. Especially suited for small internal threads.
VC922	P20-40 M20-30 K20-30	C5, C6 C1, C2	TiAlN PVD Coated, Sub-micron Medium Duty Grade Excellent Wear And Toughness	Carbon Steels, Hard Alloys Stainless Steels Heat Resistant Alloys	An excellent grade for low to medium cutting speeds.
VC929	P05-10 M10-20 K10-15	C7, C8 C2, C3	TiN PVD Coated Light Duty Grade Excellent Wear, High Lubricity	Carbon Steels, Alloy Steels, Stainless Steels, Cast Irons Non-Ferrous Materials	An excellent grade for medium to high cutting speeds.
VC905	P15-35 M10-20	C6	TiN PVD Coated Medium Duty Grade Good Deformation Resistance	Carbon Steels Alloy Steels Cast Steels	General purpose grade with a wide application range.
VC942	---	---	TiN PVD Coated High Speed Steel Grade Excellent Edge Strength	Carbon Steels Alloy Steels, Stainless Steels, and Non-Ferrous.	Heavy Duty HSS grade for super low speeds. Especially suited for small internal threads.

Uncoated

VC5	P20-40 M20-30	C5	Uncoated Carbide General Purpose Grade Good Deformation Resistance	Steel, Cast Steel 300 series stainless steels.	General purpose grade for wide variety of steels in a wide range of cutting conditions.
VC29	K10-20	C2, C3	Uncoated Micro-grain Carbide Light Duty Grade Excellent Wear Resistance	Stainless Steels Cast Irons Non-Ferrous & Aluminum	An excellent light duty grade where sharp edges and good wear resistance are required.

Cermet

VC620	P05-25 M10-20	C7, C8	TiC/TiN Cermet Light Duty Grade Excellent Wear, High Lubricity	Carbon Steels, Alloy Steels, Stainless Steels, Cast Irons, Aluminum Alloys	Excellent for higher speeds on soft materials. Especially suited to prevent build-up and cratering.

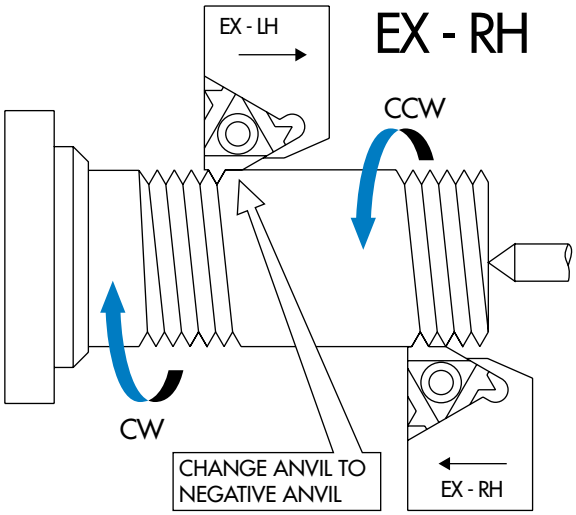
VALENITE GRADES AND CUTTING SPEED SELECTION (SFM/m/min)

