



INTERNAL MACHINING

## Mini-V

Precise Turning, Grooving,  
Threading & Face Grooving

INCH

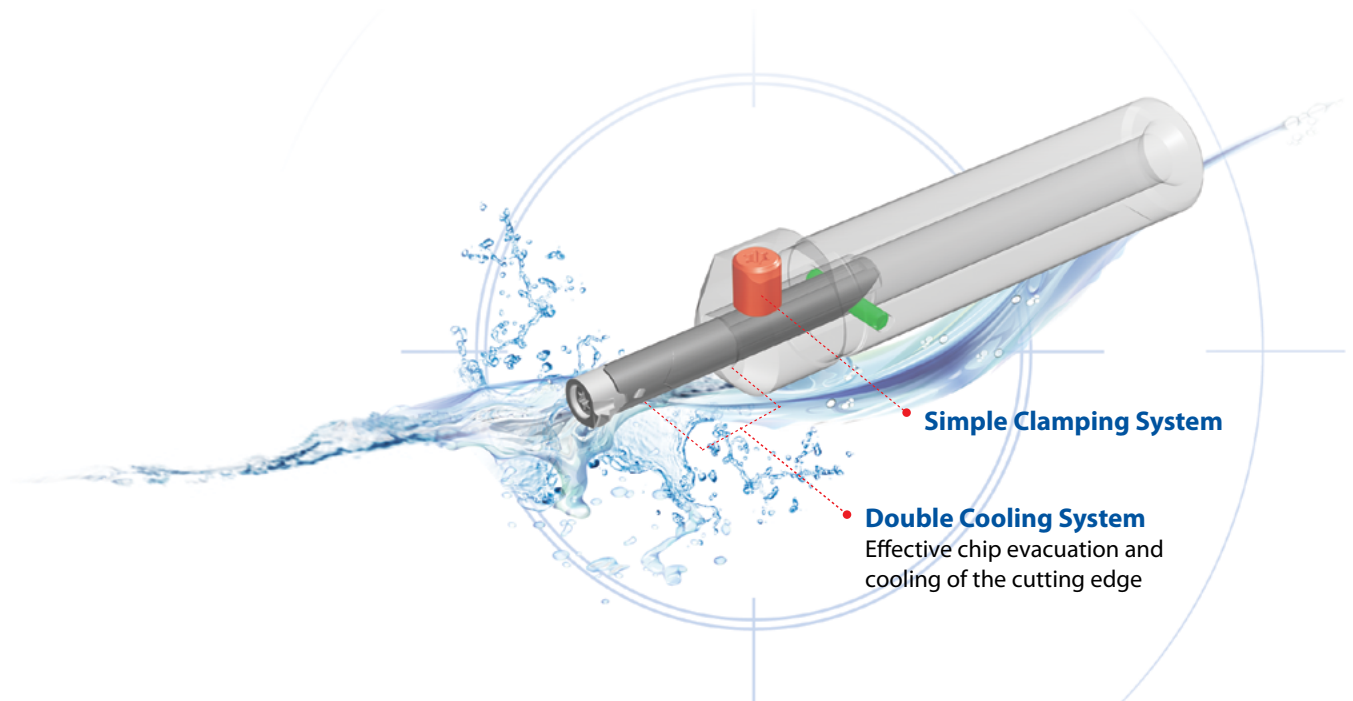
# Mini-V

## Mini Tools for Small & Medium Bores

The Mini-V line by **Groovex** offers improved solutions for mini boring, grooving and threading in bores starting from .314 inches (8 mm).

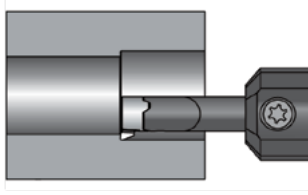
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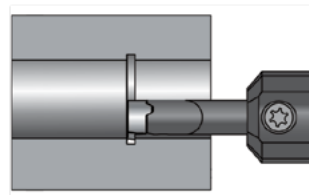
## Applications

### Boring



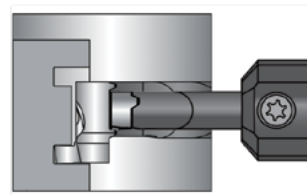
- Boring
- Boring with Chip Former
- Profiling
- Back Boring
- Chamfering

### Grooving



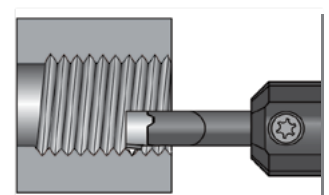
- Square Grooving D472
- Square Grooving
- Round Grooving

### Face Grooving



- Square Face Grooving Internal
- Square Face Grooving External
- Round Face Grooving Internal
- Round Face Grooving External

### Threading



- Partial 60°
- Partial 55°
- American UN
- ISO Metric
- Whitworth
- BSPT
- NPT
- NPTF
- Trapez

# Mini-V Technical Data

## Recommended Grades, Cutting Speeds Vc [ft/min]

Material Group	Vargus No.	Material	Hardness Brinell HB	VBX		Max Depth on R [inch]	
				Vc [ft/min]			
				Threading Boring	Grooving	Boring	
<b>P</b> Steel	1	Unalloyed Steel	Low Carbon (C=.1-.25%)	125	131-262	131-590	.011-.019
	2		Medium Carbon (C=.25-.55%)	150	131-262	131-557	.011-.019
	3		High Carbon (C=.55-.85%)	170	131-262	131-524	.009-.013
	4	Low Alloy Steel (alloying elements≤5%)	Non Hardened	180	131-262	131-508	.011-.017
	5		Hardened	275	131-262	131-524	.009-.017
	6		Hardened	350	131-262	131-492	.009-.015
	7	High Alloy Steel (alloying elements>5%)	Annealed	200	131-196	131-377	.007-.011
	8		Hardened	325	131-196	131-328	.007-.011
	9	Cast Steel	Low Alloy (alloying elements <5%)	200	131-196	131-557	.007-.011
	10		High Alloy (alloying elements >5%)	225	131-196	131-426	.006-.011
<b>M</b> Stainless Steel	11	Stainless Steel Ferritic	Non Hardened	200	131-196	131-590	.008-.013
	12		Hardened	330	131-196	131-590	.008-.012
	13	Stainless Steel Austenitic	Austenitic	180	131-196	131-459	.009-.015
	14		Super Austenitic	200	131-196	131-459	.006-.010
	15	Stainless Steel Cast Ferritic	Non Hardened	200	131-196	131-459	.009-.014
	16		Hardened	330	131-196	131-459	.006-.010
	17	Stainless Steel Cast Austenitic	Austenitic	200	131-196	131-393	.007-.011
	18		Hardened	330	131-196	131-393	.006-.010
<b>K</b> Cast Iron	28	Malleable Cast Iron	Ferritic (short chips)	130	131-262	131-393	.009-.014
	29		Pearlitic (long chips)	230	131-262	131-328	.007-.011
	30	Grey Cast Iron	Low Tensile Strength	180	131-262	131-328	.008-.013
	31		High Tensile Strength	260	131-262	131-328	.007-.011
	32	Nodular SG Iron	Ferritic	160	131-262	131-328	.005-.009
	33		Pearlitic	260	131-262	131-295	.007-.011
<b>N(K)</b> Non-Ferrous Metals	34	Aluminium Alloys Wrought	Non Aging	60	131-393	131-1312	.023-.039
	35		Aged	100	131-393	131-1312	.019-.035
	36	Aluminium Alloys	Cast	75	131-393	131-1312	.019-.035
	37		Cast & Aged	90	131-393	131-656	.015-.023
	38	Aluminium Alloys	Cast Si 13-22%	130	131-393	131-656	.019-.035
	39	Copper and Copper Alloys	Brass	90	131-393	131-656	.023-.039
	40		Bronze and Non Leaded Copper	100	131-393	131-656	.019-.035
<b>S(M)</b> Heat Resistant Material	19	High Temperature Alloys	Annealed (Iron based )	200	65-98	65-98	.004-.008
	20		Aged (Iron based)	280	65-98	65-98	.003-.007
	21		Annealed (Nickel or Cobalt based)	250	49-65	49-65	.003-.007
	22		Aged (Nickel or Cobalt based)	350	32-49	32-49	.003-.007
	23	Titanium Alloys	Pure 99.5 Ti	400Rm	131-196	131-196	.003-.007
	24		α+β Alloys	1050Rm	65-98	65-98	.003-.007
<b>H(K)</b> Hardened Material	25	Extra Hard Steel	Hardened & Tempered	45-50HRc	49-65	49-65	.001-.003
	26			51-55HRc	49-65	49-65	.001-.003

### VTX

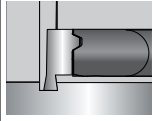
Excellent for Boring applications in medium-to-high cutting speeds and in dry conditions.  
Multi-layered AlTiN PVD coated, general purpose grade for prevention of peeling and chipping.

\* For **VTX Grade**, increase speed by 20%.

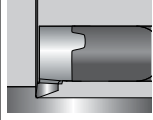
### VBX

Excellent for all applications and outstanding wear resistance in low-to-medium cutting speeds, combined with good fracture toughness.  
TiCN PVD coated.

## Feed Rate $f$ [inch/rev]

Grooving		
	.0003 - .0011 inch	0.01 - 0.03 mm

Boring		
	.0011 - .0039 inch	0.03 - 0.10 mm

## Threading Depths of Cut and Number of Passes

1. High pressure coolant is recommended
2. Infeed method - modified flank infeed  $1^\circ$

### Option of modified volume chip

		Pitch mm	0.5	0.75	1	1.25			1.5	1.75	2	2.5	3	3.5	4	
		Pitch tpi	48	32	27	24	20	19	18	16	14	12	10	8	7	6
Insert Style	Standard	Passes (modified volume)														
V08	ISO															
	UN	13	19		25	16			19	22						
	W															
	NPT															
	NPTF			28					43							
V11	ISO															
	UN	13	19		25	16			19	22	24					
	W															
	BSPT							19								
V14	ISO															
	UN	7	10		13	16			19	22	24	32	38			
	W															
V16	ISO															
	UN	7	10		13	16			19	22	24	32	38			
	W															

### Option of constant depth chip

		Pitch mm	0.5	0.75	1	1.25			1.5	1.75	2	2.5	3	3.5	4	
		Pitch tpi	48	32	27	24	20	19	18	16	14	12	10	8	7	6
Insert Style	Standard	Passes (same)														
V08	ISO															
	UN	11-24	17-35		23-48	18-28			21-34	25-40						
	W															
	NPT															
	NPTF			25-53					40-83							
V11	TR										50-104		70-145			
	ISO															
	UN	11-24	17-35		23-48	14-28			17-34	20-40	23-46					
	BSPT							21-34								
V14	TR															90-187
	ISO															
	UN	11-24	17-35		23-48	14-28			9-15	11-18	11-18	12-21	18-24			
V16	W															
	ISO															
	UN	11-24	17-35		23-48	14-28			9-15	11-18	11-18	12-21	18-24			

Number of passes can be decreased when high pressure coolant is used.

