WE NEVER STOP...

Turning

Valenite®

Valenite®

Dear Valued Customer,

WE NEVER STOP...

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

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

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

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

Make us prove it!

Your Valenite Team

WE NEVER STOP...

Thinking

Listening

Working

Valenite®

Inventing

Improving

Performing

Producing

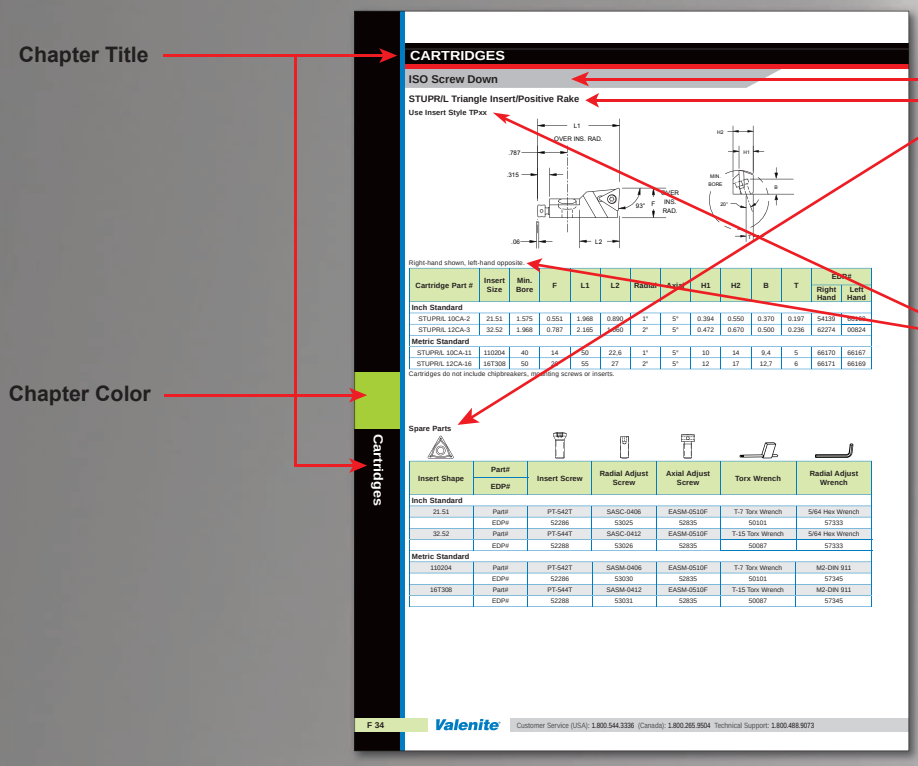
Advancing

How To Use Our Catalog

We never stop making things easier for you...

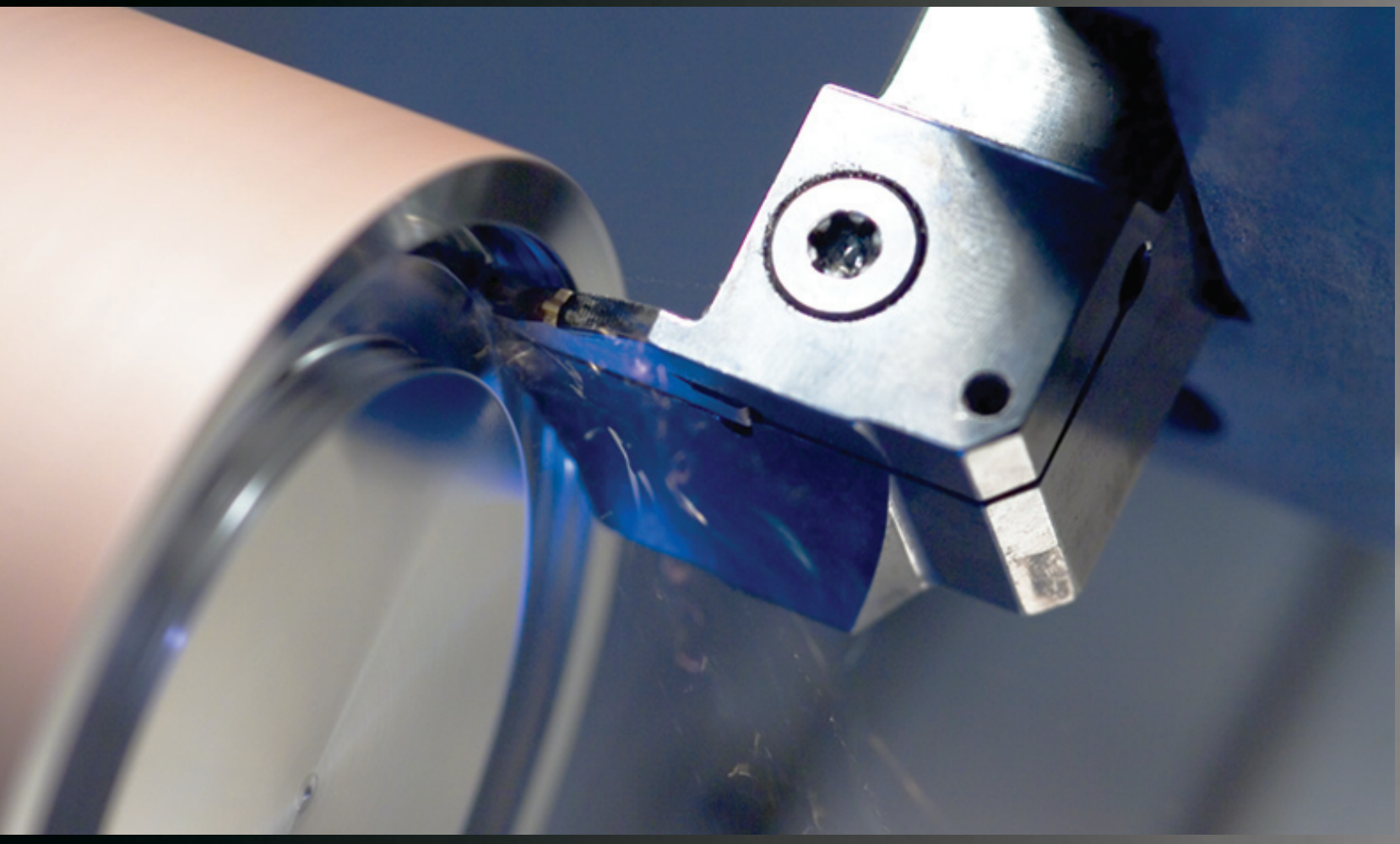
This catalog has been organized into 9 chapters and each chapter is identified by a different color.

Example: Cartridges = Green Chapter Color



At Valenite

WE NEVER STOP...



Advancing

- **VTG Two-edge Grooving & Turning System**

  Grooving, parting, turning/profiling and face grooving for OD and ID

  Productivity Benefits: Increased speed/feed capability, fewer tool changes, better surface finish, excellent repeatability

- **VSG One-edge Parting & Grooving System**

  Parting, grooving, profiling and precision grooves for OD and ID

  From interrupted cuts at high feed rates to small parts, the VSG system handles it superbly.

- **V-LOC Grooving & Threading System**

  Proven V-LOC system versatility with new ValPRO system grades for increased productivity in a wide variety of materials.

Supporting

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

Table of Contents

ValGROOVE™ VTG Parting and Grooving System

* Available 2Q–3Q 2007. Contact your Valenite Distributor or Sales for availability.

ValGROOVE™ VSG Parting and Grooving System

ValGROOVE™ Toolholder Designation

VG **TB** **101** **R** **16** **044** **20**

Identifier

ValGROOVE™

Component Type

TB	Tool Block
TBCA	Tool Block Coolant Adapter

Hand of Holder

Void	Neutral
R	Right
L	Left

Shank Size

Toolholders (inch)

Blades - Cutting Edge Height (mm)

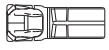
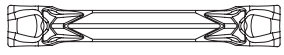
First Cut Diameter

Face Grooving:
First Cut Diameter—
minimum inside diameter (mm)

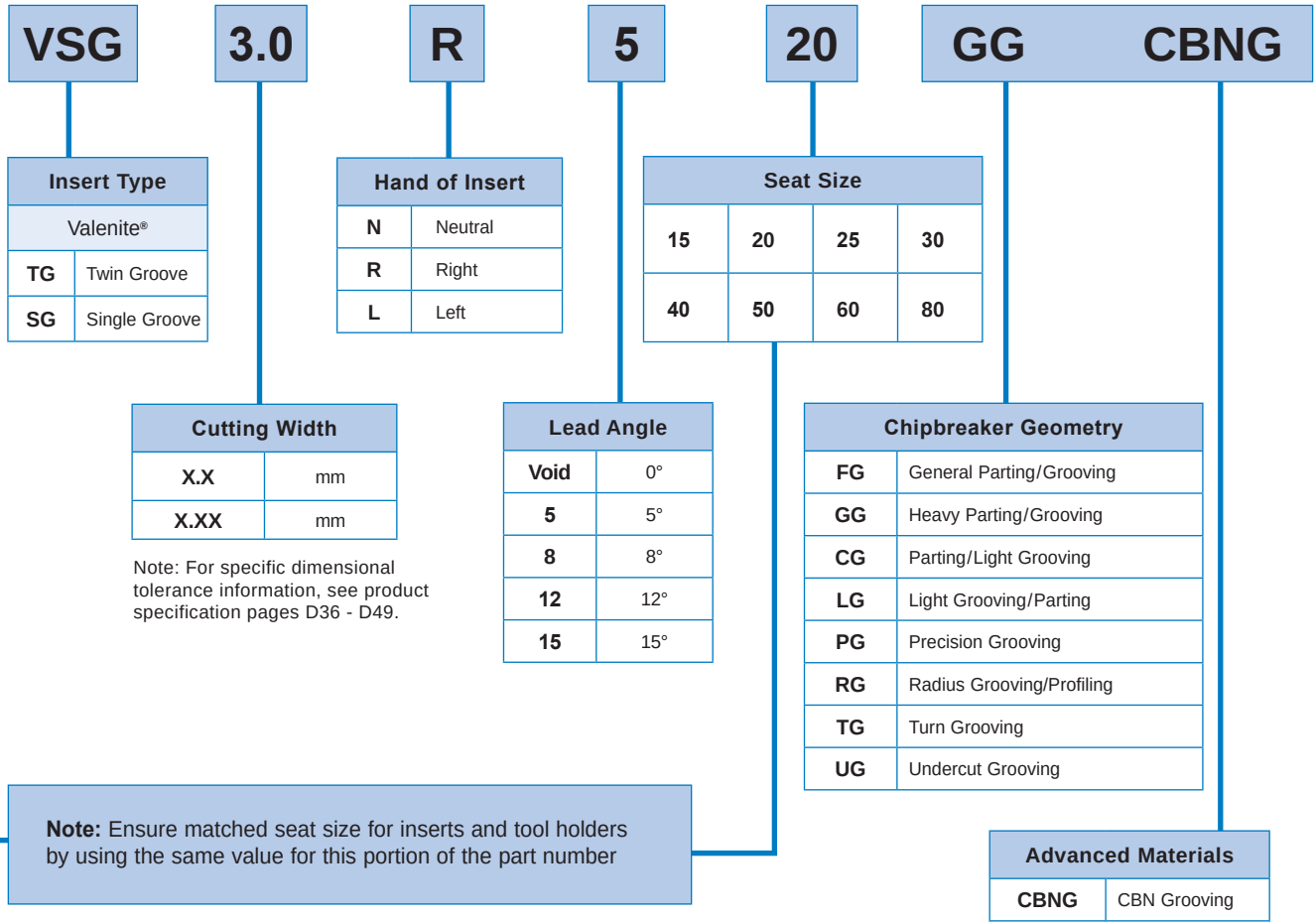
Seat Size

15	**20**	**25**	**30**
40	**50**	**60**	**80**

Toolholder Style

Single Ended System		Double Ended System	
			
VG101	Double Ended Parting Blade	**VG102**	VTG Double Ended Parting Blade
VG103	VDG Double Ended Parting Blade	**VG104**	VTG Single Ended Parting Blade
VG105	Reinforced Spring Clamp Holder	**VG110**	Grooving/Turning Holder
VG107	Spring Clamp Parting/Grooving Holder	**VG112**	Parting/Deep Grooving Holder
VG109	Deep Groove/Parting Holder	**VG114**	Face Grooving Holder
VG111	Grooving/Turning/Profiling Holder	**VG116**	90° Face Holder
VG115	Undercut Turning Holder	**VG118**	ID Turning/Grooving/Boring Bars
VG117	ID Turning/Grooving/Boring Bar	**VG130**	Shallow Groove/Face Groove Holder
VG121	Swiss/Screw Machine Holder	**VG132**	90° Shallow Groove/Face Groove Holder
VG123	Manchester Blade	**VGSCA**	Screw Clamp Anvil
VGWCA	Wedge Clamp Anvil	**VGDG**	VIDG Replacement Blades
VGBT	MTS System Blades		
VGDG	VIDG Replacement Blades		

ValGROOVE™ Insert Designation



Insert Type	
Valenite®	
TG	Twin Groove
SG	Single Groove

Hand of Insert	
N	Neutral
R	Right
L	Left

Seat Size			
15	**20**	**25**	**30**
40	**50**	**60**	**80**

Cutting Width	
X.X	mm
X.XX	mm

Note: For specific dimensional tolerance information, see product specification pages D36 - D49.

Lead Angle	
Void	0°
5	5°
8	8°
12	12°
15	15°

Chipbreaker Geometry	
FG	General Parting/Grooving
GG	Heavy Parting/Grooving
CG	Parting/Light Grooving
LG	Light Grooving/Parting
PG	Precision Grooving
RG	Radius Grooving/Profiling
TG	Turn Grooving
UG	Undercut Grooving

Note: Ensure matched seat size for inserts and tool holders by using the same value for this portion of the part number

Advanced Materials	
CBNG	CBN Grooving
CBNP	CBN Profiling
PCDG	PCD Grooving
PCDP	PCD Profiling

VSG Insert Seat Interchangeability

Insert Seat Size	Fits in Toolholder Seat:	Insert Seat Size:	Fits in Toolholder 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.

VTG Insert Seat Interchangeability

Insert Seat Size:	Fits in Toolholder Seat:	Insert Seat Size:	Fits in Toolholder Seat:
15	15	40	40
20	20	50	50 & 40
25	25 & 20	60	60, 50 & 40
30	30, 25 & 20	80	80

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

ValGROOVE™ VTG System Description

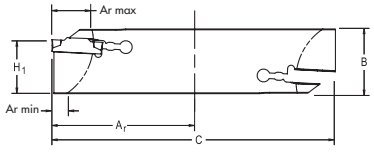
VTG System Toolholders for Two-Edge Inserts	**VG102**	**Double-Ended VTG Spring Clamp Parting Blade** • Ideal for parting of bars and tubes up to 1.8 inch diameter
	VG104	**Single-Ended VTG Screw Clamp Parting Blade** • Ideal for parting of bars and tubes up to 1.8 inch diameter
	VG110	**VTG System Grooving and Turning Toolholder** • Insert clamping designed to resist axial forces when turning • Increased speed/feed without encountering vibration problems
	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
	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
	VG118	**VTG System I.D. Grooving and Turning Boring Bars** • For internal grooving applications • Excellent for internal turning/profiling operations.
	VG 130/132	**Shallow Radial Grooving/Face Grooving Toolholders** • VG130 for 0° applications, VG132 for 90° grooving/face grooving • Excellent for turning/profiling applications up to .315" deep
	VGSCA	**Modular Machining Heads** • Screw clamp anvil (VGSCA) for all VTG inserts • Modular system using VHDBS style shanks
VTG System Two-Edge Inserts	**VTG-GG**	**First Choice for Parting and Grooving Operations on All Materials** • Lower cutting forces resulting in reduced vibration • Recommended for thin walled tubes and small diameters
	VTG-PG	**First Choice for Precision Grooving** • Excellent chip control, especially for stainless steel
	VTG-TG	**Excellent Choice for General Plunge Turning** • Medium feed rate capability with good chip control • Recommended on steels and stainless steels
	VTG-RG	**First Choice for Profiling/Radius Grooving** • Precision ground cutting edge excellent for stainless steel • Strong geometry for high temp alloys and interrupted cuts
VTG System Tipped Inserts	**VTG-PCD**	**Alternative for Finish Grooving and Profiling of Both Hardened and Non-Ferrous Materials** • Maintains close tolerance and excellent surface finish • Outstanding productivity
	VTG-CBN	

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
	VG 121	**Small Shank Toolholders for Swiss Machines** • "No offset" design for use on small parts • Shank sizes ⅜ to ¾ inch use insert widths .063" to .203"
	VGWCA	**Modular Machining Heads** • Wedge clamp design for VSG Inserts. • Modular system using VHDBS style shanks
	VGDG/VGBT	**VIDG Replacement Blades/MTS System Parting Blades**
VSG System One-Edge Inserts	**VSG-FG**	**First Choice for 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	**Precision Grooving on All Materials** • 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

ValGROOVE™ VTG Toolholder System

VG102—Double-Ended Spring Clamp Parting Blades

Use Insert Style:
VTG-xx



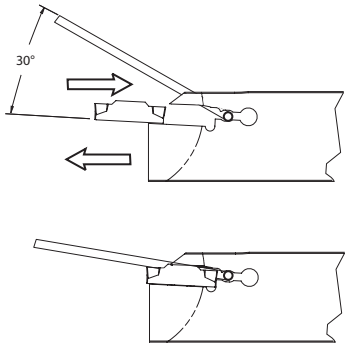
Ar	Seat Size	Part Number	Dimensions					EDP #
			W	A	B	C	H1	
0.590	15	VG102 21 15	0.063	0.047	1.020	3.937	0.827	52218
0.590	15	VG102 25 15	0.063	0.047	1.256	5.906	0.984	52237
0.590	20	VG102 21 20	.073 - .094	0.059	1.020	3.937	0.827	52220
0.787	20	VG102 25 20	.073 - .094	0.059	1.256	5.906	0.984	52238
1.181	25	VG102 21 25	.094 - .125	0.079	1.020	3.937	0.827	52226
2.165	25	VG102 25 25	.094 - .125	0.079	1.256	5.906	0.984	52239
1.181	30	VG102 21 30	.118 - .130	0.093	1.020	3.937	0.827	52231
2.165	30	VG102 25 30	.118 - .130	0.093	1.256	5.906	0.984	52260
2.165	40	VG102 25 40	.156 - .197	0.132	1.256	5.906	0.984	52266
2.165	50	VG102 25 50	.199 - .250	0.171	1.256	5.906	0.984	52267
2.165	60	VG102 25 60	.238 - .255	0.211	1.256	5.906	0.984	52270

Note: When using two-edge VTG inserts, use the Ar of the insert for the maximum depth of cut.
Insert key must be ordered separately.

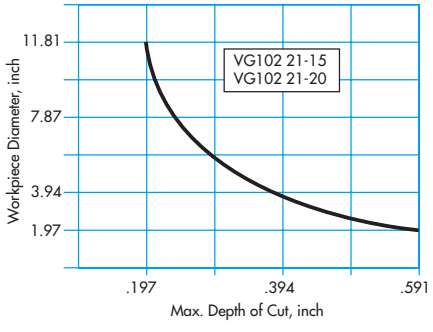
VG102 Spare Parts

Seat Size	Insert Key	EDP#
15	PT1202	56817
20	PT1202	56817
25	PT1202	56817
30	PT1202	56817
40	PT1202	56817
50	PT1202	56817
60	PT1202	56817

VG102 Insert Indexing

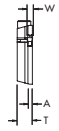


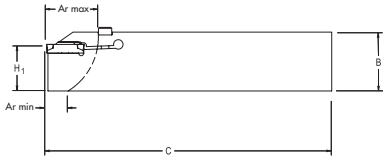
Application Information



VG104—Single-Ended Screw Clamp Parting Blades

Use Insert Style:
VTG-txx





Right-hand shown, Left-hand opposite

Ar	Seat Size	Right Hand	Left Hand	Dimensions						Right EDP#	Left EDP#
				W	A	B	C	H1	T		
.197-.984	20	VG104 R 25 20	VG104 L 25 20	.073- .094	0.059	1.256	5.906	0.984	0.315	52318	52271
.197-.984	25	VG104 R 25 25	VG104 L 25 25	.094 - .125	0.079	1.256	5.906	0.984	0.315	52320	52273
.197-.984	30	VG104 R 25 30	VG104 L 25 30	.118 - .130	0.093	1.256	5.906	0.984	0.315	52322	52274
.197-1.260	40	VG104 R 25 40	VG104 L 25 40	.156 - .197	0.132	1.256	5.906	0.984	0.315	52336	52276

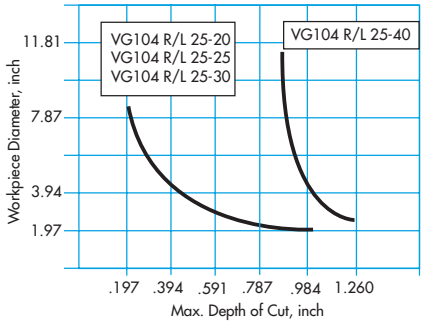
Note: When using two-edge VTG inserts, use the Ar of the insert for the maximum depth of cut.

VG104 Spare Parts

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

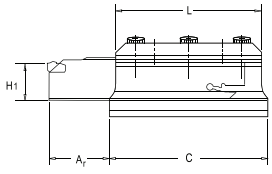
*Advanced Torx Plus® locking mechanism

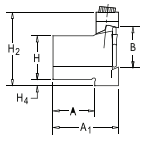
Application Information

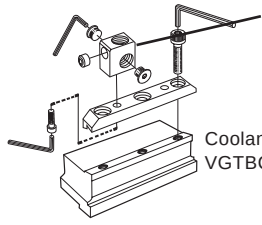


ValGROOVE™ VTG Toolholder System

VGTB Tool Blocks







Coolant Adapter
VGTBCA1 **EDP# 56851**

Part Number	Dimensions								EDP#
	A	A1	H	H1	H2	H4	C	L	
VGTB10 16	0.63	1.30	0.63	0.62	1.34	0.16	3.15	2.76	58321
VGTB12 21	0.73	1.46	0.75	0.84	1.79	0.43	3.15	2.76	58322
VGTB16 21	1.03	1.70	1.00	0.84	1.75	0.20	4.72	4.32	58323
VGTB16 25	0.98	1.71	1.00	0.98	1.79	0.43	4.72	4.33	58324
VGTB20 25	1.23	1.96	1.25	0.98	2.15	0.21	4.72	4.33	58326
VGTB24 25	1.48	2.21	1.50	0.98	2.40	0.20	4.72	4.33	62415

Notes:

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

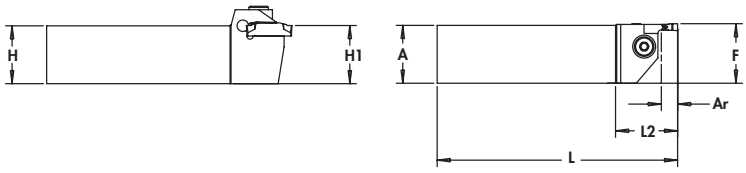
VGTB Spare Parts

Part Number	Hex Wrench	Screw	Clamp	Wrench EDP#	Screw EDP#	Clamp EDP#
VGTB10 16	PT1212	PT1218	CL1221	62398	62404	62292
VGTB12 21	PT1212	PT1218	CL1221	62398	62404	62292
VGTB16 21	PT1212	PT1219	CL1225	62398	62405	62293
VGTB16 25	PT1212	PT1219	CL1225	62398	62405	62293
VGTB20 25	PT1212	PT1219	CL1225	62398	62405	62293
VGTB24 25	PT1212	PT1219	CL1225	62398	62405	62293

ValGROOVE™ VTG Toolholder System

VG110—Grooving/Profiling

Use Insert Style:
VTG-xx



Right-hand shown, Left-hand opposite

Ar	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions							Right EDP#	Left EDP#
					W	A	F	H	H1	L	L2		
0.320	15	0.047	VG110 R 08 15	VG110 L 08 15	0.063	0.500	0.512	0.500	0.500	5.00	1.004	51106	51094
0.320	15	0.047	VG110 R 10 15	VG110 L 10 15	0.063	0.625	0.669	0.625	0.625	4.00	1.004	51115	51095
0.320	20	0.059	VG110 R 08 20	VG110 L 08 20	.073- .094	0.500	0.512	0.500	0.500	4.50	1.004	58408	58387
0.320	20	0.059	VG110 R 10 20	VG110 L 10 20	.073- .094	0.625	0.669	0.625	0.625	4.50	1.004	58409	58388
0.320	20	0.059	VG110 R 12 20	VG110 L 12 20	.073- .094	0.750	0.827	0.750	0.750	4.50	1.004	58411	58390
0.320	20	0.059	VG110 R 16 20	VG110 L 16 20	.073- .094	1.000	1.028	1.000	1.000	5.00	1.004	58415	58394
0.400	25	0.079	VG110 R 10 25	VG110 L 10 25	.094 - .125	0.625	0.669	0.625	0.625	4.50	1.004	58410	58389
0.400	25	0.079	VG110 R 12 25	VG110 L 12 25	.094 - .125	0.750	0.827	0.750	0.750	4.50	1.142	58412	58391
0.400	25	0.079	VG110 R 16 25	VG110 L 16 25	.094 - .125	1.000	1.024	1.000	1.000	5.00	1.142	58416	58395
0.400	25	0.079	VG110 R 20 25	VG110 L 20 25	.094 - .125	1.250	1.299	1.250	1.250	6.00	1.142	58422	58401
0.400	30	0.093	VG110 R 12 30	VG110 L 12 30	.118 - .130	0.750	0.827	0.750	0.750	4.50	1.181	58413	58392
0.400	30	0.093	VG110 R 16 30	VG110 L 16 30	.118 - .130	1.000	1.024	1.000	1.000	5.00	1.181	58417	58396
0.400	30	0.093	VG110 R 20 30	VG110 L 20 30	.118 - .130	1.250	1.299	1.250	1.250	6.00	1.181	58423	58402
0.510	40	0.132	VG110 R 12 40	VG110 L 12 40	.156 - .197	0.750	0.827	0.750	0.750	4.50	1.338	58414	58393
0.510	40	0.132	VG110 R 16 40	VG110 L 16 40	.156 - .197	1.000	1.024	1.000	1.000	5.00	1.338	58418	58397
0.510	40	0.132	VG110 R 20 40	VG110 L 20 40	.156 - .197	1.250	1.299	1.250	1.250	6.00	1.338	58424	58403
0.510	50	0.171	VG110 R 16 50	VG110 L 16 50	.199 - .250	1.000	1.024	1.000	1.000	5.00	1.338	58419	58398
0.510	50	0.171	VG110 R 20 50	VG110 L 20 50	.199 - .250	1.250	1.299	1.250	1.250	6.00	1.338	58425	58404
0.510	50	0.171	VG110 R 24 50	VG110 L 24 50	.199 - .250	1.500	1.614	1.500	1.500	8.00	1.338	58427	58406
0.630	60	0.211	VG110 R 16 60	VG110 L 16 60	.238 - .255	1.000	1.024	1.000	1.000	5.00	1.535	58420	58399
0.630	60	0.211	VG110 R 20 60	VG110 L 20 60	.238 - .255	1.250	1.299	1.250	1.250	6.00	1.535	58426	58405
0.630	60	0.211	VG110 R 24 60	VG110 L 24 60	.238 - .255	1.500	1.614	1.500	1.500	8.00	1.535	58428	58407
0.630	80	0.255	VG110 R 16 80	VG110 L 16 80	.312 - .317	1.000	1.028	1.000	1.000	6.00	1.614	58421	58400

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

VTG Insert Seat Interchangeability

Insert seat size:	Fits in Toolholder seat:	Insert seat size:	Fits in Toolholder seat:
15	15	40	40
20	20	50	50 & 40
25	25 & 20	60	60, 50 &40
30	30, 25 & 20	80	80

VG110 Spare Parts

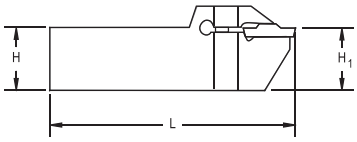
Seat Size	Shank Size	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP#	Screw EDP#
15	0.5	PT1204T	PT1213T	1.8	62393	62399
15	0.625	PT1204T	PT1214T	1.8	62393	62400
20	0.5	PT1204T	PT1213T	2.9	62393	62399
20	0.625-1.000	PT1204T	PT1214T	2.9	62393	62400
25	0.625-1.250	PT1204T	PT1214T	2.9	62393	62400
30	0.750-1.250	PT1205T	PT1215T	3.6	62394	62401
40	0.75	PT1206T	PT1217T	5.4	62395	62403
40	1.000-1.250	PT1206T	PT1220T	5.4	62395	50130
50	1.000-1.500	PT1206T	PT1220T	5.4	62395	50130
60	1.000-1.500	PT1206T	PT1220T	5.4	62395	50130
80	1.000	PT1206T	PT1220T	5.5	62395	50130

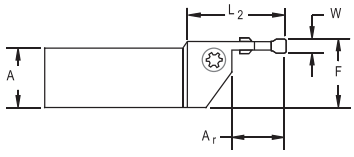
*Advanced Torx Plus® locking mechanism

ValGROOVE™ VTG Toolholder System

VG112-Deep Grooving/Parting/Profiling

Use Insert Style:
VTG-xx





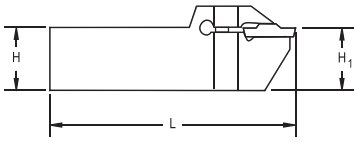
Right-hand shown, Left-hand opposite

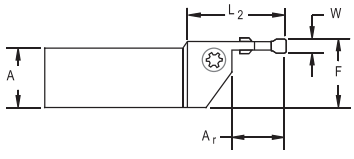
Ar	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions							Right EDP#	Left EDP#
					W	A	F	H	H1	L	L2		
0.590	20	0.059	VG112 R 08 20	VG112 L 08 20	.073- .094	0.500	0.512	0.500	0.500	4.50	1.319	51311	51122
0.590	15	0.047	VG112 R 10 15	VG112 L 10 15	0.063	0.625	0.669	0.625	0.625	4.00	1.319	51312	51140
0.590	15	0.047	VG112 R 12 15	VG112 L 12 15	0.063	0.750	0.827	0.750	0.750	5.00	1.319	51315	51176
0.590	20	0.059	VG112 R 10 20	VG112 L 10 20	.073- .094	0.625	0.669	0.625	0.625	4.50	1.319	51313	51155
0.590	20	0.059	VG112 R 12 20	VG112 L 12 20	.073- .094	0.750	0.827	0.750	0.750	5.00	1.319	51316	51177
0.590	20	0.059	VG112 R 16 20	VG112 L 16 20	.073- .094	1.000	1.024	1.000	1.000	5.00	1.319	51322	51182
0.790	25	0.079	VG112 R 10 25	VG112 L 10 25	.094 - .125	0.625	0.669	0.625	0.625	4.50	1.575	51314	51168
0.790	25	0.079	VG112 R 12 25	VG112 L 12 25	.094 - .125	0.750	0.827	0.750	0.750	5.00	1.575	51319	51178
0.790	25	0.079	VG112 R 16 25	VG112 L 16 25	.094 - .125	1.000	1.024	1.000	1.000	6.00	1.575	51323	51183
0.790	25	0.079	VG112 R 20 25	VG112 L 20 25	.094 - .125	1.250	1.299	1.250	1.250	6.00	1.575	51332	51191
0.790	30	0.093	VG112 R 12 30	VG112 L 12 30	.118 - .130	0.750	0.827	0.750	0.750	5.00	1.614	51320	51180
0.790	30	0.093	VG112 R 16 30	VG112 L 16 30	.118 - .130	1.000	1.024	1.000	1.000	6.00	1.614	51324	51184
0.790	30	0.093	VG112 R 20 30	VG112 L 20 30	.118 - .130	1.250	1.299	1.250	1.250	6.00	1.614	51333	51192
0.790	30	0.093	VG112 R 24 30	VG112 L 24 30	.118 - .130	1.500	1.614	1.500	1.500	8.00	1.614	51340	51233
0.980	40	0.132	VG112 R 12 40	VG112 L 12 40	.156 - .197	0.750	0.827	0.750	0.750	5.00	1.850	51321	51181
0.980	40	0.132	VG112 R 16 40	VG112 L 16 40	.156 - .197	1.000	1.024	1.000	1.000	6.00	1.850	51326	51185
0.980	40	0.132	VG112 R 20 40	VG112 L 20 40	.156 - .197	1.250	1.299	1.250	1.250	6.00	1.850	51334	51193
0.980	40	0.132	VG112 R 24 40	VG112 L 24 40	.156 - .197	1.500	1.614	1.500	1.500	8.00	1.850	51341	51237
1.260	50	0.171	VG112 R 16 50	VG112 L 16 50	.199 - .250	1.000	1.024	1.000	1.000	6.00	2.244	51327	51186
1.260	50	0.171	VG112 R 20 50	VG112 L 20 50	.199 - .250	1.250	1.299	1.250	1.250	6.00	2.244	51335	51194
1.260	50	0.171	VG112 R 24 50	VG112 L 24 50	.199 - .250	1.500	1.614	1.500	1.500	8.00	2.244	51342	51308
1.260	60	0.211	VG112 R 16 60	VG112 L 16 60	.238 - .255	1.000	1.024	1.000	1.000	6.00	2.283	51329	51187
1.260	60	0.211	VG112 R 20 60	VG112 L 20 60	.238 - .255	1.250	1.299	1.250	1.250	6.00	2.283	55310	51195
1.260	60	0.211	VG112 R 24 60	VG112 L 24 60	.238 - .255	1.500	1.614	1.500	1.500	8.00	2.283	55341	51309
1.000	80	0.255	VG112 R 16 80	VG112 L 16 80	.312 - .317	1.000	1.028	1.000	1.000	6.00	2.047	51330	51188
1.000	80	0.255	VG112 R 20 80	VG112 L 20 80	.312 - .317	1.250	1.300	1.250	1.250	7.000	2.047	51338	51197
1.380	80	0.255	VG112 R 20 80EX	VG112 L 20 80EX	.312 - .317	1.250	1.300	1.250	1.250	7.000	2.362	51339	51225
1.380	80	0.255	VG112 R 24 80EX	VG112 L 24 80EX	.312 - .317	1.500	1.614	1.500	1.500	7.000	2.362	51344	51310

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

VG112-Deep Grooving/Parting/Profiling

Use Insert Style:
VTG-xx





VG112 Spare Parts

Seat Size	Shank Size	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP#	Screw EDP#
15	0.625	PT1204T	PT1214T	2.5	62393	62400
20	0.5	PT1204T	PT1213T	2.9	62393	62399
20	0.625-1.000	PT1204T	PT1214T	2.9	62393	62400
25	0.625-1.250	PT1204T	PT1214T	2.9	62393	62400
30	0.750-1.250	PT1205T	PT1215T	3.6	62394	62401
40	0.75	PT1206T	PT1217T	5.4	62395	62403
40	1.000-1.500	PT1206T	PT1220T	5.4	62395	50130
50	1.000-1.500	PT1206T	PT1220T	5.4	62395	50130
60	1.000-1.500	PT1206T	PT1220T	5.4	62395	50130
80	1.000-1.500	PT1206T	PT1220T	5.5	62395	50130

VTG Insert Seat Interchangeability

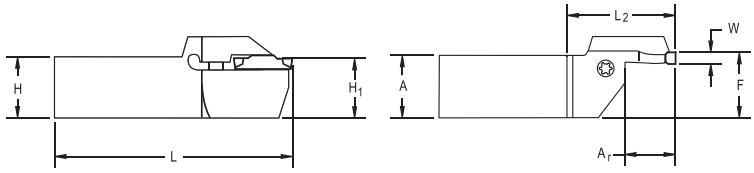
Insert Seat size:	Fits in Toolholder seat:	Insert Seat Size:	Fits in Toolholder seat:
15	15	40	40
20	20	50	50 & 40
25	25 & 20	60	60, 50 &40
30	30, 25 & 20	80	80