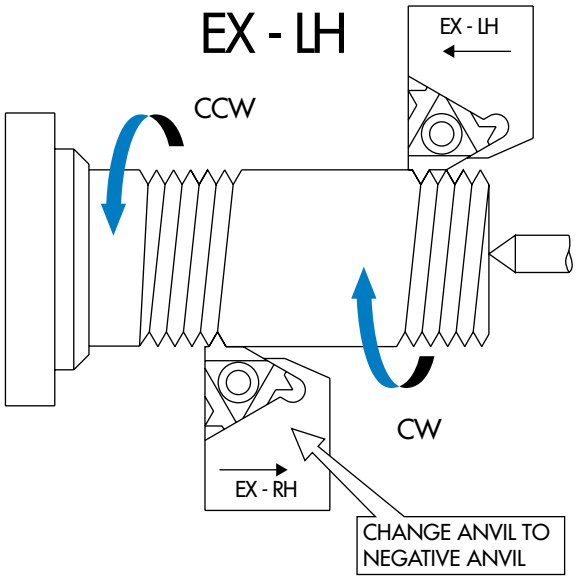
	Material Category	VC901 Low	VC901 High	VC922 Low	VC922 High	VC929 Low	VC929 High	VC905 Low	VC905 High	VC942 Low	VC942 High	VC5 Low	VC5 High	VC29 Low	VC29 High	VC620 Low	VC620 High
STEELS	Free Machining & Low Carbon Steels	200	450	300	740	330	830	350	800	50	130	180	400	-	-	350	900
		65	*135*	*90*	*225*	*100*	*250*	*105*	*245*	*15*	*40*	*55*	*120*	-	-	*105*	*227*
	Medium Carbon & High Carbon Steels	180	400	240	570	260	590	300	650	35	85	130	300	-	-	300	700
		55	*125*	*75*	*175*	*80*	*180*	*90*	*200*	*10*	*25*	*40*	*90*	-	-	*90*	*215*
	Alloy Steels & Easy-To-Machine Tool Steels	130	300	180	400	235	390	250	400	25	75	100	145	-	-	250	500
		40	*90*	*45*	*125*	*70*	*120*	*75*	*125*	*8*	*23*	*30*	*45*	-	-	*75*	*150*
	Tool Steels & Die Steel	100	145	132	315	-	-	145	290	20	50	85	125	-	-	200	450
		30	*45*	*40*	*95*	-	-	*45*	*90*	*6*	*15*	*25*	*38*	-	-	*60*	*135*
STAINLESS STEEL	Ferritic & Martensitic Stainless Steels	165	350	210	485	250	490	275	525	40	100	140	300	145	325	275	600
		50	*105*	*65*	*150*	*75*	*150*	*85*	*160*	*12*	*30*	*42*	*90*	*45*	*100*	*85*	*185*
	Austenitic Stainless Steels	100	300	150	450	175	450	-	-	30	75	80	270	90	280	200	500
		30	*90*	*45*	*135*	*55*	*135*	-	-	*9*	*23*	*25*	*80*	*27*	*85*	*60*	*150*
	PH & Duplex Stainless Steels	85	255	125	350	150	300	-	-	20	60	65	230	75	245	165	310
		26	*80*	*40*	*105*	*45*	*90*	-	-	*6*	*18*	*20*	*70*	*23*	*70*	*50*	*95*
	High Temperature Alloys	50	150	75	180	100	225	-	-	15	30	-	-	45	145	-	-
		15	*45*	*25*	*55*	*30*	*70*	-	-	*5*	*10*	-	-	*15*	*45*	-	-
	Titanium Alloys	40	120	70	150	120	210	-	-	20	55	-	-	30	115	-	-
		12	*35*	*20*	*45*	*35*	*65*	-	-	*6*	*17*	-	-	*10*	*35*	-	-
CAST IRON	Gray Cast Iron	180	400	240	570	260	590	-	-	50	125	-	-	175	375	300	700
		55	*125*	*75*	*175*	*80*	*180*	-	-	*15*	*38*	-	-	*55*	*115*	*90*	*215*
	Ductile & Malleable Cast Iron 140-180 BHN	165	235	215	515	235	530	-	-	40	100	-	-	150	225	250	550
		50	*70*	*65*	*155*	*70*	*160*	-	-	*12*	*30*	-	-	*45*	*58*	*75*	*170*
	Ductile & Malleable Cast Iron 220-260 BHN	145	210	195	460	210	475	-	-	35	80	-	-	130	200	225	500
		45	*65*	*62*	*140*	*65*	*145*	-	-	*10*	*25*	-	-	*40*	*60*	*70*	*150*
	Aluminum Alloys, Low & Medium Silicon	360	800	385	915	415	945	-	-	100	250	-	-	340	750	450	975
		115	*245*	*115*	*280*	*125*	*290*	-	-	*30*	*75*	-	-	*105*	*130*	*125*	*300*