# Mini-V Inserts

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## Mini-V Inserts Ordering Code System

### Boring Inserts

<b>V</b>	<b>08</b>	<b>CL</b>		<b>R</b>	<b>VBX</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>

<b>1 - Line Name</b> V - Mini-V	<b>3 - Type of Application</b> BC - Boring BCF - Boring with Chip Former CL - Profiling BB - Back Boring CH45 - Chamfering 45°	<b>4 - Copy Angle</b> None - Profiling 20° 3 - Profiling 30° CL+ None - Profiling 45°	<b>5 - RH or LH</b> R - RH L - LH	<b>6 - Carbide Grade</b> VBX VTX
<b>2 - Insert Size</b> 08, 11, 14, 16				

### Grooving Inserts

<b>V</b>	<b>08</b>	<b>GS</b>	<b>W120</b>	<b>T 100</b>	<b>R</b>	<b>VBX</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

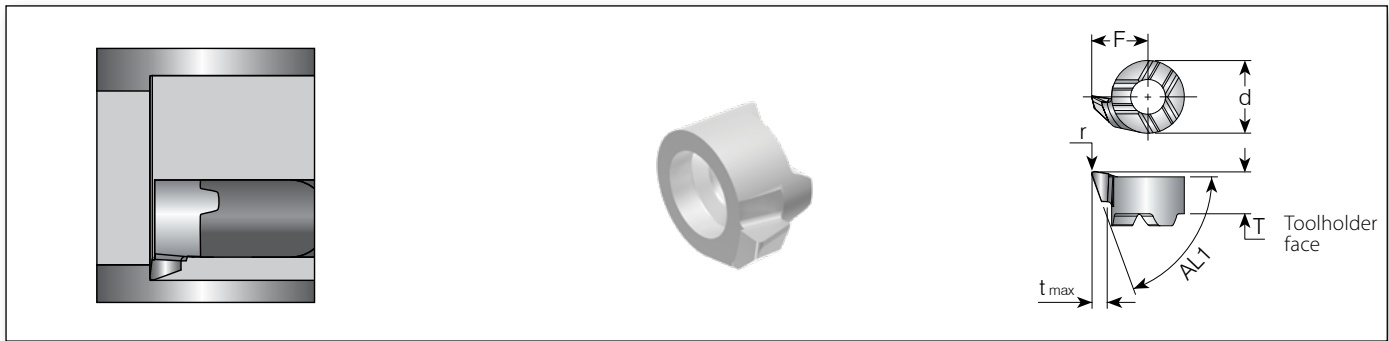
<b>1 - Line Name</b> V - Mini-V	<b>3 - Type of Application</b> D472 - Square Grooving Sharp Corner Radius GS - Square Grooving .002" (0.05mm) Corner Radius GSR - Square Grooving .008" (0.2mm) Corner Radius D7993 - Round Grooving D7993 FGW - Square Face Grooving Internal FGR - Round Face Grooving Internal FEGW - Square Face Grooving External FEGR - Round Face Grooving External	<b>4 - Groove Width</b> W070 - .0276" ----- W400 - .157"	<b>6 - RH or LH</b> R - RH L - LH
<b>2 - Insert Size</b> 08, 11, 14, 16		<b>5 - Groove Depth</b> T100 - .039" T230 - .091" T400 - .157" T430 - .169"	<b>7 - Carbide Grade</b> VBX VTX

### Threading Inserts

<b>V</b>	<b>08</b>	<b>TH</b>	<b>.5</b>	<b>ISO</b>	<b>R</b>	<b>VBX</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

<b>1 - Line Name</b> V - Mini-V	<b>4 - Pitch (for Threading)</b> Full Profile - Pitch Range TPI mm 32-12 0.5-2.0 Partial Profile - Pitch Range TPI mm H 48-32 H 0.5-.75 I 24-20 I 1.0-1.25 J 16-14 J 1.5-1.75 G 14-8 G 1.75-3.0 AG 48-8 AG 0.5-3.0	<b>5 - Threading Standard</b> 60° - Partial Profile 60° 55° - Partial Profile 55° UN - American UN ISO - ISO Metric W - Whitworth for BSW, BSP BSPT - British Standard Pipe Thread NPT - NPT National Pipe Thread NPTF - NPTF National Seal Pipe Thread TR - Trapez Din 103	<b>6 - RH or LH</b> R - RH L - LH
<b>2 - Insert Size</b> 08, 11, 14, 16			<b>7 - Carbide Grade</b> VBX VTX
<b>3 - Type of Application</b> TH - Threading			

## Boring



Insert Style	Ordering Code	Dimensions (inch)							Min. Bore dia. inch	Dimensions (mm)						Min. Bore dia. mm	Grades	
		r	d	T	t max	AL1	F	r		d	T	t max	AL1	F	VBX		VTX	
V08	V08BC R...	.008	.236	.142	.051	70°	.183	.307	0.2	6	3.6	1.3	70°	4.65	7.8	•	•	
V11	V11BC R...	.008	.315	.150	.091	70°	.264	.433	0.2	8	4.0	2.3	70°	6.70	11.0	•	•	
V14	V14BC R	.008	.354	.220	.157	70°	.343	.543	0.2	9	5.6	4.0	70°	8.7	13.8	•	•	
V16	V16BC R	.008	.433	.220	.169	70°	.382	.610	0.2	11	5.6	4.3	70°	9.7	15.5	•	•	

• In stock ◦ Available upon request

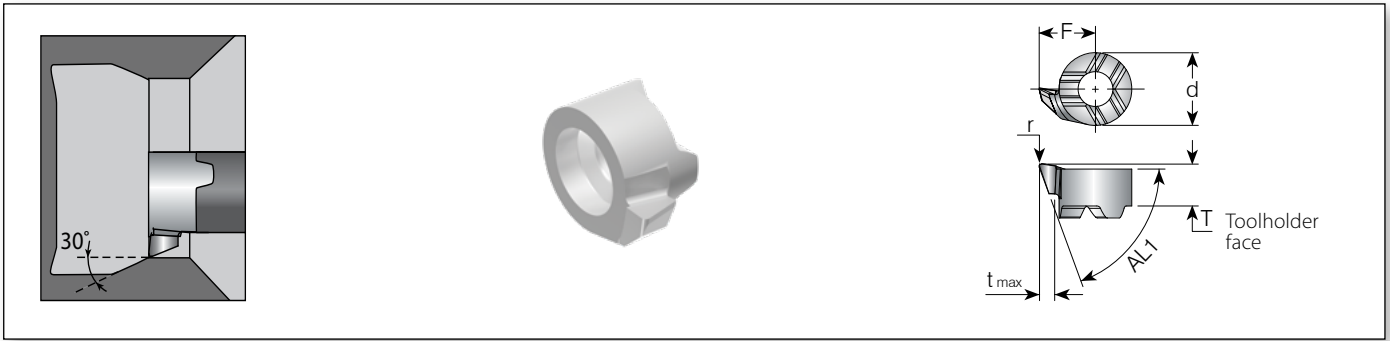
## Boring with Chip Former



Insert Style	Ordering Code	Dimensions (inch)							Min. Bore dia. inch	Dimensions (mm)						Min. Bore dia. mm	Grades	
		r	d	T	t max	AL1	F	r		d	T	t max	AL1	F	VBX		VTX	
V08	V08BCF R...	.008	.236	.142	.051	70°	.183	.307	0.2	6	3.6	1.3	70°	4.65	7.8	•	•	
V11	V11BCF R...	.008	.315	.15	.091	70°	.264	.433	0.2	8	4.05	2.3	70°	6.7	11	•	•	

• In stock ◦ Available upon request

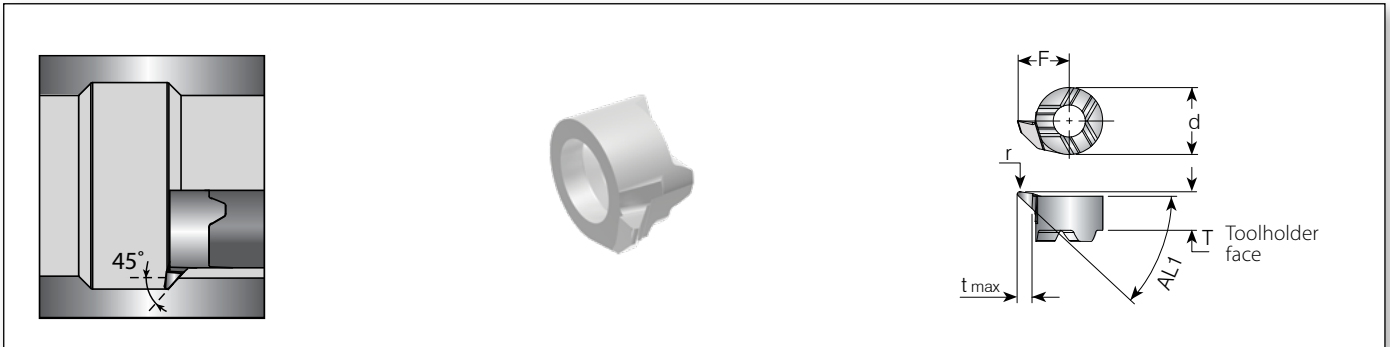
## Profiling 30°



Insert Style	Ordering Code	Dimensions (inch)							Min. Bore dia. inch	Dimensions (mm)						Min. Bore dia. mm	Grades	
		r	d	T	t max	AL1	F	r		d	T	t max	AL1	F	VBX		VTX	
	RH																	
V08	V08BC3 R...	.008	.236	.142	.051	59.8°	.183	.307	0.2	6	3.6	1.3	59.8°	4.65	7.8	•	•	
V11	V11BC3 R...	.008	.315	.150	.091	59.8°	.264	.433	0.2	8	3.8	2.3	59.8°	6.70	11.0	•	•	