*Advanced Torx Plus® locking mechanism

ValGROOVE™ VTG Toolholder System

VG114—Face Grooving Ar .470 - 1.000

Use Insert Style:
VTG-xx



Right-hand shown, Left-hand opposite

Ar	First Cut Dia. min - max	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions							Right EDP#	Left EDP#
						W	A	F	H	H1	L	L2		
0.470	1.339 - 1.732	30	0.093	VG114 R 16 034 30	VG114 L 16 034 30	.118 - .130	1.000	1.039	1.000	1.000	6.00	1.257	58276	58231
0.750	1.654 - 2.362	30	0.093	VG114 R 16 042 30	VG114 L 16 042 30	.118 - .130	1.000	1.039	1.000	1.000	6.00	1.577	58285	58239
0.750	2.126 - 2.953	30	0.093	VG114 R 16 054 30	VG114 L 16 054 30	.118 - .130	1.000	1.039	1.000	1.000	6.00	1.577	58289	58243
0.750	2.638 - 3.937	30	0.093	VG114 R 16 067 30	VG114 L 16 067 30	.118 - .130	1.000	1.039	1.000	1.000	6.00	1.577	58297	58251
0.870	3.543 - 6.299	30	0.093	VG114 R 16 090 30	VG114 L 16 090 30	.118 - .130	1.000	1.039	1.000	1.000	6.00	1.697	58303	58257
0.870	5.118 - 11.811	30	0.093	VG114 R 16 130 30	VG114 L 16 130 30	.118 - .130	1.000	1.039	1.000	1.000	6.00	1.697	58309	58263
0.790	1.575 - 2.362	40	0.132	VG114 R 16 040 40	VG114 L 16 040 40	.156 - .197	1.000	1.039	1.000	1.000	6.00	1.656	58281	58235
0.790	2.047 - 2.835	40	0.132	VG114 R 16 052 40	VG114 L 16 052 40	.156 - .197	1.000	1.039	1.000	1.000	6.00	1.656	58287	58241
1.000	2.520 - 3.937	40	0.132	VG114 R 16 064 40	VG114 L 16 064 40	.156 - .197	1.000	1.039	1.000	1.000	6.00	1.888	58295	58249
1.000	3.622 - 5.512	40	0.132	VG114 R 16 092 40	VG114 L 16 092 40	.156 - .197	1.000	1.039	1.000	1.000	6.00	1.888	58305	58259
1.000	5.197 - 9.055	40	0.132	VG114 R 16 132 40	VG114 L 16 132 40	.156 - .197	1.000	1.039	1.000	1.000	6.00	1.888	58311	58265
1.000	8.661 - 19.685	40	0.132	VG114 R 16 220 40	VG114 L 16 220 40	.156 - .197	1.000	1.039	1.000	1.000	6.00	1.888	58319	58273
0.790	1.575 - 2.756	50	0.171	VG114 R 16 040 50	VG114 L 16 040 50	.199 - .250	1.000	1.039	1.000	1.000	6.00	1.696	58282	58236
1.000	2.362 - 3.740	50	0.171	VG114 R 16 060 50	VG114 L 16 060 50	.199 - .250	1.000	1.039	1.000	1.000	6.00	1.906	58293	58247
1.000	3.346 - 5.118	50	0.171	VG114 R 16 085 50	VG114 L 16 085 50	.199 - .250	1.000	1.039	1.000	1.000	6.00	1.906	58299	58253
1.000	4.724 - 7.087	50	0.171	VG114 R 16 120 50	VG114 L 16 120 50	.199 - .250	1.000	1.039	1.000	1.000	6.00	1.906	58307	58261
1.000	6.890 - 19.685	50	0.171	VG114 R 16 175 50	VG114 L 16 175 50	.199 - .250	1.000	1.039	1.000	1.000	6.00	1.906	58315	58269
0.790	1.575 - 2.756	60	0.211	VG114 R 16 040 60	VG114 L 16 040 60	.238 - .255	1.000	1.039	1.000	1.000	6.00	1.735	58283	58237
1.000	2.283 - 3.937	60	0.211	VG114 R 16 058 60	VG114 L 16 058 60	.238 - .255	1.000	1.039	1.000	1.000	6.00	1.945	58291	58245
1.000	3.465 - 7.087	60	0.211	VG114 R 16 088 60	VG114 L 16 088 60	.238 - .255	1.000	1.039	1.000	1.000	6.00	1.945	58301	58255
1.000	6.614 - 15.748	60	0.211	VG114 R 16 168 60	VG114 L 16 168 60	.238 - .255	1.000	1.039	1.000	1.000	6.00	1.945	58313	58267

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

VG114 Spare Parts

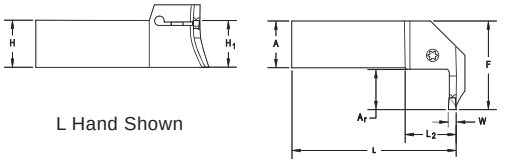
Seat Size	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Torx® Wrench EDP#	Screw EDP#
30	PT1205T	PT1215T	2.6	62394	62401
40	PT1206T	PT1220T	2.6	62395	50130
50	PT1206T	PT1220T	3	62395	50130
60	PT1206T	PT1220T	3.3	62395	50130

*Advanced Torx Plus® locking mechanism

ValGROOVE™ VTG Toolholder System

VG116—90° Face Grooving Ar .790

Use Insert Style:
VTG-xx



L Hand Shown

R Hand Shown

Ar	First Cut Dia. min - max	Seat Size	Seat Width	Right - Hand	Left - Hand	Dimensions							Right EDP#	Left EDP#
						W	A	F	H	H1	L	L2		
0.790	2.520 - 3.937	40	0.132	VG116 R 16 064 40	VG116 L 16 064 40	.156 - .197	1.000	1.850	1.000	1.000	6.00	1.059	62428	62419
0.790	3.622 - 5.512	40	0.132	VG116 R 16 092 40	VG116 L 16 092 40	.156 - .197	1.000	1.850	1.000	1.000	6.00	1.059	62431	62422
0.790	5.197 - 9.055	40	0.132	VG116 R 16 132 40	VG116 L 16 132 40	.156 - .197	1.000	1.850	1.000	1.000	6.00	1.059	62432	62423
0.790	2.283 - 3.937	60	0.211	VG116 R 16 058 60	VG116 L 16 058 60	.199 - .250	1.000	1.850	1.000	1.000	6.00	1.207	62427	62418
0.790	3.465 - 7.087	60	0.211	VG116 R 16 088 60	VG116 L 16 088 60	.199 - .250	1.000	1.850	1.000	1.000	6.00	1.207	62430	62421
0.790	6.614 - 15.748	60	0.211	VG116 R 16 168 60	VG116 L 16 168 60	.199 - .250	1.000	1.850	1.000	1.000	6.00	1.207	62434	62425
0.790	1.969 - 3.150	80	0.255	VG116 R 16 050 80	VG116 L 16 050 80	.312 - .317	1.000	1.850	1.000	1.000	6.00	1.630	62426	62417
0.790	2.953 - 5.906	80	0.255	VG116 R 16 075 80	VG116 L 16 075 80	.312 - .317	1.000	1.850	1.000	1.000	6.00	1.630	62429	62420
0.790	5.512 - 15.748	80	0.255	VG116 R 16 140 80	VG116 L 16 140 80	.312 - .317	1.000	1.850	1.000	1.000	6.00	1.630	62433	62424

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

VG116 Spare Parts

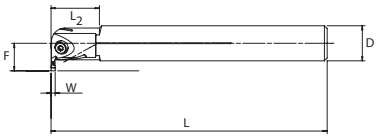
Seat Size	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Torx® Wrench EDP#	Screw EDP#
40	PT1206T	PT1220T	2.6	62395	50130
60	PT1206T	PT1220T	3.3	62395	50130
80	PT1206T	PT1220T	3.7	62395	50130

*Advanced Torx Plus® locking mechanism

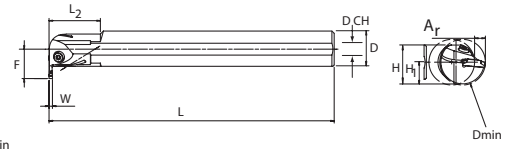
ValGROOVE™ VTG Toolholder System

VG118—ID Turning/Grooving

Use Insert Style:
VTG-xx



D<=1 inch cylindrical



D=>1.25 inch with flats

Right-hand shown, Left-hand opposite

D min.	Ar	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions								Right EDP#	Left EDP#
						W	F	H	H1	L	L2	D	D CH		
0.984	0.177	15	0.047	VG118 R 10 15	VG118 L 10 15	0.063	0.489	-	-	5.91	0.984	0.625	0.236	52071	51983
1.260	0.197	15	0.047	VG118 R 12 15	VG118 L 12 15	0.063	0.592	-	-	7.09	1.181	0.750	0.236	52073	51999
1.260	0.197	20	0.059	VG 118 R 12 20	VG 118 L 12 20	.073- .094	0.592	-	-	7.08	1.180	0.750	0.236	52077	52001
1.260	0.276	20	0.059	VG 118 R 16 20	VG 118 L 16 20	.073- .094	0.785	-	-	7.87	1.370	1.000	0.354	52098	52018
1.575	0.374	20	0.059	VG 118 R 20 20	VG 118 L 20 20	.073- .094	1.014	0.910	0.450	9.84	1.770	1.250	0.354	52119	52035
1.260	0.197	30	0.093	VG 118 R 12 30	VG 118 L 12 30	.118 - .130	0.592	-	-	7.08	1.180	0.750	0.236	52097	52013
1.260	0.276	30	0.093	VG 118 R 16 30	VG 118 L 16 30	.118 - .130	0.785	-	-	7.87	1.370	1.000	0.354	52100	52021
1.575	0.374	30	0.093	VG 118 R 20 30	VG 118 L 20 30	.118 - .130	1.014	0.910	0.450	9.84	1.770	1.250	0.354	52123	52036
1.969	0.433	30	0.093	VG 118 R 24 30	VG 118 L 24 30	.118 - .130	1.189	1.180	0.590	11.80	2.160	1.500	0.472	52131	52043
1.260	0.276	40	0.132	VG 118 R 16 40	VG 118 L 16 40	.156 - .197	0.785	-	-	7.87	1.370	1.000	0.354	52101	52030
1.575	0.413	40	0.132	VG 118 R 20 40	VG 118 L 20 40	.156 - .197	1.053	0.910	0.450	9.84	1.770	1.250	0.354	52126	52037
1.969	0.433	40	0.132	VG 118 R 24 40	VG 118 L 24 40	.156 - .197	1.189	1.180	0.590	11.80	2.160	1.500	0.472	52134	52044
1.260	0.276	50	0.171	VG 118 R 16 50	VG 118 L 16 50	.199 - .250	0.785	-	-	7.87	1.370	1.000	0.354	52117	52031
1.575	0.433	50	0.171	VG 118 R 20 50	VG 118 L 20 50	.199 - .250	1.073	0.910	0.450	9.84	1.770	1.250	0.354	52130	52039
1.969	0.433	50	0.171	VG 118 R 24 50	VG 118 L 24 50	.199 - .250	1.189	1.180	0.590	11.80	2.160	1.500	0.472	52135	52049
1.969	0.433	60	0.211	VG 118 R 24 60	VG 118 L 24 60	.238 - .255	1.189	1.460	0.730	11.80	2.160	1.500	0.472	52136	52070

Notes:
- H&H1 noted for bars with flats: Cylindrical Bars D <= 1.000"; Bars with Flats D => 1.250"
- When using two-edge VTG inserts, use the Ar of the insert for the maximum depth of cut.

VG118 Spare Parts

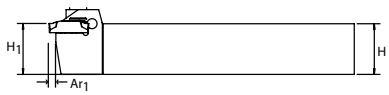
Seat	Bar Diameter	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP#	Screw EDP#
15, 20, 30	.625 - 0.750	PT1203T	PT1221T	2.6	56818	56819
20	1.000-1.250	PT1204T	PT1214T	3.0	62393	62400
30	1.000 - 1.500	PT1205T	PT1222T	3.3	62394	56820
40, 50	1.000	PT1205T	PT1222T	3.5	62394	56820
40, 50	1.250	PT1206T	PT1216T	3.5	62395	62402
40, 50,60	1.500	PT1206T	PT1217T	4.0	62395	62403

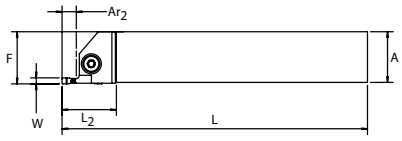
*Advanced Torx Plus® locking mechanism

ValGROOVE™ VTG Toolholder System

VG130—Shallow Grooving/Face Grooving

Use Insert Style:
VTG-xx



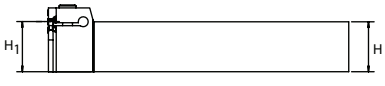


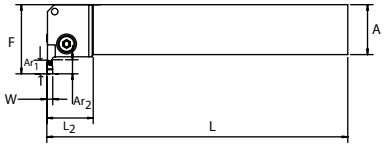
Right-hand shown, Left-hand opposite

Right Hand	Left Hand	Seat	Seat Width	Dimensions									Right EDP#	Left EDP#
				Ar1	Ar2	W	A	F	H	H1	L	L2		
VG130 R 16 30	VG130 L 16 30	30	0.093	0.138	0.275	.081-.120	1.000	1.024	1.000	1.000	6.000	1.063	56509	56507
VG130 R 16 60	VG130 L 16 60	60	0.211	0.177	0.315	.159-.238	1.000	1.024	1.000	1.000	6.000	1.081	56510	56508

NOTES:
- Use Ar1 for face grooves
- Use Ar2 for radial grooves
- VG130/132 shallow groove holders use several insert sizes:
  - Seat size 30 toolholder can use insert seat sizes 30, 25 and 20
  - Seat size 60 toolholder can use insert seat sizes 60, 50 and 40

VG132—Shallow Grooving/Face Grooving





Right-hand shown, Left-hand opposite

Right Hand	Left Hand	Seat	Seat Width	Dimensions									Right EDP#	Left EDP#
				Ar1	Ar2	W	A	F	H	H1	L	L2		
VG132 R 16 30	VG132 L 16 30	30	0.093	0.138	0.275	.081-.120	1.000	1.378	1.000	1.000	6.000	0.925	56513	56511
VG132 R 16 60	VG132 L 16 60	60	0.211	0.177	0.315	.159-.238	1.000	1.417	1.000	1.000	6.000	1.130	56514	56512

NOTES:
- Use Ar1 for face grooves
- Use Ar2 for radial grooves
- VG130/132 shallow groove holders use several insert sizes:
  - Seat size 30 toolholder can use insert seat sizes 30, 25 and 20
  - Seat size 60 toolholder can use insert seat sizes 60, 50 and 40

Spare Parts VG130 & VG132

Seat	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP#	Screw EDP#
30	PT1205T	PT1215T	2.6	62394	62401
60	PT1206T	PT1220T	3.3	62395	50130

*Advanced Torx Plus® locking mechanism

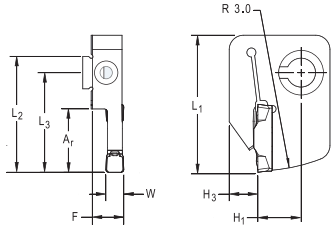
Face Grooving with VG130/132

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

ValGROOVE™ VTG Toolholder System

VGSCA—Modular Machining

Use Insert Style:
VTG-xx



Right-hand shown, Left-hand opposite

Depth Ar	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions							Right EDP#	Left EDP#
					W	L1	L2	L3	F	H1	H3		
0.810	20	0.059	VGSCA R 20	VGSCA L 20	.073- .094	2.09	1.721	1.44	0.546	0.75	0.5	58482	58475
0.810	25	0.079	VGSCA R 25	VGSCA L 25	.094 - .125	2.09	1.721	1.44	0.546	0.75	0.5	58483	58476
0.810	30	0.093	VGSCA R 30	VGSCA L 30	.118 - .130	2.09	1.721	1.44	0.549	0.75	0.5	58484	58477
1.000	40	0.132	VGSCA R 40	VGSCA L 40	.156 - .197	2.28	1.911	1.63	0.548	0.75	0.5	58485	58478
1.000	50	0.171	VGSCA R 50	VGSCA L 50	.199 - .250	2.28	1.911	1.63	0.549	0.75	0.5	58486	58479
1.000	60	0.211	VGSCA R 60	VGSCA L 60	.238 - .255	2.28	1.911	1.63	0.548	0.75	0.5	58487	58480
1.100	80	0.255	VGSCA R 80	VGSCA L 80	.312 - .317	2.38	2.011	1.73	0.567	0.75	0.5	58488	58481

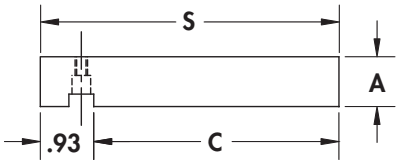
Note: When using two-edge VTG inserts, use the Ar of the insert for the maximum depth of cut.
Note: Use with VHDBS Style Shanks Page D19 - D20.

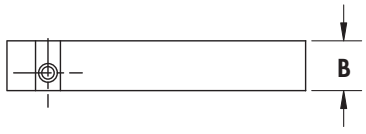
VGSCA Spare Parts

Seat Size	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP#	Screw EDP#
20	PT1206T	PT1217T	1.8	62395	62403
25	PT1206T	PT1217T	2.2	62395	62403
30	PT1206T	PT1217T	2.5	62395	62403
40	PT1206T	PT1217T	3.2	62395	62403
50	PT1206T	PT1217T	3.6	62395	62403
60	PT1206T	PT1217T	3.9	62395	62403
80	PT1206T	PT1217T	4.8	62395	62403

*Advanced Torx Plus® locking mechanism

VHDBS R/L Toolholders—Heavy-Duty Axial Shank



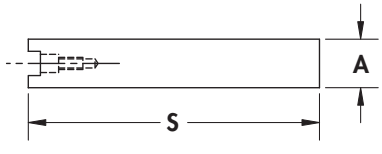


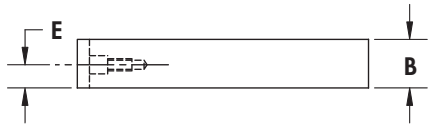
Right-hand shown, Left-hand opposite

Part Number		Dimensions				EDP#	
Right Hand	Left Hand	A	B	C	L	Right Hand	Left Hand
VHDBS 12R	VHDBS 12L	0.750	0.750	4.320	5.250	61771	61770
VHDBS 16R	VHDBS 16L	1.000	1.000	4.320	5.250	61773	61772
VHDBS 20R	VHDBS 20L	1.250	1.250	5.320	6.250	61775	61774
VHDBS 24*		1.500	1.500	6.320	7.250	61776	

*Shank can be inverted for opposite hand application

VHDBSN Toolholders—Heavy-Duty 90° Shank





Part Number	Dimensions				EDP#
	A	B	L	E	
VHDBSN-12	0.750	0.750	6.000	0.000	61782
VHDBSN-16	1.000	1.000	6.000	0.250	61783
VHDBSN-20	1.250	1.250	7.000	0.500	61784
VHDBSN-24	1.500	1.500	8.000	0.750	61785

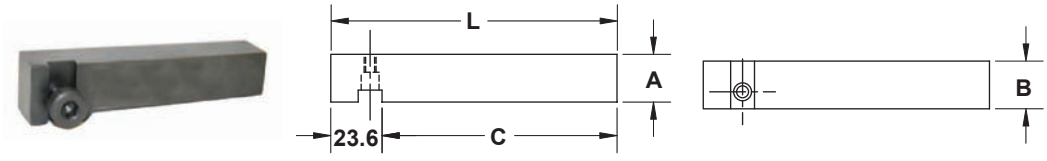
Spare Parts

Part-Number		Wrench	Screw	Torque ft-lbs
VHDBS & VHDBSN	Part#	5/16-Hex-Wrench	PT527	32
	EDP#	57330	53003	32

Note: Shanks complete with screw & wrench. Anvils must be purchased separately
Note: For use with all VGSCA, VGWCA, VHDBA & VHDBTA anvils

ValGROOVE™ VTG Toolholder System

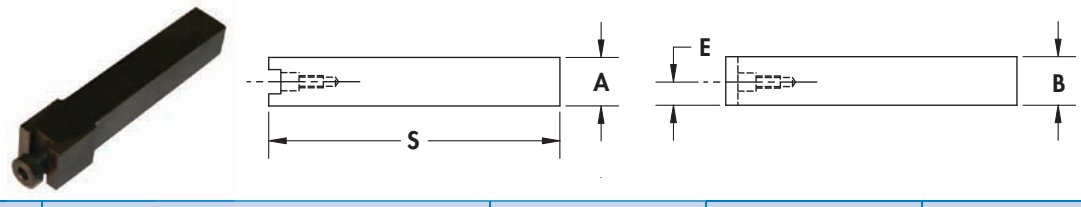
VHDBS R/L Toolholders—Heavy-Duty Metric Axial Shank



Right-hand shown, Left-hand opposite

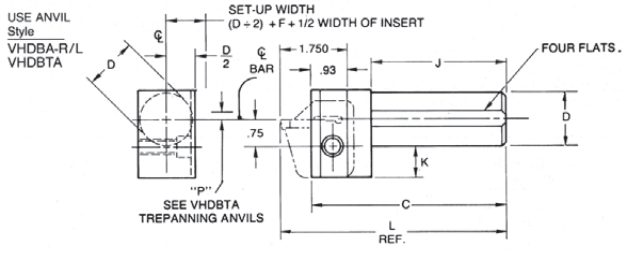
Part Number		Dimensions				Mounting Screw	EDP# Mounting Screw	EDP#	
Right Hand	Left Hand	A	B	C	L Ref.			Right Hand	Left Hand
VHDBS 2525R	VHDBS 2525L	25	25	106	130	PT-527,H-5/16	53003	61778	61777
VHDBS 3232R	VHDBS 3232L	32	32	126	130	PT-527,H-5/16		61781	61780

VHDBSN Tooholders—Heavy-Duty Metric 90° Shank



Part Number	Dimensions				Mounting Screw	EDP# Mounting Screw	EDP#
	A	B	L	E			
VHDBSN-2525	25	25	150	12.5	PT-527,H-5/16	53003	61786
VHDBSN-3232	32	32	175	16	PT-527,H-5/16		61788

VHDBBR— Heavy-Duty Axial Round Shank

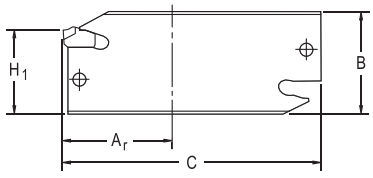


Right-hand shown, Left-hand opposite

Part Number		Dimensions					Mounting Screw	EDP# Mounting Screw	EDP#	
Right Hand	Left Hand	C	D	J	K	L			Right Hand	Left Hand
VHDBBR 125	-	6.000	1.250	4.500	0.620	6.820	PT-527, H=5/16	53003	61794	-
VHDBBR 150	VHDBBL 150	8.000	1.500	6.500	0.500	8.820	PT-527, H=5/16		61795	61793

ValGROOVE™ VSG Toolholder System

VG101—VSG Double-Ended Parting Blades



Use Insert Style:
VSG-xx

Ar	Seat Size	Part Number	Dimensions					EDP#
			W	A	B	C	H1	
0.750	15	VG101 16 15	0.059	0.047	0.750	3.38	0.620	58171
0.750	15	VG101 21 15	0.059	0.047	1.020	4.33	0.840	58173
1.250	15	VG101 25 15	0.059	0.047	1.250	5.90	0.980	58178
1.300	20	VG101 16 20	.065 - .088	0.059	0.750	3.38	0.620	58172
1.400	20	VG101 21 20	.065 - .088	0.059	1.020	4.33	0.840	58174
1.500	20	VG101 25 20	.065 - .088	0.059	1.260	5.91	0.980	56536
1.378	25	VG101 21 25	.098 - .133	0.079	1.020	4.33	0.840	58175
2.362	25	VG101 25 25	.098 - .133	0.079	1.260	5.91	0.980	58179
1.378	30	VG101 21 30	.118 - .163	0.093	1.020	4.33	0.840	58176
2.362	30	VG101 25 30	.118 - .163	0.093	1.260	5.91	0.980	58180
1.378	40	VG101 21 40	.156 - .203	0.132	1.020	4.33	0.840	58177
2.362	40	VG101 25 40	.156 - .203	0.132	1.260	5.91	0.980	58181
2.362	50	VG101 25 50	.197 - .250	0.171	1.260	5.91	0.980	58182
2.362	60	VG101 25 60	.236 - .315	0.211	1.260	5.91	0.980	58183

VG101 blades are used with VGTB & V-Cut tool blocks.
Insert key must be ordered separately.

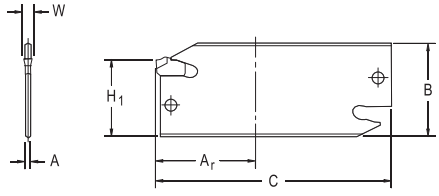
VG101 & VG103 Spare Parts

Seat Size	Insert Key	EDP#
15	PT1211	62397
20	PT1211	62397
25	PT1211	62397
30	PT1211	62397
40	PT1210	62396
50	PT1210	62396
60	PT1210	62396

ValGROOVE™ VSG Toolholder System

VG103—VSG Double-Ended Parting Blades

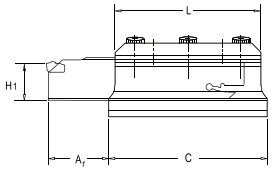
Use Insert Style:
VSG-xx

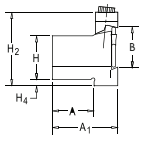


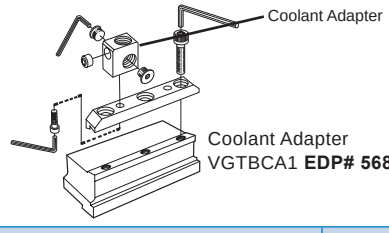
Ar	Seat Size	Part Number	Dimensions					EDP#
			W	A	B	C	H1	
2.362	30	VG103 25 30	.118 - .163	0.093	1.260	5.91	0.980	58184
2.362	40	VG103 25 40	.156 - .203	0.132	1.260	5.91	0.980	58185
2.362	50	VG103 25 50	.197 - .250	0.171	1.260	5.91	0.980	58186

Note: • VG103 blades are used only with VDG tool blocks. • Insert key must be ordered separately. See page D21.

VGTB Tool Blocks







Part Number	Dimensions								EDP#
	A	A1	H	H1	H2	H4	C	L	
VGTB10 16	0.63	1.30	0.63	0.62	1.34	0.16	3.15	2.76	58321
VGTB12 21	0.73	1.46	0.75	0.84	1.79	0.43	3.15	2.76	58322
VGTB16 21	1.03	1.70	1.00	0.84	1.75	0.20	4.72	4.32	58323
VGTB16 25	0.98	1.71	1.00	0.98	1.79	0.43	4.72	4.33	58324
VGTB20 25	1.23	1.96	1.25	0.98	2.15	0.21	4.72	4.33	58326
VGTB24 25	1.48	2.21	1.50	0.98	2.40	0.20	4.72	4.33	62415

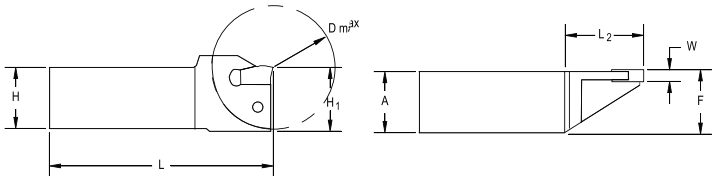
Notes:
- The blade height, H1 must match the H1 - dimension of the tool block. Example: Blade - VG101 **16** 15 , Tool block VGTB 10 **16**.
- Blade height refers to dimension H1 from the base of the blade to the insert cutting edge.

VGTB Spare Parts

Part Number	Hex Wrench	Screw	Clamp	Wrench EDP#	Screw EDP#	Clamp EDP#
VGTB10 16	PT1212	PT1218	CL1221	62398	62404	62292
VGTB12 21	PT1212	PT1218	CL1221	62398	62404	62292
VGTB16 21	PT1212	PT1219	CL1225	62398	62405	62293
VGTB16 25	PT1212	PT1219	CL1225	62398	62405	62293
VGTB20 25	PT1212	PT1219	CL1225	62398	62405	62293
VGTB24 25	PT1212	PT1219	CL1225	62398	62405	62293

ValGROOVE™ VSG Toolholder System

VG105—Grooving Reinforced Spring Clamp



Use Insert Style:
VSG-xx

Right-hand shown, Left-hand opposite

D max	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions							Right EDP#	Left EDP#
					W	A	F	H	H1	L	L2		
0.76	20	0.059	VG105 R 06 20	VG105 L 06 20	.063 - .090	0.375	0.385	0.375	0.375	4.72	0.630	58190	58187
1.18	20	0.059	VG105 R 08 20	VG105 L 08 20	.063 - .090	0.500	0.510	0.500	0.500	5.91	0.810	58191	58188
1.18	20	0.059	VG105 R 10 20	VG105 L 10 20	.063 - .090	0.625	0.634	0.625	0.625	5.91	0.810	56399	56395
1.18	25	0.079	VG105 R 08 25	VG105 L 08 25	.094 - .130	0.500	0.510	0.500	0.500	5.91	0.810	58192	58189
1.18	25	0.079	VG105 R 10 25	VG105 L 10 25	.094 - .130	0.625	0.634	0.625	0.625	5.91	0.810	56400	56396
1.38	30	0.093	VG105 R 10 30	VG105 L 10 30	.094 - .130	0.625	0.638	0.625	0.625	4.00	1.020	56401	56397
1.77	30	0.093	VG105 R 12 30	VG105 L 12 30	.094 - .130	0.750	0.764	0.750	0.750	4.50	1.240	56402	56398

Note: Insert key must be ordered separately.

VG105 Spare Parts

Seat Size	Insert Key	EDP#
20	PT1211	62397
25	PT1211	62397
30	PT1211	62397

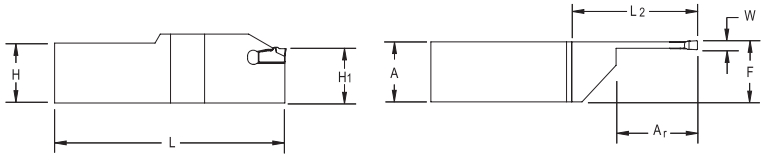
VSG Insert Seat Interchangeability

Insert Seat Size:	Fits in Toolholder Seat:	Insert Seat Size:	Fits in Toolholder Seat:
15	15 & 20	40	40 & 50
20	20 & 15	50	50 & 40
25	25 & 30	60	60
30	30 & 25	80	80

ValGROOVE™ VSG Toolholder System

VG107—Deep Grooving Spring Clamp

Use Insert Style:
VSG-xx



Right-hand shown, Left-hand opposite

Ar	Seat Size	Seat Width	Right - Hand	Left - Hand	Dimensions							Right EDP#	Left EDP#
					W	A	F	H	H1	L	L2		
0.590	20	0.059	VG107 R 10 20	VG107 L 10 20	.063 - .090	0.625	0.634	0.625	0.625	4.00	0.810	52402	52340
0.590	25	0.079	VG107 R 10 25	VG107 L 10 25	.094 - .130	0.625	0.634	0.625	0.625	4.00	0.810	52422	52344
0.790	25	0.079	VG107 R 12 25	VG107 L 12 25	.094 - .130	0.750	0.760	0.750	0.750	4.50	1.020	52423	50171
0.790	30	0.093	VG107 R 12 30	VG107 L 12 30	.094 - .130	0.750	0.760	0.750	0.750	4.50	1.020	52445	52345
0.980	30	0.093	VG107 R 16 30	VG107 L 16 30	.123 - .163	1.000	1.012	1.000	1.000	6.00	1.260	52704	52351
0.980	40	0.132	VG107 R 12 40	VG107 L 12 40	.162 - .203	0.750	0.764	0.750	0.750	4.50	1.250	52703	52350
1.260	40	0.132	VG107 R 16 40	VG107 L 16 40	.162 - .203	1.000	1.012	1.000	1.000	6.00	1.640	52705	52355
1.260	40	0.132	VG107 R 20 40	VG107 L 20 40	.162 - .203	1.250	1.264	1.250	1.250	6.00	1.640	52708	52371
1.260	50	0.171	VG107 R 16 50	VG107 L 16 50	.202 - .236	1.000	1.012	1.000	1.000	6.00	1.640	52706	52356
1.260	50	0.171	VG107 R 20 50	-	.202 - .236	1.250	1.264	1.250	1.250	6.00	1.640	52709	-
1.260	60	0.211	VG107 R 16 60	VG107 L 16 60	.241 - .312	1.000	1.012	1.000	1.000	6.00	1.630	52707	52369
1.260	60	0.211	VG107 R 20 60	VG107 L 20 60	.241 - .312	1.250	1.260	1.250	1.250	6.00	1.640	52710	52392

Note: Insert key must be ordered separately

VG107 Spare Parts

Seat Size	Insert Key	EDP#
20	PT1211	62397
25	PT1211	62397
30	PT1211	62397
40	PT1210	62396
50	PT1210	62396
60	PT1210	62396

VSG Insert Seat Interchangeability

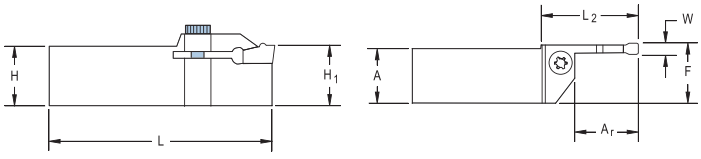
Insert Seat Size:	Fits in Toolholder Seat:	Insert Seat Size:	Fits in Toolholder Seat:
15	15 & 20	40	40 & 50
20	20 & 15	50	50 & 40
25	25 & 30	60	60
30	30 & 25	80	80

Notes:
- Check for sufficient clearance between tool body & insert.
- Inserts from ValMILL V350 system are also interchangeable with ValGROOVE inserts in the above chart.