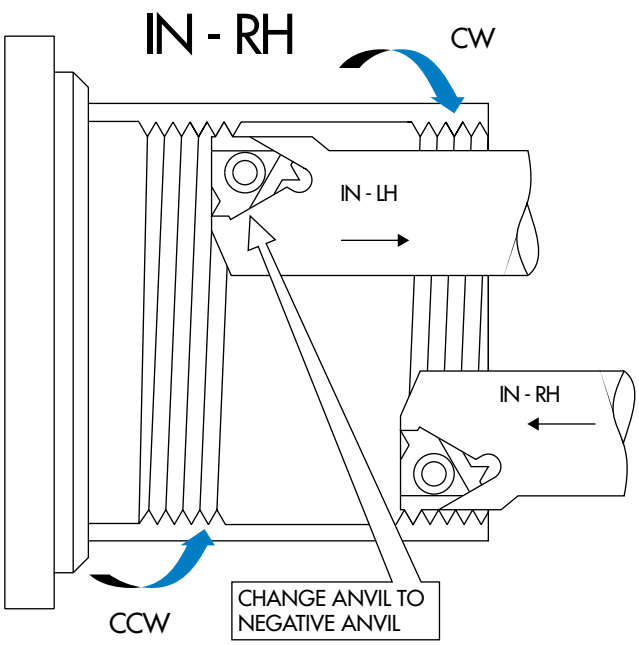
ValTHREAD™

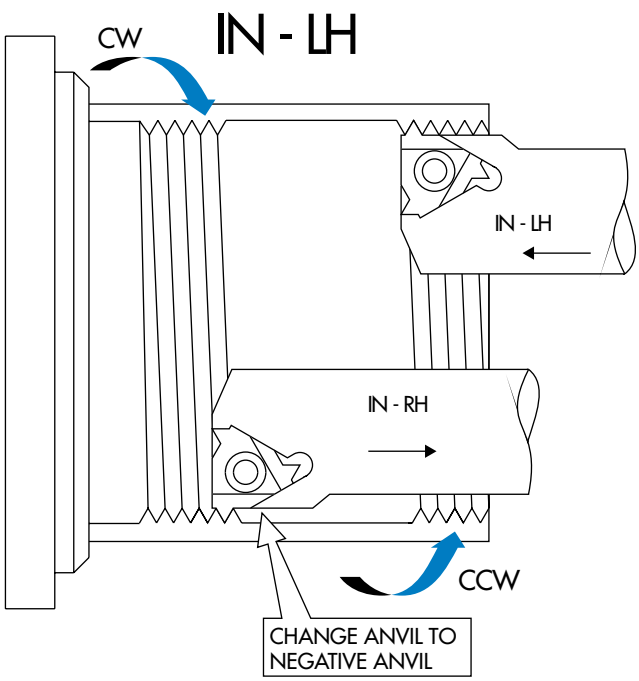
VThread® APPLICATION DATA

THREADING, TURNING & BORING 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

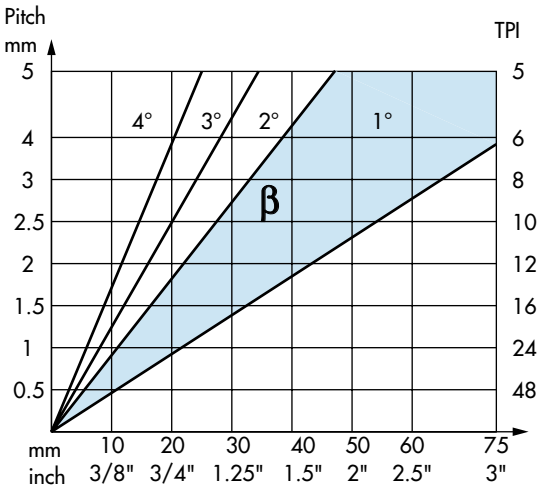
Thread Pass Notes:

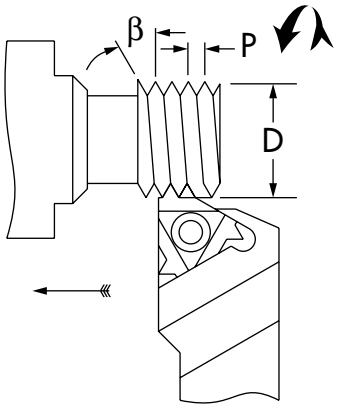
1. For most standard applications, choose the middle of the range as a good starting point.
2. In most cases, the tougher the material, the higher the number of cutting passes required.
3. As a general rule of thumb, less passes are better than increasing speed.