• In stock ◦ Available upon request

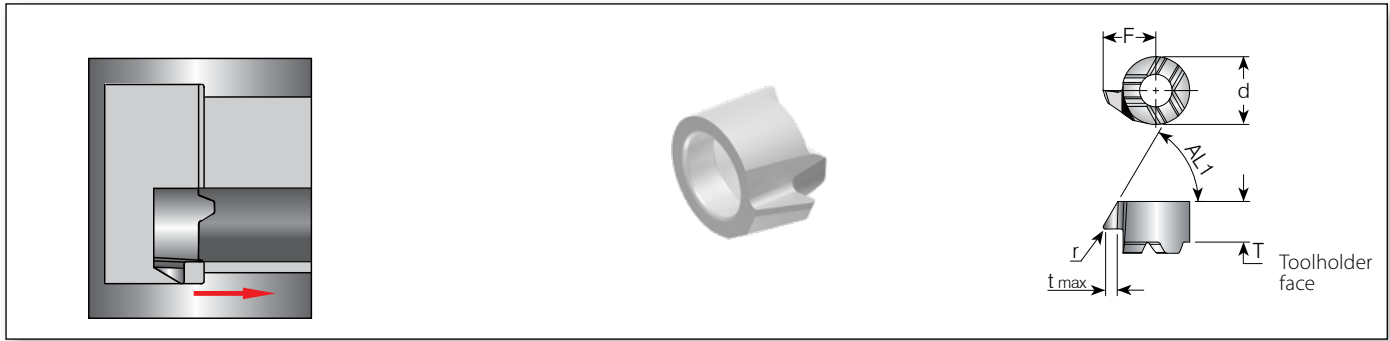
## Profiling 45°



Insert Style	Ordering Code	Dimensions (inch)							Min. Bore dia. inch	Dimensions (mm)						Min. Bore dia. mm	Grades	
		r	d	T	t max	AL1	F	r		d	T	t max	AL1	F	VBX		VTX	
	RH																	
V08	V08CL R...	.008	.236	.142	.047	43°	.183	.307	0.2	6	3.6	1.2	43°	4.65	7.8	•	•	
V11	V11CL R...	.008	.315	.150	.091	43°	.264	.433	0.2	8	3.95	2.3	43°	6.70	11.0	•	•	
V14	V14CL R	.008	.354	.220	.157	43°	.343	.539	0.2	9	5.6	4	43°	8.7	13.7	•	•	
V16	V16CL R	.008	.433	.220	.169	43°	.402	.622	0.2	11	5.6	4.3	43°	10.2	15.8	•	•	

• In stock ◦ Available upon request

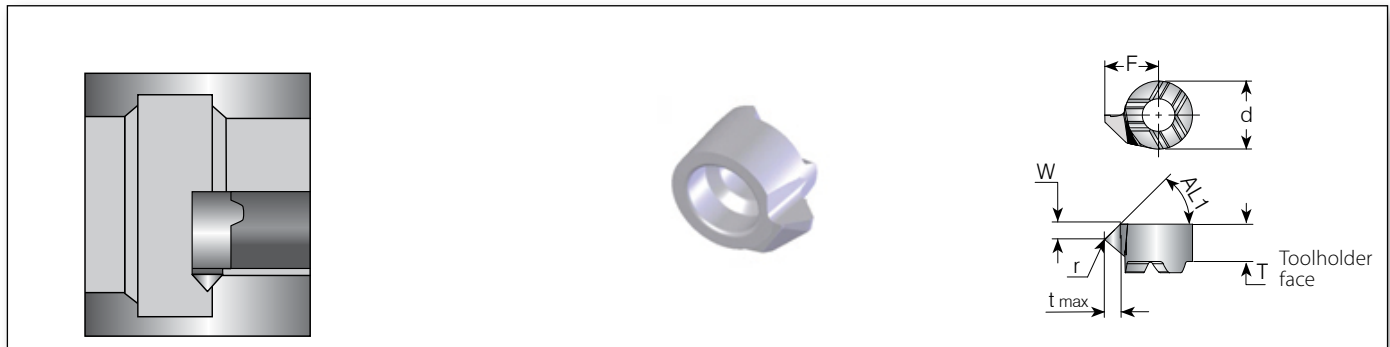
## Back Boring



Insert Style	Ordering Code	Dimensions (Inch)							Min. Bore dia. inch	Dimensions (mm)							Min. Bore dia. mm	Grades	
		r	d	T	t max	AL1	F	r		d	T	t max	AL1	F	VBX	VTX			
V08	V08BB R...	.008	.236	.142	.051	60°	.183	.307	0.2	6	3.6	1.3	60°	4.65	7.8	•	•		
V11	V11BB R...	.008	.315	.150	.091	60°	.264	.433	0.2	8	3.95	2.3	60°	6.70	11.0	•	•		
V14	V14BB R...	.008	.354	.220	.138	60°	.343	.543	0.2	9	5.6	3.5	60°	8.7	13.8	•	•		

• In stock ◦ Available upon request

## Chamfering

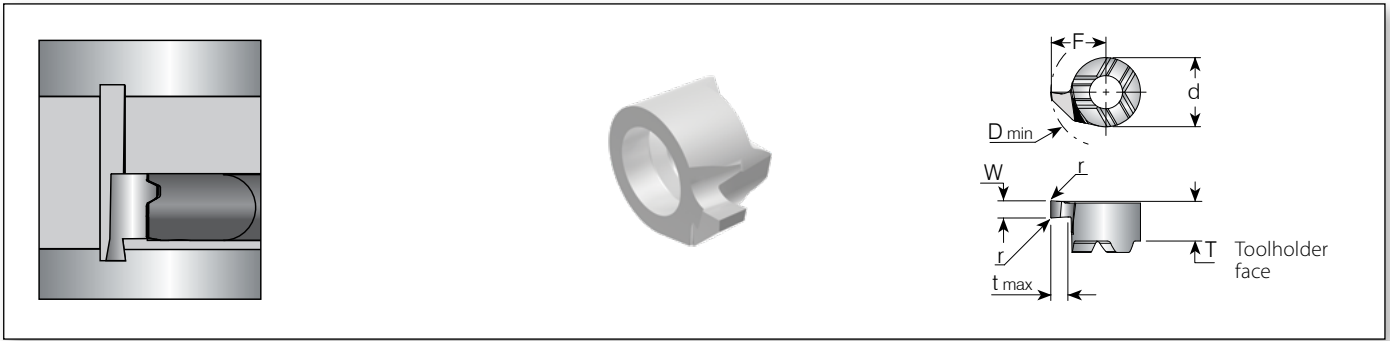


Insert Style	Ordering Code	Dimensions (inch)							Min. Bore dia. inch	Dimensions (mm)							Min. Bore dia. mm	Grades	
		r	d	W	T	t max	AL1	F		r	d	W	T	t max	AL1	F		VBX	VTX
V08	V08CH45 R...	.008	.236	.071	.142	.055	45°	.183	.315	0.2	6	1.8	3.6	1.4	45°	4.65	8.0	•	•
V14	V14CH45 R...	.008	.354	.106	.220	.059	45°	.343	.551	0.2	9	2.7	5.6	1.5	45°	9	14.0	•	•

• In stock ◦ Available upon request



# Grooving DIN 472 - Sharp Corner Radius

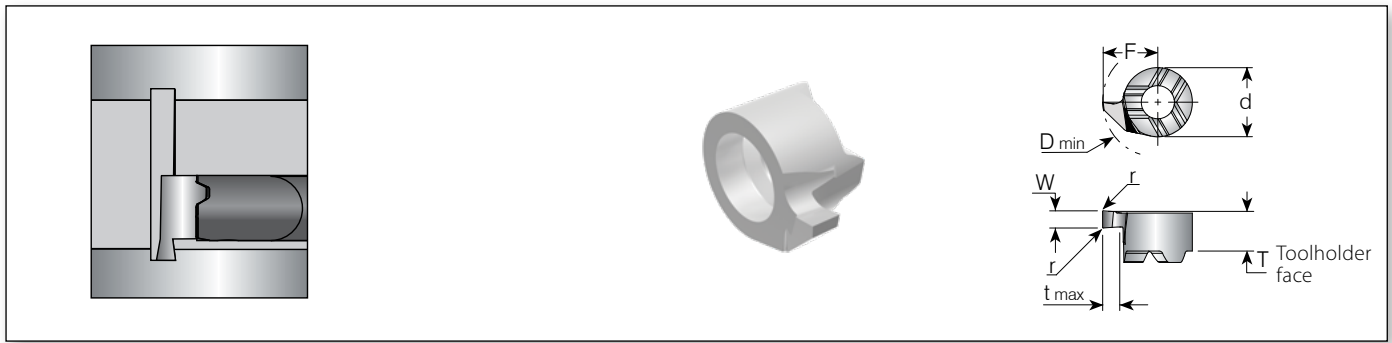


Insert Style	Ordering Code	Width of Circlip (inch)		Dimensions (Inch)				Min. Bore dia.	Width of Circlip (mm)		Dimensions (mm)				Min. Bore dia.	Grades	
		RH		W <sup>+0.0012*</sup>	d	t max	T		F	D min	W <sup>+0.03*</sup>	d	t max	T		F	D min
V08	V08D472 W070T100 R...	.028	.029						0.7	0.73						•	•
	V08D472 W080T100 R...	.031	.033						0.8	0.83						•	•
	V08D472 W090T100 R...	.035	.037						0.9	0.93						•	•
	V08D472 W110T100 R...	.043	.047	.236	.039	.142	.189	.315	1.1	1.2	6	1	3.6	4.8	8	•	•
	V08D472 W130T100 R...	.051	.055						1.3	1.4						•	•
	V08D472 W160T100 R...	.063	.067						1.6	1.7						•	•
V11	V11D472 W070T120 R...	.028	.029		.047				0.7	0.73		1.2				•	•
	V11D472 W080T130 R...	.031	.033		.051				0.8	0.83		1.3				•	•
	V11D472 W090T150 R...	.035	.037		.059				0.9	0.93	8	1.5	3.95	6.7	11	•	•
	V11D472 W110T230 R...	.043	.047	.315	.091	.156	.264	.433	1.1	1.2		2.3				•	•
	V11D472 W130T230 R...	.051	.055		.091				1.3	1.4		2.3				•	•
	V11D472 W160T230 R...	.063	.067		.091				1.6	1.7		2.3				•	•
V14	V14D472 W130T400 R...	.051	.055	.354	.157	.220	.354	.551	1.4	1.3	9	4	5.6	9	14	•	•
	V14D472 W160T400 R...	.063	.067		.157				1.7	1.6						•	•

• In stock ◦ Available upon request

\*All dimensions of W are from the DIN 472 Metric Standard and are translated into inch.