ValGROOVE™ VSG Toolholder System

VG109—Deep Grooving/Parting

Use Insert Style:
VSG-xx



Right-hand shown, Left-hand opposite

Ar	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions							Right EDP#	Left EDP#
					W	A	F	H	H1	L	L2		
0.590	20	0.059	VG109 R 08 20	VG109 L 08 20	.065 - .088	0.500	0.750	0.500	0.500	4.50	1.319	58443	58429
0.590	20	0.059	VG109 R 10 20	VG109 L 10 20	.065 - .088	0.625	0.875	0.625	0.625	4.50	1.319	58445	58431
0.790	25	0.079	VG109 R 08 25	VG109 L 08 25	.098 - .133	0.500	0.750	0.500	0.500	4.50	1.575	58444	58430
0.790	25	0.079	VG109 R 10 25	VG109 L 10 25	.098 - .133	0.625	0.875	0.625	0.625	4.50	1.575	58446	62416
0.790	25	0.079	VG109 R 12 25	VG109 L 12 25	.098 - .133	0.750	1.000	0.750	0.750	5.00	1.575	58447	58433
0.790	30	0.093	VG109 R 12 30	VG109 L 12 30	.118 - .163	0.750	1.000	0.750	0.750	5.00	1.614	58448	58434
0.790	30	0.093	VG109 R 16 30	VG109 L 16 30	.118 - .163	1.000	1.250	1.000	1.000	6.00	1.614	58450	58436
0.980	40	0.132	VG109 R 12 40	VG109 L 12 40	.156 - .203	0.750	1.000	0.750	0.750	5.00	1.850	58449	58435
0.980	40	0.132	VG109 R 16 40	VG109 L 16 40	.156 - .203	1.000	1.250	1.000	1.000	6.00	1.850	58451	58437
0.980	40	0.132	VG109 R 20 40	VG109 L 20 40	.156 - .203	1.250	1.500	1.250	1.250	6.00	1.850	58454	58440
1.260	50	0.171	VG109 R 16 50	VG109 L 16 50	.197 - .250	1.000	1.250	1.000	1.000	6.00	2.244	58452	58438
1.260	60	0.211	VG109 R 16 60	VG109 L 16 60	.236 - .315	1.000	1.250	1.000	1.000	6.00	2.283	58453	58439
1.260	60	0.211	VG109 R 20 60	VG109 L 20 60	.236 - .315	1.250	1.500	1.250	1.250	6.00	2.283	58455	58441
1.500	80	0.211	VG109 R 24 80	VG109 L 24 80	.315 - .394	1.450	1.500	1.500	1.500	8.75	2.760	58456	58442

VG109 Spare Parts

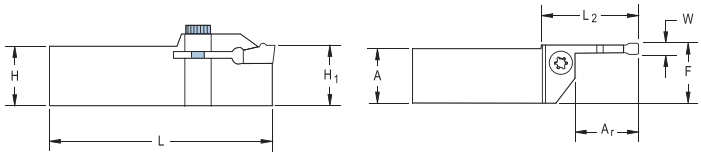
Seat Size	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP#	Screw EDP#
20	PT1204T	PT1214T	2.9	62393	62400
25	PT1204T	PT1214T	2.9	62393	62400
30	PT1205T	PT1215T	3.7	62394	62401
40	PT1206T	PT1217T	5.5	62395	62403
50	PT1206T	PT1217T	5.5	62395	62403
60	PT1206T	PT1217T	5.5	62395	62403
80	PT1206T	PT1217T	4.5	62395	62403

*Advanced Torx Plus® locking mechanism

ValGROOVE™ VSG Toolholder System

VG 121—Grooving/Parting Swiss Screw Machine

Use Insert Style:
VSG-xx



Note: Right-hand shown, Left-hand opposite

Ar	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions							Right EDP#	Left EDP#
					W	A	F	H	H1	L	L2		
0.350	20	0.059	VG121 R 06 20	VG121 L 06 20	.063 - .090	0.375	0.390	0.375	0.375	4.00	1.038	63015	63003
0.350	20	0.059	VG121 R 08 20	VG121 L 08 20	.063 - .090	0.500	0.510	0.500	0.500	4.00	1.039	63018	63006
0.350	20	0.059	VG121 R 10 20	VG121 L 10 20	.063 - .090	0.625	0.634	0.625	0.625	4.00	1.039	63021	63009
0.390	25	0.079	VG121 R 06 25	VG121 L 06 25	.098-.133	0.375	0.386	0.375	0.375	4.00	1.138	63016	63004
0.390	25	0.079	VG121 R 08 25	VG121 L 08 25	.098-.133	0.500	0.510	0.500	0.500	4.00	1.138	63019	63007
0.390	25	0.079	VG121 R 10 25	VG121 L 10 25	.098-.133	0.625	0.634	0.625	0.625	4.00	1.138	63022	63010
0.400	30	0.093	VG121 R 06 30	VG121 L 06 30	.118-.163	0.375	0.389	0.375	0.375	4.00	1.187	63017	63005
0.400	30	0.093	VG121 R 08 30	VG121 L 08 30	.118-.163	0.500	0.512	0.500	0.500	4.00	1.187	63020	63008
0.400	30	0.093	VG121 R 10 30	VG121 L 10 30	.118-.163	0.625	0.634	0.625	0.625	4.00	1.187	63023	63011
0.400	30	0.093	VG121 R 12 30	VG121 L 12 30	.118-.163	0.750	0.758	0.750	0.750	5.00	1.187	63025	63013
0.510	40	0.132	VG121 R 10 40	VG121 L 10 40	.162-.203	0.625	0.634	0.625	0.625	4.00	1.337	63024	63012
0.510	40	0.132	VG121 R 12 40	VG121 L 12 40	.162-.203	0.750	0.758	0.750	0.750	5.00	1.337	63026	63014

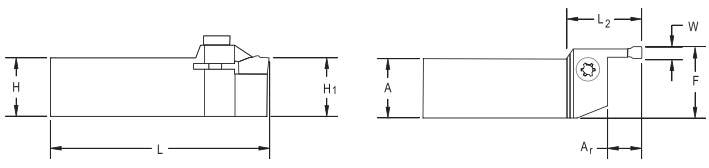
VG121 Spare Parts

Shank Size	Seat	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP	Screw EDP
06 & 08	20, 25 & 30	PT1204T	PT1213T	1.9	62393	62399
10	20 & 25	PT1204T	PT1214T	2.2	62393	62400
10	30 & 40	PT1205T	PT1222T	2.6	62394	56820
12	30	PT1205T	PT1215T	2.6	62394	62401
12	40	PT1206T	PT1217T	3.3	62395	62403

*Advanced Torx Plus® locking mechanism

VG111—Grooving/Profiling

Use Insert Style:
VSG-xx



Right-hand shown, Left-hand opposite

Ar	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions							Right EDP#	Left EDP#
					W	A	F	H	H1	L	L2		
0.320	20	0.059	VG111 R 10 20	VG111 L 10 20	.063 - .090	0.625	0.875	0.625	0.625	4.500	1.180	52721	52712
0.320	20	0.059	VG111 R 12 20	VG111 L 12 20	.063 - .090	0.750	1.000	0.750	0.750	4.500	1.180	58203	58195
0.320	20	0.059	VG111 R 16 20	VG111 L 16 20	.063 - .090	1.000	1.250	1.000	1.000	5.000	1.180	52723	52714
0.400	25	0.079	VG111 R 10 25	VG111 L 10 25	.094 - .130	0.625	0.875	0.625	0.625	4.500	1.300	58202	58194
0.400	25	0.079	VG111 R 12 25	VG111 L 12 25	.094 - .130	0.750	1.000	0.750	0.750	4.500	1.300	52722	52713
0.400	25	0.079	VG111 R 16 25	VG111 L 16 25	.094 - .130	1.000	1.250	1.000	1.000	5.000	1.300	52724	52715
0.400	30	0.093	VG111 R 12 30	VG111 L 12 30	.118 - .163	0.750	1.000	0.750	0.750	4.500	1.340	58204	58196
0.400	30	0.093	VG111 R 16 30	VG111 L 16 30	.118 - .163	1.000	1.250	1.000	1.000	5.000	1.340	58206	58198
0.400	30	0.093	VG111 R 20 30	VG111 L 20 30	.123 - .163	1.250	1.500	1.250	1.250	6.000	1.340	52752	52717
0.510	40	0.132	VG111 R 12 40	VG111 L 12 40	.156 - .203	0.750	1.000	0.750	0.750	4.500	1.430	58205	58197
0.510	40	0.132	VG111 R 16 40	VG111 L 16 40	.156 - .203	1.000	1.250	1.000	1.000	5.000	1.430	58207	58199
0.510	40	0.132	VG111 R 20 40	VG111 L 20 40	.162 - .203	1.250	1.500	1.250	1.250	6.000	1.430	52812	50175
0.510	50	0.171	VG111 R 16 50	VG111 L 16 50	.202 - .236	1.000	1.250	1.000	1.000	5.000	1.490	52729	52716
0.510	50	0.171	VG111 R 20 50	VG111 L 20 50	.202 - .236	1.250	1.500	1.250	1.250	6.000	1.490	52909	52718
0.630	60	0.211	VG111 R 16 60	VG111 L 16 60	.236 - .312	1.000	1.250	1.000	1.000	5.000	1.690	58208	58200
0.630	60	0.211	VG111 R 20 60	VG111 L 20 60	.241 - .312	1.250	1.500	1.250	1.250	6.000	1.690	53228	52719
0.930	80	0.255	VG111 R 24 80	VG111 L 24 80	.320 - .394	1.450	1.500	1.500	1.500	8.000	1.970	53229	52720

VG 111 Spare Parts

Seat Size	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP#	Screw EDP#
20	PT1204T	PT1214T	1.9	62393	62400
25	PT1204T	PT1214T	2.2	62393	62400
30	PT1204T	PT1214T	2.6	62393	62400
40	PT1206T	PT1217T	3.3	62395	62403
50	PT1206T	PT1217T	3.7	62395	62403
60	PT1206T	PT1217T	3.7	62395	62403
80	PT1206T	PT1217T	4.5	62395	62403

VSG Insert Seat Interchangeability

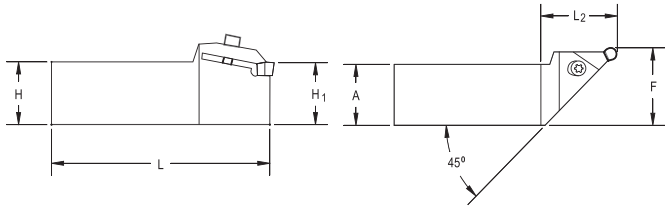
Insert Seat Size:	Fits in Tool holder Seat:	Insert Seat Size:	Fits in Toolholder Seat:
15	15 & 20	40	40 & 50
20	20 & 15	50	50 & 40
25	25 & 30	60	60
40	40, 30 & 20	80	80

*Advanced Torx Plus® locking mechanism

ValGROOVE™ VSG Toolholder System

VG115—Undercut Turning

Use Insert Style:
VSG-xx



Right-hand shown, Left-hand opposite

Seat Size	Seat Width	Right Hand	Left Hand	Dimensions							Right EDP#	Left EDP#
				W	A	F	H	H1	L	L2		
20	0.059	VG115 R 12 20	VG115 L 12 20	.065 - .088	0.750	1.000	0.750	0.750	4.50	1.190	58219	58209
25	0.079	VG115 R 12 25	VG115 L 12 25	.098 - .133	0.750	1.000	0.750	0.750	4.50	1.320	58220	58210
25	0.079	VG115 R 16 25	VG115 L 16 25	.098 - .133	1.000	1.250	1.000	1.000	5.00	1.320	58222	58212
30	0.093	VG115 R 12 30	VG115 L 12 30	.118 - .163	0.750	1.000	0.750	0.750	4.50	1.360	58221	58211
30	0.093	VG115 R 16 30	VG115 L 16 30	.118 - .163	1.000	1.250	1.000	1.000	5.00	1.360	58223	58213
40	0.132	VG115 R 16 40	VG115 L 16 40	.156 - .203	1.000	1.250	1.000	1.000	5.00	1.430	58224	58214
50	0.171	VG115 R 20 50	VG115 L 20 50	.197 - .250	1.250	1.500	1.250	1.250	6.00	1.490	58227	58217

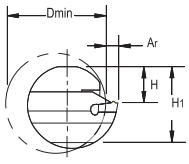
VG115 Spare Parts

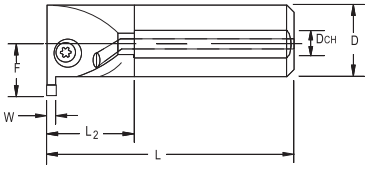
Seat Size	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP#	Screw EDP#
20	PT1204T	PT1214T	1.9	62393	62400
25	PT1204T	PT1214T	2.2	62393	62400
30	PT1204T	PT1214T	2.6	62393	62400
40	PT1206T	PT1217T	3.3	62395	62403
50	PT1206T	PT1217T	3.7	62395	62403

*Advanced Torx Plus® locking mechanism

VG117—ID Turning/Grooving

Use Insert Style:
VSG-xx





Right-hand shown, Left-hand opposite

D min.	Ar	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions								Right EDP#	Left EDP#
						W	F	H1	H	L	L2	D	D CH		
1.26	0.197	20	0.059	VG117 R 16 20	VG117 L 16 20	.065 - .088	0.697	0.910	0.450	8.00	1.270	1.000	0.35	58342	58328
1.58	0.197	20	0.059	VG117 R 20 20	VG117 L 20 20	.065 - .088	0.846	1.180	0.590	10.00	1.430	1.250	0.35	58345	58331
1.97	0.240	25	0.079	VG117 R 16 25	VG117 L 16 25	.098 - .133	0.732	0.910	0.450	8.00	1.270	1.000	0.35	58343	58329
1.97	0.240	25	0.079	VG117 R 20 25	-	.098 - .133	0.870	1.180	0.590	10.00	1.430	1.250	0.35	58346	-
1.97	0.236	25	0.079	VG117 R 24 25	-	.098 - .133	1.031	1.460	0.730	12.00	1.670	1.500	0.47	58351	-
1.97	0.236	30	0.093	VG117 R 16 30	VG117 L 16 30	.118 - .163	0.728	0.910	0.450	8.00	1.270	1.000	0.35	58344	58330
1.97	0.236	30	0.093	VG117 R 20 30	VG117 L 20 30	.118 - .163	0.870	1.180	0.590	10.00	1.430	1.250	0.35	58347	58333
1.97	0.236	30	0.093	VG117 R 24 30	VG117 L 24 30	.118 - .163	1.024	1.460	0.730	11.96	1.690	1.500	0.35	58352	58338
2.36	0.319	40	0.132	VG117 R 20 40	VG117 L 20 40	.156 - .203	0.949	1.180	0.590	10.00	1.430	1.250	0.35	58348	58334
2.36	0.319	40	0.132	VG117 R 24 40	VG117 L 24 40	.156 - .203	1.106	1.460	0.730	12.00	1.670	1.500	0.47	58353	58339
2.36	0.315	50	0.171	VG117 R 20 50	VG117 L 20 50	.197 - .250	0.945	1.180	0.590	10.00	1.430	1.250	0.35	58349	58335
2.36	0.315	50	0.171	VG117 R 24 50	-	.197 - .250	1.102	1.460	0.730	12.00	1.670	1.500	0.47	58354	-
2.76	0.394	60	0.211	VG117 R 20 60	VG117 L 20 60	.236 - .315	1.024	1.180	0.590	10.00	1.430	1.250	0.35	58350	58336
2.76	0.394	60	0.211	VG117 R 24 60	VG117 L 24 60	.236 - .315	1.181	1.460	0.730	12.00	1.670	1.500	0.47	58355	58341

VG117 Spare Parts

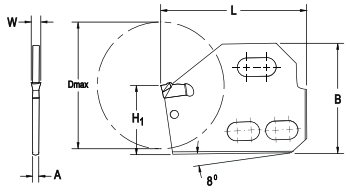
Seat Size	Torx® Wrench*	Torx® Screw*	Torque ft-lbs	Wrench EDP#	Screw EDP#
20	PT1204T	PT1213T	1.8	62393	62399
25	PT1204T	PT1213T	2.2	62393	62399
30	PT1204T	PT1213T	2.6	62393	62399
40	PT1206T	PT1216T	3.3	62395	62402
50	PT1206T	PT1216T	3.7	62395	62402
60	PT1206T	PT1216T	3.7	62395	62402

*Advanced Torx Plus® locking mechanism

ValGROOVE™ VSG Toolholder System

VG 123—Manchester Blades

Use Insert Style:
VSG-xx



Dmax	Seat Size	Seat Width	Part Number	Dimensions					EDP#
				W	A	B	H1	L	
3.00	20	0.059	VG123 40 20	.065 - .088	0.060	2.250	1.580	3.06	58364
2.00	20	0.059	VG123 27 20	.065 - .088	0.060	1.750	1.060	2.34	58358
3.00	30	0.093	VG123 40 30	.118 - .163	0.090	2.250	1.580	3.06	58366
2.00	30	0.093	VG123 27 30	.118 - .163	0.090	1.750	1.060	2.34	58360
3.00	30	0.093	VG123 36 30	.118 - .163	0.090	1.900	1.440	3.06	58363
3.00	50	0.171	VG123 40 50	.197 - .250	0.170	2.250	1.580	3.06	58368
2.00	50	0.171	VG123 27 50	.197 - .250	0.170	1.750	1.060	2.34	58362
5.00	60	0.211	VG123 56 60	.236 - .315	0.210	3.130	2.210	4.43	58370

VG123 Spare Parts

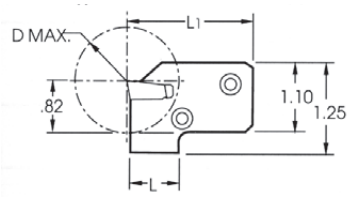
Seat Size	Torx® Wrench*	Wrench EDP#
20	PT1211	62397
30	PT1211	62397
50	PT1210	62396
60	PT1210	62396

Note: Insert key must be ordered separately
*Advanced Torx Plus® locking mechanism

ValGROOVE™ VSG Toolholder System

VGBT Blades

Use Insert Style: VSG-xx

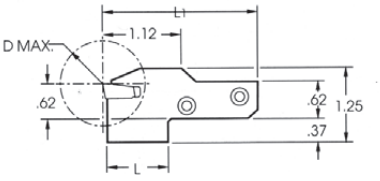


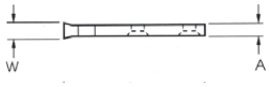
Right-hand shown, Left-hand opposite

Dmax	Seat Size	Seat Width	Part Number	Dimensions				EDP
				W	A	L	L1	
0.79	30	0.093	VGBT25L58 30	0.123	0.093	0.80	1.920	50168
0.79	30	0.093	VGBT25R58 30	0.123	0.093	0.80	1.920	50169

VGDG Blades

Use Insert Style: VSG-xx





Right-hand shown, Left-hand opposite

Dmax	Seat Size	Seat Width	Part Number	Dimensions				EDP
				W	A	L	L1	
1.50	30	0.093	VGDGL125078 30	0.123	0.093	0.78	2.250	50173
1.50	30	0.093	VGDGR125078 30	0.123	0.093	0.78	2.250	50184
2.00	50	0.171	VGDGL188103 50	0.202	0.171	1.03	2.500	50188
2.00	50	0.171	VGDGR188103 50	0.202	0.171	1.03	2.500	50179
3.00	60	0.211	VGDG250153 60	0.241	0.211	1.53	3.000	50177

VGBT & VGDG Spare Parts

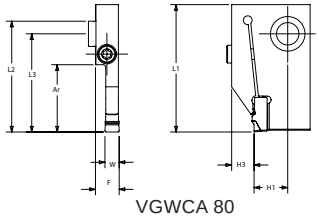
Seat Size	Insert Key	EDP#
30	PT1211	62397
50	PT1210	62396
60	PT1210	62396

Note: Insert key must be ordered separately

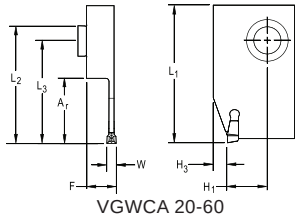
ValGROOVE™ VSG Toolholder System

VGWCA Modular Machining

Use Insert Style:
VSG-xx



VGWCA 80



VGWCA 20-60

Right-hand shown, Left-hand opposite

Ar	Seat Size	Seat Width	Right Hand	Left Hand	Dimensions							Right EDP#	Left EDP#
					W	L1	L2	L3	F	H1	H3		
0.875	20	0.059	VGWCA R 20	VGWCA L 20	.065 - .088	2.215	1.845	1.564	0.523	0.75	0.25	58496	58489
1.000	25	0.079	VGWCA R 25	VGWCA L 25	.098 - .133	2.34	1.97	1.689	0.523	0.75	0.25	58497	58490
1.125	30	0.093	VGWCA R 30	VGWCA L 30	.118 - .163	2.465	2.095	1.814	0.525	0.75	0.25	58498	58491
1.250	40	0.132	VGWCA R 40	VGWCA L 40	.156 - .203	2.59	2.2	1.939	0.526	0.75	0.25	58499	58492
1.250	50	0.171	VGWCA R 50	VGWCA L 50	.197 - .250	2.59	2.2	1.939	0.526	0.75	0.25	58500	58493
1.250	60	0.211	VGWCA R 60	VGWCA L 60	.236 - .315	2.59	2.2	1.939	0.527	0.75	0.25	58501	58494
1.500	80	0.255	VGWCA R 80	VGWCA L 80	.315 - .394	2.84	2.47	2.189	0.530	0.75	0.25	58502	58495

Note:
- Use with VHDBS Style Shanks page D19-D20.
- Insert key must be ordered separately.

VGWCA Spare Parts

Seat Size	Insert Key	EDP#
20	PT1211	62397
25	PT1211	62397
30	PT1211	62397
40	PT1210	62396
50	PT1210	62396
60	PT1210	62396
80	PT1210	62396

ValGroove VTG inserts for high productivity grooving, profiling, and parting in proven ValPro carbide grades and PCD/CBN tipped styles

ValGROOVE™ Insert Geometry Descriptions

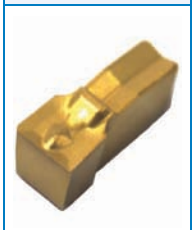
VTG System

Insert Style	Description
VTG-GG 	**Parting / Grooving** First choice for parting and grooving on all materials. Positive geometry eliminates the risk of edge build-up. Low cutting forces reduce vibration. Recommended for thin walled tubes and small diameter components.
VTG-TG 	**Turn-Grooving** Excellent choice for general plunge-turning. Medium feed rate capability with good chip control.
VTG-RG 	**Profiling / Radius Grooving** First choice for profiling/turning and radius grooving operations. Precision ground cutting edge for low forces and excellent surface finish. Strong geometry resists chipping in work hardening materials and interrupted cuts.
VTG-PG 	**Precision Grooving** First choice for precision grooving and turning operations. Excellent chip control in stainless steel and high temp alloys.

Insert Style	Description
VTG-CBNG 	**Grooving** General and finish grooving of irons and hard materials. Good impact resistance. Maintains close tolerances and excellent surface finish.
VTG-PCDG 	**Grooving** High performance parting and grooving in non-ferrous materials High speed/long tool life for aluminum and non-ferrous materials. Excellent in highly abrasive aluminum or other non-ferrous alloys. Maintains close tolerances and excellent surface finish.
VTG-CBNP 	**Profiling / Radius Grooving** General and finish profiling/radius grooving of irons and hard materials. Good impact resistance. Maintains close tolerances and excellent surface finish.
VTG-PCDP 	**Profiling/Radius Grooving** High performance profiling and radius grooving in non-ferrous materials High speed/long tool life for aluminum and non-ferrous materials. Excellent in highly abrasive aluminum or other non-ferrous alloys. Maintains close tolerances and excellent surface finish.

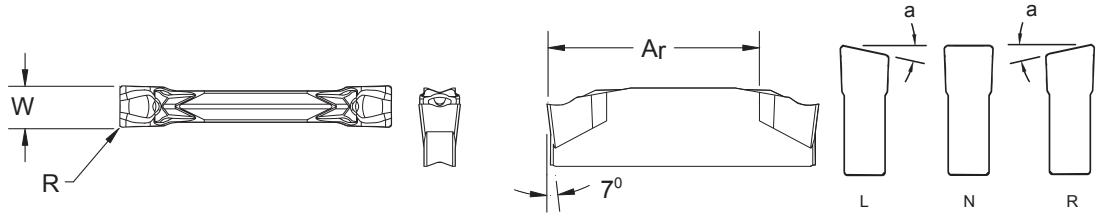
ValGROOVE™ Insert Geometry Descriptions

VSG System

Insert Style	Description
VSG-FG 	**Parting / Grooving** First choice for general parting and grooving operations. Good chip control and moderate cutting forces. Recommended for tubes and stainless steel.
VSG-PG 	**Precision Grooving** Best choice for precision grooving. Excellent repeatability due to tight tolerances. Low cutting forces and good chip control on many materials.
VSG-GG 	**Parting / Grooving** Ideal for heavy parting and grooving operations. Strong geometry for interrupted cuts.
VSG-RG 	**Radius Grooving / Profiling** Designed for radius grooving and profiling on all materials. Generates excellent surface finish.
VSG-CG 	**Parting / Grooving** Optimal parting and light grooving geometry. Minimizes pips and burrs when parting bars and tubes. Excellent for stainless, low carbon steel, high temp alloys.
VSG-UG 	**Undercut Grooving** First choice for turning of undercuts and reliefs. Increased clearance angle permits undercutting. Good chip control in a wide variety of materials.
VSG-LG 	**Grooving / Parting** Alternate light grooving and parting geometry. Generates low cutting forces. For stainless steels, ductile and work hardening materials.
VSG-SC 	**Grooving** Designed for slot milling applications in V350 Slot Mills. Excellent in heavily interrupted cuts and at high feed rates in poor machining conditions.

ValGROOVE™ VTG Insert System

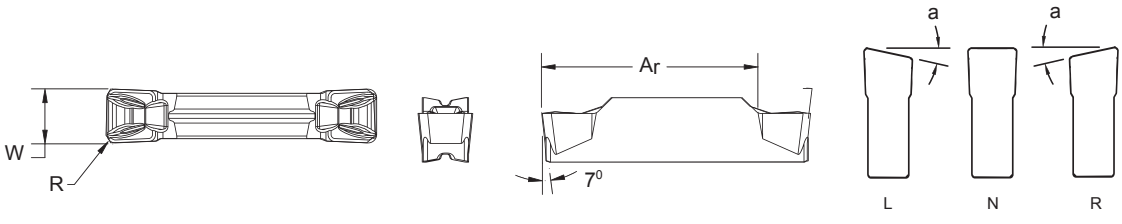
VTG GG—General Grooving/Parting



Chipbreaker	Part Number	Insert Dimensions								ValPro Grade Selection					
		Seat Size	Width		Radius		Ar		α	Available Grades - EDP#					
			Inch	mm	Inch	mm	Inch	mm		5820	5815	5810	5735	1710	UK20
VTG-GG	VTG 2.0 L5 20 GG	20	0.081	2.05	0.008	0.20	0.748	19.0	5°	02776					
	VTG 2.0 N 20 GG	20	0.081	2.05	0.008	0.20	0.748	19.0	0	02777			02759		
	VTG 2.0 R5 20 GG	20	0.081	2.05	0.008	0.20	0.748	19.0	5°	02778					
	VTG 2.5 L5 25 GG	25	0.100	2.55	0.008	0.20	0.744	18.9	5°	02779					
	VTG 2.5 N 25 GG	25	0.100	2.55	0.008	0.20	0.744	18.9	0	02780			02761		
	VTG 2.5 R5 25 GG	25	0.100	2.55	0.008	0.20	0.744	18.9	5°	02781					
	VTG 3.0 L5 30 GG	30	0.120	3.05	0.008	0.20	0.744	18.9	5°	02782			02762		
	VTG 3.0 N 30 GG	30	0.120	3.05	0.008	0.20	0.740	18.8	0	02783			02763		
	VTG 3.0 R5 30 GG	30	0.120	3.05	0.008	0.20	0.740	18.8	5°	02785			02765		
	VTG 4.0 L5 40 GG	40	0.159	4.05	0.008	0.20	0.949	24.1	5°	02786			02766		
	VTG 4.0 N 40 GG	40	0.159	4.05	0.008	0.20	0.949	24.1	0°	02787			02767	22483	
	VTG 4.0 R5 40 GG	40	0.159	4.05	0.008	0.20	0.949	24.1	5°	02789			02769		
	VTG 5.0 N 50 GG	50	0.199	5.05	0.008	0.20	0.949	24.1	0	02790			02770		
	VTG 6.0 N 60 GG	60	0.238	6.05	0.016	0.40	0.925	23.5	0	02792			02772	19893	

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

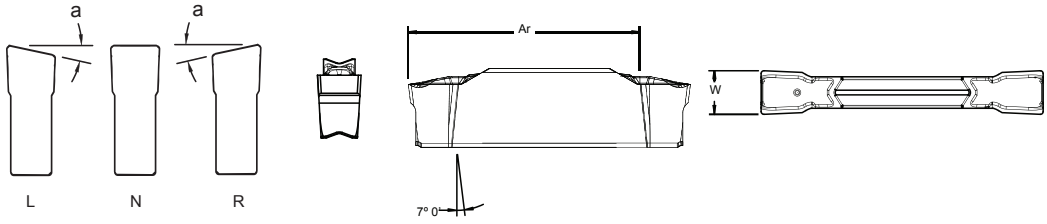
VTG TG—Turn Grooving



Chipbreaker	Part Number	Insert Dimensions								ValPro Grade Selection					
		Seat Size	Width		Radius		Ar		α	Available Grades - EDP#					
			Inch	mm	Inch	mm	Inch	mm		5820	5815	5810	5735	1710	UK20
VTG-TG	VTG 3.0 N 30 TG	30	0.120	3.05	0.016	0.40	0.724	18.4	0	02784			02764		
	VTG 4.0 N 40 TG	40	0.159	4.05	0.031	0.80	0.921	23.4	0	02788			02768		
	VTG 5.0 N 50 TG	50	0.199	5.05	0.031	0.80	0.906	23.0	0	02791			02771		
	VTG 6.0 N 60 TG	60	0.238	6.05	0.031	0.80	0.906	23.0	0	02793			02773		
	VTG 8.0 N 80 TG	80	0.317	8.05	0.047	1.20	1.090	27.6	0	02794			02774		

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

VTG-PG—Precision Grooving



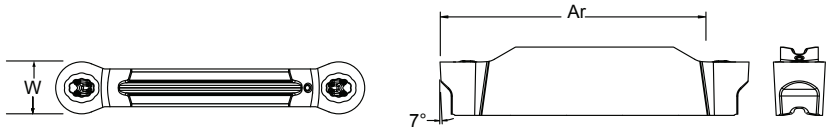
Chipbreaker	Part Number	Insert Dimensions								ValPro Grade Selection					
		Seat Size	Width		Radius		Ar		α	Available Grades - EDP#					
			Inch	mm	Inch	mm	Inch	mm		5820	5815	5810	5735	1710	UK20
VTG-PG	VTG 1.60 L10 15 PG¹	15	0.063	1.60	0.004	0.10	0.524	13.3	10°	23617					
	VTG 1.60 N 15 PG¹	15	0.063	1.60	0.004	0.10	0.524	13.3	0	23620		23619	23618		
	VTG 1.60 R10 15 PG¹	15	0.063	1.60	0.004	0.10	0.524	13.3	10°	23657					
	VTG 1.85 N 20 PG*	20	0.073	1.85	0.004	0.10	0.750	19.0	0	23621					
	VTG 1.98 N 20 PG*	20	0.078	1.98	0.008	0.20	0.750	19.0	0	23622					
	VTG 2.39 N 25 PG*	25	0.094	2.39	0.008	0.20	0.750	19.0	0	23625		23624	23623		
	VTG 2.65 N 25 PG¹	25	0.104	2.65	0.008	0.20	0.750	19.0	0	23626					
	VTG 3.00 N 30 PG*	30	0.118	3.00	0.008	0.20	0.750	19.0	0	23628		23627			
	VTG 3.10 N 30 PG*	30	0.122	3.10	0.008	0.20	0.750	19.0	0	23629					
	VTG 3.18 N 30 PG*	30	0.125	3.18	0.008	0.20	0.750	19.0	0	23633		23632	23631		23630
	VTG 3.30 N 30 PG*	30	0.130	3.30	0.008	0.20	0.750	19.0	0	23634					
	VTG 3.96 N 40 PG¹	40	0.156	3.96	0.008	0.20	0.960	24.4	0	23637		23636	23635		
	VTG 4.00 N 40 PG¹	40	0.157	4.00	0.008	0.20	0.960	24.4	0	23640		23639	23638		
	VTG 4.32 N 40 PG¹	40	0.170	4.32	0.016	0.40	0.960	24.4	0	23641					
	VTG 4.50 N 40 PG¹	40	0.177	4.50	0.016	0.40	0.960	24.4	0	23642					
	VTG 4.75 N 40 PG¹	40	0.187	4.75	0.020	0.51	0.960	24.4	0	23646		23645	23644		23643
	VTG 5.56 N 50 PG¹	50	0.218	5.56	0.020	0.51	0.960	24.4	0	23647					
	VTG 6.35 N 60 PG¹	60	0.250	6.35	0.020	0.51	0.960	24.4	0	23651		23650	23649		23648
	VTG 6.48 N 60 PG¹	60	0.255	6.48	0.024	0.60	0.960	24.4	0	23653			23652		
	VTG 7.92 N 80 PG¹	80	0.312	7.92	0.016	0.40	1.140	29.0	0	23656		23658	23655		23654

*Available June 2007

¹Available 3Q 2007. Check with Valenite Customer Service for details.
Width Tolerance ± 0.0008" (± 0.02mm), Radius Tolerance ±0.002" (± 0.05mm)

ValGROOVE™ VTG Insert System

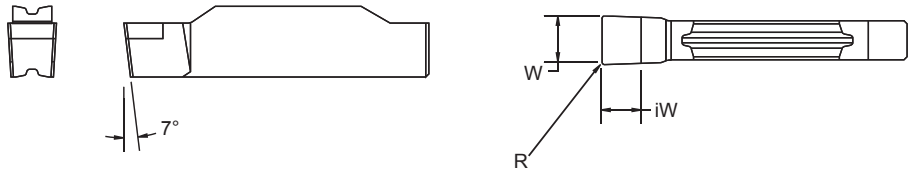
VTG-RG—Profiling/Radius Grooving



Chipbreaker	Part Number	Insert Dimensions								ValPro Grade Selection					
		Seat Size	Width		Radius		Ar		α	Available Grades - EDP#					
			Inch	mm	Inch	mm	Inch	mm		5820	5815	5810	5735	1710	UK20
VTG-RG	VTG 2.00 N 20 RG	20	0.079	2.00	0.0395	1.00	0.759	19.3	0	20325	20337		20324		
	VTG 2.39 N 20 RG	20	0.094	2.39	0.047	1.19	0.750	19.0	0	20326	20339		20338		
	VTG 3.00 N 25 RG	25	0.118	3.00	0.059	1.50	0.750	19.0	0	20327	20341		20340		
	VTG 3.18 N 25 RG	25	0.125	3.18	0.063	1.59	0.750	19.0	0	20328	20344		20343		20342
	VTG 4.00 N 40 RG	40	0.156	4.00	0.078	2.00	0.920	23.4	0	20329	20347		20346		20345
	VTG 4.75 N 40 RG	40	0.187	4.75	0.094	2.38	0.900	22.9	0	20330	20350		20349		20348
	VTG 5.00 N 40 RG	40	0.197	5.00	0.099	2.50	0.900	22.9	0	20331	20352		20351		
	VTG 6.00 N 50 RG	40	0.236	6.00	0.118	3.00	0.875	22.2	0	20332	20355		20354		20353
	VTG 6.35 N 50 RG	50	0.250	6.35	0.125	3.18	0.875	22.2	0	20333	20358		20357		20356
	VTG 8.00 N 80 RG	80	0.315	8.00	0.157	4.00	1.080	27.4	0	20334	20359		22351		

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

VTG CBNG—CBN Grooving

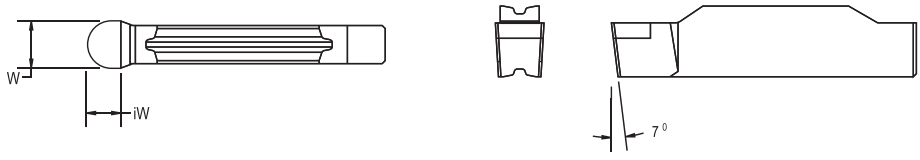


Insert Style	Part Number	Insert Dimensions								ValPro Grade Selection	
		Seat Size	Width		Radius		iW		α	Available Grades - EDP#	
			Inch	mm	Inch	mm	Inch	mm		D720	B125
VTG-CBNG	VTG 2.39 N 25 CBNG	25	0.094	2.39	0.008	0.20	0.126	3.2	0		40227
	VTG 3.00 N 30 CBNG	30	0.118	3.00	0.008	0.20	0.126	3.2	0		40228
	VTG 3.18 N 30 CBNG	30	0.125	3.18	0.008	0.20	0.126	3.2	0		40229
	VTG 4.00 N 40 CBNG	40	0.157	4.00	0.008	0.20	0.126	3.2	0		40230
	VTG 4.75 N 40 CBNG	40	0.187	4.75	0.008	0.20	0.126	3.2	0		40233
	VTG 5.00 N 40 CBNG	40	0.197	5.00	0.008	0.20	0.126	3.2	0		40254
	VTG 6.00 N 50 CBNG	50	0.236	6.00	0.008	0.20	0.126	3.2	0		00361
	VTG 6.35 N 60 CBNG	60	0.250	6.35	0.008	0.20	0.126	3.2	0		40271
	VTG 7.94 N 80 CBNG	80	0.312	7.94	0.008	0.20	0.126	3.2	0		40273
	VTG 8.00 N 80 CBNG	80	0.315	8.00	0.008	0.20	0.126	3.2	0		40276

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

ValGROOVE™ VTG Insert System

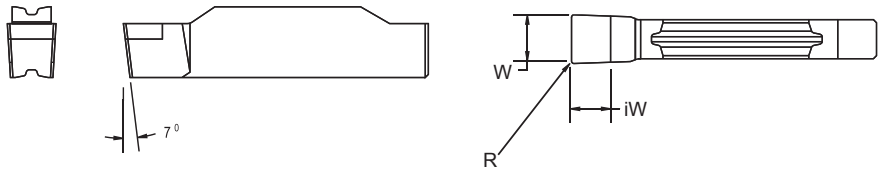
VTG CBNP—CBN Profiling



Insert Style	Part Number	Insert Dimensions								ValPro Grade Selection	
		Seat Size	Width		Radius		iW		α	Available Grades - EDP#	
			Inch	mm	Inch	mm	Inch	mm		D720	B125
VTG-CBNP	VTG 2.39 N 25 CBNP	25	0.094	2.39	0.047	1.19	0.098	2.5	0		40277
	VTG 3.00 N 30 CBNP	30	0.118	3.00	0.059	1.50	0.098	2.5	0		40278
	VTG 3.18 N 30 CBNP	30	0.125	3.18	0.063	1.59	0.098	2.5	0		40288
	VTG 4.00 N 40 CBNP	40	0.157	4.00	0.079	2.00	0.118	3.0	0		40291
	VTG 4.75 N 40 CBNP	40	0.187	4.75	0.093	2.38	0.138	3.5	0		40292
	VTG 5.00 N 40 CBNP	40	0.197	5.00	0.098	2.50	0.138	3.5	0		40295
	VTG 6.00 N 50 CBNP	50	0.236	6.00	0.118	3.00	0.157	4.0	0		40300
	VTG 6.35 N 50 CBNP	50	0.250	6.35	0.125	3.18	0.157	4.0	0		40302
	VTG 7.94 N 80 CBNP	80	0.312	7.94	0.156	3.97	0.197	5.0	0		40304
	VTG 8.00 N 80 CBNP	80	0.315	8.00	0.157	4.00	0.197	5.0	0		40305