VThread® APPLICATION DATA

ValTHREAD™

THREAD HELIX ANGLE





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

Simplified formula

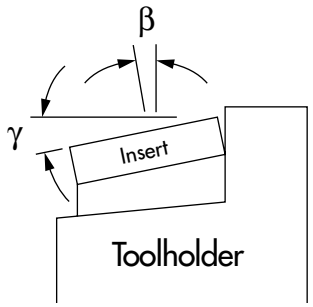
Metric: $\beta = 20P/D$
Inch: $\beta = 20/PD$

Example:

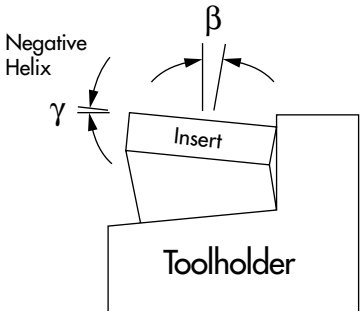
D = 30 mm (1.18")
P = 1.5 mm (16 TPI)
Metric: $\beta = 20x1.5/30 = 1$
Inch: $\beta = 20/16x1.18 = 1$

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



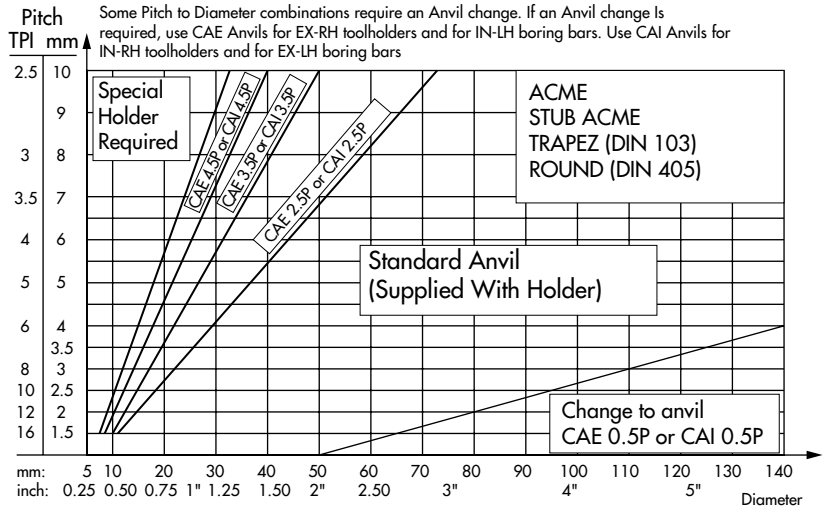
NEGATIVE HELIX ANGLES... Applicable when turning RH thread with LH holder or LH thread with RH holder

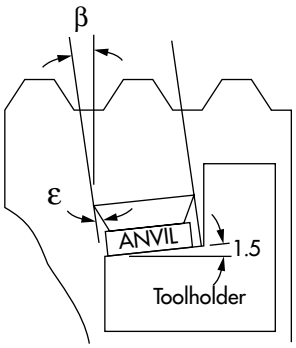
A (IC)	Toolholder	Standard Positive Helix Anvils					Standard Negative Helix Anvils		Multi-Tooth Anvils
		4.5 Deg	3.5 Deg	2.5 Deg	1.5 Deg	0.5 Deg	-0.5 Deg	-1.5 Deg	
.375	EX, RH or IN, LH	CAE 16 4.5P	CAE 16 3.5P	CAE 16 2.5P	CAE 16	CAE 16 0.5P	CAE 16 0.5N	CAE 16 1.5N	CAE 16M
.375	EX, LH or IN, RH	CAI 16 4.5P	CAI 16 3.5P	CAI 16 2.5P	CAI 16	CAI 16 0.5P	CAI 16 0.5N	CAI 16 1.5N	CAI 16M
.500	EX, RH or IN, LH	CAE 22 4.5P	CAE 22 3.5P	CAE 22 2.5P	CAE 22	CAE 22 0.5P	CAE 22 0.5N	CAE 22 1.5N	CAE 22M
.500	EX, LH or IN, RH	CAI 22 4.5P	CAI 22 3.5P	CAI 22 2.5P	CAI 22	CAI 22 0.5P	CAI 22 0.5N	CAI 22 1.5N	CAI 22M
.625	EX, RH or IN, LH	CAE 27 4.5P	CAE 27 3.5P	CAE 27 2.5P	CAE 27	CAE 27 0.5P	CAE 27 0.5N	CAE 27 1.5N	CAE 27M
.625	EX, LH or IN, RH	CAI 27 4.5P	CAI 27 3.5P	CAI 27 2.5P	CAI 27	CAI 27 0.5P	CAI 27 0.5N	CAI 27 1.5N	CAI 27M
.500U	EX, RH or IN, LH	CAE 22U 4.5P	CAE 22U 3.5P		CAE 22U 2.5P		CAE 22U	CAE 22U 0.5P	CAE 22U
0.5N	CAE 22U 1.5N								
.500U	EX, LH or IN, RH	CAI 22U 4.5P	CAI 22U 3.5P	CAI 22U 2.5P	CAI 22U	CAI 22U 0.5P	CAI 22U 0.5N		CAI 22U
1.5N									