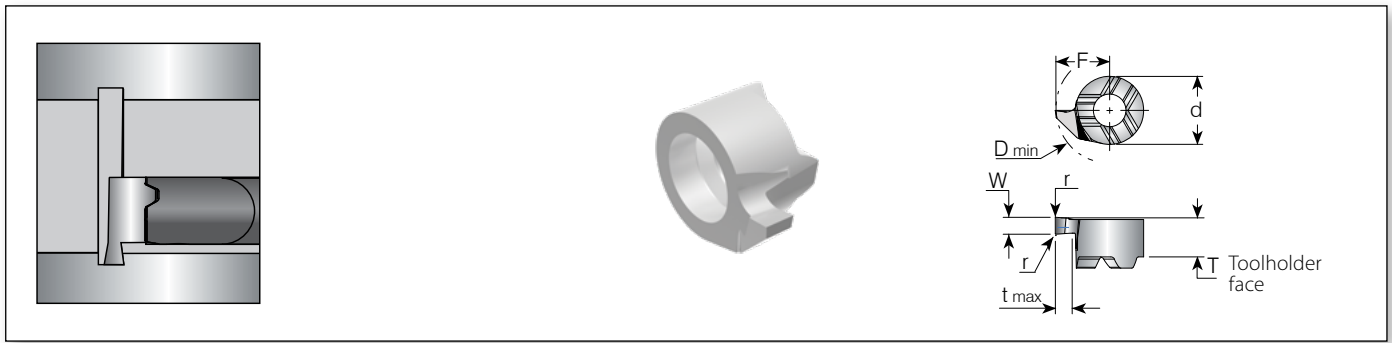
# Grooving - .002" (0.05mm) Corner Radius



Insert Style	Ordering Code	Dimensions (Inch)							Min. Bore dia.	Dimensions (mm)							Min. Bore dia.	Grades	
		RH	d	W <sup>+0.012</sup>	t max	T	F	r		D min	d	W <sup>+0.03</sup>	t max	T	F	r		D min	VBX
V08	V08GS W100T100 R...		.039														•	•	
	V08GS W150T100 R...		.059														•	•	
	V08GS W200T100 R...		.079														•	•	
	V08GS W078T100 R...	.236	.031	.039	.142	.189	.002	.314	6	0.78	1	3.6	4.8	0.05	8		•	•	
	V08GS W086T100 R...		.034							0.86							•	•	
	V08GS W117T100 R...		.046							1.17							•	•	
	V08GS W157T100 R...		.062							1.57							•	•	
	V08GS W198T100 R...		.078							1.98							•	•	
V11	V11GS W100T230 R...		.039														•	•	
	V11GS W120T230 R...		.047														•	•	
	V11GS W150T230 R...		.059														•	•	
	V11GS W200T230 R...		.079														•	•	
	V11GS W250T230 R...		.098														•	•	
	V11GS W117T230 R...	.315	.046	.091	.156	.264	.002	.433	8	1.17	2.3	3.95	6.7	0.05	11		•	•	
	V11GS W142T230 R...		.056							1.42							•	•	
	V11GS W157T230 R...		.062							1.57							•	•	
	V11GS W198T230 R...		.078							1.98							•	•	
	V11GS W238T230 R...		.094							2.38							•	•	
V14	V14GS W117T400 R...		.046														•	•	
	V14GS W150T400 R...		.059														•	•	
	V14GS W157T400 R...		.062														•	•	
	V14GS W198T400 R...		.078														•	•	
	V14GS W200T400 R...	.354	.079	.157	.220	.354	.002	.551	9	2	4.0	5.6	9.0	0.05	14		•	•	
	V14GS W238T400 R...		.094							2.38							•	•	
	V14GS W250T400 R...		.098							2.5							•	•	
	V14GS W300T400 R...		.118							3							•	•	
	V14GS W318T400 R...		.125							3.18							•	•	
V16	V16GS W200T430 R...		.078														•	•	
	V16GS W300T430 R...		.118														•	•	
	V16GS W350T430 R...		.138														•	•	
	V16GS W400T430 R...		.157														•	•	
	V16GS W117T430 R...	.433	.046	.169	.220	.402	.002	.630	11	1.17	4.3	5.6	10.2	0.05	16		•	•	
	V16GS W142T430 R...		.056							1.42							•	•	
	V16GS W157T430 R...		.062							1.57							•	•	
	V16GS W198T430 R...		.078							1.98							•	•	
	V16GS W238T430 R...		.094							2.38							•	•	
	V16GS W318T430 R...		.125							3.18							•	•	

• In stock ◦ Available upon request

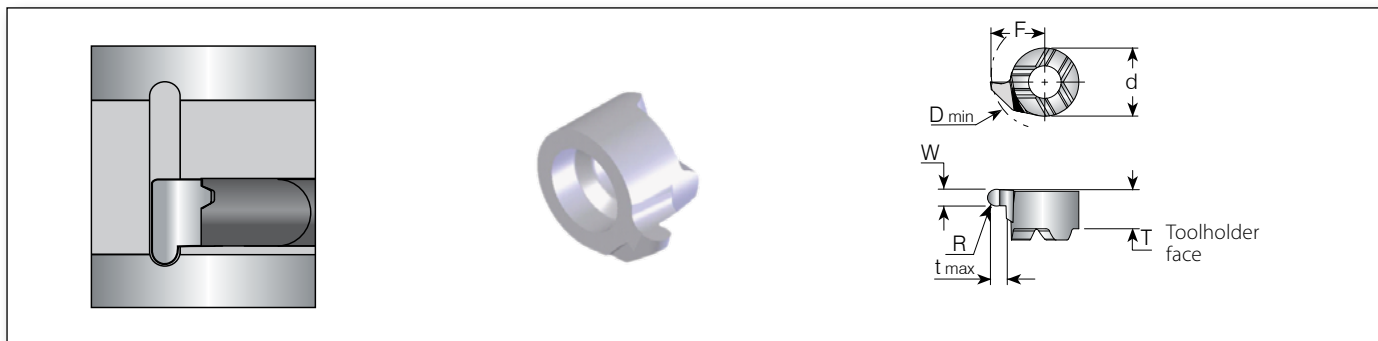
# Grooving - .08" (0.2mm) Corner Radius



Insert Style	Ordering Code	Dimensions (Inch)							Min. Bore dia.	Dimensions (mm)							Min. Bore dia.	Grades	
		d	W <sup>+0.012</sup>	t max	T	F	r	D min		d	W <sup>+0.03</sup>	t max	T	F	r	D min		VBX	VTX
	<b>RH</b>																		
V08	V08GSR W150T100 R...		.059							1.5							•	•	
	V08GSR W078T100 R...		.031							0.78							•	•	
	V08GSR W117T100 R...	.236	.046	.039	.141	.189	.008	.315	6	1.17	1	3.6	4.8	0.2	8		•	•	
	V08GSR W157T100 R...		.062							1.57							•	•	
	V08GSR W198T100 R...		.078							1.98							•	•	
V11	V11GSR W200T230 R...		.079			.264				2							•	•	
	V11GSR W117T230 R...		.046							1.17							•	•	
	V11GSR W157T230 R...	.315	.062	.091	.156	.248	.008	.433	8	1.57	2.3	3.95	6.7	0.2	11		•	•	
	V11GSR W198T230 R...		.078							1.98							•	•	
	V11GSR W238T230 R...		.094							2.38							•	•	
	V11GSR W318T230 R...		.125							3.18							•	•	
V14	V14GSR W078T400 R...		.031							0.78							•	•	
	V14GSR W117T400 R...		.046							1.17							•	•	
	V14GSR W150T400 R...		.059							1.50							•	•	
	V14GSR W157T400 R...	.354	.062	.157	.220	.354	.008	.551	9	1.57	4	5.6	9	0.2	14		•	•	
	V14GSR W198T400 R...		.078							1.98							•	•	
	V14GSR W200T400 R...		.079							2.00							•	•	
	V14GSR W238T400 R...		.094							2.38							•	•	
	V14GSR W318T400 R...		.125							3.18							•	•	
V16	V16GSR W078T120 R...		.031	.047						0.78							•	•	
	V16GSR W117T430 R...		.046							1.17							•	•	
	V16GSR W157T430 R...	.433	.062		.220	.402	.008	.630	11	1.57	4.3	5.6	10.2	0.2	16		•	•	
	V16GSR W198T430 R...		.078	.169						1.98							•	•	
	V16GSR W238T430 R...		.094							2.38							•	•	
	V16GSR W318T430 R...		.125							3.18							•	•	