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

VTG PCDG—PCD Grooving

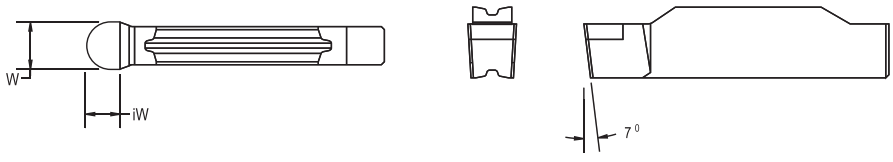


Insert Style	Part Number	Insert Dimensions								ValPro Grade Selection	
		Seat Size	Width		Radius		iW		α	Available Grades - EDP#	
			Inch	mm	Inch	mm	Inch	mm		D720	B125
VTG-PCDG	VTG 3.00 N 30 PCDG	30	0.118	3.00	0.008	0.20	0.126	3.2	0	40056	
	VTG 3.18 N 30 PCDG	30	0.125	3.18	0.008	0.20	0.126	3.2	0	40064	
	VTG 4.00 N 40 PCDG	40	0.157	4.00	0.008	0.20	0.126	3.2	0	40073	
	VTG 4.75 N 40 PCDG	40	0.187	4.75	0.008	0.20	0.126	3.2	0	40084	
	VTG 5.00 N 40 PCDG	40	0.197	5.00	0.008	0.20	0.126	3.2	0	40086	
	VTG 6.00 N 50 PCDG	50	0.236	6.00	0.008	0.20	0.126	3.2	0	40091	
	VTG 6.35 N 60 PCDG	60	0.250	6.35	0.008	0.20	0.126	3.2	0	40105	
	VTG 7.94 N 80 PCDG	80	0.312	7.94	0.008	0.20	0.126	3.2	0	40148	
	VTG 8.00 N 80 PCDG	80	0.315	8.00	0.008	0.20	0.126	3.2	0	40154	

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

ValGROOVE™ VTG Insert System

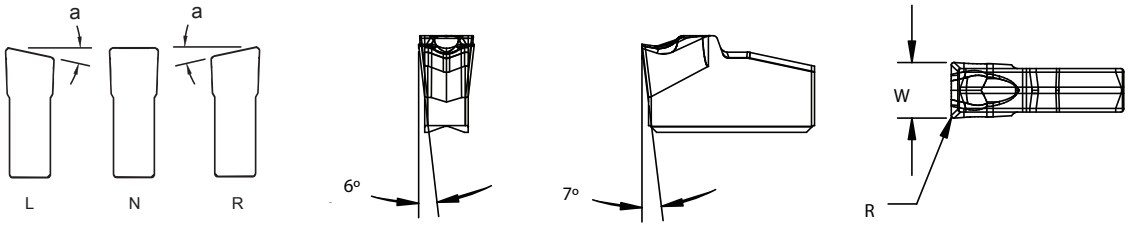
VTG PCDP—PCD Profiling



Insert Style	Part Number	Insert Dimensions								ValPro Grade Selection	
		Seat Size	Width		Radius		iW		α	Available Grades - EDP#	
			Inch	mm	Inch	mm	Inch	mm		D720	B125
VTG-PCDP	VTG 3.00 N 30 PCDP	30	0.118	3.00	0.059	1.50	0.098	2.5	0	40213	
	VTG 3.18 N 30 PCDP	30	0.125	3.18	0.063	1.59	0.098	2.5	0	40214	
	VTG 4.00 N 40 PCDP	40	0.157	4.00	0.079	2.00	0.118	3.0	0	40215	
	VTG 4.75 N 40 PCDP	40	0.187	4.75	0.093	2.38	0.138	3.5	0	40216	
	VTG 5.00 N 40 PCDP	40	0.197	5.00	0.098	2.50	0.138	3.5	0	40217	
	VTG 6.00 N 50 PCDP	50	0.236	6.00	0.118	3.00	0.157	4.0	0	40218	
	VTG 6.35 N 50 PCDP	50	0.250	6.35	0.125	3.18	0.157	4.0	0	40219	
	VTG 7.94 N 80 PCDP	80	0.312	7.94	0.156	3.97	0.197	5.0	0	40220	
	VTG 8.00 N 80 PCDP	80	0.315	8.00	0.157	4.00	0.197	5.0	0	40221	

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

VSG-FG—General Grooving/Parting

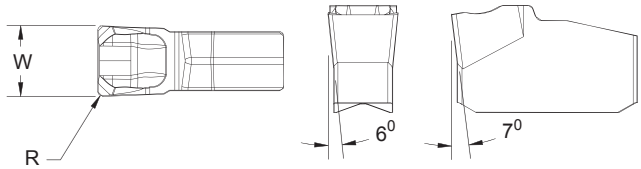


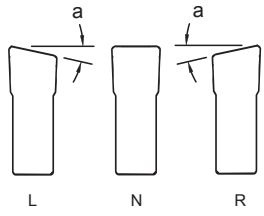
Chipbreaker	Part Number	Insert Dimensions						ValPro Grade Selection					
		Seat Size	Width		Radius		α	Available Grades - EDP#					
			Inch	mm	Inch	mm		5820	5815	5735	1710	UK20	5845
VSG-FG	VSG 1.5 L5 15 FG	15	0.063	1.60	0.004	0.10	5°		04963			04960	
	VSG 1.5 N 15 FG	15	0.063	1.60	0.008	0.20	0	23532	22363	23531		23530	
	VSG 1.5 R5 15 FG	15	0.063	1.60	0.004	0.10	5°	04986	04985	22364		04979	
	VSG 2.0 L5 20 FG	20	0.084	2.13	0.008	0.20	5°	05003	04995			04993	
	VSG 2.0 N 20 FG	20	0.084	2.13	0.008	0.20	0	23535	05509	23534		23533	
	VSG 2.0 R5 20 FG	20	0.084	2.13	0.008	0.20	5°	05552	05546	23536		05542	
	VSG 2.4 L5 25 FG	25	0.094	2.39	0.008	0.20	5°	05564	05560			05558	
	VSG 2.4 N 25 FG	25	0.094	2.39	0.008	0.20	0	05573	05572			05569	
	VSG 2.4 R5 25 FG	25	0.094	2.39	0.008	0.20	5°	05717	05716			05574	
	VSG 3.0 L5 30 FG	30	0.123	3.13	0.008	0.20	5°	05815	05814	05812		05727	
	VSG 3.0 N 30 FG	30	0.123	3.13	0.008	0.20	0	05891	05877	05876	22360	05821	
	VSG 3.0 R5 30 FG	30	0.123	3.13	0.008	0.20	5°	06101	06097	06093		06092	
	VSG 4.0 L5 40 FG	40	0.162	4.13	0.008	0.20	5°	06122	06119	06117		06115	
	VSG 4.0 N 40 FG	40	0.162	4.13	0.008	0.20	0	06132	06130	06129		06124	
	VSG 4.0 R5 40 FG	40	0.162	4.13	0.008	0.20	5°	06163	06144	06143		06138	
	VSG 4.7 L5 40 FG	40	0.189	4.80	0.008	0.20	5°	06362	06354	06243		06231	
	VSG 4.7 N 40 FG	40	0.189	4.80	0.008	0.20	0	06377	06375	06366		06365	
	VSG 4.7 R5 40 FG	40	0.189	4.80	0.008	0.20	5°	06389	06387	06382		07013	
	VSG 5.0 L5 50 FG	50	0.202	5.13	0.008	0.20	5°	07015	07014				
	VSG 5.0 N 50 FG	50	0.202	5.13	0.008	0.20	0	07226	07081	07031		07025	
	VSG 5.0 R5 50 FG	50	0.202	5.13	0.008	0.20	5°	07234	07227				
	VSG 6.0 L5 60 FG	60	0.241	6.13	0.008	0.20	5°	07303	07242	17684		07237	
	VSG 6.0 N 60 FG	60	0.241	6.13	0.008	0.20	0	07324	07310	07309		07308	
	VSG 6.0 R5 60 FG	60	0.241	6.13	0.008	0.20	5°	07682	07673	07551		07481	
	VSG 6.4 N 60 FG	60	0.250	6.35	0.008	0.20	0	07893	07892	07891		07858	

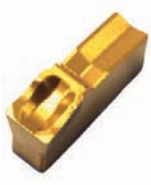
Width Tolerance: ± 0.005" (± 0.125mm), Radius Tolerance ± 0.004" (± 0.1mm)

ValGROOVE™ VSG Insert System

VSG-GG One Edge Inserts—Heavy Grooving/Parting



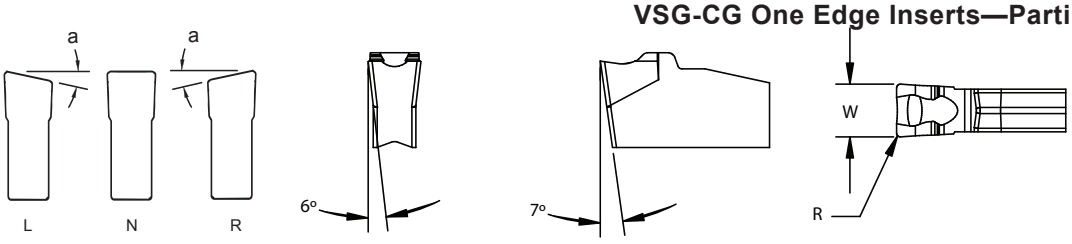


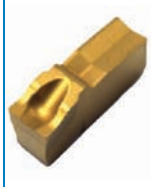
Chipbreaker	Part Number	Insert Dimensions						ValPro Grade Selection					
		Seat Size	Width		Radius		α	Available Grades - EDP#					
			Inch	mm	Inch	mm		5820	5815	5735	1710	UK20	5845
VSG-GG	VSG 2.5 N 25 GG	25	0.103	2.63	0.012	0.30	0	02697		02663		02731	
	VSG 3.0 L5 30 GG	30	0.123	3.13	0.012	0.30	5°	02699		02665		02733	
	VSG 3.0 N 30 GG	30	0.123	3.13	0.012	0.30	0	02701		02667		02735	
	VSG 3.0 R5 30 GG	30	0.123	3.13	0.012	0.30	5°	02703		02669		02737	
	VSG 4.0 L5 40 GG	40	0.162	4.13	0.012	0.30	5°	12835		12808		12863	
	VSG 4.0 N 40 GG	40	0.162	4.13	0.012	0.30	0	02711		02677		02744	
	VSG 4.0 R5 40 GG	40	0.162	4.13	0.012	0.30	5°	02713		02679		02746	
	VSG 4.7 N 40 GG	40	0.189	4.80	0.012	0.30	0	02714		02680		02747	
	VSG 4.7 R5 40 GG	40	0.189	4.80	0.012	0.30	5°	02715		02681		02748	
	VSG 5.0 L5 50 GG	50	0.202	5.13	0.012	0.30	5°	12840		12811		12866	
	VSG 5.0 N 50 GG	50	0.202	5.13	0.015	0.38	0	02718		02684		02751	
	VSG 5.0 R5 50 GG	50	0.202	5.13	0.012	0.30	5°	12842		12813		12868	
	VSG 6.0 L5 60 GG	60	0.241	6.13	0.012	0.30	5°	02721	02775	02686		02752	
	VSG 6.0 N 60 GG	60	0.241	6.13	0.012	0.30	0	02723		02688		02754	
	VSG 6.0 R5 60 GG	60	0.241	6.13	0.012	0.30	5°	12847		12816		12871	
	VSG 6.4 L5 60 GG	60	0.250	6.35	0.014	0.35	5°	19565	19564	19563		19562	
	VSG 6.4 N 60 GG	60	0.250	6.35	0.014	0.35	0	19569	19568	19567		19566	
	VSG 6.4 R5 60 GG	60	0.250	6.35	0.014	0.35	5°	19573	19572	19571		19570	
	VSG 8.0 N 80 GG	80	0.320	8.13	0.024	0.60	0	02727		02692		02758	

Width Tolerance: ± 0.005" (± 0.125mm), Radius Tolerance ± 0.004" (± 0.1mm)

ValGROOVE™ VSG Insert System

VSG-CG One Edge Inserts—Parting/Light Grooving

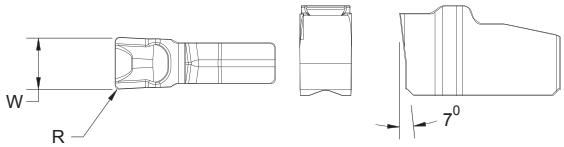


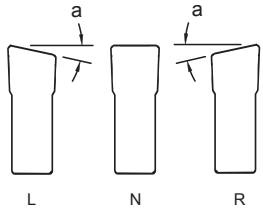
Chipbreaker	Part Number	Insert Dimensions						ValPro Grade Selection					
		Seat Size	Width		Radius		α	Available Grades - EDP#					
			Inch	mm	Inch	mm		5820	5815	5735	1710	UK20	5845
VSG-CG	VSG 2.0 L5 20 CG	20	0.083	2.10	0.004	0.10	5°		17724			17723	
	VSG 2.0 N 20 CG	20	0.083	2.10	0.008	0.20	0	17728	17727	17726		17725	
	VSG 2.0 R5 20 CG	20	0.084	2.10	0.004	0.10	5°		17730			17729	
	VSG 2.5 L12 25 CG	25	0.102	2.60	0.004	0.10	12°	17820	17819	17818		17817	
	VSG 2.5 L5 25 CG	25	0.102	2.60	0.004	0.10	5°	17738	17737	17736		17735	
	VSG 2.5 L8 25 CG	25	0.102	2.60	0.004	0.10	8°	17742	17741	17740		17739	
	VSG 2.5 N 25 CG	25	0.102	2.60	0.008	0.20	0	17746	17745	17744		17743	
	VSG 2.5 R12 25 CG	25	0.102	2.60	0.004	0.10	12°	17824	17823	17822		17821	
	VSG 2.5 R5 25 CG	25	0.102	2.60	0.004	0.10	5°	17754	17753	17752		17751	
	VSG 2.5 R8 25 CG	25	0.102	2.60	0.004	0.10	8°	17758	17757	17756		17755	
	VSG 3.0 L12 30 CG	30	0.123	3.13	0.004	0.10	12°	17828	17827	17826		17825	
	VSG 3.0 L5 30 CG	30	0.123	3.13	0.004	0.10	5°	17766	17765	17764		17763	
	VSG 3.0 L8 30 CG	30	0.123	3.13	0.004	0.10	8°	17770	17769	17768		17767	
	VSG 3.0 N 30 CG	30	0.123	3.13	0.008	0.20	0	17774	17773	17772		17771	
	VSG 3.0 R12 30 CG	30	0.123	3.13	0.004	0.10	12°	17832	17831	17830		17829	
	VSG 3.0 R5 30 CG	30	0.123	3.13	0.004	0.10	5°	17782	17781	17780		17779	
	VSG 3.0 R8 30 CG	30	0.123	3.13	0.004	0.10	8°	17786	17785	17784		17783	
	VSG 4.0 L5 40 CG	40	0.161	4.10	0.004	0.10	5°	17789	17788	17971		17787	
	VSG 4.0 L8 40 CG	40	0.161	4.10	0.004	0.10	8°	17794	17793	17792		17791	
	VSG 4.0 N 40 CG	40	0.161	4.10	0.008	0.20	0	17798	17797	17796		17795	
	VSG 4.0 R5 40 CG	40	0.161	4.10	0.004	0.10	5°	17802	17801	17800		17799	
	VSG 4.0 R8 40 CG	40	0.161	4.10	0.004	0.10	8°	17806	17805	17804		17803	
	VSG 4.7 N 40 CG	40	0.189	4.80	0.008	0.20	0	17810	17809	17808		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)

ValGROOVE™ VSG Insert System

VSG LG One Edge Inserts—Light Grooving/Parting

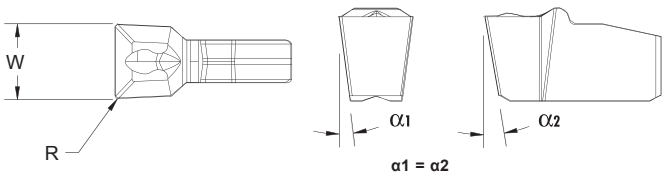




Chipbreaker	Part Number	Insert Dimensions						ValPro Grade Selection					
		Seat Size	Width		Radius		α	Available Grades - EDP#					
			Inch	mm	Inch	mm		5820	5815	5735	1710	UK20	5845
VSG-LG	VSG 3.0 L15 30 LG	30	0.123	3.13	.008x45°	0.20x45°	15°	12828		12803		12858	
	VSG 3.0 L8 30 LG	30	0.123	3.13	.008x45°	0.20x45°	8°	12829		12804		12859	
	VSG 3.0 N 30 LG	30	0.123	3.13	0.012	0.30	0	02702		02668		02736	
	VSG 3.0 R15 30 LG	30	0.123	3.13	.008x45°	0.20x45°	15°	12831		12806		12861	
	VSG 3.0 R8 30 LG	30	0.123	3.13	.008x45°	0.20x45°	8°	02704		02670		02738	
	VSG 4.0 L15 40 LG	40	0.162	4.13	.008x45°	0.20x45°	15°	12834		12807		12862	
	VSG 4.0 N 40 LG	40	0.162	4.13	0.012	0.30	0	02712		02678		02745	
	VSG 4.0 R15 40 LG	40	0.162	4.13	.008x45°	0.20x45°	15°	12836		12809		12864	

Width Tolerance: ± 0.005" (± 0.125mm), Radius Tolerance ± 0.004" (± 0.1mm)

VSG PG One-Edge Inserts—Precision Grooving

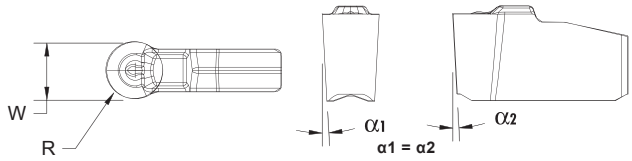


Chipbreaker	Part Number	Insert Dimensions						ValPro Grade Selection					
		Seat Size	Width		Radius		α	Available Grades - EDP#					
			Inch	mm	Inch	mm		5820	5815	5735	1710	UK20	5845
VSG-PG	VSG 1.85 N 20 PG	20	0.073	1.85	0.008	0.20	7°	14703		14702		14704	
	VSG 1.98 N 20 PG	20	0.078	1.98	0.008	0.20	7°	12822		14671		12856	
	VSG 2.24 N 20 PG	20	0.088	2.24	0.008	0.20	7°	12825		12802		12857	
	VSG 2.29 N 20 PG	20	0.090	2.29	0.008	0.20	7°	01240		01235			
	VSG 2.39 N 25 PG	25	0.094	2.39	0.008	0.20	7°	01248	01243				
	VSG 2.46 N 25 PG	25	0.097	2.46	0.013	0.33	7°	01250					
	VSG 2.67 N 25 PG	25	0.105	2.67	0.008	0.20	7°	02698	22359	02664		02732	
	VSG 2.79 N 25 PG	25	0.110	2.79	0.013	0.33	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	0.008	0.20	7°	01252	01251				
	VSG 3.10 N 25 PG	25	0.122	3.10	0.008	0.20	7°	02705		02671		02739	
	VSG 3.18 N 25 PG	25	0.125	3.18	0.008	0.20	7°	02706	22361	02672		02740	
	VSG 3.30 N 25 PG	25	0.130	3.30	0.008	0.20	7°	02707	01254	02673		02741	
	VSG 3.61 N 30 PG	30	0.142	3.61	0.013	0.33	7°	01256	01255				
	VSG 3.96 N 30 PG	30	0.156	3.96	0.008	0.20	7°	02709		02675		02742	
	VSG 4.00 0.40 N30 PG	30	0.157	4.00	0.016	0.40	7°	17844	17843				
	VSG 4.00 N 30 PG	30	0.157	4.00	0.008	0.20	7°	01258	01257				
	VSG 4.15 N 30 PG	30	0.163	4.15	0.008	0.20	7°	12839		12810		12865	
	VSG 4.32 N 40 PG	40	0.170	4.32	0.015	0.38	7°	01261	01259				
	VSG 4.50 N 40 PG	40	0.177	4.50	0.016	0.40	7°	01274	01268	01262			
	VSG 4.52 N 40 PG	40	0.178	4.50	0.008	0.20	7°	01280	01278			01277	
	VSG 4.70 N 40 PG	40	0.185	4.70	0.023	0.57	7°	01286	01285			01284	
	VSG 4.80 N 40 PG	40	0.189	4.80	0.023	0.57	7°	02716	01287	02682		02749	
	VSG 5.00 0.40 N40 PG	40	0.197	5.00	0.0160	0.40	7°	01293					
	VSG 5.00 N 40 PG	40	0.197	5.00	0.008	0.20	7°	01288					
	VSG 5.15 N 40 PG	40	0.203	5.15	0.008	0.20	7°	12845		12814		12869	
	VSG 5.33 N 50 PG	50	0.210	5.33	0.024	0.60	7°	01332	01329				
	VSG 5.41 N 50 PG	50	0.213	5.41	0.008	0.20	7°	01433	01432				
	VSG 5.56 N 50 PG	50	0.219	5.56	0.023	0.57	7°	01435					
	VSG 6.00 N 50 PG	50	0.236	6.00	0.008	0.20	7°	12848		02685		12872	
	VSG 6.35 N 60 PG	60	0.250	6.35	0.023	0.57	7°	02724	01442	02689		02755	
	VSG 6.48 N 60 PG	60	0.255	6.48	0.023	0.57	7°	02725		02690		02756	
	VSG 7.92 N 60 PG	60	0.312	7.92	0.033	0.83	7°	12851		12817		12873	
	VSG 9.52 N 80 PG	80	0.375	9.52	0.033	0.83	7°	12852		12818		12874	
	VSG 10.0 N 80 PG	80	0.394	10.00	0.012	0.30	7°	12819		12798		12853	

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

ValGROOVE™ VSG Insert System

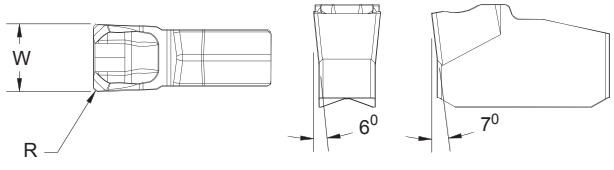
VSG RG One-Edge Inserts—Radius Grooving/Profiling

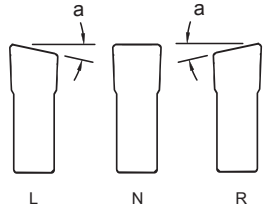


Chipbreaker	Part Number	Insert Dimensions						ValPro Grade Selection					
		Seat Size	Width		Radius		α	Available Grades - EDP#					
			Inch	mm	Inch	mm		5820	5815	5735	1710	UK20	5845
VSG-RG	VSG 3.0 N 30 RG	30	0.118	3.00	0.059	1.50	0	12830		12805		12860	
	VSG 3.18 N 30 RG	30	0.125	3.18	0.063	1.59	0	14676		14675		14677	
	VSG 3.30 N 30 RG	30	0.130	3.30	0.065	1.65	0	02708	22362	02674		14678	
	VSG 3.96 N 40 RG	40	0.156	3.96	0.078	1.98	0	14680		14679		14681	
	VSG 4.0 N 40 RG	40	0.157	4.00	0.079	2.00	0	14683		14682		14684	
	VSG 4.32 N 40 RG	40	0.170	4.35	0.085	2.18	0	02661	02660				
	VSG 4.75 N 40 RG	40	0.187	4.75	0.094	2.38	0	14686		14685		14687	
	VSG 5.0 N 40 RG	40	0.197	5.00	0.098	2.50	0	12841		12812		12867	
	VSG 5.33 N 50 RG	50	0.210	5.33	0.105	2.67	0	02694	02693				
	VSG 6.0 N 50 RG	50	0.236	6.00	0.118	3.00	0	12846		12815		12870	
	VSG 6.35 N 50 RG	50	0.250	6.35	0.125	3.18	0	14689		14688		14690	
	VSG 6.48 N 50 RG	50	0.255	6.48	0.128	3.24	0	02728	02720	02719		02695	
	VSG 7.93 N 60 RG	60	0.312	7.93	0.156	3.97	0	14692		14691		14693	
	VSG 9.53 N 80 RG	80	0.375	9.53	0.188	4.77	0	14695		14694		14696	
	VSG 10.0 N 80 RG	80	0.394	10.00	0.197	5.00	0	12820		12799		12854	

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

VSG-SC One-Edge Inserts—Slotting Mill/Heavy Parting



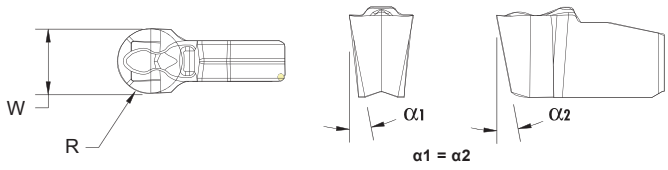


Chipbreaker	Part Number	Insert Dimensions						ValPro Grade Selection					
		Seat Size	Width		Radius		α	Available Grades - EDP#					
			Inch	mm	Inch	mm		5820	5815	5735	1710	UK20	5845
VSG-SC	VSG 2.06 N 20 SC	20	0.081	2.06	0.008	0.20	0		12823				12824
	VSG 2.60 N 25 SC	25	0.102	2.60	0.008	0.20	0		12826				12827
	VSG 3.10 N 30 SC	30	0.123	3.10	0.012	0.30	0		12832				12833
	VSG 4.12 N 40 SC	40	0.162	4.12	0.012	0.30	0		12837				12838
	VSG 5.14 N 50 SC	50	0.202	5.14	0.015	0.38	0		12843				12844
	VSG 6.12 N 60 SC	60	0.241	6.12	0.015	0.38	0		12849				12850

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

ValGROOVE™ VSG Insert System

VSG UG One Edge Inserts—Undercut Grooving

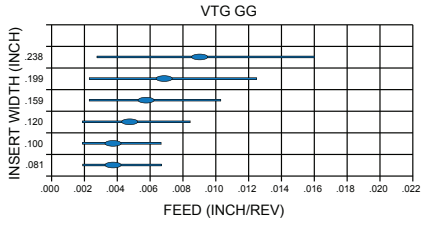
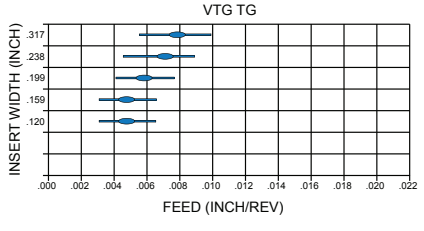
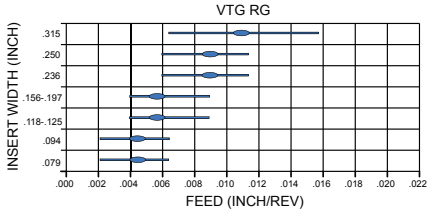
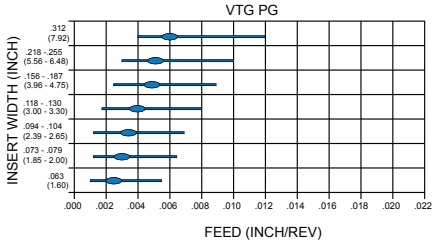


Chipbreaker	Part Number	Insert Dimensions						ValPro Grade Selection					
		Seat Size	Width		Radius		α	Available Grades - EDP#					
			Inch	mm	Inch	mm		5820	5815	5735	1710	UK20	5845
VSG-UG	VSG 2.0 N 20 UG	20	0.079	2.00	0.039	1.00	5°	02696		02662		02730	
	VSG 3.0 N 25 UG	25	0.118	3.00	0.059	1.50	7°	02700		02666		02734	
	VSG 4.0 N 30 UG	30	0.157	4.00	0.079	2.00	11°	02710		02676		02743	
	VSG 5.0 N 40 UG	40	0.197	5.00	0.098	2.50	11°	02717		02683		02750	
	VSG 6.0 N 50 UG	50	0.236	6.00	0.118	3.00	11°	02722		02687		02753	
	VSG 8.0 N 60 UG	60	0.315	8.00	0.158	4.00	11°	02726		02691		02757	

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

ValGROOVE™ Insert Geometry Application Data

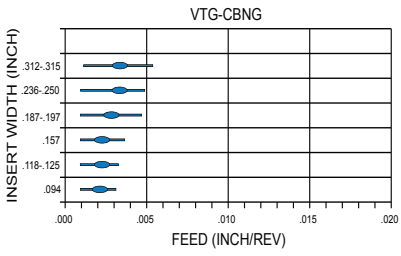
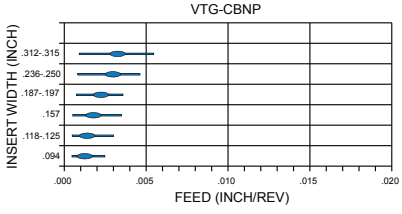
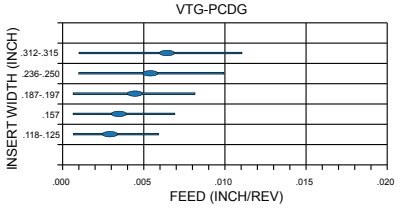
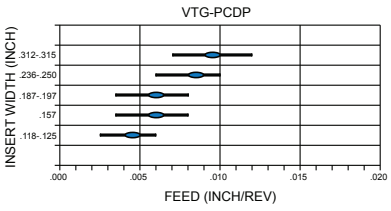
VTG System

Insert Style	Description	Radial Feed Rate	Materials	Application
		= Optimum feed rate for most applications		
VTG-GG 	**Parting / Grooving** First choice for parting and grooving on all materials. Positive geometry eliminates the risk of edge build-up. Low cutting forces reduce vibration. Recommended for thin walled tubes and small diameter components.		Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/ Non-Ferrous Hardened Material	**Main application area:** General Machining to Finishing operations Light to medium feed rates
VTG-TG 	**Turn-Grooving** Excellent choice for general plunge-turning. Medium feed rate capability with good chip control.		Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/ Non-Ferrous Hardened Material	**Main application area:** General Machining operations Medium feed rates
VTG-RG 	**Profiling / Radius Grooving** First choice for profiling/ turning and radius grooving operations. Precision ground cutting edge for low forces and excellent surface finish. Strong geometry resists chipping in work hardening materials and interrupted cuts.		Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/ Non-Ferrous Hardened Material	**Main application area:** General Machining to Finishing operations Light to medium feed rates
VTG-PG 	**Precision Grooving** First choice for precision grooving and turning operations. Excellent chip control in stainless steel and high temp alloys.		Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/ Non-Ferrous Hardened Material	**Main application area:** Precision grooves at light ot medium feed rates Turning operations in difficult materials General machining to finishing operations

Note: See Pages D54-D55 for Turning/Grooving/Profiling Application Charts.

ValGROOVE™ Insert Geometry Application Data

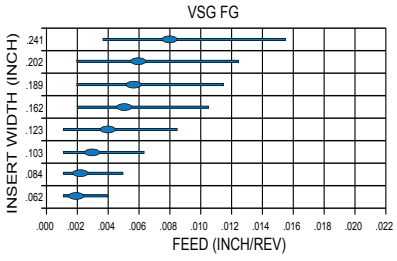
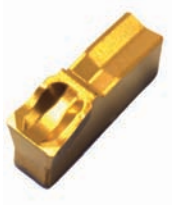
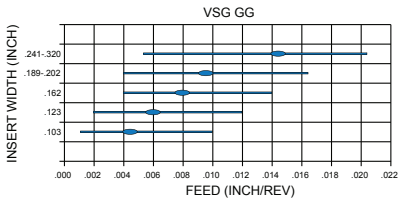
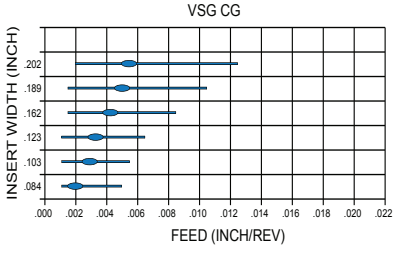
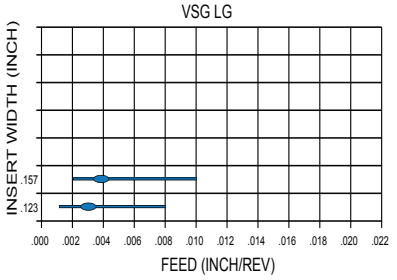
VTG System

Insert Style	Description	Radial Feed Rate	Materials	Application
		= Optimum feed rate for most applications		
VTG-CBNG 	**Grooving** General and finish grooving of irons and hard materials. Good impact resistance. Maintains close tolerances and excellent surface finish.		Steels Stainless Steels **Cast Irons** High Temperature Alloys Aluminum/Non-Ferrous Hardened Material	**Main application area:** General high speed machining in irons. Finishing operations in hard materials
VTG-CBNP 	**Profiling / Radius Grooving** General and finish profiling/radius grooving of irons and hard materials. Good impact resistance. Maintains close tolerances and excellent surface finish.		Steels Stainless Steels **Cast Irons** High Temperature Alloys Aluminum/Non-Ferrous Hardened Material	**Main application area:** General high speed machining in irons. Finishing operations in hard materials
VTG-PCDG 	**Grooving** High performance parting and grooving in non-ferrous materials. High speed/long tool life for aluminum and non-ferrous materials. Excellent in highly abrasive aluminum or other non-ferrous alloys. Maintains close tolerances and excellent surface finish.		Steels Stainless Steels Cast Irons High Temperature Alloys **Aluminum/Non-Ferrous** Hardened Material	**Main application area:** General machining to finishing at high speeds
VTG-PCDP 	**Profiling / Radius Grooving** High performance profiling and radius grooving in non-ferrous materials. High speed/long tool life for aluminum and non-ferrous materials. Excellent in highly abrasive aluminum or other non-ferrous alloys. Maintains close tolerances and excellent surface finish.		Steels Stainless Steels Cast Irons High Temperature Alloys **Aluminum/Non-Ferrous** Hardened Material	**Main application area:** General machining to finishing at high speeds

Note: See Pages D57-D58 for Turning/Grooving Application Charts.

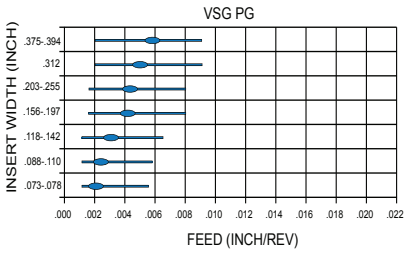
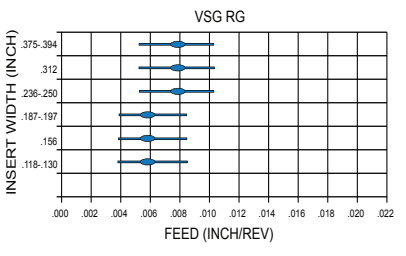
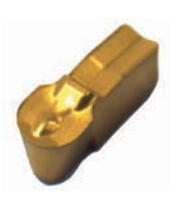
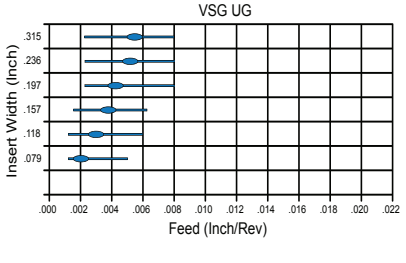
ValGROOVE™ Insert Geometry Application Data

VSG System

Insert Style	Description	Radial Feed Rate	Materials	Application
		= Optimum feed rate for most applications		
VSG-FG 	**Parting / Grooving** First choice for general parting and grooving operations. Good chip control and moderate cutting forces. Recommended for tubes and stainless steel.		Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/Non-Ferrous Hardened Material	**Main application area:** General machining to finishing operations Light to medium feed rates
VSG-GG 	**Parting / Grooving** Ideal for heavy parting and grooving operations. Strong geometry for interrupted cuts.		Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/Non-Ferrous Hardened Material	**Main application area:** General machining to heavy roughing Medium to high feed rates
VSG-CG 	**Parting / Grooving** Optimal parting and light grooving geometry. Minimizes pips and burrs when parting bars and tubes. Excellent for stainless, low carbon steel, high temp alloys.		Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/Non-Ferrous Hardened Material	**Main application area:** General machining to finishing operations Light to medium feed rates
VSG-LG 	**Grooving / Parting** Alternate light grooving and parting geometry. Generates low cutting forces. For stainless steels, ductile and work hardening materials.		Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/Non-Ferrous Hardened Material	**Main application area:** General machining to finishing operations Light to medium feed rates

ValGROOVE™ Insert Geometry Application Data

VSG System

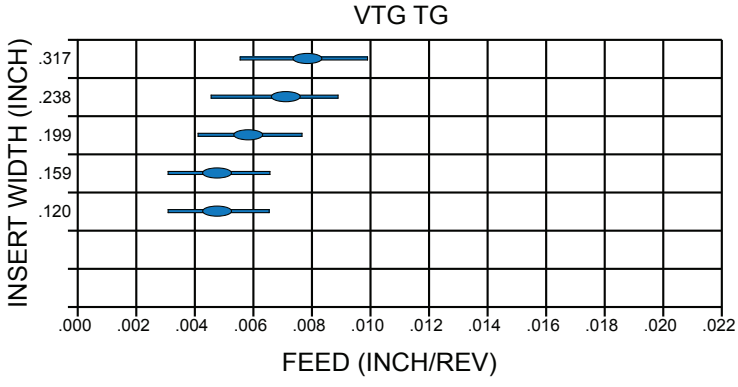
Insert Style	Description	Radial Feed Rate	Materials	Application
		= Optimum feed rate for most applications		
VSG-PG 	**Precision Grooving** Excellent repeatability due to tight tolearances. Low cutting forces and good chip control on many materials.		Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/Non-Ferrous Hardened Material	**Main application area:** Precision grooves at light to medium feed rates General machining to finishing operations
VSG-RG 	**Radius Grooving / Profiling** Designed for radius grooving and profiling on all materials. Generates excellent surface finish.		Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/Non-Ferrous Hardened Material	**Main application area:** General machining to finishing operations Medium feed rates
VSG-UG 	**Undercut Grooving** First choice for turning of undercuts and reliefs. Increased clearance angle permits undercutting. Good chip control in a wide variety of materials.		Steels Stainless Steels Cast Irons High Temperature Alloys Aluminum/Non-Ferrous Hardened Material	**Main application area:** General machining to finishing operations Light feed rates

Note: See page D56 for profiling/turning application charts for VSG-RG

ValGROOVE™ Insert Geometry Application Data

VTG-TG

Radial Feed Rate



Description

Designed for Turn-Grooving on all materials.