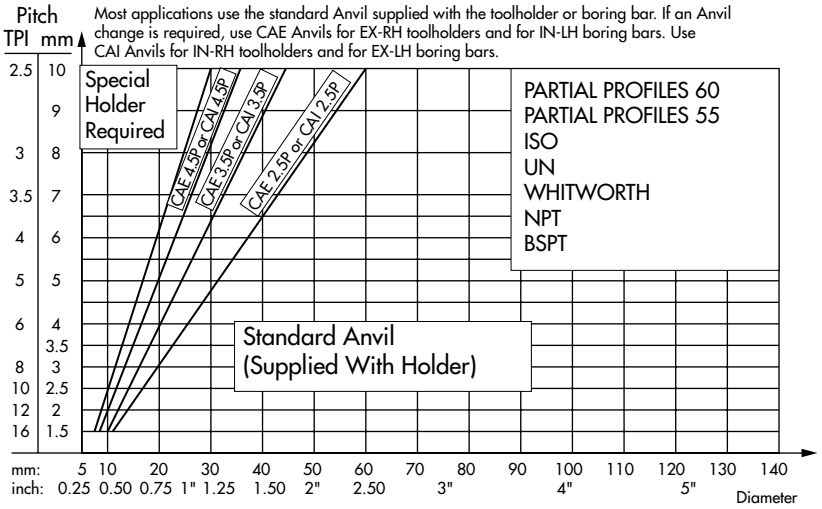
ValTHREAD™

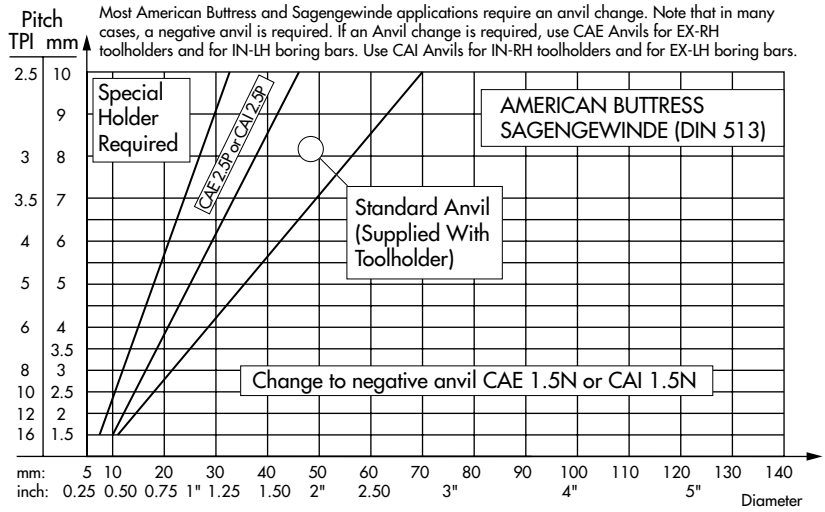
VThread® APPLICATION DATA

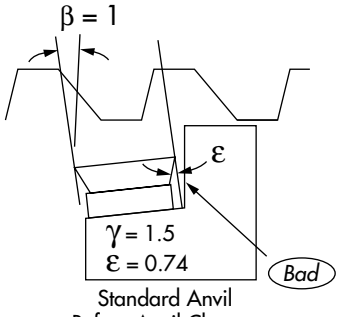
RECOMMENDED ANVIL REPLACEMENTS



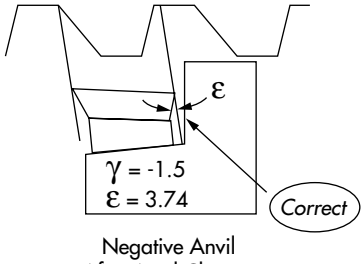








Standard Anvil
Before Anvil Change



Negative Anvil
After Anvil Change