• In stock ◦ Available upon request

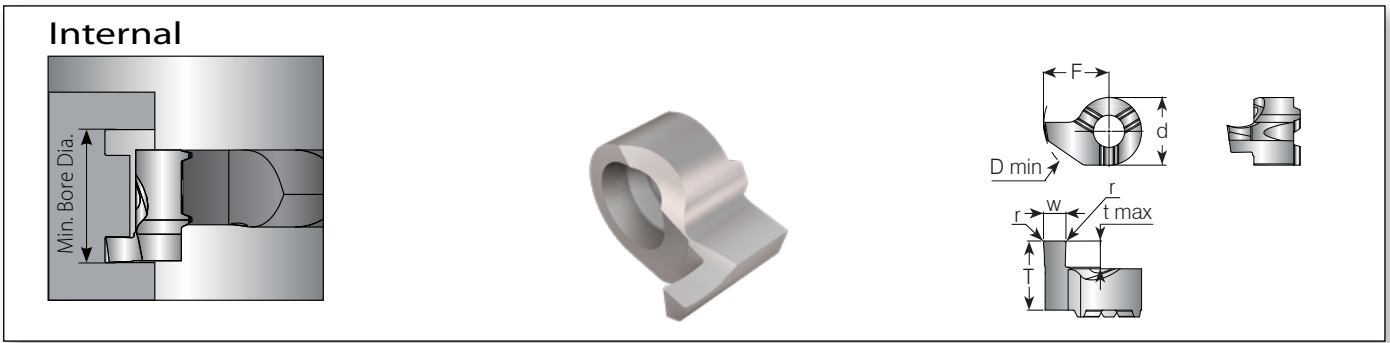
# Round Grooving



Insert Style	Ordering Code	Dimensions (Inch)						Min. Bore dia.	Dimensions (mm)						Min. Bore dia.	Grades		
		d	W <sup>+0.012</sup>	t max	T	F	r		D min	d	W <sup>+0.03</sup>	t max	T	F		r	D min	VBX
V08	RH																	
	V08D7993 W080T100 R...		.031				.016			0.8				0.4			•	•
	V08D7993 W120T100 R...		.047				.024			1.2				0.6			•	•
	V08D7993 W160T100 R...	.236	.062	.039	.142	.189	.031	.315	6	1.6	1	3.6	4.8	0.8	8		•	•
	V08D7993 W180T100 R...		.071				.035			1.8				0.9			•	•
V08D7993 W200T100 R...		.079				.039			2.0				1.0			•	•	
V11	V11D7993 W080T230 R...		.031				.016			0.8				0.4			•	•
	V11D7993 W120T230 R...		.047				.024			1.2				0.6			•	•
	V11D7993 W157T230 R...		.062				.031			1.57				0.79			•	•
	V11D7993 W180T230 R...	.315	.071	.091	.156	.264	.035	.433	8	1.8	2.3	3.95	6.7	0.9	11		•	•
	V11D7993 W200T230 R...		.079				.039			2.0				1.0			•	•
	V11D7993 W240T230 R...		.094				.047			2.4				1.2			•	•
V11D7993 W300T230 R...		.118				.059			3.0				1.5			•	•	
V14	V14D7993 W120T400 R...		.047				.024			1.2				0.6			•	•
	V14D7993 W157T400 R...		.062				.031			1.57				0.79			•	•
	V14D7993 W180T400 R...		.071				.035			1.8				0.9			•	•
	V14D7993 W200T400 R...	.354	.079	.157	.220	.354	.039	.551	9	2.0	4	5.6	9	1.0	14		•	•
	V14D7993 W220T400 R...		.087				.043			2.2				1.1			•	•
	V14D7993 W238T400 R...		.940				.047			2.38				1.19			•	•
	V14D7993 W300T400 R...		.118				.059			3.0				1.5			•	•
	V14D7993 W318T400 R...		.125				.062			3.18				1.59			•	•

• In stock ◦ Available upon request

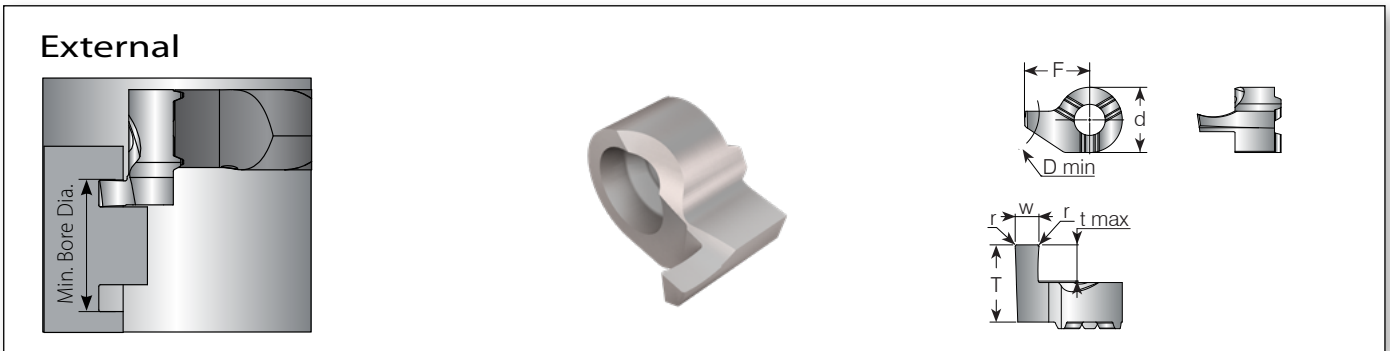
# Square Face Grooving



Insert Style	Ordering Code	Dimensions (Inch)							Min. Bore dia.	Dimensions (mm)							Grades		
		d	W	t max	T	F	r	D min		d	W	t max	T	F	r	D min	VBX	VTX	
	<b>RH</b>																		
V-14	V14FGW100T150 R...	.354	.039	.059	.303				9	1	1.5	7.7			9	0.2	14	•	◦
	V14FGW150T250 R...		.039	.098	.343			1.5		2.5	8.7			•				◦	
	V14FGW200T300 R...		.079	.118	.362			2		3	9.2			•				◦	
	V14FGW200T500 R...		.079	.197	.421	.354	.008	.551		2	5	10.7						•	◦
	V14FGW250T300 R...		.098	.118	.362					2.5	3	9.2						•	◦
	V14FGW250T500 R...		.098	.197	.421					2.5	5	10.7						•	◦
	V14FGW300T300 R...		.118	.118	.362					3	3	9.2						•	◦

• In stock ◦ Available upon request

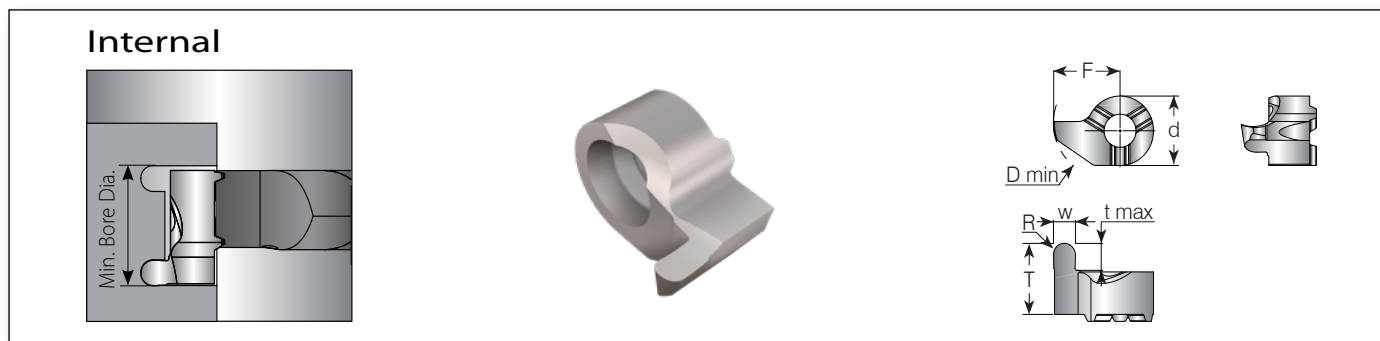
# Square Face Grooving



Insert Style	Ordering Code	Dimensions (Inch)							Min. Bore dia.	Dimensions (mm)							Grades		
		d	W	t max	T	F	r	D min		d	W	t max	T	F	r	D min	VBX	VTX	
	<b>RH</b>																		
V-14	V14FEGW100T150 R...	.354	.039	.059	.287				9	1	1.5	7.3			9	0.2	12	•	◦
	V14FEGW150T250 R...		.039	.098	.327			1.5		2.5	8.3			•				◦	
	V14FEGW200T300 R...		.079	.118	.346					2	3	8.8						•	◦
	V14FEGW200T500 R...		.079	.197	.421	.354	.008	.472		2	5	10.7						•	◦
	V14FEGW250T300 R...		.098	.118	.346					2.5	3	8.8						•	◦
	V14FEGW250T500 R...		.098	.197	.421					2.5	5	10.7						•	◦
	V14FEGW300T300 R...		.118	.118	.346					3	3	8.8						•	◦

• In stock ◦ Available upon request

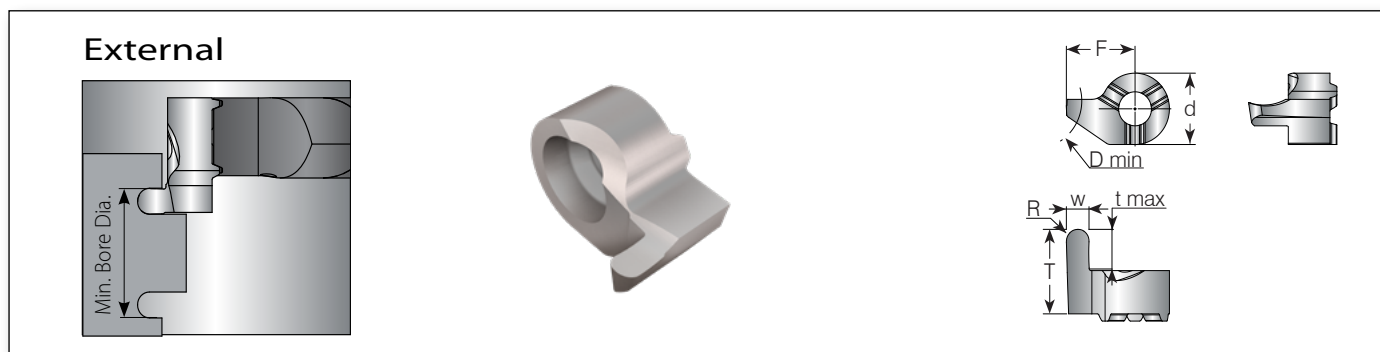
## Round Face Grooving



Insert Style	Ordering Code	Dimensions (Inch)							Min. Bore dia.	Dimensions (mm)							Min. Bore dia.	Grades	
		d	W	t max	T	F	r	D min		d	W	t max	T	F	r	D min		VBX	VTX
	RH																		
V-14	V14FGR050T150 R...		.039	.059	.303		.030			1	1.5	7.7		0.5			•	○	
	V14FGR100T300 R...	.354	.079	.118	.362	.354	.059	.551	9	2	3	9.2	9	1	14		•	○	
	V14FGR150T300 R...		.118	.118	.362		.059			3	3	9.2		1.5			•	○	