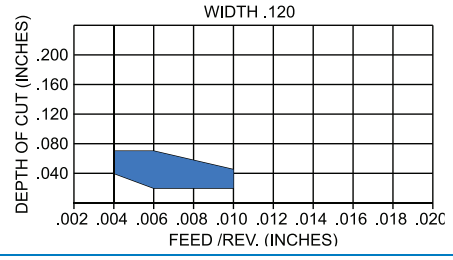
- **Generates excellent surface finish.**
- **Recommended for stainless and heat resistant materials.**

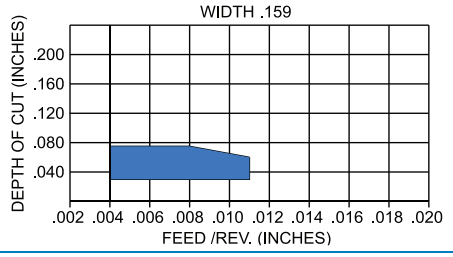
Materials

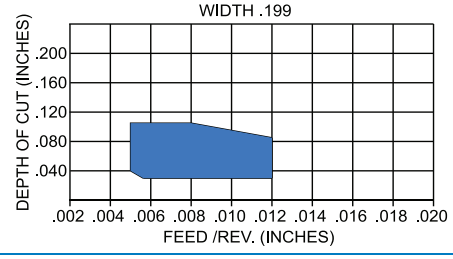
Steels
Stainless Steels
Cast Irons
High Temperature Alloys
Aluminum/Non-Ferrous
Hardened Material

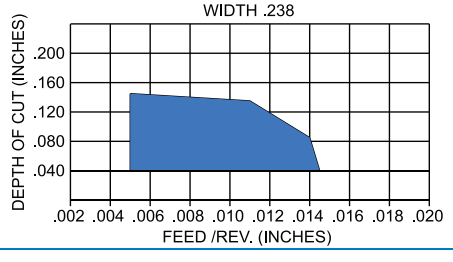
Turn-Grooving

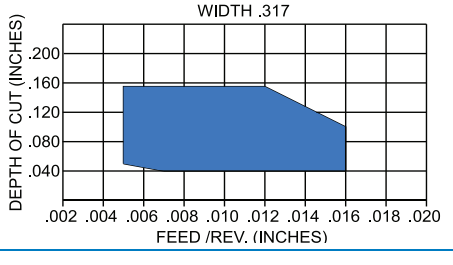
Axial Feed Rate/Depth of Cut







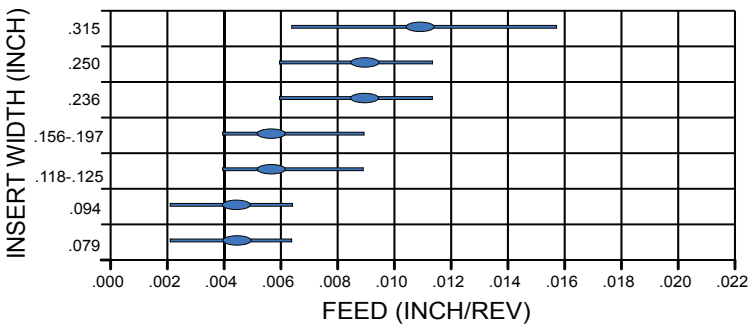




ValGROOVE™ Insert Geometry Application Data

VTG-RG

Radial Feed Rate
VTG RG



Description

First choice for profiling and turning operations.

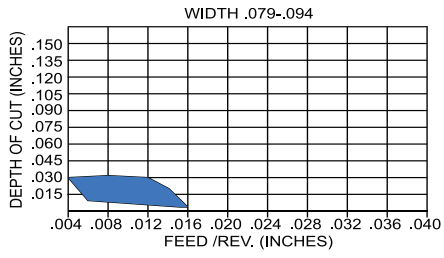
- **Precision ground cutting edge for low forces and excellent surface finish.**
- **Strong geometry resists chipping in work hardening materials.**

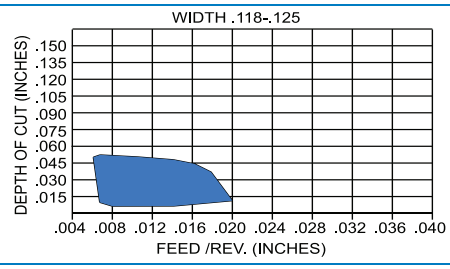
Materials

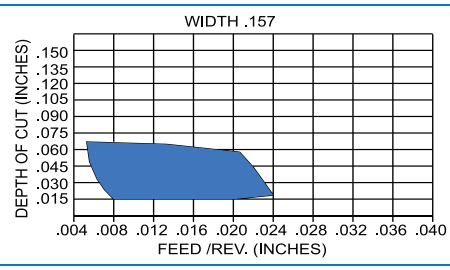
- Steels
- Stainless Steels
- Cast Irons
- High Temperature Alloys
- Aluminum/Non-Ferrous
- Hardened Material

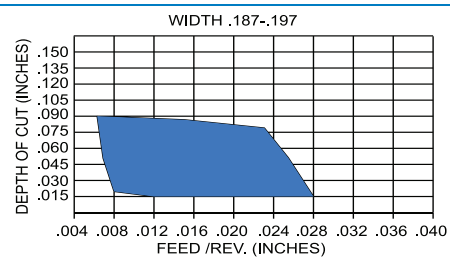
Profiling/Radius Grooving

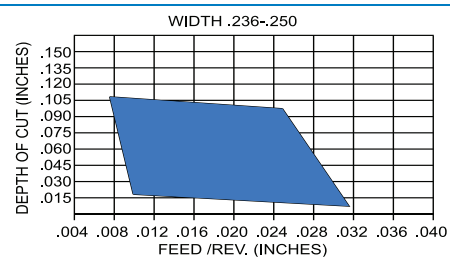
Axial Feed Rate/Depth of Cut

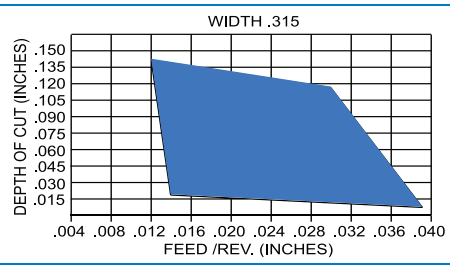








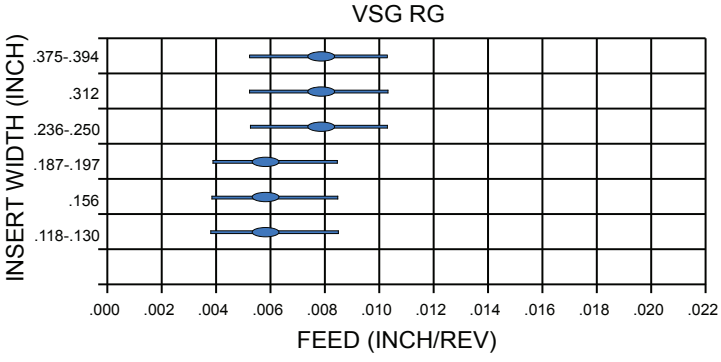




ValGROOVE™ Insert Geometry Application Data

VSG-RG

Radial Feed Rate



Description

Designed for radius grooving and profiling on all materials.

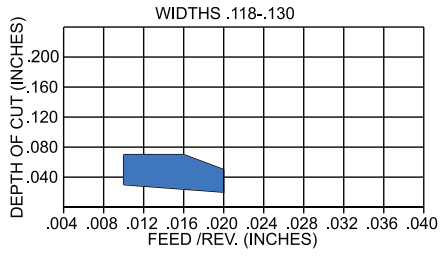
- **Generates excellent surface finish.**
- **Good chip control in a wide variety of materials.**

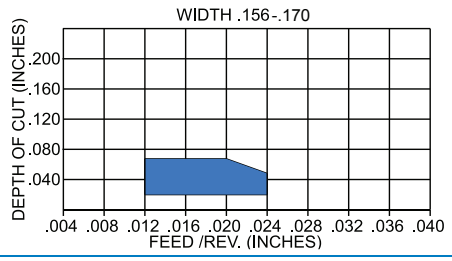
Materials

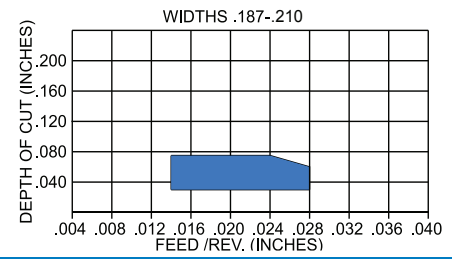
- **Steels**
- **Stainless Steels**
- **Cast Irons**
- **High Temperature Alloys**
- **Aluminum/Non-Ferrous**
- **Hardened Material**

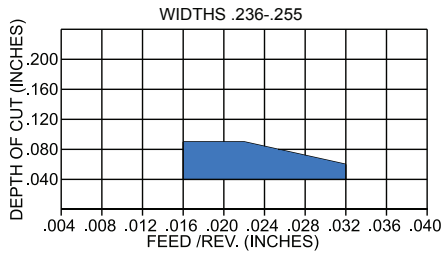
Radius Grooving/Profiling

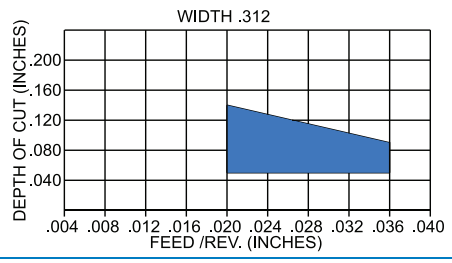
Axial Feed Rate/Depth of Cut

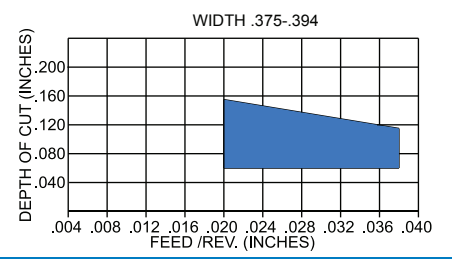






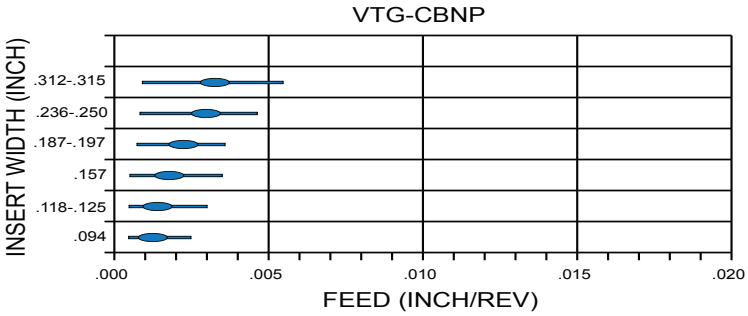






VTG-CBNP

Radial Feed Rate



Description

General and finish profiling/radius grooving of irons and hard materials.

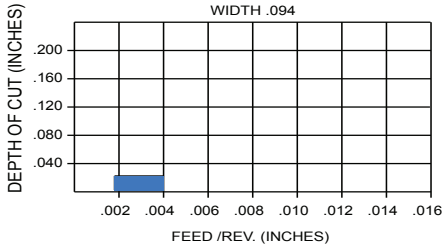
- **Good impact resistance.**
- **Maintains close tolerances and excellent surface finish.**

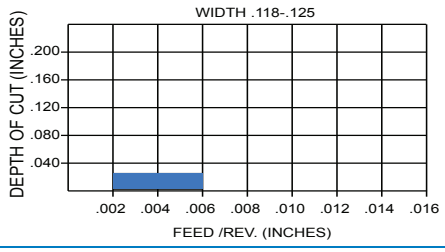
Materials

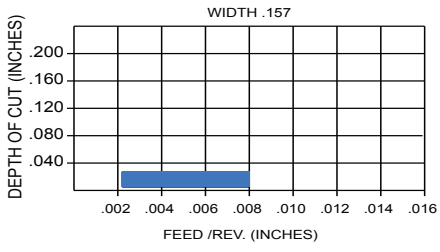
- Steels
- Stainless Steels
- **Cast Irons**
- High Temperature Alloys
- Aluminum/Non-Ferrous
- Hardened Material

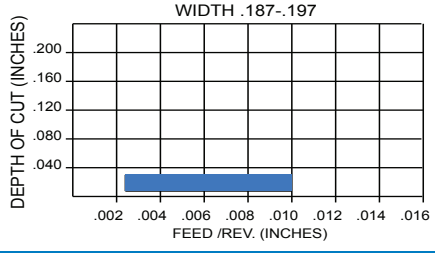
Profiling/Radius Grooving

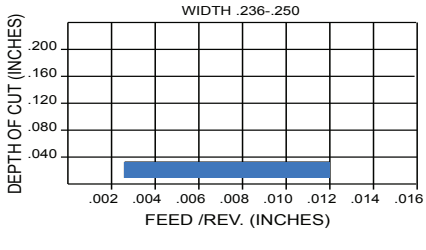
Axial Feed Rate/Depth of Cut

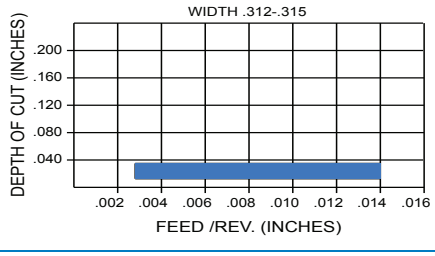








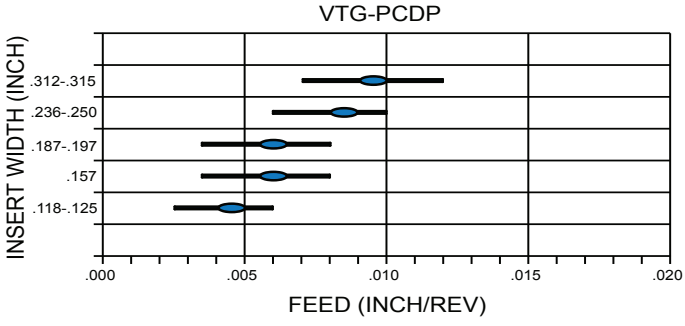




ValGROOVE™ Insert Geometry Application Data

VTG-PCDP

Radial Feed Rate



Description

High performance profiling and radius grooving in non-ferrous materials.

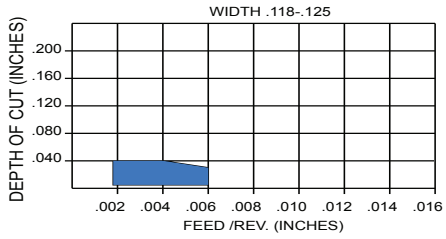
- **High speed/long tool life for aluminum and non-ferrous materials.**
- **Excellent in highly abrasive aluminum or other non-ferrous alloys.**
- **Maintains close tolerances and excellent surface finish.**

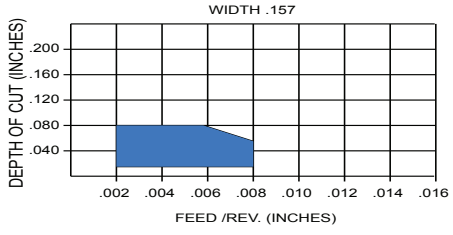
Materials

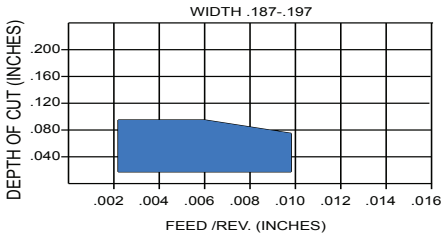
Steels
Stainless Steels
Cast Irons
High Temperature Alloys
Aluminum/Non-Ferrous
Hardened Material

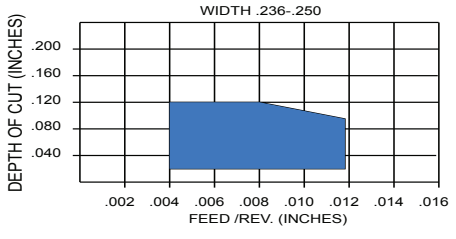
Profiling/Radius Grooving

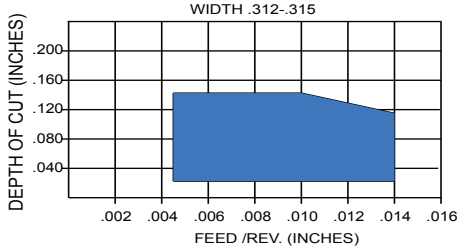
Axial Feed Rate/Depth of Cut









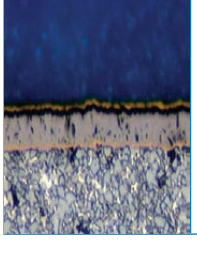


ValGROOVE™ Guide to Workpiece Material

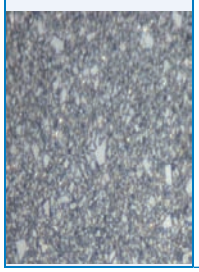
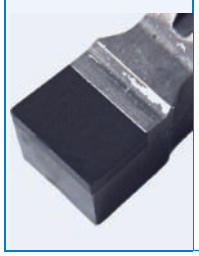
The ValPRO™ Color System simplifies the tool selection process. Use the ValGROOVE™ color-coded identification system for matching our tools to your application. Color and letter designations correspond to the ISO standard classification system. These letters and colors are used throughout the catalog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

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

ValGROOVE™ Grade Description

Grade	Description	Performance	ISO Class	Application
VP5815 	**PVD Coated Carbide** TiAlN/TiN Multi-Layer Coating Fine Grain Substrate	**Medium Duty Grade** Excellent Wear Resistance Excellent Toughness and Chipping Resistance Less Build-Up at the Cutting Edge.	P15 M15 K15 S15 N15	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Aluminum & Non-Ferrous Alloys. Finish to General Purpose Machining. Medium to High Speeds.
VP5820 	**PVD Coated Carbide** TiAlN/ TiN Multi-Layer Coating Micro Grain Substrate High Cobalt Substrate.	**General Machining Grade** Enhanced Crater Resistance Excellent Wear Resistance Excellent Toughness and Chipping Resistance Low Cutting Edge Build-up.	P20 M20 K20 S20 N20	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Aluminum & Non-Ferrous Alloys. General Purpose Machining. Medium to High Speeds. Continuous and Interrupted Cuts, and Medium to High Feed Rates.
VP5845 	**PVD Coated Carbide** TiAlN Coating Super Tough High Cobalt Substrate	**Roughing Grade** Highest Toughness and Chipping Resistance Excellent Wear Resistance	P45 M40 K45 S40 N40	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Aluminum & Non-Ferrous Alloys. Rough to General Machining. Low to Medium Speeds. Interrupted Cuts, Demanding High Feed Operations.
VP5735 	**MTCVD Coated Carbide** TiCN/Al_2O_3/TiN Coating High Cobalt Substrate	**Roughing Grade** Excellent Wear Resistance Very High Toughness and Chipping Resistance.	P35 M35 K35 S30	Steels, Stainless Steels, Cast Iron, High Temperature Alloys. Roughing to General Purpose Machining, Medium Speeds, Continuous and Interrupted Cuts, and High Feed Rates.

ValGROOVE™ Grade Description

Grade	Description	Performance	ISO Class	Application
VP1710 	**MTCVD Coated Carbide** TiCN/Al_2O_3 Coating Fine Grain Substrate Polished Surface	**General and Light Machining Grade** Excellent Wear Resistance Enhanced Toughness Enhanced Build-Up Resistance	P10 K10	Cast Irons: Gray, Ductile, Malleable. Powder Metals. Steels: Carbon, Alloy, Tool & Die. General Machining, Semi-Finishing and Finishing. Continuous and Light Interrupted Cuts.
VPUK20 	**Uncoated Carbide** Fine Grain Substrate Medium Hardness	**General Purpose Grade** Excellent Toughness Good Wear Resistance and Chipping Resistance	M25 K20 S25 N25	Aluminum, Stainless Steels- Ferritic and Austenitic, Gray Iron, Ductile Iron, Malleable Iron, Bi-Metal Components. Low to Medium Speed Under a Wide Range of Cutting Conditions. General Machining with Good Surface Finish, Continuous and Interrupted Cuts.
VPB125 	**CBN Tipped Carbide**	**High Speed Grade for Iron** **General Purpose Grade for Hardened Steels** High Impact Resistance Excellent Wear Resistance	K01-05 H10-15	Gray Irons, Most Ductile Irons, Hardened Steels 45-60 Rc High Speeds in Iron, Medium Speeds in Hard Steels. Continuous and Light Interrupted Cuts.
VPD720 	**Diamond Tipped Carbide**	**High Speed Grade for Aluminum and Non-Ferrous Materials** Excellent Toughness Excellent Wear Resistance	N10-40	Aluminum & Non-Ferrous Alloys. Medium Speed to High Speed Under a Wide Range of Cutting Conditions Roughing to Finishing with Good Surface Finish.

ValGROOVE™ Steels

Grade Selection Guide

Steels						
ISO	P50	P40	P30	P20	P10	P01
ANSI	C5		C6	C7		C8

Typical Failure Modes	• Chipping • Deformation • Wear	• Wear • Deformation • Chipping
Application	General Machining	Light Machining

PVD Coated	VP5820	VP5815
MTCVD Coated	VP5735	VP1710

Application Guide

Parting and Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/ pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	
Free Machining and Low Carbon Steels 120-170 BHN	L	.002-.006 (0.05-0.15)	1100-800 (335-244)	1000-800 (305-244)	1200-900 (366-274)	800-700 (244-213)	- -	- -
	G	.007-.018 (0.18-0.46)	900-600 (274-183)	800-600 (244-183)	1000-750 (305-229)	700-500 (213-152)	- -	- -
Medium Carbon and High Carbon Steels 180-220 BHN	L	.002-.005 (0.05-0.13)	900-700 (274-213)	800-650 (244-198)	1000-700 (305-213)	700-600 (213-183)	- -	- -
	G	.006-.015 (0.15-0.38)	700-500 (213-152)	650-500 (198-152)	900-600 (274-183)	600-400 (183-122)	- -	- -
Alloy Steels and Easy to Machine Tool Steels 200-240 BHN	L	.002-.005 (0.05-0.13)	800-600 (244-183)	700-500 (213-152)	850-600 (259-183)	600-450 (183-137)	- -	- -
	G	.006-.012 (0.15-0.30)	(600-400) 183-122	500-400 (152-122)	700-500 (213-152)	450-350 (137-107)	- -	- -
Tool Steels and Die Steels 220-260 BHN	L	.002-.004 (0.05-0.10)	600-450 (183-137)	500-400 (152-122)	650-400 (198-122)	400-300 (122-91)	- -	- -
	G	.005-.008 (0.13-0.20)	450-350 (137-107)	400-350 (122-107)	500-350 (152-107)	300-250 (91-76)	- -	- -

L = Light Machining G = General Machining

Turning and Profiling								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/ pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	
Free Machining and Low Carbon Steels 120-170 BHN	L	.002-.006 (0.05-0.15)	1100-800 (335-244)	1000-800 (305-244)	1200-900 (366-274)	800-700 (244-213)	- -	- -
	G	.007-.018 (0.18-0.46)	900-600 (274-183)	800-600 (244-183)	1000-750 (305-229)	700-500 (213-152)	- -	- -
Medium Carbon and High Carbon Steels 180-220 BHN	L	.002-.005 (0.05-0.13)	900-700 (274-213)	800-650 (244-198)	1000-700 (305-213)	700-600 (213-183)	- -	- -
	G	.006-.015 (0.15-0.38)	700-500 (213-152)	650-500 (198-152)	900-600 (274-183)	600-400 (183-122)	- -	- -
Alloy Steels and Easy to Machine Tool Steels 200-240 BHN	L	.002-.005 (0.05-0.13)	800-600 (244-183)	700-500 (213-152)	850-600 (259-183)	600-450 (183-137)	- -	- -
	G	.006-.012 (0.15-0.30)	600-400 (183-122)	500-400 (152-122)	700-500 (213-152)	450-350 (137-107)	- -	- -
Tool Steels and Die Steels 220-260 BHN	L	.002-.004 (0.05-0.10)	600-450 (183-137)	500-400 (152-122)	650-400 (198-122)	400-300 (122-91)	- -	- -
	G	.005-.008 (0.13-0.20)	450-350 (137-107)	400-350 (122-107)	500-350 (152-107)	300-250 (91-76)	- -	- -

NOTE: For turning and profiling applications, please see section for Feed Rate and Depth of Cut recommendations

Internal Grooving, Undercutting and Face Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/ pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	
Free Machining and Low Carbon Steels 120-170 BHN	L	.002-.006 (0.05-0.15)	850-650 (259-198)	750-600 (229-183)	1000-750 (305-229)	600-450 (183-137)	- -	- -
	G	.007-.018 (0.18-0.46)	675-500 (206-152)	600-450 (183-137)	800-600 (244-183)	500-400 (152-122)	- -	- -
Medium Carbon and High Carbon Steels 180-220 BHN	L	.002-.005 (0.05-0.13)	700-550 (213-168)	600-500 (183-152)	800-600 (244-183)	475-350 (145-107)	- -	- -
	G	.006-.015 (0.15-0.38)	550-375 (168-114)	500-350 (152-107)	700-450 (213-137)	375-275 (114-84)	- -	- -
Alloy Steels and Easy to Machine Tool Steels 200-240 BHN	L	.002-.005 (0.05-0.13)	600-500 (183-152)	550-450 (168-137)	700-550 (213-168)	350-250 (107-76)	- -	- -
	G	.006-.012 (0.15-0.30)	450-325 (137-99)	400-300 (122-91)	550-400 (168-122)	325-225 (99-69)	- -	- -
Tool Steels and Die Steels 220-260 BHN	L	.002-.004 (0.05-0.10)	425-300 (130-91)	350-250 (107-76)	500-325 (152-99)	275-200 (84-61)	- -	- -
	G	.005-.008 (0.13-0.20)	325-250 (99-76)	275-200 (84-61)	400-275 (122-84)	250-180 (76-55)	- -	- -

L = Light Machining G = General Machining

ValGROOVE™ Stainless Steels

Grade Selection Guide

Stainless Steels				
ISO	**M40**	**M30**	**M20**	**M10**
Typical Failure Modes	• Build-up • Wear • Chipping		• Wear • Build-up • Chipping	
Application	**General Machining**		**Light Machining**	
PVD Coated	**VP5820**		**VP5815**	
MTCVD Coated	**VP5735**			
Uncoated	**VPUK20**			

Application Guide

Parting and Grooving								
Material	**Operation**	**IPR (mm/rev)**	**SFM (Vm/min) and Grade**					
			PVD Coated		**MTCVD Coated**		**Uncoated**	**PCD/ pCBN**
			VP5815	**VP5820**	**VP1710**	**VP5735**	**VPUK20**	
Ferritic and Martensitic Stainless Steels 180 - 240 BHN	**L**	.002-.006 (0.05-0.15)	700-550 (213-168)	650-500 (198-152)	- -	600-450 (183-137)	320-220 (98-67)	- -
	G	.007-.012 (0.18-0.30)	550-450 (168-137)	500-400 (152-122)	- -	450-350 (137-107)	300-200 (91-61)	- -
Austenitic Stainless Steels 140 - 180 BHN	**L**	.002-.004 (0.05-0.10)	700-500 (213-152)	600-450 (183-137)	- -	500-400 (152-122)	320-220 (98-67)	- -
	G	.005-.010 (0.13-0.25)	500-400 (152-122)	450-350 (137-107)	- -	400-350 (122-107)	300-200 (91-61)	- -
PH and Duplex Stainless Steels 220 - 260 BHN	**L**	.002-.004 (0.05-0.10)	500-400 (152-122)	450-350 (137-107)	- -	400-300 (122-91)	210-150 (64-46)	- -
	G	.005-.010 (0.13-0.25)	400-300 (122-91)	350-250 (107-76)	- -	300-200 (91-61)	180-130 (55-40)	- -

L = Light Machining G = General Machining

Turning and Profiling								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/ pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	
Ferritic and Martensitic Stainless Steels 180 - 240 BHN	L	.002-.006 (0.05-0.15)	700-550 (213-168)	650-500 (198-152)	- -	600-450 (183-137)	320-220 (98-67)	- -
	G	.007-.012 (0.18-0.30)	550-450 (168-137)	500-400 (152-122)	- -	450-350 (137-107)	300-200 (91-61)	- -
Austenitic Stainless Steels 140 - 180 BHN	L	.002-.004 (0.05-0.10)	700-500 (213-152)	600-450 (183-137)	- -	500-400 (152-122)	320-220 (98-67)	- -
	G	.005-.010 (0.13-0.25)	500-400 (152-122)	450-350 (137-107)	- -	400-350 (122-107)	300-200 (91-61)	- -
PH and Duplex Stainless Steels 220 - 260 BHN	L	.002-.004 (0.05-0.10)	500-400 (152-122)	450-350 (137-107)	- -	400-300 (122-91)	210-150 (64-46)	- -
	G	.005-.010 (0.13-0.25)	400-300 (122-91)	350-250 (107-76)	- -	300-200 (91-61)	180-130 (55-40)	- -

NOTE: For turning and profiling applications, please see section for Feed Rate and Depth of Cut recommendations

Internal Grooving, Undercutting and Face Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/ pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	
Ferritic and Martensitic Stainless Steels 180 - 240 BHN	L	.002-.006 (0.05-0.15)	550-450 (168-137)	500-400 (152-122)	- -	450-350 (137-107)	300-200 (91-61)	- -
	G	.007-.012 (0.18-0.30)	500-400 (152-122)	450-350 (137-107)	- -	350-300 (107-91)	250-170 (76-52)	- -
Austenitic Stainless Steels 140 - 180 BHN	L	.002-.004 (0.05-0.10)	500-400 (152-122)	450-350 (137-107)	- -	400-300 (122-91)	300-200 (91-61)	- -
	G	.005-.010 (0.13-0.25)	400-325 (122-99)	350-275 (107-84)	- -	300-250 (91-76)	275-170 (84-52)	- -
PH and Duplex Stainless Steels 220 - 260 BHN	L	.002-.004 (0.05-0.10)	450-350 (137-107)	400-300 (122-91)	- -	350-250 (107-76)	200-140 (61-43)	- -
	G	.005-.010 (0.13-0.25)	375-250 (114-76)	350-225 (107-69)	- -	250-175 (76-53)	170-110 (52-34)	- -

L = Light Machining G = General Machining

ValGROOVE™ Cast Irons

Grade Selection Guide

Cast Irons				
ISO	K40	K30	K20	K10
ANSI	C1	C2	C3	C4

Typical Failure Modes	• Wear • Build-up • Chipping	• Wear • Build-up
Application	General Machining	Light Machining

PVD Coated	VP5820	VP5815
MTCVD Coated	VP5735	VP1710
Uncoated	VPUK20	
PCBN		VPB125

Application Guide

Parting and Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	VPB125
Gray Cast Irons 140 - 200 BHN	L	.002-.006 (0.05-0.15)	675-360 (206-110)	600-325 (183-99)	1000-450 (305-137)	650-300 (198-91)	270-220 (82-67)	3000-2000 (914-610)
	G	.007-.016 (0.18-0.41)	500-325 (152-99)	550-300 (168-91)	900-400 (274-122)	550-250 (168-76)	250-200 (76-61)	3000-2000 (914-610)
Gray Cast Irons 200 - 260 BHN	L	.002-.006 (0.05-0.15)	550-350 (168-107)	500-300 (152-91)	900-400 (274-122)	425-250 (130-76)	250-200 (76-61)	2000-1500 (610-457)
	G	.007-.016 (0.18-0.41)	500-300 (152-91)	450-250 (137-76)	800-350 (244-107)	400-200 (122-61)	225-175 (69-53)	2000-1500 (610-457)
Ductile & MalleableCast Irons 140 - 200 BHN	L	.002-.005 (0.05-0.13)	750-375 (229-114)	700-350 (213-107)	1100-500 (335-152)	500-300 (152-91)	325-250 (99-76)	1500-1000* (457-305)
	G	.006-.012 (0.15-0.30)	650-325 (198-99)	600-300 (183-91)	800-375 (244-114)	450-275 (137-84)	275-225 (84-69)	1500-1000* (457-305)
Ductile & MalleableCast Irons 200 - 260 BHN	L	.002-.005 (0.05-0.13)	575-300 (175-91)	500-275 (152-84)	850-400 (259-122)	350-220 (107-67)	220-170 (67-52)	N/A
	G	.006-.010 (0.15-0.25)	450-260 (137-79)	425-225 (130-69)	700-325 (213-99)	300-200 (91-61)	175-150 (53-46)	N/A

L = Light Machining G = General Machining * For low pearlite content ductile iron

Application Guide

Turning and Profiling								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	VPB125
Gray Cast Irons 140 - 200 BHN	L	.002-.006 (0.05-0.15)	675-360 (206-110)	600-325 (183-99)	1000-450 (305-137)	650-300 (198-91)	270-220 (82-67)	3000-2000 (914-610)
	G	.007-.016 (0.18-0.41)	500-325 (152-99)	550-300 (168-91)	900-400 (274-122)	550-250 (168-76)	250-200 (76-61)	3000-2000 (914-610)
Gray Cast Irons 200 - 260 BHN	L	.002-.006 (0.05-0.15)	550-350 (168-107)	500-300 (152-91)	900-400 (274-122)	425-250 (130-76)	250-200 (76-61)	2000-1500 (610-457)
	G	.007-.016 (0.18-0.41)	500-300 (152-91)	450-250 (137-76)	800-350 (244-107)	400-200 (122-61)	225-175 (69-53)	2000-1500 (610-457)
Ductile & Malleable Cast Irons 140 - 200 BHN	L	.002-.005 (0.05-0.13)	750-375 (229-114)	700-350 (213-107)	1100-500 (335-152)	500-300 (152-91)	325-250 (99-76)	1500-1000* (457-305)
	G	.006-.012 (0.15-0.30)	650-325 (198-99)	600-300 (183-91)	800-375 (244-114)	450-275 (137-84)	275-225 (84-69)	1500-1000* (457-305)
Ductile & Malleable Cast Irons 200 - 260 BHN	L	.002-.005 (0.05-0.13)	575-300 (175-91)	500-275 (152-84)	850-400 (259-122)	350-220 (107-67)	220-170 (67-52)	N/A
	G	.006-.012 (0.15-0.30)	450-260 (137-79)	425-225 (130-69)	700-325 (213-99)	300-200 (91-61)	175-150 (53-46)	N/A

NOTE: For turning and profiling applications, please see section for Feed Rate and Depth of Cut recommendations

Internal Grooving, Undercutting and Face Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	VPB125
Gray Cast Irons 140 - 200 BHN	L	.002-.006 (0.05-0.15)	500-270 (152-82)	480-250 (146-76)	800-360 (244-110)	450-210 (137-64)	240-180 (73-55)	2500-1500 (762-457)
	G	.007-.016 (0.18-0.41)	375-240 (114-73)	400-210 (122-64)	825-320 (251-98)	375-175 (114-53)	200-150 (61-46)	2500-1500 (762-457)
Gray Cast Irons 200 - 260 BHN	L	.002-.006 (0.05-0.15)	420-250 (128-76)	375-210 (114-64)	825-320 (251-98)	300-175 (91-53)	200-150 (61-46)	1800-1300 (549-396)
	G	.007-.016 (0.18-0.41)	375-225 (114-69)	340-190 (104-58)	640-280 (195-85)	280-140 (85-43)	150-125 (46-38)	1800-1300 (549-396)
Ductile & Malleable Cast Irons 140 - 200 BHN	L	.002-.005 (0.05-0.13)	550-300 (168-91)	525-270 (160-82)	850-400 (259-122)	350-210 (107-64)	200-150 (61-46)	1300-900* (396-274)
	G	.006-.012 (0.15-0.30)	500-250 (152-76)	450-225 (137-69)	640-300 (195-91)	315-190 (96-58)	150-125 (46-38)	1300-900* (396-274)
Ductile & Malleable Cast Irons 200 - 260 BHN	L	.002-.005 (0.05-0.13)	430-225 (131-69)	375-210 (114-64)	680-320 (207-98)	250-150 (76-46)	175-125 (53-38)	N/A
	G	.006-.010 (0.15-0.25)	340-195 (104-59)	325-170 (99-52)	560-260 (171-79)	210-140 (64-43)	125-100 (38-30)	N/A

L = Light Machining G = General Machining * For low pearlite content ductile iron

ValGROOVE™ High Temp Alloys

Grade Selection Guide

High Temp Alloys				
ISO	S40	S30	S20	S10

Typical Failure Modes	• Build-up • Deformation • Chipping	• Wear • Build-up • Deformation
Application	General Machining	Light Machining

PVD Coated	VP5820	VP5815
MTCVD Coated	VP5735	
Uncoated		VPUK20

Application Guide

Parting and Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/ pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	
Iron & Nickel Based Alloys Monel, Hastelloy Inconel, Waspaloy	L	.002-.006 (0.05-0.15)	250-110 (76-34)	230-100 (70-30)	- -	170-80 (52-24)	170-80 (52-24)	- -
	G	.005-.008 (0.13-0.20)	170-60 (52-18)	150-50 (46-15)	- -	100-35 (30-11)	125-50 (38-15)	- -
Cobalt Base Alloys Haynes Stellite	L	.002-.004 (0.05-0.10)	190-110 (58-34)	170-100 (52-30)	- -	145-75 (44-23)	120-60 (37-18)	- -
	G	.005-.008 (0.13-0.20)	120-60 (37-18)	110-50 (34-15)	- -	120-45 (37-14)	110-40 (34-12)	- -
Titanium Alloys 6Al-4V	L	.002-.004 (0.05-0.10)	250-150 (76-46)	225-130 (69-40)	- -	- N/A	260-200 (79-61)	- -
	G	.005-.008 (0.13-0.20)	220-120 (67-37)	200-110 (67-34)	- -	-	210-170 (64-52)	- -

L = Light Machining G = General Machining

Grade Selection Guide

Turning and Profiling								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/ pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	
Iron & Nickel Based Alloys Monel, Hastelloy Inconel, Waspaloy	L	.002-.004 (0.05-0.10)	250-110 (76-34)	230-100 (70-30)	- -	170-80 (52-24)	170-80 (52-24)	- -
	G	.005-.008 (0.13-0.20)	170-60 (52-18)	150-50 (46-15)	- -	100-35 (30-11)	125-50 (38-15)	- -
Cobalt Base Alloys Haynes Stellite	L	.002-.004 (0.05-0.10)	190-110 (58-34)	170-100 (52-30)	- -	145-75 (44-23)	120-60 (37-18)	- -
	G	.005-.008 (0.13-0.20)	120-60 (37-18)	110-50 (34-15)	- -	120-45 (37-14)	110-40 (34-12)	- -
Titanium Alloys 6Al-4V	L	.002-.004 (0.05-0.10)	250-150 (76-46)	225-130 (69-40)	- -	- N/A	260-200 (79-61)	- -
	G	.005-.008 (0.13-0.20)	220-120 (67-37)	200-110 (67-34)	- -	- -	210-170 (64-52)	- -

NOTE: For turning and profiling applications, please see section for Feed Rate and Depth of Cut recommendations

Internal Grooving, Undercutting and Face Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/ pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	
Iron & Nickel Based Alloys Monel, Hastelloy Inconel, Waspaloy	L	.002-.004 (0.05-0.10)	225-100 (69-300	210-90 (64-27)	- -	160-75 (49-23)	150-70 (46-21)	- -
	G	.005-.008 (0.13-0.20)	150-50 (46-15)	135-50 (41-15)	- -	100-35 (30-11)	120-50 (37-15)	- -
Cobalt Base Alloys Haynes Stellite	L	.002-.004 (0.05-0.10)	180-100 (55-30)	160-90 (49-27)	- -	140-70 (43-21)	110-60 (34-18)	- -
	G	.005-.008 (0.13-0.20)	110-60 (34-18)	100-50 (30-15)	- -	110-45 (34-14)	100-55 (30-17)	- -
Titanium Alloys 6Al-4V	L	.002-.004 (0.05-0.10)	230-130 (70-40)	215-120 (66-37)	- -	- N/A	240-180 (73-55)	- -
	G	.005-.008 (0.13-0.20)	210-110 (64-34)	190-100 (58-30)	- -	- -	200-160 (61-49)	- -

L = Light Machining G = General Machining

ValGROOVE™ Aluminum & Non-Ferrous

Grade Selection Guide

Aluminum & Non-Ferrous				
ISO	N40	N30	N20	N10
ANSI	C1	C2	C3	C4

Typical Failure Modes	• Build-up • Wear • Chipping	• Wear • Build-up
Application	General Machining	Light Machining

PVD Coated	VP5820 VP5815	
Uncoated	VPUK20	
PCD		VPD720

Application Guide

Parting and Grooving								
MATERIAL	OPERATION	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/ pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	PCD VPD720
Aluminum Alloys <7% Silicon	L	.002-.008 (0.05-0.20)	3500-2500 (914-762)	3000-2500 (914-762)	- -	- -	2500-1750 (762-533)	6000-2000 (1829-610)
	G	.009-.020 (0.23-0.51)	3000-2000 (914-610)	2500-1750 (762-533)	- -	- -	1750-1250 (533-381)	6000-2000 (1829-610)
Aluminum Alloys 7% - 12% Silicon	L	.002-.008 (0.05-0.20)	3000-2000 (914-610)	2500-1750 (762-533)	- -	- -	1750-1250 (533-381)	6000-2000 (1829-610)
	G	.009-.020 (0.23-0.51)	2000-1500 (610-457)	1750-1250 (533-381)	- -	- -	1250-1000 (381-305)	6000-2000 (1829-610)
Aluminum Alloys 12% - 18% Silicon	L	.002-.008 (0.05-0.20)	2000-1500 (610-457)	1500-1250 (457-381)	- -	- -	1000-800 (305-244)	3000-1500 (914-457)
	G	.009-.014 (0.23-0.36)	1500-800 (457-244)	1250-800 (381-244)	- -	- -	800-600 (244-183)	2000-1000 (610-305)
Copper Alloys	L	.002-.008 (0.05-0.20)	1300-900 (396-274)	1200-800 (366-244)	- -	- -	800-600 (244-183)	1800-1200 (549-366)
	G	.009-.014 (0.23-0.36)	1000-600 (305-183)	800-500 (244-152)	- -	- -	600-400 (183-122)	1200-600 (366-183)

L = Light Machining G = General Machining

Turning and Profiling								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/ pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	PCD VPD720
Aluminum Alloys <7% Silicon	L	.002-.008 (0.05-0.20)	3500-2500 (914-762)	3000-2500 (914-762)	- -	- -	2500-1750 (762-533)	6000-2000 (1829-610)
	G	.009-.020 (0.23-0.51)	3000-2000 (914-610)	2500-1750 (762-533)	- -	- -	1750-1250 (533-381)	6000-2000 (1829-610)
Aluminum Alloys 7% - 12% Silicon	L	.002-.008 (0.05-0.20)	3000-2000 (914-610)	2500-1750 (762-533)	- -	- -	1750-1250 (533-381)	6000-2000 (1829-610)
	G	.009-.020 (0.23-0.51)	2000-1500 (610-457)	1750-1250 (533-381)	- -	- -	1250-1000 (381-305)	6000-2000 (1829-610)
Aluminum Alloys 12% - 18% Silicon	L	.002-.008 (0.05-0.20)	2000-1500 (610-457)	1500-1250 (457-381)	- -	- -	1000-800 (305-244)	3000-1500 (914-457)
	G	.009-.014 (0.23-0.36)	1500-800 (457-244)	1250-800 (381-244)	- -	- -	800-600 (244-183)	2000-1000 (610-305)
Copper Alloys	L	.002-.008 (0.05-0.20)	1300-900 (396-274)	1200-800 (366-244)	- -	- -	800-600 (244-183)	1800-1200 (549-366)
	G	.009-.014 (0.23-0.36)	1000-600 (305-183)	800-500 (244-152)	- -	- -	600-400 (183-122)	1200-600 (366-183)

NOTE: For turning and profiling applications, please see section for Feed Rate and Depth of Cut recommendations

Internal Grooving, Undercutting and Face Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	PCD/ pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	PCD VPD720
Aluminum Alloys <7% Silicon	L	.002-.008 (0.05-0.20)	2800-2000 (853-610)	2400-2000 (732-610)	- -	- -	2000-1400 (610-427)	6000-2000 (1829-610)
	G	.009-.020 (0.23-0.51)	2400-1600 (732-488)	2000-1400 (610-427)	- -	- -	1400-1000 (427-305)	6000-2000 (1829-610)
Aluminum Alloys 7% - 12% Silicon	L	.002-.008 (0.05-0.20)	2400-1600 (732-488)	2000-1400 (610-427)	- -	- -	1400-1000 (427-305)	6000-2000 (1829-610)
	G	.009-.020 (0.23-0.51)	1600-1200 (488-366)	1400-1000 (427-305)	- -	- -	1000-800 (305-244)	6000-2000 (1829-610)
Aluminum Alloys 12% - 18% Silicon	L	.002-.008 (0.05-0.20)	1600-1200 (488-366)	1200-1000 (366-305)	- -	- -	800-650 (244-198)	3000-1500 (914-457)
	G	.009-.014 (0.23-0.36)	1200-640 (366-195)	1000-640 (305-195)	- -	- -	650-500 (198-152)	2000-1000 (610-305)
Copper Alloys	L	.002-.008 (0.05-0.20)	1000-720 (305-219)	1000-640 (305-195)	- -	- -	650-500 (198-152)	1800-1200 (549-366)
	G	.009-.014 (0.23-0.36)	800-480 (244-146)	640-400 (195-122)	- -	- -	480-320 (146-98)	1200-600 (366-183)

L = Light Machining G = General Machining

ValGROOVE™ Hardened Materials

Grade Selection Guide

Hardened Materials				
ISO		H30	H20	H10
Typical Failure Modes	• Wear • Chipping		• Wear • Deformation • Chipping	
Application	General Machining		Light Machining	
PVD Coated		VP5820	VP5815	
MTCVD Coated			VP1710	
PCBN			VPB125	

Application Guide

Parting and Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	VPB125
Steels 45-50 Rc	L	.001-.003 (0.03-0.08)	375-220 (114-67)	350-200 (107-61)	400-300 (122-91)	- -	- -	600-400 (183-122)
	G	.003-.005 (0.08-0.13)	330-170 (101-52)	300-150 (91-46)	350-250 (107-76)	- -	- -	500-350 (152-107)
Steels 50-60 Rc	L	.001-.003 (0.03-0.08)	300-170 (91-52)	275-150 (84-46)	325-250 (99-76)	- -	- -	450-375 (137-114)
	G	.003-.005 (0.08-0.13)	200-130 (61-40)	180-120 (55-37)	300-220 (91-61)	- -	- -	400-300 (122-91)
Chilled Irons 40-50 Rc	L	.001-.003 (0.03-0.08)	340-225 (104-69)	300-200 (91-61)	425-350 (130-107)	- -	- -	650-500 (198-152)
	G	.003-.005 (0.08-0.13)	275-200 (84-61)	250-175 (76-53)	375-300 (114-91)	- -	- -	550-400 (168-122)

L = Light Machining G = General Machining

Turning and Profiling								
Material	Operation	IPR mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	VPB125
Steels 45-50 Rc	L	.002-.004 (0.05-0.10)	375-220 (114-67)	350-200 (107-61)	400-300 (122-91)	- -	- -	600-400 (183-122)
	G	.002-.004 (0.05-0.10)	330-170 (101-52)	300-150 (91-46)	350-250 (107-76)	- -	- -	500-350 (152-107)
Steels 50-60 Rc	L	.002-.004 (0.05-0.10)	300-170 (91-52)	275-150 (84-46)	325-250 (99-76)	- -	- -	450-375 (137-114)
	G	.002-.004 (0.05-0.10)	200-130 (61-40)	180-120 (55-37)	300-220 (91-61)	- -	- -	400-300 (122-91)
Chilled Irons 40-50 Rc	L	.002-.004 (0.05-0.10)	340-225 (104-69)	300-200 (91-61)	425-350 (130-107)	- -	- -	650-500 (198-152)
	G	.002-.004 (0.05-0.10)	275-200 (84-61)	250-175 (76-53)	375-300 (114-91)	- -	- -	550-400 (168-122)

NOTE: For turning and profiling applications, please see section for Feed Rate and Depth of Cut recommendations

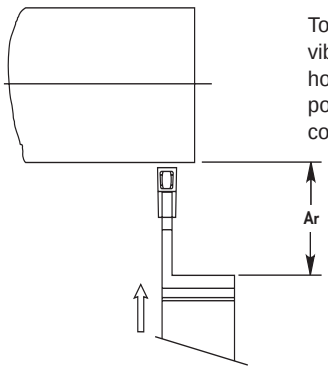
Internal Grooving, Undercutting and Face Grooving								
Material	Operation	IPR (mm/rev)	SFM (Vm/min) and Grade					
			PVD Coated		MTCVD Coated		Uncoated	pCBN
			VP5815	VP5820	VP1710	VP5735	VPUK20	VPB125
Steels 45-50 Rc	L	.002-.004 (0.05-0.10)	300-175 (91-53)	280-160 (85-49)	340-260 (104-79)	- -	- -	550-360 (168-110)
	G	.002-.004 (0.05-0.10)	260-135 (79-41)	240-120 (73-37)	300-220 (91-67)	- -	- -	450-320 (137-98)
Steels 50-60 Rc	L	.002-.004 (0.05-0.10)	240-135 (73-41)	220-120 (67-37)	280-210 (85-64)	- -	- -	400-340 (122-104)
	G	.002-.004 (0.05-0.10)	165-110 (50-34)	150-100 (46-30)	260-190 (79-58)	- -	- -	360-275 (110-84)
Chilled Irons 40-50 Rc	L	.002-.004 (0.05-0.10)	260-175 (79-53)	240-160 (73-49)	390-320 (119-98)	- -	- -	600-450 (183-137)
	G	.002-.004 (0.05-0.10)	220-150 (67-46)	200-140 (61-43)	340-270 (104-82)	- -	- -	500-360 (152-110)

L= Light Machining G = General Machining

ValGROOVE™ Machining Guidelines

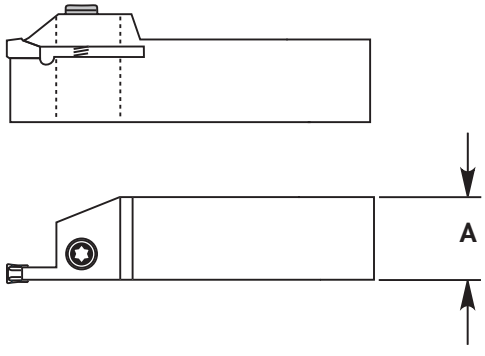
Toolholder Overhang

To minimize deflection and vibration, choose the tool-holder size with the least possible overhang, Ar, part configuration will allow.



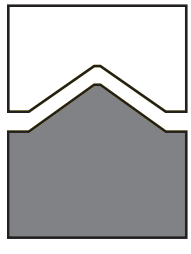
Choose a Shank Size with Adequate Strength

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

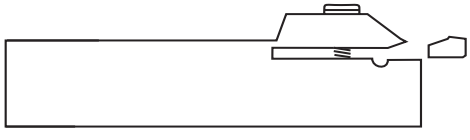
The wider the insert, the more secure the seating in the pocket. The insert should be as large as possible, relative to the dimensions of the workpiece. Make sure the insert is wide enough for the cutting conditions. For small parts and thin walls choose a smaller width to minimize cutting forces. For 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).



Insert

Holder

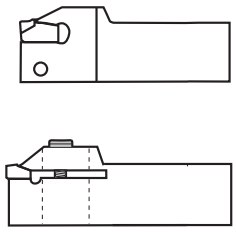
Match the Toolholder Seat Size to the Insert Seat Size



Example: (seat sizes in blue)

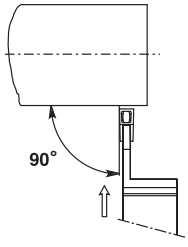
Toolholder	VG	111 R 16 30
Insert Number	VSG	3.0 N 30 GG

Correct Insert Clamping



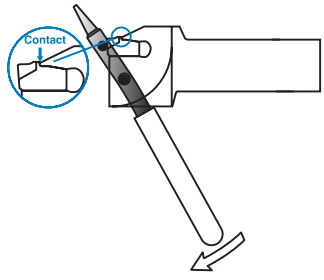
Choose the correct toolholder style for the operation. Screw clamp toolholders provide the most secure clamping for both radial (plunging) and axial (turning) machining. Wedge clamp toolholders are recommended only for radial machining.

Positioning the Tool in the Tool Block



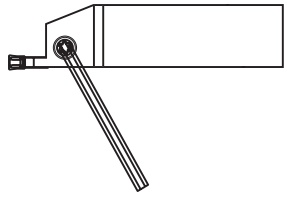
It is essential that the tool be correctly positioned in the tool block. The toolholder must be perpendicular to the workpiece. Deviation will cause part distortion. The front edge of the insert should be parallel to the workpiece to minimize vibration.

Installing and Extracting the Insert



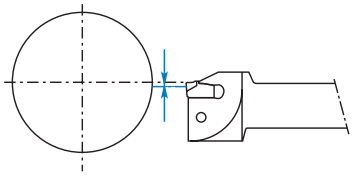
Wedge Style

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).

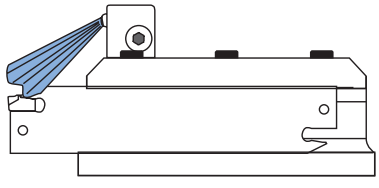


Check the Center Height of the Edge of the Insert

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.

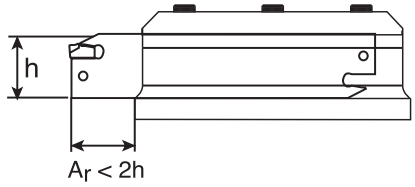
Cutting Fluid

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

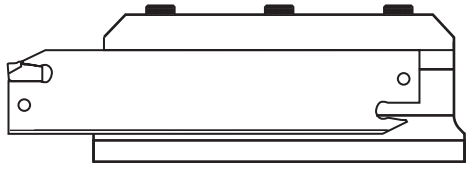
For maximum stability, the insertion depth, Ar, should not exceed twice the blade height, h.



ValGROOVE™ Parting Machining Guidelines

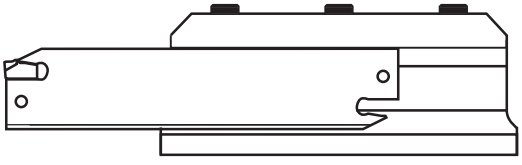
Minimize Overhang

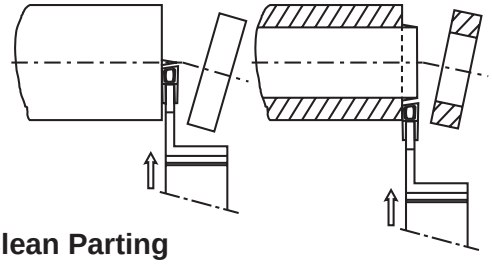
For maximum stability, position the blade for the least possible overhang.



Parting Large Diameters

Use double ended blades for large depths.

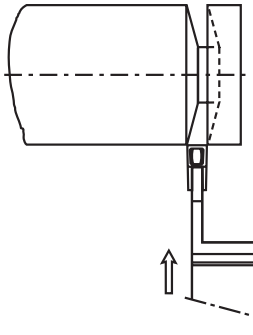




Clean Parting

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

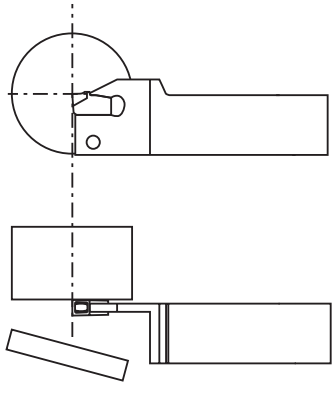
Convex or Concave Surfaces

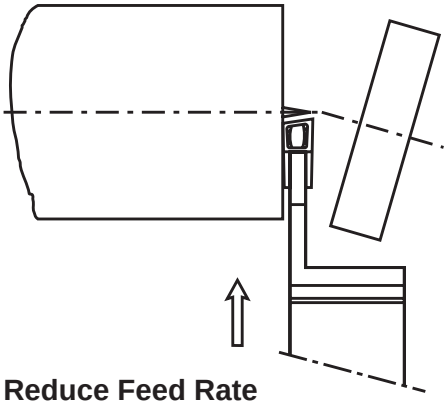


If convex or concave surfaces are produced, reduce the feed rate or use a wider insert.

Parting to Center

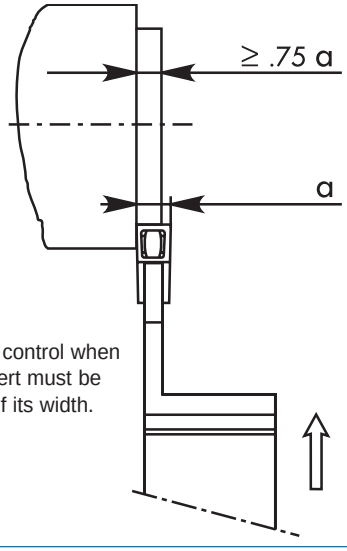
Exceeding the center line of the workpiece after parting will damage the insert.





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

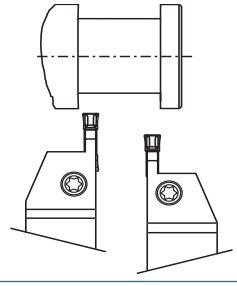
To ensure good chip control when facing a part, the insert must be engaged over 75% of its width.

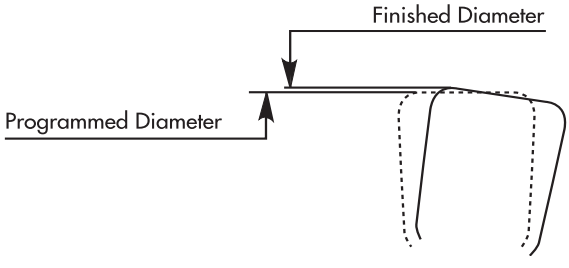
Toolholder Selection

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.

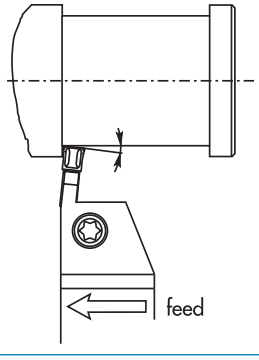




Compensation for Deflection when Axial Turning

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

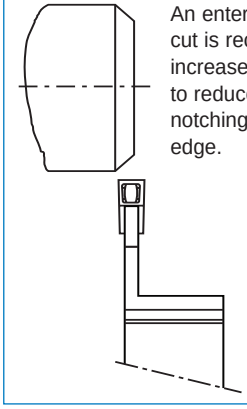
Determine the compensation during set up by measuring the difference between the programmed diameter and the finished diameter. Values will vary depending on workpiece material as well as feed and depth of cut.



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

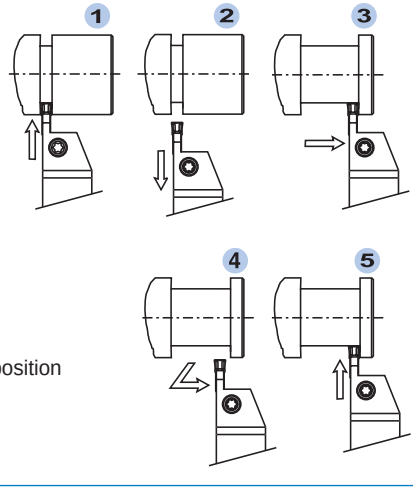


An entering chamfer cut is recommended for increased tool life and to reduce chipping and notching of the cutting edge.

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

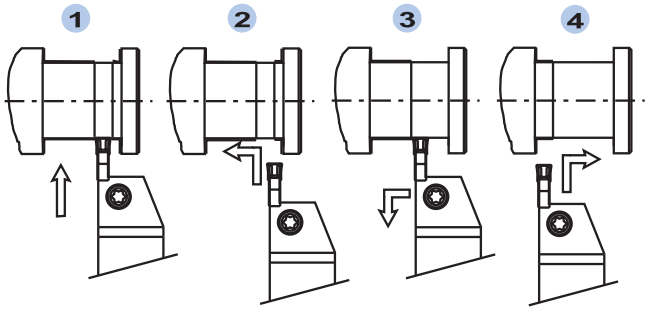


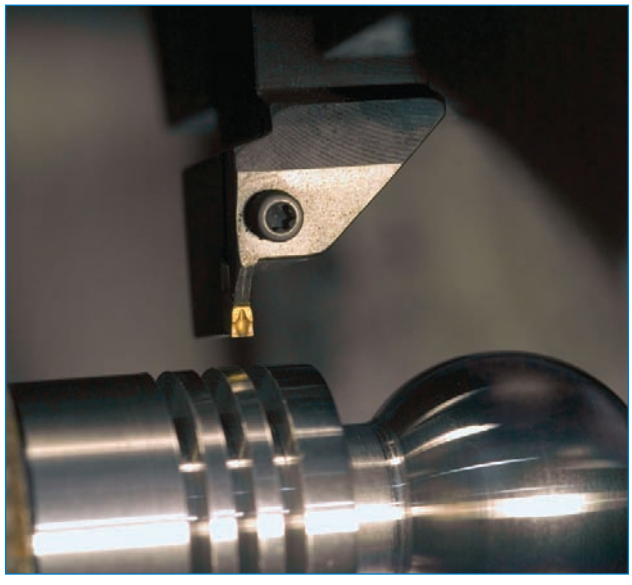
ValGROOVE™ Turning and Profiling Machining Guidelines

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:

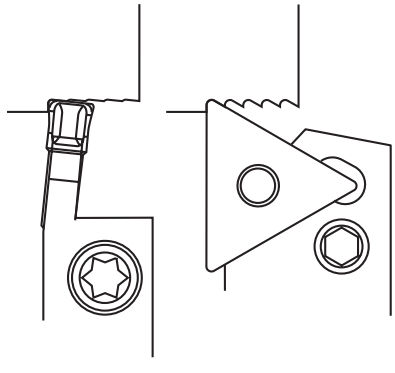
1. Plunge parallel to finished surface
2. Retract and finish wall and radius
3. Turn diameter and retract tool
4. Radially feed and generate radius to finish diameter





Surface Finish

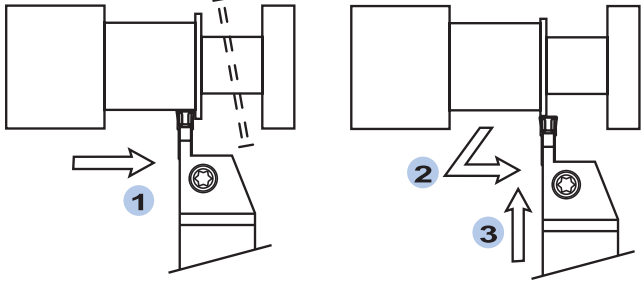
The wiper effect from deflecting the insert produces surface finishes much superior to those produced by conventional inserts. This wiper effect makes it possible to increase the feed rate resulting in productivity gain.



Trapped Ring

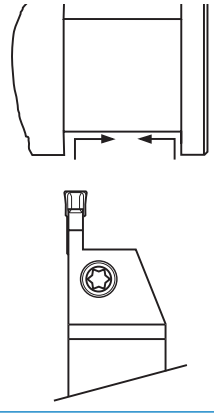
An unwanted trapped ring of material can result when turning toward the end of a bar or a recess between two walls.
To prevent a trapped ring:

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



In Copying

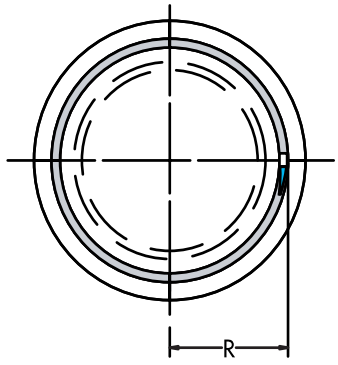
For increased tool life and better chip control, in copying is recommended. Doing so uses both corners of the insert, minimizing tool wear.



ValGROOVE™ Face Grooving Machining Guidelines

General Recommendations

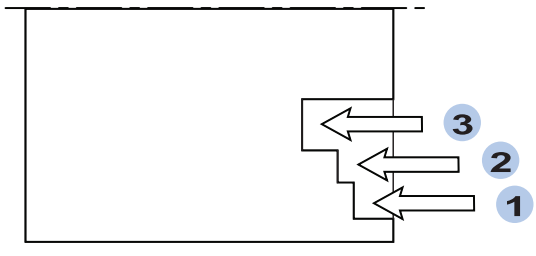
- **Always start with the largest possible diameter and work inward.**
- **Use the tool with the largest possible diameter range.**
- **To avoid chatter minimize overhang.**

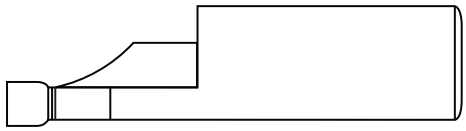


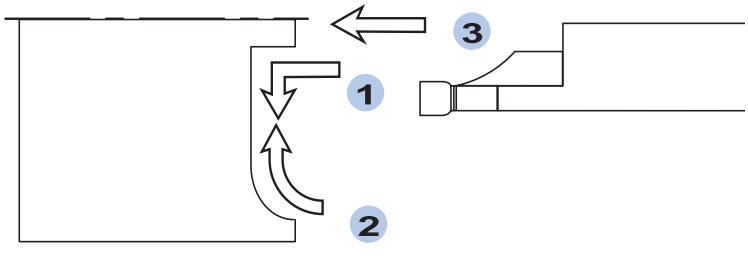
Roughing

1 Starting cut chip control but no breaking.

2 & 3 Width of cut should be 50% to 80% of insert width - insert will break chips.







Finishing

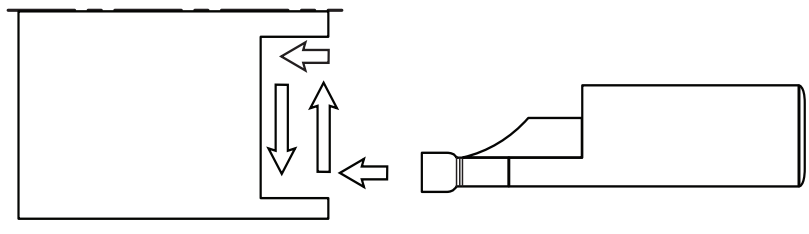
1 Position within diameter range and feed toward the radius.

2 Finish the outside diameter and radius and face turn inward.

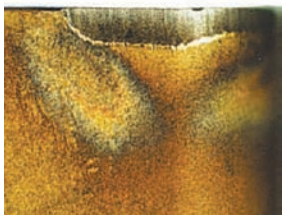
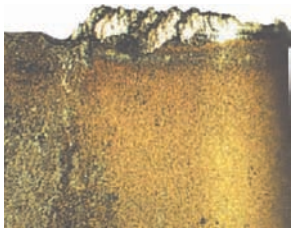
3 Finish the inside diameter to the correct dimension.

Plunge Turning

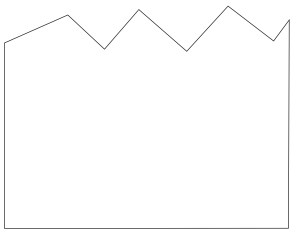
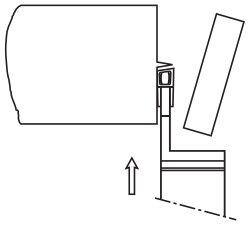
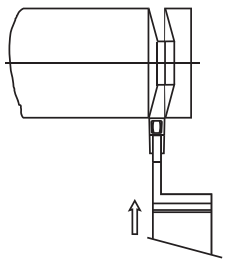
Axial depth of cut should not be deeper than 75% width of insert.



ValGROOVE™ Insert Failure Modes

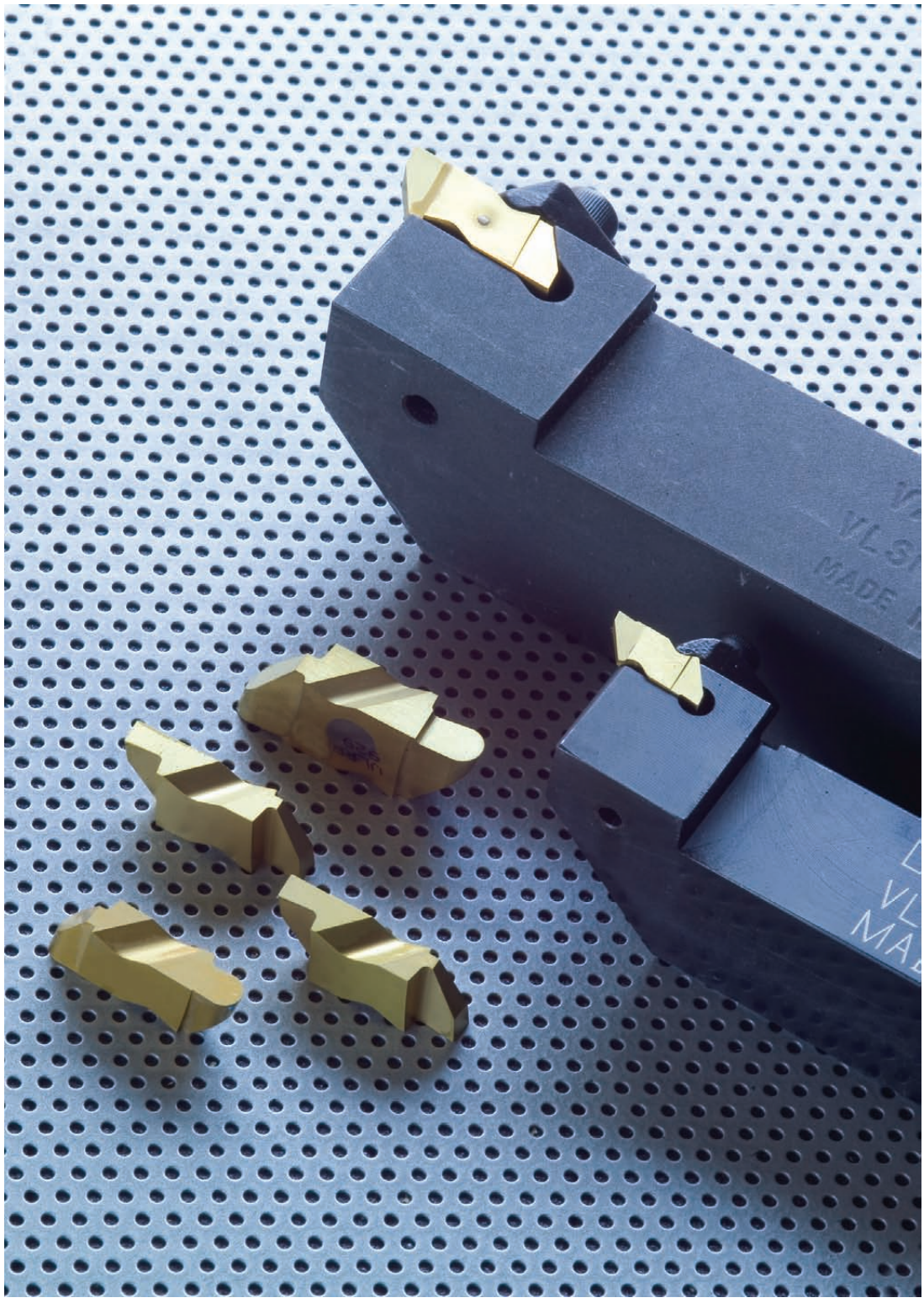
Problem/Failure Mode	Cause	Control Action/Remedy
Rapid Flank Wear 	• Excessive cutting speed • Work material micro-structure contains carbides	• Reduce cutting speed • Use more wear resistant grade • Select more positive rake chipbreaker • Flood cutting zone with coolant
Built-Up Edge, Torn Finish, Chip Welding 	• Low cutting speed • High feed rate • Poor shearing action	• Increase cutting speed and/or decrease feed • Select more positive rake chipbreaker • Select tougher grade (use PVD coated insert) • Flood cutting zone with coolant
Edge Chipping 	• Excessive feed rate • Interrupted cut	• Increase speed • Reduce feed rate • Select tougher grade • Check for edge build-up • Select stronger chipbreaker • Improve rigidity, minimize overhang
Fracture 	• Improper selection of grade/ chipbeaker and/or cutting conditions	• Reduce feed rate • Select tougher grade • Select stronger chipbreaker • Ensure set-up rigidity, minimize tool overhang

ValGROOVE™ Insert Failure Modes

Problem/Failure Mode	Cause	Control Action/Remedy
Thermal Cracks 	• Extreme variation in cutting temperatures • Interrupted cut	• Reduce feed rate • Increase cutting speed • Select stronger chipbreaker
Poor Surface Finish 	• High feed rate • Low cutting speed	• Reduce feed rate and increase cutting speed • Check set-up, minimize overhang of tool • Select more positive rake chipbreaker/PVD coated insert • Flood cutting zone with coolant • Select a precision ground insert style • Dwell at bottom of groove (3 rev. max)
Residual Burrs/Nibs 	• Improper feed • Improper set-up	• Use sharp inserts • Adjust feed rate • Adjust tool center height • Use a lead angle insert for parting
Convex or Concave Surfaces 	• High feed rate • Excessive tool overhang • Small insert width	• Check set-up, minimize overhang of tool • Check tool alignment for square • Use a correct hand insert • Use a sharper tool • Use a wider insert

ValGROOVE™ Insert Failure Modes

Problem/Failure Mode	Cause	Control Action/Remedy
Workpiece Chatter Vibration 	• Poor set-up • Improper insert selection	• Check set-up, minimize tool overhang • Check tool center height • Increase feed rate • Increase speed • Use sharp inserts • Select more positive rake chipbreaker
Unacceptable Chip Control (Low Carbon Steel) 	• Low feed rate	• Increase feed rate • Use more aggressive chipbreaker style • Decrease speed • Adjust coolant flow and concentration



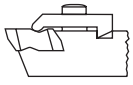
The versatility of the V-Loc system provides grooving and threading capability combined with productivity boosting ValPro grades.