- In stock ○ Available upon request

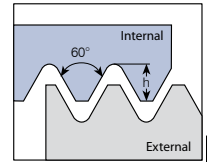
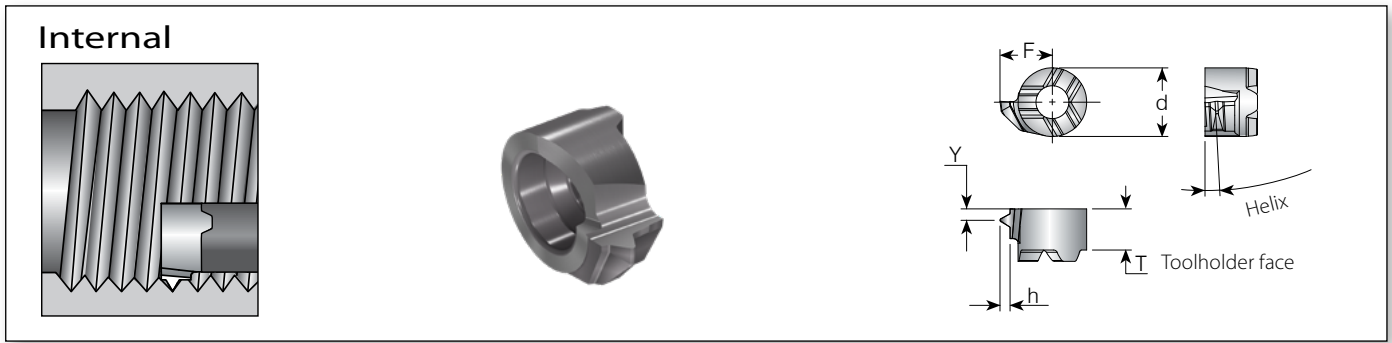
## Round Face Grooving



Insert Style	Ordering Code	Dimensions (Inch)							Min. Bore dia.	Dimensions (mm)							Min. Bore dia.	Grades	
		d	W	t max	T	F	r	D min		d	W	t max	T	F	r	D min		VBX	VTX
	RH																		
V-14	V14FEGR100T500 R...	.354	.039	.197	.421	.354	.030	.472	9	2	5	10.7	9	1	12		•	○	
	V14FEGR125T500 R...		.098				.049			2.5				1.25			•	○	

- In stock ○ Available upon request

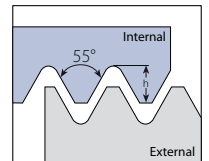
# Threading



## Partial Profile 60°

Insert Style	Pitch		Ordering Code	Dimensions (Inch)						Dimensions (mm)						Helix		Grades	
	TPI	mm		RH / LH	d	T	F	Y	r	h max	d	T	F	Y	r	h max	Deg.	VBX	VTX
V08	48-32	0.5-.75	V08TH H60 R...	.236	.141	.165	.019	.001	.019	6	3.6	4.20	0.6	0.03	0.49	1.5	•	•	
	24-20	1.0-1.25	V08TH I60 R...			.175	.031	.003	.029			4.46	0.9	0.1	0.74	2.5	•	•	
	16-14	1.5-1.75	V08TH J60 R...			.187	.035	.005	.040			4.76	1.1	0.14	1.04	3	•	•	
V11	48-32	0.5-.75	V11TH H60 R...	.314	.155	.228	.019	.001	.019	8	3.95	5.80	0.6	0.03	0.49	1.5	•	•	
	24-20	1.0-1.25	V11TH I60 R...			.238	.031	.003	.029			6.06	0.9	0.1	0.74	1.5	•	•	
	16-14	1.5-1.75	V11TH J60 R...			.220	.035	.005	.040			5.61	1.1	0.14	1.04	3	•	•	
V14	48-16	0.5-1.5	V14TH A60 R...	.354	.224	.354	.040	.002	.058	9	5.7	9	0.9	0.05	1.485	1.5	•	•	
	14-8	1.75-3.0	V14TH G60 R...			.070	.006	.112	1.7			0.16	2.350	•	•				
	48-8	0.5-3.0	V14TH AG60 R...			.070	.002	.112	1.7			0.05	2.350	•	•				
V16	48-16	0.5-1.5	V16TH A60 R...	.433	.224	.401	.035	.001	.058	11	5.7	10.2	0.9	0.05	1.485	1.5	•	•	
	14-8	1.75-3.0	V16TH G60 R...			.066	.006	.111	1.7			0.16	2.835	•	•				
	48-8	0.5-3.0	V16TH AG60 R...			.066	.001	.111	1.7			0.05	2.835	•	•				

• In stock ◦ Available upon request



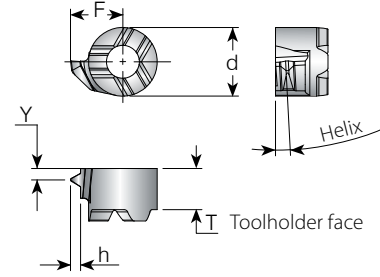
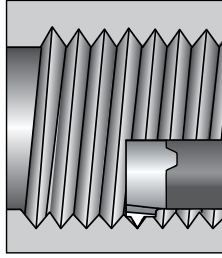
## Partial Profile 55°

Insert Style	Pitch		Ordering Code	Dimensions (Inch)						Dimensions (mm)						Helix		Grades	
	TPI	mm		RH / LH	d	T	F	Y	r	h max	d	T	F	Y	r	h max	Deg.	VBX	VTX
V14	48-16	0.5-1.5	V14TH A55 R...	.354	.224	.354	.040	.002	.067	9	5.7	9	0.9	0.05	1.71	1.5	•	•	
	14-8	1.75-3.0	V14TH G55 R...			.070	.008	.127	1.7			0.21	2.700	•	•				
	48-8	0.5-3.0	V14TH AG55 R...			.070	.002	.127	1.7			0.05	2.700	•	•				
V16	48-16	0.5-1.5	V16TH A55 R...	.433	.224	.401	.035	.002	.067	11	5.7	10.2	0.9	0.07	1.71	1.5	•	•	
	14-8	1.75-3.0	V16TH G55 R...			.066	.009	.127	1.7			0.25	3.236	•	•				
	48-8	0.5-3.0	V16TH AG55 R...			.066	.002	.127	1.7			0.07	3.236	•	•				

• In stock ◦ Available upon request

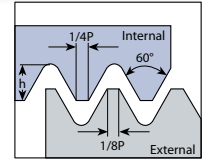
# Threading

## Internal



## American UN

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

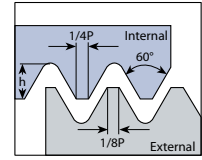


Min Thread	Insert Style	Ordering Code	Dimensions (Inch)					Dimensions (mm)					Helix		Grades	
			TPI	RH / LH	d	T	F	Y	h min	d	T	F	Y	h min	Deg.	VBX
3/8"-32UNEF	V08	V08TH 32UN R...	.236	.141	.165	.019	.018	6	3.6	4.21	0.6	0.46	1	•	•	
3/8"-28UN		V08TH 28UN R...			.168	.019	.020			4.28	0.7	0.52	2	•	•	
3/8"-24UNF		V08TH 24UN R...			.170	.025	.024			4.32	0.8	0.61	2	•	•	
3/8"-20UN		V08TH 20UN R...			.175	.031	.028			4.45	0.9	0.73	2.5	•	•	
3/8"-18UNS		V08TH 18UN R...			.178	.033	.031			4.53	1.0	0.81	2.5	•	•	
3/8"-16UNC		V08TH 16UN R...			.170	.037	.036			4.33	1.1	0.92	2.5	•	•	
7/16"-14UNC		V08TH 14UN R...			.188	.043	.041			4.78	1.2	1.05	3	•	•	
9/16"-12UNC	V11	V11TH 12UN R...	.314	.155	.253	.049	.048	8	3.95	6.44	1.4	1.22	2.5	•	•	

- In stock ◦ Available upon request

## ISO Metric

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

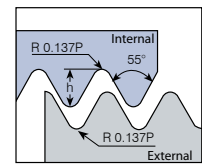


Min Thread	Insert Style	Ordering Code	Dimensions (Inch)					Dimensions (mm)					Helix		Grades	
			mm	RH / LH	d	T	F	Y	h min	d	T	F	Y	h min	Deg.	VBX
M8x.5	V08	V08TH .50ISO R...	.236	.141	.165	.013	.011	6	3.6	3.84	0.4	0.29	1	•	•	
M8.5x.75		V08TH .75ISO R...			.164	.019	.016			4.19	0.6	0.43	1.5	•	•	
M9x1.0		V08TH 1.00ISO R...			.168	.019	.022			4.29	0.7	0.58	2	•	•	
M10x1.25		V08TH 1.25ISO R...			.174	.031	.028			4.44	0.9	0.72	2.5	•	•	
M10x1.5		V08TH 1.50ISO R...			.180	.035	.034			4.58	1.0	0.87	3	•	•	
M12x1.75		V08TH 1.75ISO R...			.188	.035	.039			4.80	1.2	1.01	3	•	•	
M14x2.0	V11	V11TH 2.00ISO R...	.314	.155	.254	.043	.045	8	3.95	6.47	1.3	1.15	2.5	•	•	