V-LOC® Grooving Toolholders Designation

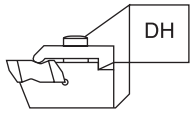
VL	S	R		16	3	D

Holding Method

V-Loc



Drop Head



Shank Size

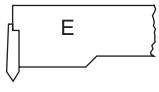
For shanks 5/8" square and larger, the number of 1/16" width and height.

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

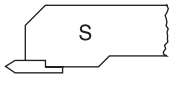
Qualified Back and End

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

Insert Location



Side Mount Offset

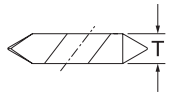


Hand of Tool

End Mount

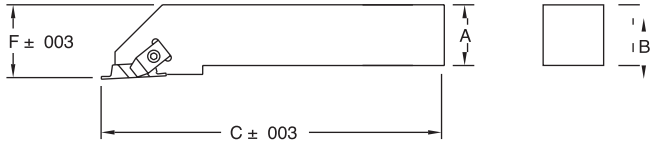
Side Mount

Insert Size



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

Qualified Back and End

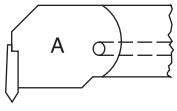


Toolholders are qualified over sharp corner of gage grooving insert.

V-LOC® Boring Bars Designation

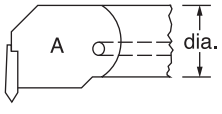
A — **Bar Type**

Steel with Coolant



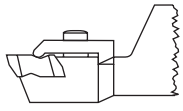
32 — **Bar Diameter**

Indicates bar diameter in sixteenth of an inch.



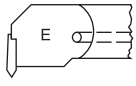
VL — **Holding Method**

V-Loc



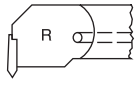
E — **Insert Location**

End Mount

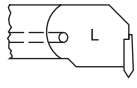


R — **Insert Location**

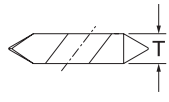
Right Hand



Left Hand



3 — **Insert Size**



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

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

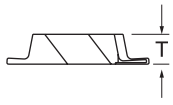
V-LOC® Designation for Grooving Inserts

VL **G** **P** **3** **031** **L**

Type
V-Loc

Style
B—Blank (special forms)
G—Grooving
R—Full Radius
U—Undercutting

Additional Information
P—Positive

Size


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

Groove Width
Groove width or radius in .001" increments.

Hand
R—Right Hand
L—Left Hand

VLG

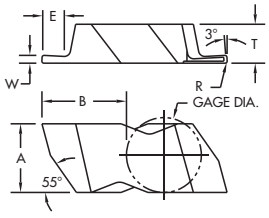

VLGP

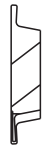

VLR


VLRP


V-LOC® Grooving Inserts

VLG Inserts





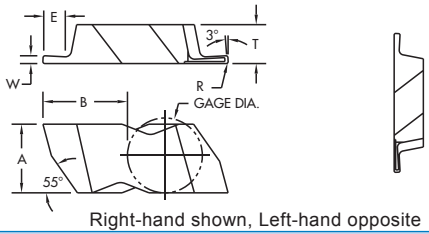
Right-hand shown, Left-hand opposite

Chipbreaker		Part Number		Insert Dimensions*						ValPro Selection			
				Insert Size	Width		R		E		Available Grades - EDP#			
		Right Hand	Left Hand		Inch	mm	Inch	mm	Inch	mm	VP5735	VP5810	VP5820	VPUS10
VLG-2		VLG 2 031R		2	0.031	0.79	0.0035	0.09	0.050	1.27	22987	23539		
			VLG 2 031L	2	0.031	0.79	0.0035	0.09	0.050	1.27	22986	23538		
		VLG 2 041R		2	0.041	1.04	0.0035	0.09	0.050	1.27	22989	23541		
			VLG 2 041L	2	0.041	1.04	0.0035	0.09	0.050	1.27	22988	23540		
		VLG 2 047R		2	0.047	1.19	0.0035	0.09	0.050	1.27	22991	23543		
			VLG 2 047L	2	0.047	1.19	0.0035	0.09	0.050	1.27	22990	23542		
		VLG 2 058R		2	0.058	1.47	0.0075	0.19	0.050	1.27	22993	23545		
			VLG 2 058L	2	0.058	1.47	0.0075	0.19	0.110	2.79	22992	23544		
		VLG 2 062R		2	0.062	1.57	0.0075	0.19	0.110	2.79	22995	23547		
			VLG 2 062L	2	0.062	1.57	0.0075	0.19	0.110	2.79	22994	23546		
		VLG 2 094R		2	0.094	2.39	0.0075	0.19	0.110	2.79	22997	23549		
			VLG 2 094L	2	0.094	2.39	0.0075	0.19	0.110	2.79	22996	23548		
		VLG 2 125R		2	0.125	3.18	0.0075	0.19	0.110	2.79	22999	23551		
			VLG 2 125L	2	0.125	3.18	0.0075	0.19	0.110	2.79	22998	23550		

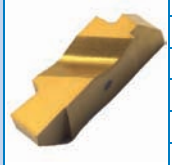
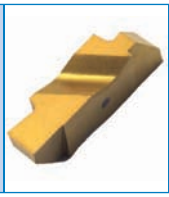
*See V-LOC Common Insert Dimensions page D97 for references

V-LOC® Grooving Inserts

VLG Inserts

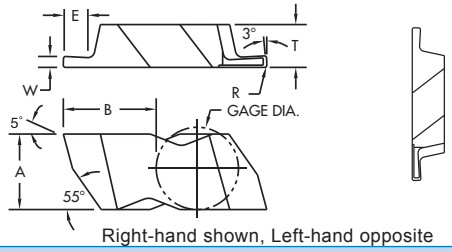


Right-hand shown, Left-hand opposite

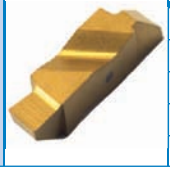
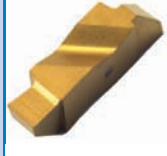
Chipbreaker		Part Number		Insert Dimensions*							ValPro Selection			
				Insert	Width		R		E		Available Grades - EDP#			
		Right Hand	Left Hand	Size	Inch	mm	Inch	mm	Inch	mm	VP5735	VP5810	VP5820	VPUS10
VLG-3		VLG 3 047R		3	0.047	1.19	0.0075	0.19	0.075	1.91	23001	23553	23392	24549
			VLG 3 047L	3	0.047	1.19	0.0075	0.19	0.075	1.91	23000	23552	23390	
		VLG 3 062R		3	0.062	1.57	0.0075	0.19	0.094	2.39	23004	23555	23396	24551
			VLG 3 062L	3	0.062	1.57	0.0075	0.19	0.094	2.39	23003	23554	23394	24550
		VLG 3 072R		3	0.072	1.83	0.0075	0.19	0.094	2.39	23006	23557		24552
			VLG 3 072L	3	0.072	1.83	0.0075	0.19	0.094	2.39	23005	23556		
		VLG 3 078R		3	0.078	1.98	0.0075	0.19	0.094	2.39	23012	23559	23400	24553
			VLG 3 078L	3	0.078	1.98	0.0075	0.19	0.094	2.39	23011	23558	23347	
		VLG 3 088R		3	0.088	2.24	0.0075	0.19	0.094	2.39	23015	23599		
			VLG 3 088L	3	0.088	2.24	0.0075	0.19	0.094	2.39	23013	23598		
		VLG 3 094R		3	0.094	2.39	0.0075	0.19	0.150	3.81	23021	23562	23406	24555
			VLG 3 094L	3	0.094	2.39	0.0075	0.19	0.150	3.81	23019	23600	23404	24554
		VLG 3 097R		3	0.097	2.46	0.0125	0.32	0.150	3.81	23027	23564		
			VLG 3 097L	3	0.097	2.46	0.0125	0.32	0.150	3.81	23025	23563		
		VLG 3 105R		3	0.105	2.67	0.0075	0.19	0.150	3.81	23035	23566		
			VLG 3 105L	3	0.105	2.67	0.0075	0.19	0.150	3.81	23034	23565		
		VLG 3 110R		3	0.110	2.79	0.0125	0.32	0.150	3.81	23036			
			VLG 3 110L	3	0.110	2.79	0.0125	0.32	0.150	3.81	23411			
		VLG 3 125R		3	0.125	3.18	0.0075	0.19	0.150	3.81	23041	23601	23415	24557
			VLG 3 125L	3	0.125	3.18	0.0075	0.19	0.150	3.81	23040	23567	23413	24556
		VLG 3 142R		3	0.142	3.61	0.0125	0.32	0.150	3.81	23042			
			VLG 3 142L	3	0.142	3.61	0.0125	0.32	0.150	3.81	24839			
		VLG 3 156R		3	0.156	3.96	0.0075	0.19	0.150	3.81	23080	23569		24559
			VLG 3 156L	3	0.156	3.96	0.0075	0.19	0.150	3.81	23079	23568		24558
		VLG 3 178R		3	0.178	4.52	0.0075	0.19	0.150	3.81		23571		
			VLG 3 178L	3	0.178	4.52	0.0075	0.19	0.150	3.81		23570		
		VLG 3 189R		3	0.189	4.80	0.0225	0.57	0.150	3.81	23097	23573		24561
			VLG 3 189L	3	0.189	4.80	0.0225	0.57	0.150	3.81	23081	23572		24560
VLG-4		VLG 4 125R		4	0.125	3.18	0.0075	0.19	0.150	3.81	23099	23575		
			VLG 4 125L	4	0.125	3.18	0.0075	0.19	0.150	3.81	23098	23574		
		VLG 4 189R		4	0.189	4.80	0.0225	0.57	0.250	6.35	23100			
			VLG 4 189L	4	0.189	4.80	0.0225	0.57	0.250	6.35		23576		
		VLG 4 250R		4	0.250	6.35	0.0225	0.57	0.250	6.35	23101	23578		
			VLG 4 250L	4	0.250	6.35	0.0225	0.57	0.250	6.35	23438	23577		

*See V-LOC Common Insert Dimensions page D97 for references

VLGP Inserts



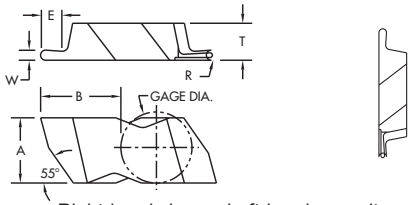
Right-hand shown, Left-hand opposite

Chipbreaker		Part Number		Insert Dimensions*							ValPro Selection			
				Insert Size	Width		R		E		Available Grades - EDP#			
		Right Hand	Left Hand		Inch	mm	Inch	mm	Inch	mm	VP5735	VP5810	VP5820	VPUS10
VLGP 2		VLGP 2 031R		2	0.031	0.79	0.0035	0.09	0.050	1.27			23363	
			VLGP 2 031L	2	0.031	0.79	0.0035	0.09	0.050	1.27			23362	
		VLGP 2 062R		2	0.062	1.57	0.0075	0.19	0.110	2.79		23537	23365	
			VLGP 2 062L	2	0.062	1.57	0.0075	0.19	0.110	2.79			23346	
		VLGP 2 125R		2	0.125	3.18	0.0075	0.19	0.110	2.79			23367	
			VLGP 2 125L	2	0.125	3.18	0.0075	0.19	0.110	2.79			23366	
VLGP 3		VLGP 3 088R		3	0.088	2.24	0.0075	0.19	0.094	2.39			22985	
			VLGP 3 088L	3	0.088	2.24	0.0075	0.19	0.094	2.39	22984		23368	
		VLGP 3 125R		3	0.125	3.18	0.0075	0.19	0.150	3.81			23370	
			VLGP 3 125L	3	0.125	3.18	0.0075	0.19	0.150	3.81			23369	
		VLGP 3 156R		3	0.156	3.96	0.0075	0.19	0.150	3.81			23372	
			VLGP 3 156L	3	0.156	3.96	0.0075	0.19	0.150	3.81			23371	
		VLGP 3 189R		3	0.189	4.80	0.0225	0.57	0.150	3.81			23374	
			VLGP 3 189L	3	0.189	4.80	0.0225	0.57	0.150	3.81			23373	

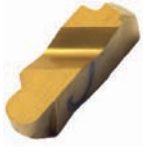
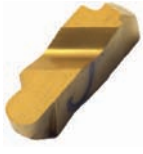
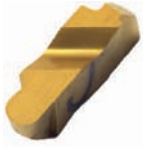
*See V-LOC Common Insert Dimensions page D97 for references

V-LOC® Grooving Inserts

VLR Inserts



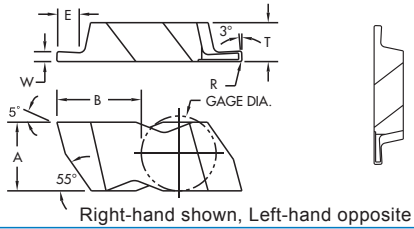
Right-hand shown, Left-hand opposite

Chipbreaker		Part Number		Insert Dimensions*							ValPro Selection			
				Insert Size	Width		R		E		Available Grades - EDP#			
		Right Hand	Left Hand		Inch	mm	Inch	mm	Inch	mm	VP5735	VP5810	VP5820	VPUS10
VLR-2		VLR 2031R		2	0.062	1.57	0.031	0.79	0.110	2.79			23453	
			VLR 2031L	2	0.062	1.57	0.031	0.79	0.110	2.79			23452	
		VLR 2047R		2	0.094	2.39	0.047	1.19	0.110	2.79			23455	
			VLR 2047L	2	0.094	2.39	0.047	1.19	0.110	2.79			23454	
		VLR 2062R		2	0.125	3.18	0.062	1.57	0.110	2.79			23459	
			VLR 2062L	2	0.125	3.18	0.062	1.57	0.110	2.79			23458	
VLR-3		VLR 3031R		3	0.062	1.57	0.031	0.79	0.094	2.39	23103	23579	23462	24566
			VLR 3031L	3	0.062	1.57	0.031	0.79	0.094	2.39	23102		23460	24565
		VLR 3047R		3	0.094	2.39	0.047	1.19	0.150	3.81	23104		23464	
			VLR 3047L	3	0.094	2.39	0.047	1.19	0.150	3.81			23463	
		VLR 3062R		3	0.125	3.18	0.062	1.57	0.150	3.81	23106	23580	23467	24568
			VLR 3062L	3	0.125	3.18	0.062	1.57	0.150	3.81	23105		23465	24567
		VLR 3078R		3	0.156	3.96	0.078	1.98	0.150	3.81			23468	24570
			VLR 3078L	3	0.156	3.96	0.078	1.98	0.150	3.81			24840	24569
		VLR 3094R		3	0.188	4.78	0.094	2.39	0.150	3.81			23470	
			VLR 3094L	3	0.188	4.78	0.094	2.39	0.150	3.81	23107		23469	
VLR-4		VLR 4062R		4	0.125	3.18	0.062	1.57	0.150	3.81			23472	24572
			VLR 4062L	4	0.125	3.18	0.062	1.57	0.150	3.81			23471	24571
		VLR 4094R		4	0.188	4.78	0.094	2.39	0.250	6.35			23474	24574
			VLR 4094L	4	0.188	4.78	0.094	2.39	0.250	6.35	23108		23473	24573
		VLR 4125R		4	0.250	6.35	0.125	3.18	0.250	6.35			23476	24576
			VLR 4125L	4	0.250	6.35	0.125	3.18	0.250	6.35			23475	24575

*See V-LOC Common Insert Dimensions page D97 for references

V-LOC® Grooving Inserts

VLRP Inserts



Right-hand shown, Left-hand opposite

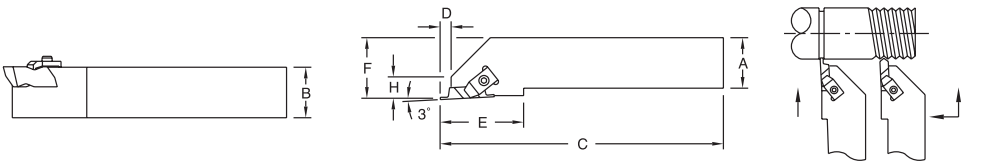
Chipbreaker		Part Number		Insert Dimensions*							ValPro Selection			
				Insert Size	Width		R		E		Available Grades - EDP#			
		Right Hand	Left Hand		Inch	mm	Inch	mm	Inch	mm	VP5735	VP5810	VP5820	VPUS10
VLRP		VLRP 3031R		3	0.062	1.57	0.031	0.79	0.094	2.39			23441	24562
			VLRP 3031L	3	0.062	1.57	0.031	0.79	0.094	2.39			23440	
		VLRP 3047R		3	0.094	2.39	0.047	1.19	0.150	3.81			23443	
			VLRP 3047L	3	0.094	2.39	0.047	1.19	0.150	3.81			23442	
		VLRP 3062R		3	0.125	3.18	0.062	1.57	0.150	3.81			23447	24564
			VLRP 3062L	3	0.125	3.18	0.062	1.57	0.150	3.81			23446	24563
		VLRP 3094R		3	0.188	4.78	0.094	2.39	0.150	3.81			23449	
			VLRP 3094L	3	0.188	4.78	0.094	2.39	0.150	3.81			23448	

*See V-LOC Common Insert Dimensions page D97 for references

V-LOC® Grooving and Threading Toolholders

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

Use Insert Style:
VLGx



Right-hand shown, Left-hand opposite

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

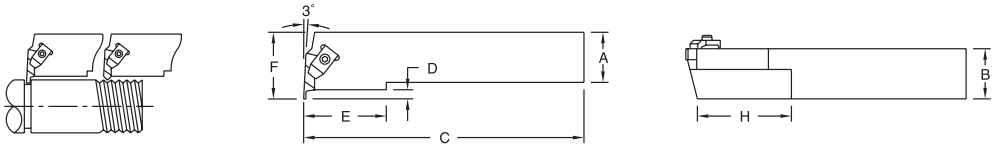
Insert		Part #/ EDP#	Shim Seat	Shim Screw	Clamp		Clamp Screw
Right Hand	Left Hand				Right Hand	Left Hand	
VL-2R	VL-2L	Part#	-	-	VL-74	VL-75	6-32 x 1/2 SHCS
		EDP#			58721	58722	52090
VL-2R*	VL-2L*	Part#	-	-	VL-74	VL-75	10-32 x 3/4 SHCS
		EDP#			58721	58722	51991
VL-3R	VL-3L	Part#	-	-	VL-72	VL-73	10-32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

*Use indicated Spare Parts for these toolholders

V-LOC® Grooving and Threading Toolholders

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

Use Insert Style:
VLGx



Right-hand shown, Left-hand opposite

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

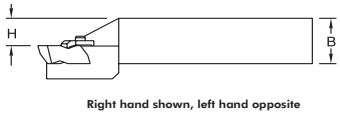
Note: VLER Toolholders use left hand inserts and clamps.
VLEL Toolholders use right hand inserts and clamps.

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

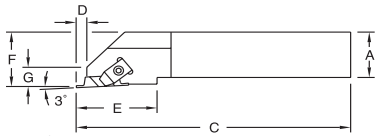
V-LOC® Grooving and Threading Toolholders

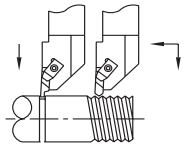
VLS-DH-R/L—Drop Head Grooving & Threading 3˚ Lead

Use Insert Style:
VLx



Right hand shown, left hand opposite




Left hand shown

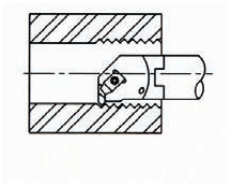
Part Number		Insert	Dimensions								EDP#	
Right Hand	Left Hand		A	B	C	D	E	F	G	H	Right Hand	Left Hand
VLSR DH 12 2B	-	VL-2R	0.750	0.750	4.500	0.125	1.200	1.000	0.400	0.750	58691	
VLSR DH 12 3A		VL-3R	0.750	0.750	4.000	0.180	1.500	1.250	0.580	0.750	58692	
VLSR DH 16 2C		VL-2R	1.000	1.000	5.000	0.125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

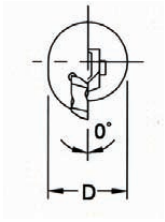
Insert		Part #/ EDP#	Clamp		Clamp Screw	Set Screw
Right Hand	Left Hand		Right Hand	Left Hand		
VL-2R	-	Part#	VL-74	-	6-32 x 1/2 SHCS	1/4 x 3/4 OPSS
		EDP#	58721		52090	RFQ
VL-3R	-	Part#	VL-72	-	10-32 x 3/4 SHCS	-
		EDP#	58719		51991	
VL-3R*	VL-3L*	Part#	VL-72	VL-73	10-32 x 3/4 SHCS	3/8-16 x 1 OPSS
	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

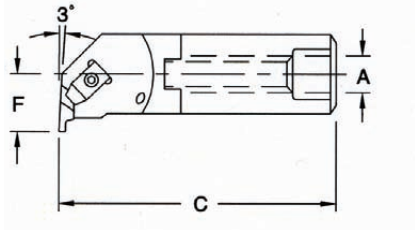
*Use indicated Spare Parts for these toolholders

V-LOC® Grooving & Threading Boring Bars

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







Use Insert Style:
VLGx

Right-hand shown, Left-hand opposite

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

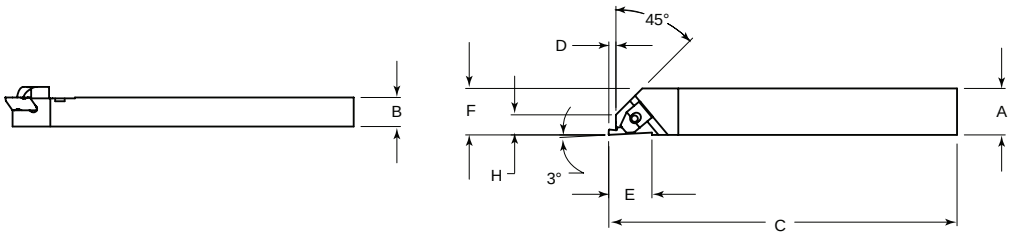
Note: Axx VLER Boring Bars use left hand inserts and clamps.
Axx VLEL Boring Bars use right hand inserts and clamps.

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

V-LOC® Grooving and Threading Toolholders

VLASR/L—Swiss/Screw Machine Grooving & Threading

Use Insert Style:
VLTx



Inch Toolholders

Right-hand shown, Left-hand opposite

Part Number		Insert (1)	Dimensions										EDP#	
Right Hand	Left Hand		B	A	H1	L1	D	E	F(2)	H	Radial	Axial	Right Hand	Left Hand
VLASR 06 2D		VL-R	0.375	0.375	0.375	6.000	0.130	0.750	0.470	0.350	0°	0°	61895	
	VLASL 06 2D	VL-2L	0.375	0.375	0.375	6.000	0.130	0.750	0.470	0.350	0°	0°		61888
VLASR 08 2D		VL-2R	0.500	0.500	0.500	6.000	0.130	0.750	0.500	0.350	0°	0°	61896	
	VLASL 08 2D	VL-2L	0.500	0.500	0.500	6.000	0.130	0.750	0.500	0.350	0°	0°		61889
VLASR 10 3B		VL-3R	0.625	0.625	0.625	4.500	0.200	1.250	0.625	0.500	0°	0°	61899	
	VLASL 10 3B	VL-3L	0.625	0.625	0.625	4.500	0.200	1.250	0.625	0.500	0°	0°		61892
VLASR 61.5 2D		VL-3R	0.375	0.750	0.750	6.000	0.130	0.750	0.750	0.350	0°	0°	61901	
	VLASL 61.5 2D	VL-3L	0.375	0.750	0.750	6.000	0.130	0.750	0.750	0.350	0°	0°		61894

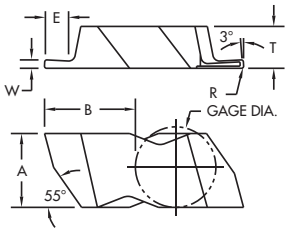
Metric Toolholders

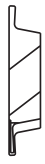
Part Number		Insert (1)	Dimensions										EDP#	
Right Hand	Left Hand		B	A	H1	L1	D	E	F	H	Radial	Axial	Right Hand	Left Hand
VLASR 1010M2Q		VL-2R	0.394	0.394	0.394	5.906	0.130	0.750	0.470	0.350	0°	0°	61897	
	VLASL 1010M2Q	VL-2L	0.394	0.394	0.394	5.906	0.130	0.750	0.470	0.350	0°	0°		61890
VLASR 1020M2Q		VL-2R	0.394	0.787	0.394	5.906	0.130	0.750	0.787	0.350	0°	0°	61898	
	VLASL 1020M2Q	VL-2L	0.394	0.787	0.394	5.906	0.130	0.750	0.787	0.350	0°	0°		61891
VLASR 1212M2Q*		VL-2R*	0.472	0.472	0.472	5.906	0.130	0.750	0.472	0.352	0°	0°	61900	
	VLASL 1212M2Q*	VL-2L*	0.472	0.472	0.472	5.906	0.130	0.750	0.472	0.352	0°	0°		61893

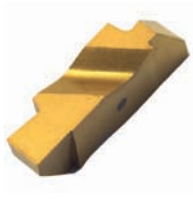
Insert		Part #/ EDP#	Clamp		Clamp Screw	Hex Wrench
Right Hand	Left Hand		Right Hand	Left Hand		
VL-2R	VL-2L	Part#	VL-182	VL-183	6-32x1/2 SHCS	7/64 Hex Wrench
		EDP#	59111	59112	52090	57336
VL-3R	VL-3L	Part#	VL-184	VL-185	10-32x3/4 SHCS	5/32 Hex Wrench
		EDP#	59113	59114	51991	57331
VL-2R*	VL-2L*	Part#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

Note:
1. V-LOC threading or grooving inserts of the same size may be used in these toolholders. See page D87 for grooving inserts.
2. “F” dimension over sharp point of grooving insert.
*Use indicated Spare Parts for these toolholders

V-LOC® Grooving and Threading Common Insert Dimensions

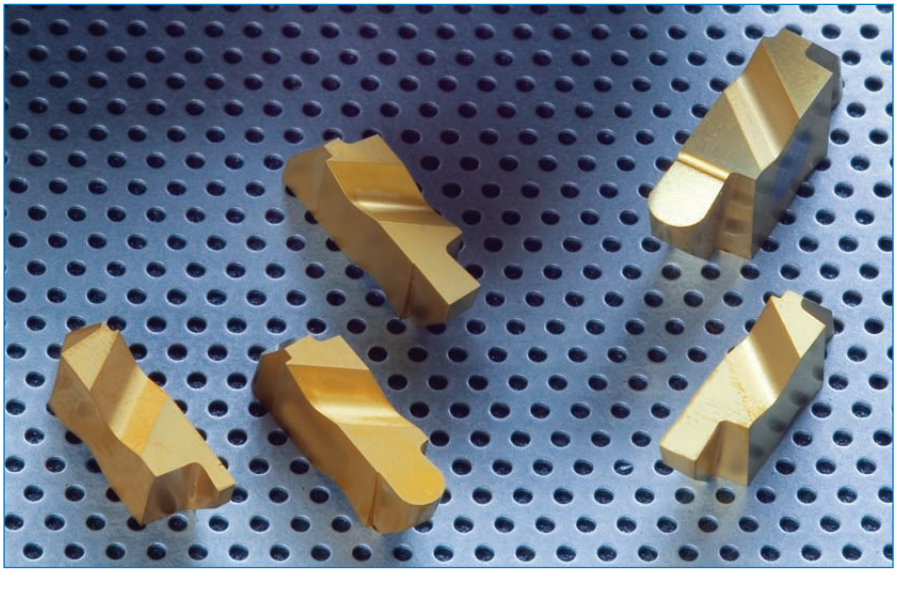




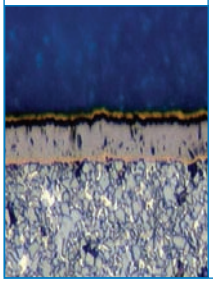
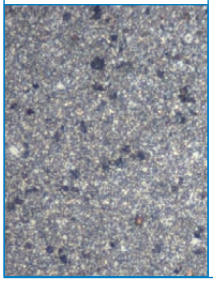


See Product pages D88-D91 for E,R, & W dimensions.

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



V-LOC® Grooving Grade Description

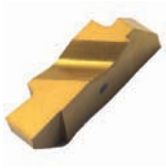
Grade	Description	Performance	ISO Class	Application
VP5810 	**PVD Coated Carbide** TiAlN/TiN Multi-Layer Coating Micro Grain Substrate	**Light Duty Grade** Excellent Wear Resistance Enhanced Crater Resistance Low Cutting Edge Build-Up Outstanding Edge Integrity	P10 M10 K10 S10 N10	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Aluminum & Non-Ferrous Alloys. Finish to General Purpose Machining. Medium to High Speeds In Good Machining Conditions.
VP5820 	**PVD Coated Carbide** TiAlN/TiN Multi-Layer Coating Micro Grain Substrate High Cobalt Substrate.	**General Machining Grade** Enhanced Crater Resistance Excellent Wear Resistance Excellent Toughness and Chipping Resistance Low Cutting Edge Build-Up	P20 M20 K20 S20 N20	Steels, Stainless Steels, Cast Irons, High Temperature Alloys, Titanium Alloys, Aluminum & Non-Ferrous Alloys. General Purpose Machining. Medium to High Speeds. Continuous and Interrupted Cuts, and Medium to High Feed Rates.
VP5735 	**MTCVD Coated Carbide** TiCN/Al_2O_3/TiN Coating High Cobalt Substrate	**Roughing Grade** Excellent Wear Resistance Very High Toughness and Chipping Resistance.	P35 M35 K35 S30	Steels, Stainless Steels, Cast Iron, High Temperature Alloys. Roughing to General Purpose Machining, Medium Speeds, Continuous and Interrupted Cuts, and High Feed Rates.
VPUS10 	**Uncoated Carbide** Micro Grain High Hardness	**Finishing Grade** Excellent Wear Resistance Excellent Edge Strength Enhanced Notch Resistance	M10 K10 S10 N15	High Temperature Alloys, Titanium Alloys, Aluminum and Non-Ferrous Alloys. Finishing Applications.

V-LOC® Grooving Insert Geometry Application Data

V-LOC® Grooving System

Insert Style	Description	Radial Feed Rate	Materials	Application
		Feed Rate by Insert Width	= Optimum feed rate for most applications	

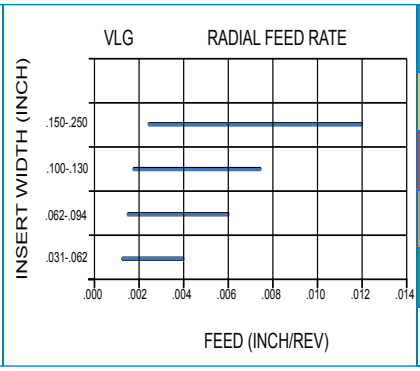
VLG



Grooving

General grooving applications.

O-ring grooves, circlip grooves



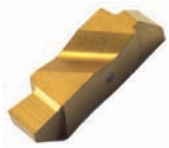
Steels
Stainless Steels
Cast Irons
High Temperature Alloys
Aluminum/ Non-Ferrous
Hardened Material

Main application area:

General Machining to Finishing operations

Light to medium feed rates

VLGP

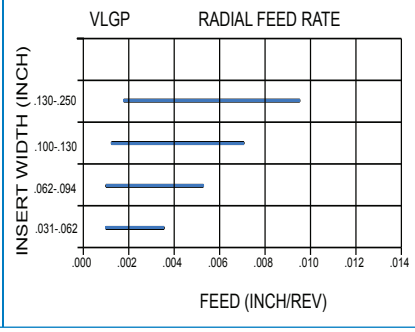


Grooving

General grooving applications with 5° positive rake.

O-ring grooves, circlip grooves

Good for stainless, non-ferrous, and high temp alloys.



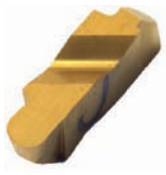
Steels
Stainless Steels
Cast Irons
High Temperature Alloys
Aluminum/ Non-Ferrous
Hardened Material

Main application area:

General Machining to Finishing operations

Light to medium feed rates

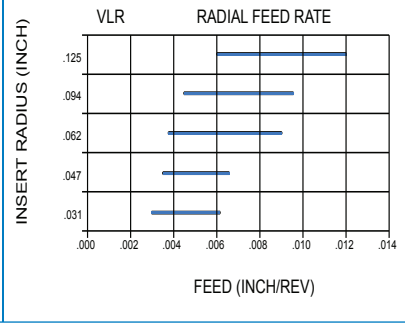
VLR



Profiling / Radius Grooving

Full radius grooving.

Turning and profiling.



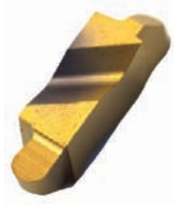
Steels
Stainless Steels
Cast Irons
High Temperature Alloys
Aluminum/ Non-Ferrous
Hardened Material

Main application area:

General Machining to Finishing operations

Light to medium feed rates

VLRP

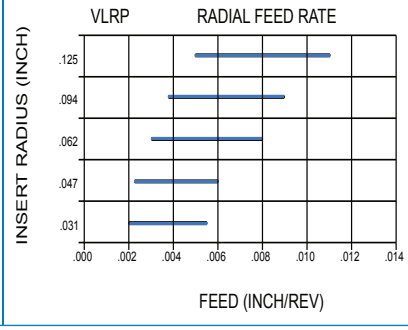


Profiling / Radius Grooving

Full radius grooving with 5° positive rake.

Turning and profiling.

Good for stainless, non-ferrous, and high temp alloys.



Steels
Stainless Steels
Cast Irons
High Temperature Alloys
Aluminum/ Non-Ferrous
Hardened Material

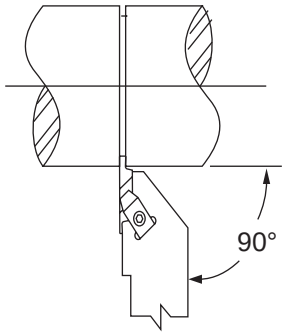
Main application area:

General Machining to Finishing operations

Light to medium feed rates

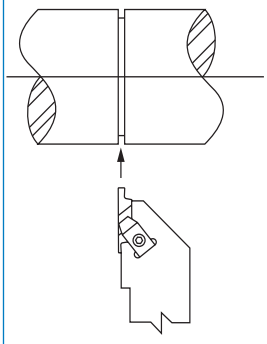
V-LOC® Grooving Machining Guidelines

Tool Holder Set-Up

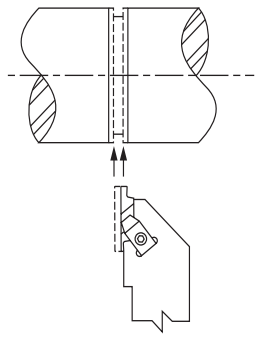


Cut groove to insert width.

Machining Slightly Wider Grooves than the Tool

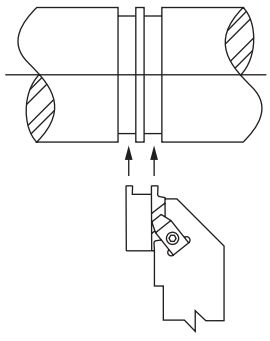


Plunge the center of the desired groove.

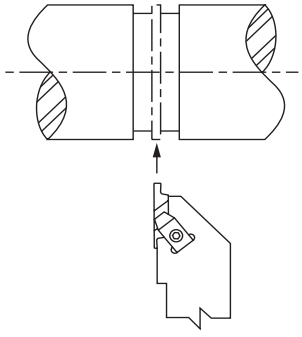


Using a slower feed rate, plunge both sides of the groove to obtain the required width.

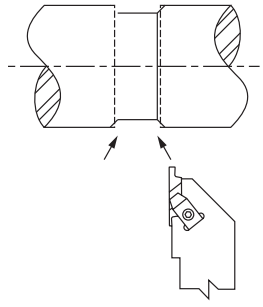
Machining Wide Grooves



Plunge both sides of the groove width.

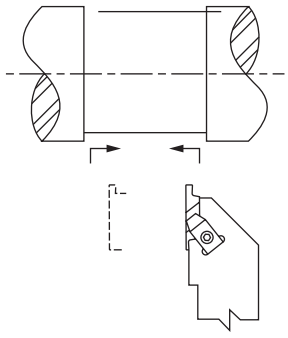


Plunge the center area to remove web of the remaining material.



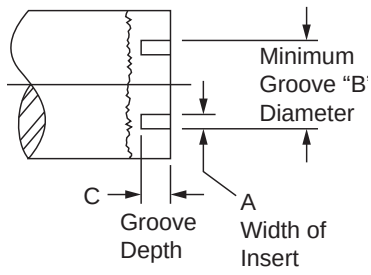
Plunge the sides of the groove at the required angle. The width of the cut should be half of the width of the grooving tool.

Finishing the Wide Groove



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

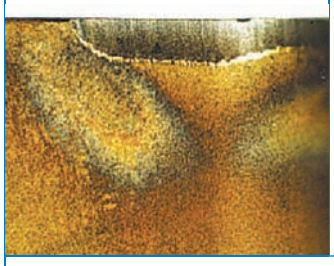
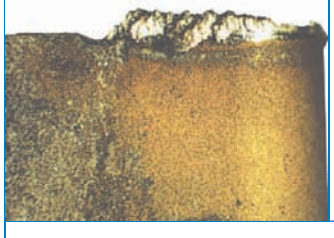
Machining Guidelines for Face Grooving Operations with Standard VLG Inserts



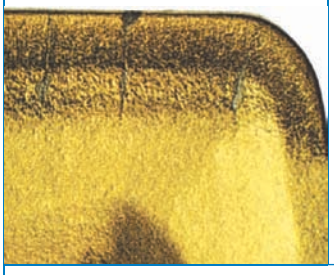
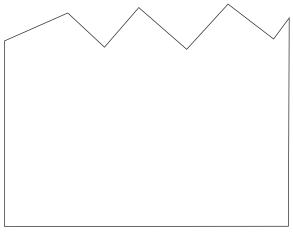
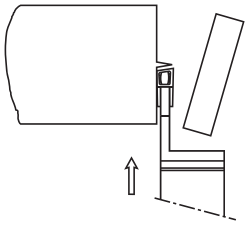
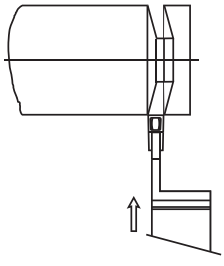
Insert Family	Groove Depth "C"	Min. Groove Dia. "B"
VLG-2	0.050	2.125
VLG-2	0.110	3.500
VLG-3	0.094	4.000
VLG-3	0.125	5.000
VLG-3	0.150	5.500
VLG-4	0.150	6.000
VLG-4	0.250	8.250
VLG-5	0.375	13.000

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® Grooving Insert Failure Modes

Problem/Failure Mode	Cause	Control Action/Remedy
Rapid Flank Wear 	• Excessive cutting speed • Work material micro-structure contains carbides	• Reduce cutting speed • Use more wear resistant grade • Select more positive rake • Flood cutting zone with coolant
Built-Up Edge, Torn Finish, Chip Welding 	• Low cutting speed • High feed rate • Poor shearing action	• Increase cutting speed and/or decrease feed • Select more positive rake • Select tougher grade (use PVD coated insert) • Flood cutting zone with coolant
Edge Chipping 	• Excessive feed rate • Interrupted cut	• Increase speed • Reduce feed rate • Select tougher grade • Check for edge build-up • Select stronger geometry • Improve rigidity, minimize overhang
Fracture 	• Improper selection of grade/ geometry and/or cutting conditions	• Reduce feed rate • Select tougher grade • Select stronger geometry • Ensure set-up rigidity, minimize tool overhang

V-LOC® Grooving Insert Failure Modes

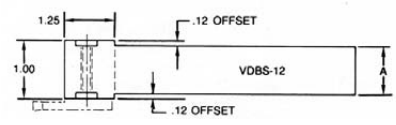
Problem/Failure Mode	Cause	Control Action/Remedy
Thermal Cracks 	• Extreme variation in cutting temperatures • Interrupted cut	• Reduce feed rate • Increase cutting speed • Select stronger geometry
Poor Surface Finish 	• High feed rate • Low cutting speed	• Reduce feed rate and increase cutting speed • Check set-up, minimize overhang of tool • Select more positive rake chipbreaker/PVD coated insert • Flood cutting zone with coolant • Select a precision ground insert style • Dwell at bottom of groove (3 rev. max)
Residual Burrs/Nibs 	• Improper feed • Improper set-up	• Use sharp inserts • Adjust feed rate • Adjust tool center height • Use a lead angle insert for parting
Convex or Concave Surfaces 	• High feed rate • Excessive tool overhang • Small insert width	• Check set-up, minimize overhang of tool • Check tool alignment for square • Use a correct hand insert • Use a sharper tool • Use a wider insert

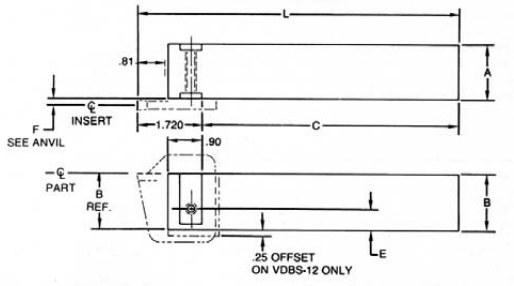
V-LOC® Grooving Insert Failure Modes

Problem/Failure Mode	Cause	Control Action/Remedy
Workpiece Chatter Vibration 	• Poor set-up • Improper insert selection	• Check set-up, minimize tool overhang • Check tool center height • Increase feed rate • Increase speed • Use sharp inserts • Select more positive rake
Unacceptable Chip Control (Low Carbon Steel) 	• Low feed rate	• Increase feed rate • Decrease speed • Adjust coolant flow and concentration

EconoGROOVE® Grooving Toolholders

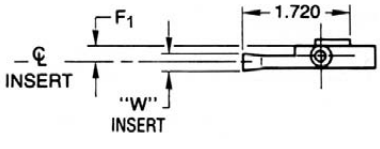
General Purpose-VDBS—Side Mounting Shanks

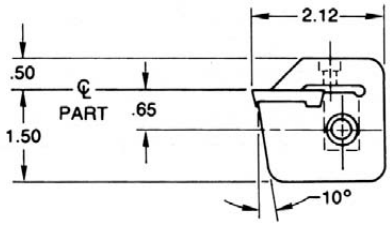




Part Number	Dimensions					EDP#	Mounting Screw	EDP# Mounting Screw
	A	B	C	E	L			
VDBS 12	0.750	0.750	4.280	0.090	6.000	61759	5/16-24 x 5/8 SHCS, H=1/4	52081
VDBS 16	1.000	1.000	4.280	0.340	6.000	61760	5/16-24 x 5/8 SHCS, H=1/4	
VDBS 20	1.250	1.250	5.280	0.590	7.000	61761	5/16-24 x 5/8 SHCS, H=1/4	
VDBS 24	1.500	1.500	6.280	0.840	8.000	61762	5/16-24 x 5/8 SHCS, H=1/4	
VDBS 85	1.000	1.250	5.280	0.590	7.000	61766	5/16-24 x 5/8 SHCS, H=1/4	

General Purpose VDBA—Anvil



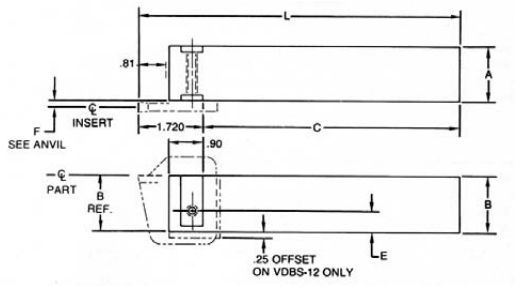


Part Number		Dimensions					Insert Series	EDP#		Clamp Screw	EDP# Clamp Screw
Right Hand	Left Hand	F	W Inch Inserts		W Metric Inserts			Right Hand	Left Hand		
			Min.	Max.	Min.	Max.					
VDBA 125 188RA	VDBA 125 188LA	0.337	0.125	0.188	-	0.157	A	61800	61799	10-32 x 5/8 SHCS, H=5/32	51998
VDBA 188 218RA	VDBA 188 218LA	0.318	0.188	0.250	0.197	0.236	A	61802	61801	10-32 x 5/8 SHCS, H=5/32	
VDBA 250 281RB	VDBA 250 281LB	0.318	0.250	0.281	0.236	0.276	B	61804	61803	10-32 x 5/8 SHCS, H=5/32	
VDBA 281 344RB	VDBA 281 344LB	0.289	0.281	0.344	0.275	0.315	B	61806	61805	10-32 x 5/8 SHCS, H=5/32	
VDBA 344 375RB	VDBA 344 375LB	0.250	0.344	0.375	-	0.354	B	61808	61807	10-32 x 5/8 SHCS, H=5/32	

Use with VDB-Style inserts, page D110.

EconoGROOVE® Grooving Toolholders

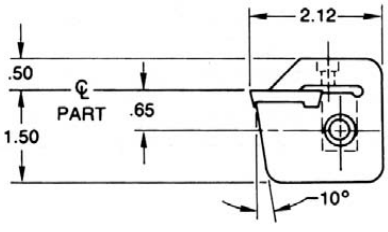
General Purpose Metric Shanks

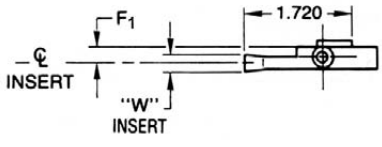


Shank No.	Dimensions			Shank EDP#	Screw	EDP# Screw
	A=B	C	L			
VDBS 2525	25 (0.984)	107 (4.218)	150,8 (5.94)	61763	M 8x16 DIN 6912	RFQ*

*Contact your local Valenite Distributor or Valenite Customer Service.

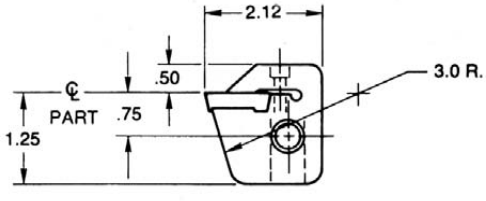
General Purpose Metric VDBA Anvil

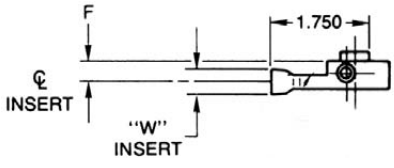




Size	Part Number		Dimensions			EDP#		Clamp Screw DIN 912	EDP# Clamp Screw
	Right Hand	Left Hand	f1	W Min.	W Nominal	Right Hand	Left Hand		
A	VDBA 3 4RA	VDBA 3 4LA	8,6	3,5	4	61810	61809	M 4x16 DIN 912	52181
A	VDBA 4 5RA	VDBA 4 5LA	8,1	4	5	61812	61811	M 4x16 DIN 912	52181
B	VDBA 5 6RB	-	8,1	5	6	61814	-	M 4x16 DIN 912	52181
B	VDBA 6 7RB	VDBA 6 7LB	7,8	6	7	61816	61815	M 4x16 DIN 912	52181
B	VDBA 7 8RB	VDBA 7 8LB	7,3	7	8	61818	61817	M 4x16 DIN 912	52181
B	-	VDBA 8 9LB	6,7	8	9	-	61819	M 4x16 DIN 912	52181

Heavy-Duty VHDBA R/L Anvils



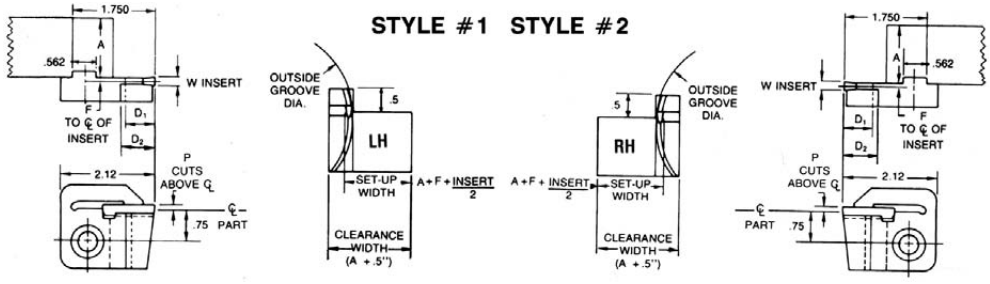


Part Number		Dimensions					EDP#		Insert Series	Clamp Screw	EDP# Clamp Screw
Right Hand	Left Hand	F	"W" Inch		"W" Metric		Right Hand	Left Hand			
			Min.	Max.	Min.	Max.					
VHDBA 125 188RA	VHDBA 125 188LA	0.458	0.125	0.188	4.000	4.800	61883	61882	A	1/4-28 x 5/8 SHCS	52029
VHDBA 188 250RA	VHDBA 188 250LA	0.438	0.188	0.250	4.800	6.000	61885	61884	A	1/4-28 x 5/8 SHCS	
VHDBA 250 375RB	VHDBA 250 375LB	0.401	0.250	0.375	6.400	9.000	61887	61886	B	1/4-28 x 5/8 SHCS	

Note: Must be used with Heavy-Duty Shanks

EconoGROOVE® Grooving Toolholders

VHDBTA—Heavy-Duty Face Grooving Anvils



Part-Number		Dimensions						EDP#	Clamp Screw	EDP# Clamp Screw
		F	P	Outside Groove Dia.		Max. Depth of Cut				
Style-1	Style-2			Min.	Max.	D1	D2			
VHDBTA 1215 1020		0.110	0.094	2.000	2.380	0.500	0.625	61821	1/4-28 x 5/8 SHCS	52029
	VHDBTA 1215 2020	0.110	0.094	2.000	2.380	0.500	0.625	61827	1/4-28 x 5/8 SHCS	
VHDBTA 1215 10238		0.110	0.094	2.380	3.000	0.500	0.625	61822	1/4-28 x 5/8 SHCS	
	VHDBTA 1215 20238	0.110	0.094	2.380	3.000	0.500	0.625	61828	1/4-28 x 5/8 SHCS	
VHDBTA 1215 1030		0.110	0.094	3.000	4.000	0.500	0.625	61823	1/4-28 x 5/8 SHCS	
	VHDBTA 1215 2030	0.110	0.094	3.000	4.000	0.500	0.625	61829	1/4-28 x 5/8 SHCS	
VHDBTA 1215 1040		0.110	0.094	4.000	6.000	0.500	0.625	61824	1/4-28 x 5/8 SHCS	
	VHDBTA 1215 2040	0.110	0.094	4.000	6.000	0.500	0.625	61830	1/4-28 x 5/8 SHCS	
VHDBTA 1215 1060		0.110	0.094	6.000	12.000	0.500	0.625	61825	1/4-28 x 5/8 SHCS	
	VHDBTA 1215 2060	0.110	0.094	6.000	12.000	0.500	0.625	61831	1/4-28 x 5/8 SHCS	
VHDBTA 1215 1120		0.110	0.094	12.000	18.000	0.500	0.625	61826	1/4-28 x 5/8 SHCS	
	VHDBTA 1215 2120	0.110	0.094	12.000	18.000	0.500	0.625	61832	1/4-28 x 5/8 SHCS	
VHDBTA 1215 1180		0.110	0.094	18.000	40.000	0.500	0.625	61871	1/4-28 x 5/8 SHCS	

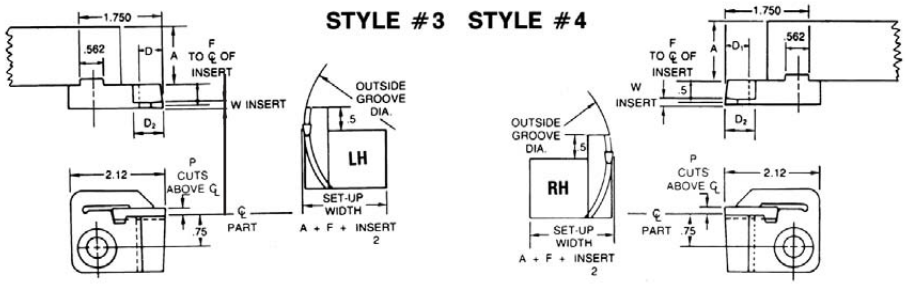
Inserts to be used with these anvils: VDB 125 A 015; VDB 156 A 015; VDB 188 A 015; VDB 125R A; VDB 156R A; VDB 188R A

VHDBTA 1825 1020		0.140	0.094	2.000	2.380	0.625	0.750	61845	1/4-28 x 5/8 SHCS	52029
	VHDBTA 1825 2020	0.140	0.094	2.000	2.380	0.625	0.750	61852	1/4-28 x 5/8 SHCS	
VHDBTA 1825 10238		0.140	0.094	2.380	3.000	0.625	0.750	61846	1/4-28 x 5/8 SHCS	
	VHDBTA 1825 20238	0.140	0.094	2.380	3.000	0.625	0.750	61853	1/4-28 x 5/8 SHCS	
VHDBTA 1825 1030		0.140	0.094	3.000	4.000	0.625	0.750	61847	1/4-28 x 5/8 SHCS	
	VHDBTA 1825 2030	0.140	0.094	3.000	4.000	0.625	0.750	61854	1/4-28 x 5/8 SHCS	
VHDBTA 1825 1040		0.140	0.094	4.000	6.000	0.625	0.750	61848	1/4-28 x 5/8 SHCS	
	VHDBTA 1825 2040	0.140	0.094	4.000	6.000	0.625	0.750	61855	1/4-28 x 5/8 SHCS	
VHDBTA 1825 1060		0.140	0.094	6.000	12.000	0.625	0.750	61849	1/4-28 x 5/8 SHCS	
	VHDBTA 1825 2060	0.140	0.094	6.000	12.000	0.625	0.750	61856	1/4-28 x 5/8 SHCS	
VHDBTA 1825 1120		0.140	0.094	12.000	18.000	0.625	0.750	61850	1/4-28 x 5/8 SHCS	
	VHDBTA 1825 2120	0.140	0.094	12.000	18.000	0.625	0.750	61857	1/4-28 x 5/8 SHCS	
VHDBTA 1825 1180		0.140	0.094	18.000	40.000	0.625	0.750	61851	1/4-28 x 5/8 SHCS	
	VHDBTA 1825 2180	0.140	0.094	18.000	40.000	0.625	0.750	61873	1/4-28 x 5/8 SHCS	
	VHDBTA 1825 2400	0.140	0.094	40.000	-	0.625	0.750	61874	1/4-28 x 5/8 SHCS	

Note:

- Must be used with Heavy-Duty Shank**s**
- **Inserts to be used with these anvils**: VDB 188 A 015; VDB 218 A 015; VDB 188 A 015; VDB 250 A 015; VDB 188R A; VDB 250R A

VHDBTA—Heavy-Duty Face Grooving Anvils



Part Number		Dimensions						EDP#	Clamp Screw	EDP# Clamp Screw
		F	P	Outside Groove Dia.		Max. Depth of Cut				
Style 3	Style 4			Min.	Max.	D1	D2			
VHDBTA 12 15 3020		0.460	0.094	2.000	2.380	0.500	0.625	61833	1/4-28 x 5/8 SHCS	52029
	VHDBTA 1215 4020	0.460	0.094	2.000	2.380	0.500	0.625	61839	1/4-28 x 5/8 SHCS	
VHDBTA 12 15 3030		0.460	0.094	3.000	4.000	0.500	0.625	61822	1/4-28 x 5/8 SHCS	
	VHDBTA 12 15 4030	0.460	0.094	3.000	4.000	0.500	0.625	61841	1/4-28 x 5/8 SHCS	
VHDBTA 12 15 3040		0.460	0.094	4.000	6.000	0.500	0.625	61836	1/4-28 x 5/8 SHCS	
	VHDBTA 12 15 4040	0.460	0.094	4.000	6.000	0.500	0.625	61842	1/4-28 x 5/8 SHCS	
VHDBTA 12 15 3060		0.460	0.094	6.000	12.000	0.500	0.625	61837	1/4-28 x 5/8 SHCS	
	VHDBTA 12 15 4060	0.460	0.094	6.000	12.000	0.500	0.625	61843	1/4-28 x 5/8 SHCS	
VHDBTA 12 15 3120		0.460	0.094	12.000	18.000	0.500	0.625	61838	1/4-28 x 5/8 SHCS	
	VHDBTA 12 15 4120	0.460	0.940	12.000	18.000	0.500	0.625	61872	1/4-28 x 5/8 SHCS	
	VHDBTA 12 15 4180	0.460	0.094	18.000	40.000	0.500	0.625	61844	1/4-28 x 5/8 SHCS	

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

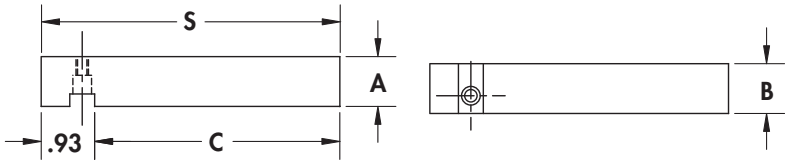
VHDBTA 18 25 3020		0.430	0.094	2.000	2.380	0.625	0.750	61858	1/4-28 x 5/8 SHCS	52029
	VHDBTA 18 25 4020	0.430	0.094	2.000	2.380	0.625	0.750	61864	1/4-28 x 5/8 SHCS	
VHDBTA 18 25 3030		0.430	0.094	3.000	4.000	0.625	0.750	61860	1/4-28 x 5/8 SHCS	
	VHDBTA 18 25 4030	0.430	0.094	3.000	4.000	0.625	0.750	61866	1/4-28 x 5/8 SHCS	
VHDBTA 18 25 3040		0.430	0.094	4.000	6.000	0.625	0.750	61861	1/4-28 x 5/8 SHCS	
	VHDBTA 18 25 4040	0.430	0.094	4.000	6.000	0.625	0.750	61867	1/4-28 x 5/8 SHCS	
VHDBTA 18 25 3060		0.430	0.094	6.000	12.000	0.625	0.750	61862	1/4-28 x 5/8 SHCS	
	VHDBTA 18 25 4060	0.430	0.094	6.000	12.000	0.625	0.750	61868	1/4-28 x 5/8 SHCS	
VHDBTA 18 25 3120		0.430	0.094	12.000	18.000	0.625	0.750	61863	1/4-28 x 5/8 SHCS	
	VHDBTA 18 25 4120	0.430	0.094	12.000	18.000	0.625	0.750	61869	1/4-28 x 5/8 SHCS	
	VHDBTA 18 25 4180	0.430	0.094	18.000	48.000	0.625	0.750	61870	1/4-28 x 5/8 SHCS	

Note:

- Must be used with Heavy-Duty Shank**s**
- **Inserts to be used with these anvils**: VDB 188 A 015; VDB 218 A 015; VDB 250 A 015; VDB 188R A; VDB218R A; VDB 250R A

EconoGROOVE® Grooving Toolholders

VHDBS R/L Toolholders—Heavy-Duty Axial Shank

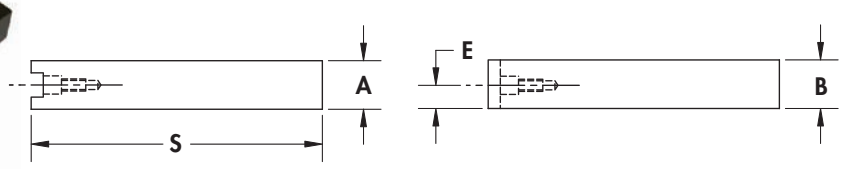


Right-hand shown, Left-hand opposite

Part Number		Dimensions				EDP#	
Right Hand	Left Hand	A	B	C	L	Right Hand	Left Hand
VHDBS 12R	VHDBS 12L	0.750	0.750	4.320	5.250	61771	61770
VHDBS 16R	VHDBS 16L	1.000	1.000	4.320	5.250	61773	61772
VHDBS 20R	VHDBS 20L	1.250	1.250	5.320	6.250	61775	61774
VHDBS 24*		1.500	1.500	6.320	7.250	61776	

*Shank can be inverted for opposite hand application

VHDBSN Toolholders—Heavy-Duty 90° Shank



Part Number	Dimensions				EDP#
	A	B	L	E	
VHDBSN-12	0.750	0.750	6.000	0.000	61782
VHDBSN-16	1.000	1.000	6.000	0.250	61783
VHDBSN-20	1.250	1.250	7.000	0.500	61784
VHDBSN-24	1.500	1.500	8.000	0.750	61785

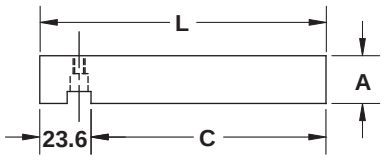
Spare Parts

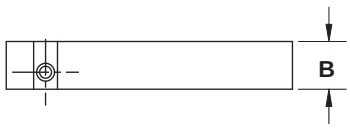
Part-Number		Wrench	Screw	Torque ft-lbs
VHDBS & VHDBSN	Part#	5/16 Hex Wrench	PT527	32
	EDP#	57330	53003	32

Note: Shanks complete with screw & wrench. Anvils must be purchased separately.
Note: For use with all VGSCA, VGWCA, VHDBA & VHDBTA anvils

EconoGROOVE® Grooving Toolholders

VHDBS—Heavy-Duty Metric Axial Shank

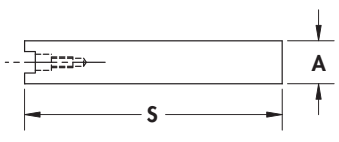


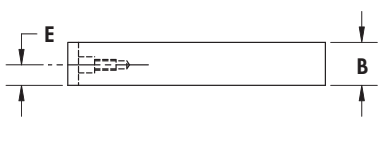


Right-hand shown, Left-hand opposite

Part Number		EDP#		Dimensions				Mounting Screw	EDP# Mounting Screw
Right Hand	Left Hand	Right Hand	Left Hand	A	B	C	L Ref.		
VHDBS 2525R	VHDBS 2525L	61778	61777	25	25	106	130	PT-527,H-5/16	53003
VHDBS 3232R	VHDBS 3232L	61781	61780	32	32	126	150	PT-527,H-5/16	

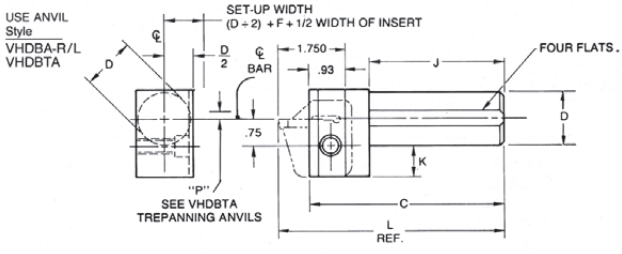
VHDBSN Tooholders—Heavy-Duty Metric 90° Shank





Part Number	EDP#	Dimensions				Mounting Screw	EDP# Mounting Screw
		A	B	L	E		
VHDBSN-2525	61786	25	25	150	18.5	PT-527,H-5/16	53003
VHDBSN-3232	61788	32	32	175	16	PT-527,H-5/16	

VHDBBR— Heavy-Duty Axial Round Shank

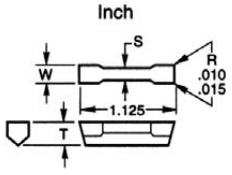


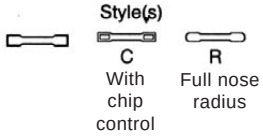
Right-hand shown, Left-hand opposite

Part Number		EDP#		Dimensions					Mounting Screw	EDP# Mounting Screw
Right Hand	Left Hand	Right Hand	Left Hand	C	D	J	K	L		
VHDBBR 125	-	61794	-	6.000	1.250	4.500	0.620	6.820	PT-527, H=5/16	53003
VHDBBR 150	VHDBBL 150	61795	61793	8.000	1.500	6.500	0.500	8.820	PT-527, H=5/16	

EconoGROOVE® Insert Product Offering

VDB Inserts





Part Number	Insert Dimensions						ValPro Grade Selection					
	Width		S		T		Available Grades - EDP #					
	Inch	mm	Inch	mm	Inch	mm	VP5715	VP5825	VP5815	VP5845	VPUK20	VPUP30
VDB 125 A015	0.125	3.18	0.106	2.69	0.250	6.35	22976	22864	23352	23328	24521	24522
VDB 125 A015C	0.125	3.18	0.106	2.69	0.250	6.35	22977			23329	24523	
VDB 125 RA	0.125	3.18	0.106	2.69	0.250	6.35	22978			23330	24524	24525
VDB 156 A015	0.156	3.96	0.106	2.69	0.250	6.35	22979			23331	24526	
VDB 156 A015C	0.156	3.96	0.106	2.69	0.250	6.35				23332		
VDB 156 RA	0.156	3.96	0.106	2.69	0.250	6.35					24527	
VDB 188 A015	0.188	4.78	0.144	3.66	0.250	6.35	22980	22866		23333	24528	24529
VDB 188 A015C	0.188	4.78	0.144	3.66	0.250	6.35	22981			23334		
VDB 188 RA	0.188	4.78	0.144	3.66	0.250	6.35				23335	24530	
VDB 218 A015	0.218	5.54	0.144	3.66	0.250	6.35				23336	24531	24532
VDB 250 A015	0.250	6.35	0.144	3.66	0.250	6.35	22982			23337	24533	
VDB 250 A015C	0.250	6.35	0.144	3.66	0.250	6.35				23338		
VDB 250 B015	0.250	6.35	0.144	3.66	0.337	8.56	22983			23339	24534	24535
VDB 250 B015C	0.250	6.35	0.144	3.66	0.337	8.56				23340		
VDB 250 RA	0.250	6.35	0.144	3.66	0.250	6.35				23341		
VDB 250 RB	0.250	6.35	0.144	3.66	0.337	8.56				23342	24536	
VDB 281 B015	0.281	7.14	0.202	5.13	0.337	8.56					24537	
VDB 312 B015	0.312	7.92	0.202	5.13	0.337	8.56				23343		
VDB 312 RB	0.312	7.92	0.202	5.13	0.337	8.56						24538
VDB 375 B015	0.375	9.53	0.276	7.00	0.337	8.56				23344	24539	
VDB 375 B015C	0.375	9.53	0.276	7.01	0.337	8.56				23345		
VDB 4A	0.157	4.00	0.106	2.70	0.250	6.30			23353		24540	
VDB 4RA	0.157	4.00	0.106	2.70	0.250	6.30					24541	
VDB 5A	0.197	5.00	0.144	3.60	0.250	6.30					24542	
VDB 5RA	0.197	5.00	0.144	3.60	0.250	6.30					24543	
VDB 6B	0.236	6.00	0.144	3.60	0.250	6.30					24544	
VDB 6RB	0.236	6.00	0.144	3.60	0.250	6.30					24545	
VDB 8B	0.315	8.00	0.202	5.10	0.337	8.50					24546	
VDB 9B	0.354	9.00	0.276	7.00	0.337	8.50					24547	

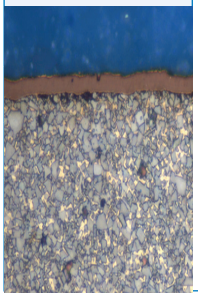
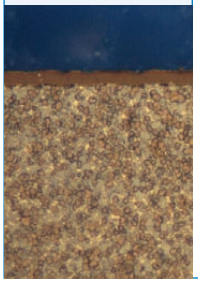
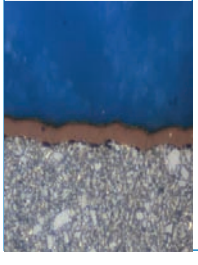
ValGROOVE™ Guide to Workpiece Material

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

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

EconoGROOVE® Grade Description

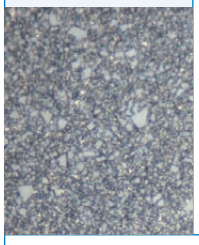
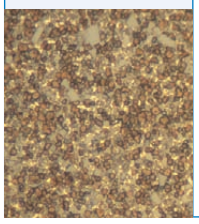
PVD

Grade	Description	Performance	ISO Class	Application
VP5845 	**PVD Coated Carbide** TiAlN Coating Super Tough High Cobalt Substrate	**Roughing Grade** Highest Toughness and Chipping Resistance Excellent Wear Resistance	P45	Steels Rough to General Machining. Low to Medium Speeds. Interrupted Cuts, Demanding High Feed Operations.
			M40	Stainless Steels
			K45	Cast Irons
			S40	High Temperature Alloys, Titanium Alloys
			N40	Aluminum & Non-Ferrous Alloys
VP5825 	**PVD Coated Carbide** TiAlN Coating Medium Grain Substrate	**General Machining Grade** Enhanced Crater Resistance Good Wear Resistance High Toughness and Chipping Resistance Low Build-Up at the Cutting Edge.	P25	Steels General Purpose Machining. Low to Medium Speeds. Continuous and Interrupted Cuts, and High Feed Rates.
			M25	Stainless Steels
			K30	Cast Irons
			S25	High Temperature Alloys, Titanium Alloys
			N25	Aluminum & Non-Ferrous Alloys
VP5815 	**PVD Coated Carbide** TiAlN/TiN Multi-Layer Coating Fine Grain Substrate	**Medium Duty Grade** Excellent Wear Resistance Excellent Toughness and Chipping Resistance Less Build-Up at the Cutting Edge.	P15	Steels Finish to General Purpose Machining. Medium to High Speeds.
			M15	Stainless Steels
			K15	Cast Irons
			S15	High Temperature Alloys, Titanium Alloys
			N15	Aluminum & Non-Ferrous Alloys

MTCVD

Grade	Description	Performance	ISO Class	Application
VP5715 	**MTCVD Coated Carbide** TiCN/Al2O3/TiN Coating Medium Grain Substrate	**Light Machining Grade** High Wear Resistance Enhanced Edge Strength and Chipping Resistance	P15	Steels Finish to General Purpose Machining. Medium to High Speeds
			M15	Stainless Steels
			K15	Cast Irons

EconoGROOVE® Grade Description

Grade	Description	Performance	ISO Class	Application
VPUK20 	**Uncoated Carbide** Fine Grain Substrate Medium Hardness	**General Purpose Grade** Excellent Toughness Good Wear Resistance and Chipping Resistance	M25	Stainless Steels-Ferritic and Austenitic.
			K20	Gray, Ductile, and Malleable Irons. Low to Medium Speed Under a Wide Range of Cutting Conditions. General Machining with Good Surface Finish, Continuous and Interrupted Cuts.
			S25	High Temperature Alloys
			N25	Aluminum, Bi-Metal Components.
VPUP30 	**Uncoated Carbide** Medium Grain Size Medium Hardness	**General Purpose Grade** Excellent Toughness Good Wear Resistance and Chipping Resistance	P30	Steels and Cast Steels. Low to Medium Speed Under a Wide Range of Cutting Conditions. General Machining with Good Surface Finish, Continuous and Interrupted Cuts.
			M25	Stainless Steels
			S25	High Temperature Alloys