- In stock ◦ Available upon request

## Whitworth - BSW, BSP, BSF, BSB

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



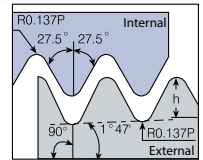
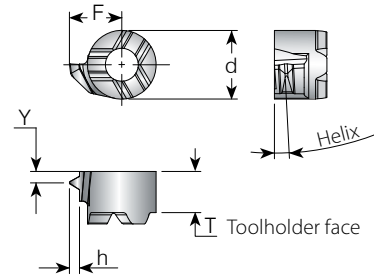
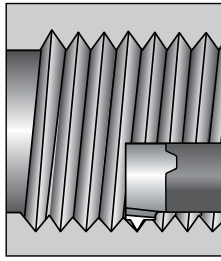
Min Thread	Insert Style	Ordering Code	Dimensions (Inch)					Dimensions (mm)					Helix		Grades	
			TPI	RH / LH	d	T	F	Y	h min	d	T	F	Y	h min	Deg.	VBX
1/2"x19W	V11	V11TH 19W R...	.314	.155	.243	.031	.033	8	3.95	6.18	1	0.86	2	•	•	

- In stock ◦ Available upon request



# Threading

## Internal



Defined by: B.S.21:1985  
Tolerance class: Standard BSPT

## BSPT

Min Thread	Insert Style	Ordering Code	Dimensions (Inch)					Dimensions (mm)					Helix Deg.	Grades		
			TPI	RH / LH	d	T	F	Y	h min	d	T	F		Y	h min	VBX
1/4"-19BSPT	V11	19	V11TH 19BSPT R...	.314	.155	.241	.035	.033	8	3.95	6.13	0.9	0.86	2.5	•	•

• In stock ◦ Available upon request

## NPT

Min Thread	Insert Style	Ordering Code	Dimensions (Inch)					Dimensions (mm)					Helix Deg.	Grades		
			TPI	RH / LH	d	T	F	Y	h min	d	T	F		Y	h min	VBX
1/8"-27NPT	V08	27	V08TH 27NPT R...	.236	.141	.171	.023	.025	6	3.6	4.35	0.8	0.64	2	•	•
1/4"-18NPT		18	V08TH 18NPT R...			.188	.035	.039			4.47	1.0	1.0		•	•

• In stock ◦ Available upon request

## NPTF

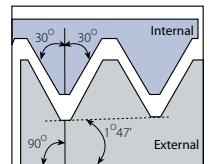
Min Thread	Insert Style	Ordering Code	Dimensions (inch)					Dimensions (mm)					Helix Deg.	Grades		
			TPI	RH / LH	d	T	F	Y	h min	d	T	F		Y	h min	VBX
1/4"-18NPTF	V08	18	V08TH 18NPTF R...	.236	.141	.182	.035	.039	6	3.6	4.64	1.0	1.0	2	•	•

• In stock ◦ Available upon request

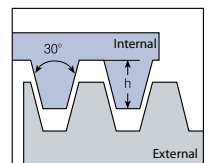
## Trapez

Min Thread	Insert Style	Ordering Code	Dimensions (Inch)					Dimensions (mm)					Helix Deg.	Grades		
			TPI	RH / LH	d	T	F	Y	h min	d	T	F		Y	h min	VBX
TR10x2.0	V08	2	V08TH 2.0TR R...	.236	.141	.188	.027	.049	6	3.6	4.80	1.3	1.25	3.5	•	•
TR11x3.0		3	V08TH 3.0TR R...			.194	.047	.068			4.95	1.4	1.75		•	•
TR16x4.0	V11	4	V11TH 4.0TR R...	.314	.155	.250	.061	.088	8	3.95	6.35	1.9	2.25	4.5	•	•

• In stock ◦ Available upon request



Defined by: ANSI 1.2.3-1976  
Tolerance class: Standard NPTF



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

## Mini-V Holders

Carbide Shank.....	19
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Sleeve Clamping System.....	22



## Mini-V Holders Ordering Code System

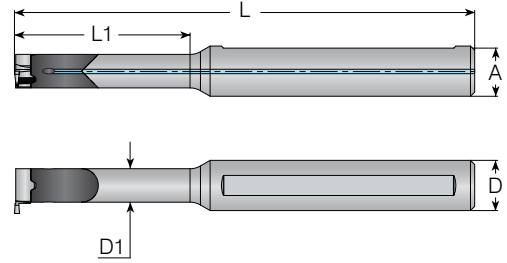
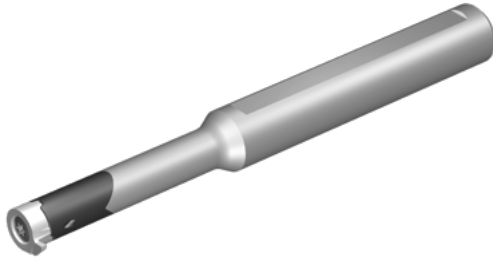
<b>C</b> 1	<b>V</b> 2	<b>08</b> 3	<b>-</b>	<b>12</b> 4	<b>21</b> 5	<b>-</b> 6
<b>1 - Holder Type</b> C - Carbide Shank None - Steel Shank	<b>2 - Product Line</b> V - Mini-V	<b>3 - Insert Size</b> 08, 11, 14, 16	<b>4 - Shank Diameter</b> 06 - .236" 08 - .315" 12 - .472" 16 - .630" 0500 - .500" 0625 - .625"	<b>5 - Tool Overhang</b> .827" - 3.150" 12 - 80mm	<b>6 - RH or LH</b> None - RH L - LH	

## Mini-V Sleeves



<b>MH</b> 1	<b>C</b> 2	<b>16</b> 3	<b>-</b>	<b>6</b> 4
<b>1 - Holder Type</b> MH - Microscope Holder	<b>2 - Coolant</b> C - Coolant Channels	<b>3 - Shank Diameter</b> 12-.472", 16-.630", 0500"-1/2", 0625"-5/8", 0750"-3/4"	<b>4 - Sleeve Bore Dia.</b> .236", .315"	

# Carbide Shank



## Internal



## Inch

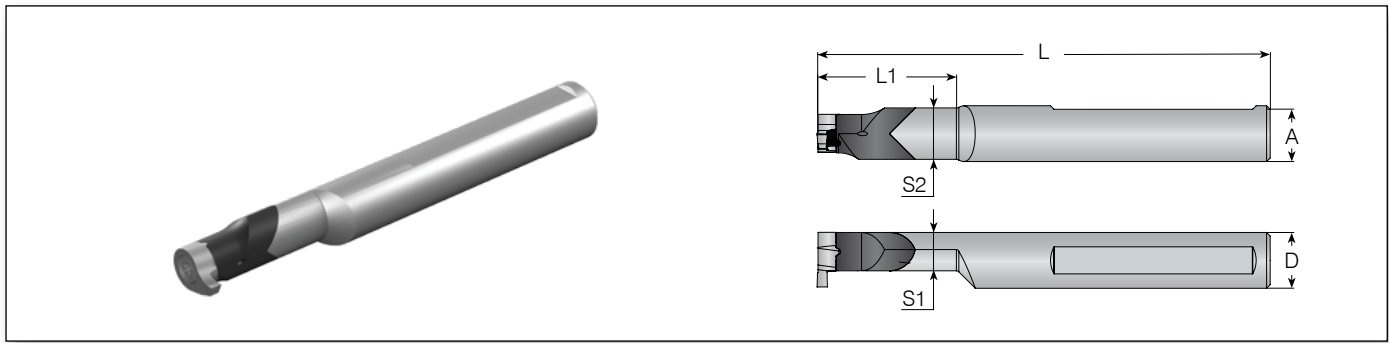
Inch								Spare Parts		
Insert Style	Ordering Code		Dimensions (Inch)							
	Sleeve	Holder RH	A	L	L1	D	D1	Screw	Size	Key
V08	-	CV08-05000827	.433	3.150	.827	.500	.236	SNV08	M2.6x.45x8	K2T
	-	CV08-05001180		3.540	1.181					
	-	CV08-05001654*		3.940	1.654					
	-	CV08-05001969		4.330	1.969					
V11	-	CV11-05001142*	.433	3.150	1.142	.500	.315	SNV11	M3.5x.6x10	K3T
	-	CV11-05001654		3.540	1.654					
	-	CV11-05002205*		3.940	2.205					
	-	CV11-05002520*		4.330	2.520					
V16	-	CV16-05001575	.433	5.120	1.575	.500	.433	SNV16	M5x.8x12	K4T
	-	CV16-0500220 *		5.120	2.205					
	-	CV16-05003150*		5.910	3.150					
	-	CV16-06251575	.591	5.120	1.575	.625	.433			
	-	CV16-06252205*		5.120	2.205					
	-	CV16-06253150*		5.910	3.150					

## Metric



Metric								Spare Parts		
Insert Style	Ordering Code		Dimensions (mm)							
	Sleeve	Holder RH	A	L	L1	D	D1	Screw	Size	Key
V08	-	CV08-1221	11.5	80.5	21	12	6	SNV08	M2.6x.45x8	K2T
	-	CV08-1230		90.5	30					
	-	CV08-1242*		100.5	42					
	-	CV08-1250*		115	50					
V11	-	CV11-1229	11.5	95	29	12	8	SNV11	M3.5x.6x10	K3T
	-	CV11-1242		110	42					
	-	CV11-1256*		120	56					
	-	CV11-1264*		130	64					
V16	-	CV16-1240	11.0	130	40	12	11	SNV16	M5x0.8x12	K4T
	-	CV16-1256		130	56					
	-	CV16-1280		150	80					

\* For Boring and Chamfering only



# Reinforced Carbide Shank



## Inch

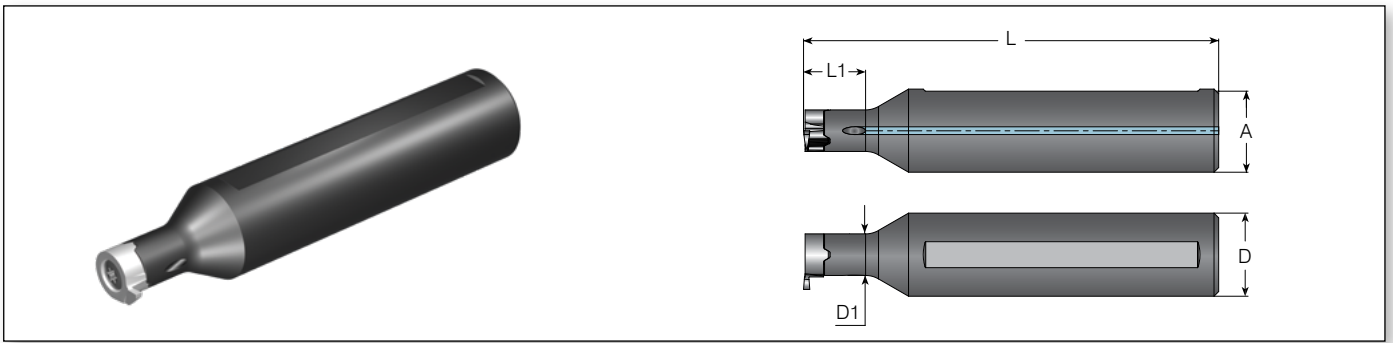
Inch								Spare Parts		
Insert Style	Ordering Code		Dimensions (Inch)							
	Sleeve	Holder RH	A	L	L1	D	S1	Screw	Size	Key
V14	-	CV14-05001339		3.940	1.339			SNV14	M4x0.7x12	KT15
	-	CV14-05001772*	.433	4.330	1.772	.500	.379			
	-	CV14-05002520*		5.120	2.520					

## Metric

Metric									Spare Parts		
Insert Style	Ordering Code		Dimensions (mm)								
	Sleeve	Holder RH	A	L	L1	D	S1	S2	Screw	Size	Key
V14	-	CV14-1234		100	34			SNV14	M4x0.7x12	KT15	
	-	CV14-1245*	11	110	45	12	9.3				11.9
	-	CV14-1264*		130	64						
	-	CV14-1634		100	34						
	-	CV14-1645*	15	110	45	16	9.3				12.45
	-	CV14-1664*		130	64						
V16	-	CV14-1675*		145	75			SNV16	M5x0.8x12	K4T	
	-	CV16-1640		129.7	39.7						
	-	CV16-1656*	15	129.7	55.7	16	11				14.75
	-	CV16-1680*		149.7	79.7						

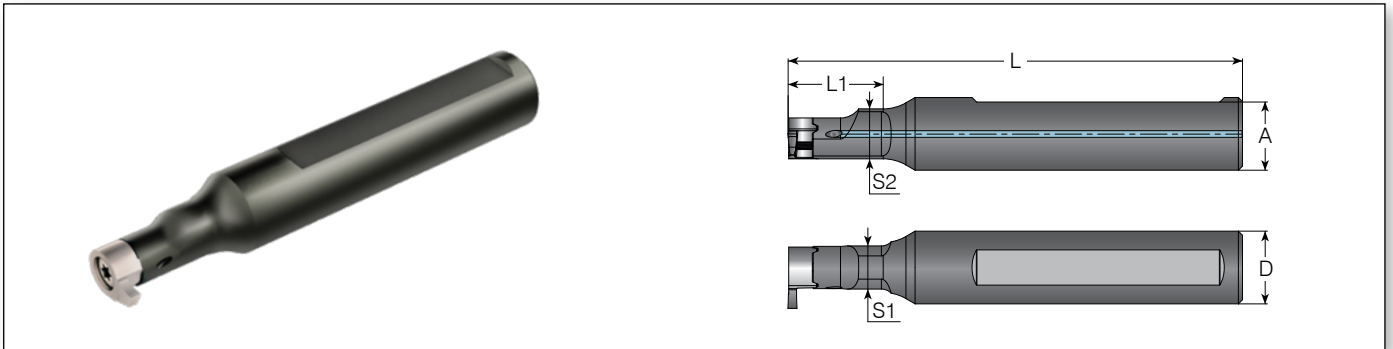
\* For boring, chamfering and face grooving only.

# Alloy Steel Shank



## Metric

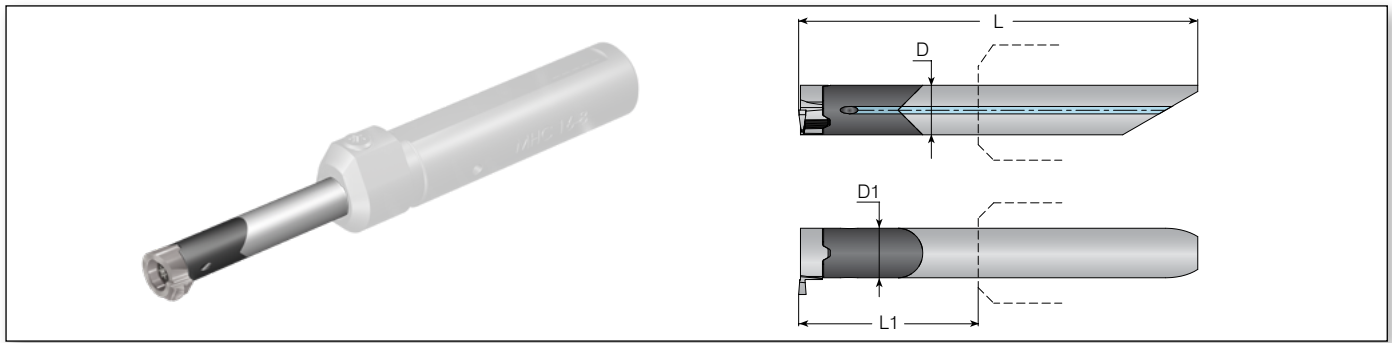
Insert Style	Ordering Code	Dimensions (mm)					Spare Parts		
							Screw		Size
	Holder RH	A	L	L1	D	D1			
V08	V08-1612	15.6	80	12	16	6	SNV08	M2.6x.45x8	K2T
V11	V11-1612	15.6	80	12	16	8	SNV11	M3.5x.6x10	K3T
V16	V16-1622	15	100	22	16	11	SNV16	M5.0x.8x12	K4T





## Metric

Insert Style	Ordering Code	Dimensions (mm)						Spare Parts		
								Screw		Size
	Holder RH	A	L	L1	D	S1	S2			
V14	V14-1620	15.0	100	20	16	9.5	11	SNV14	M4x.7x12	KT15



# Sleeve Clamping



## Inch

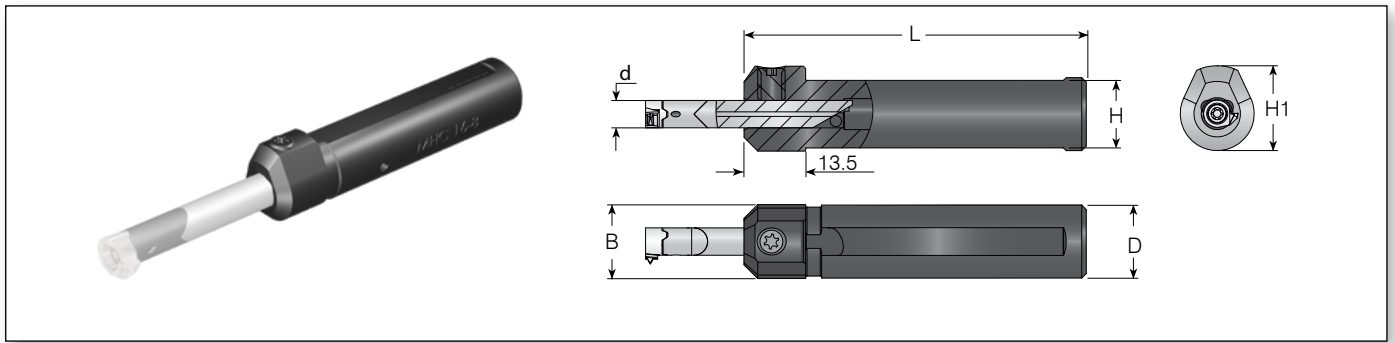
Inch								Spare Parts		
Insert Style	Ordering Code	Dimensions (Inch)					Ordering Code			
	Holder RH	A	L	L1	D	D1	Sleeve	Screw	Size	Key
V08	CV08-0621	-	1.772	.827	.236	.236	MHC ...-6	SNV08	M2.6x.45x8	K2T
	CV08-0630*	-	2.126	1.181			MHC ...-6			
V11	CV11-0829	-	2.539	1.142	.315	.315	MHC ...-8	SNV11	M3.5x.6x10	K3T
	CV11-0842*	-	3.051	1.654			MHC ...-8			

## Metric



Metric								Spare Parts		
Insert Style	Ordering Code	Dimensions (mm)					Ordering Code			
	Holder RH	A	L	L1	D	D1	Sleeve	Screw	Size	Key
V08	CV08-0621	-	45	21	6	6	MHC ...-6	SNV08	M2.6x.45x8	K2T
	CV8-0630*	-	54	30			MHC ...-6			
V11	CV11-0829	-	64.5	29	8	8	MHC ...-8	SNV11	M3.5x.6x10	K3T
	CV11-0842*	-	77.5	42			MHC ...-8			

\* For boring and chamfering only.



# Sleeves



## Inch

Inch						Spare Parts	
Ordering Code		Dimensions (Inch)					
d	Sleeve	D=B	H1	H	L	Screw	Key
6	MHC 0500-6	.500	.644	.394	2.756	SL7DT15	KT15
	MHC 0625-6	.625	.732	.551	2.953		
	MHC 0750-6	.750	.866	.709	3.543		
8	MHC 0625-8	.625	.732	.583	1.667		
	MHC 0750-8	.750	.769	.697	1.667		

## Metric

Metric						Spare Parts	
Ordering Code		Dimensions (mm)					
d	Sleeve	D=B	H1	H	L	Screw	Key
6	MHC 12-6	12	16	10.8	70	SL7DT15	KT15
	MHC 16-6	16	18.6	14.8	75		
	MHC 20-6	20	22	18.8	84		
8	MHC 16-8	16	18.6	14.8	75		
	MHC 20-8	20	22	18.8	84		



## Mini-V

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