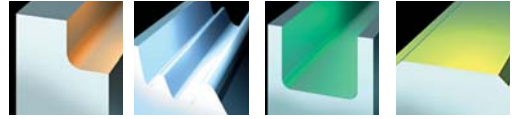


# 7702 VRD 10 Contour Milling Cutter



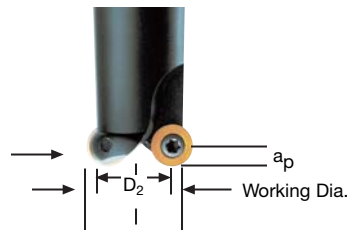
## 7702 VRD 10 Weldon Shank

EDP #	Part Number	Dimensions (inch)							Spares			
		D	L	$l_1$	$d_3$	a	No. of Inserts	Linear Ramp Down	EDP#	EDP#	EDP#	
025721	C7702VRD10WA0.75R2.75	0.75	4.780	2.750	0.75	0.196	2	18.5°	022056	F3507T	015240	T15
025722	C7702VRD10WA0.75R4.75	0.75	6.756	4.725	1.00	0.196	2	18.5°	022056	F3507T	015240	T15
025723	C7702VRD10WA1.00R2.75	1.00	5.030	2.750	1.00	0.196	2	12°	015269	F3508T	015240	T15
025724	C7702VRD10WA1.00R4.75	1.00	7.030	4.725	1.00	0.196	2	12°	015269	F3508T	015240	T15
025725	C7702VRD10WA1.25R2.75	1.25	5.030	2.750	1.25	0.196	3	12.5°	015269	F3508T	015240	T15
025726	C7702VRD10WA1.25R4.75	1.25	7.030	4.725	1.25	0.196	3	12.5°	015269	F3508T	015240	T15



## 7702 VRD 10 Technical Advice

Milling Cutter Order Example: **C7702VRD10WA1.00R2.75**  
 Milling Insert Order Example: **RDHW1003M0T SP4036**  
 For complete cutting conditions refer to page: **208**



### Working Diameter:

$$DW = D_2 + 2 \times \sqrt{r^2 - (r - a_p)^2}$$

where: **DW** = Working Diameter  
**D<sub>2</sub>** = Diameter of cutter insert center to center  
**r** = Insert radius  
**a<sub>p</sub>** = Axial Depth of Cut

### To find programmed feedrate:

$$f_z = h_m \times \sqrt{\frac{D}{a_p}} \times \sqrt{\frac{D_w}{a_e}}$$

where: **f<sub>z</sub>** = Feed per tooth  
**h<sub>m</sub>** = Average chip thickness  
**D** = Cutter diameter (outside)  
**a<sub>e</sub>** = Radial Depth of Cut  
**D<sub>w</sub>** = Working Diameter  
**a<sub>p</sub>** = Axial Depth of Cut

### Average chip thickness:

$$h_m = \frac{f_z}{\sqrt{\frac{D}{a_p}} \times \sqrt{\frac{D_w}{a_e}}}$$



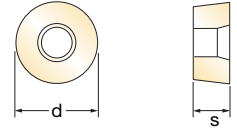
Weldon Shank



Depth of Cut (a)



# Inserts for 7702 VRD 10

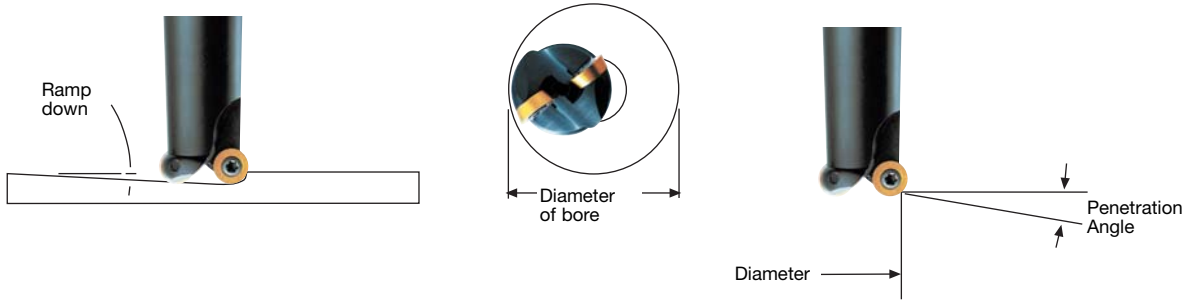


EDP#	Part Number	Grade	Application & Material			Dimensions (inch)				
			Roughing	Semi-Finishing	Finishing	d	l	s	r	$h_m$ min
025743	RDET1003M0E-701	SP4036	◆	◆◆◆	◆◆◆◆◆	0.394	-	0.125	0.197	0.0020

RDET 10\_ -701

025741	RDHW1003M0T	SP4036	◆◆◆◆◆	◆◆◆◆◆	◆◆◆◆◆	0.394	-	0.125	0.197	0.0059
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RDHW 10\_



Part Number	Bore Dia. Max. (inch)	Bore Dia. Min. (inch)	Penetration Angle	Linear Ramp Down
C7702VRD10WA0.75R2.75	1.500	0.828	13.0°	17.5°
C7702VRD10WA0.75R4.75				
C7702VRD10WA1.00R2.75	1.921	1.275	9.5°	10.7°
C7702VRD10WA1.00R4.75				
C7702VRD10WA1.25R2.75	2.421	1.801	7.2°	14.0°
C7702VRD10WA1.25R4.75				

## RD\_10 Recommended Cutting Conditions

Material	▼ Roughing			▼▼ Semi-Finishing			▼▼▼ Finishing		
	Speed $V_c$ (feet/min)	Feed $h_m$ (inch)	D.O.C. $a_p$ (inch)	Speed $V_c$ (feet/min)	Feed $h_m$ (inch)	D.O.C. $a_p$ (inch)	Speed $V_c$ (feet/min)	Feed $h_m$ (inch)	D.O.C. $a_p$ (inch)
◆ Unalloyed Steels	600 - 720	0.005 - 0.010	0.10 - 0.20	730 - 850	0.004 - 0.008	0.03 - 0.10	730 - 980	0.003 - 0.006	0.00 - 0.03
◆ Alloyed Steels	230 - 360	0.004 - 0.009	0.10 - 0.16	330 - 490	0.003 - 0.007	0.03 - 0.10	330 - 630	0.003 - 0.005	0.00 - 0.03
◆ Stainless Steels	-	-	-	460 - 590	0.003 - 0.006	0.03 - 0.10	600 - 750	0.003 - 0.005	0.00 - 0.03
◆ PH Stainless	-	-	-	230 - 270	0.003 - 0.004	0.03 - 0.10	270 - 320	0.002 - 0.004	0.00 - 0.03
◆ Cast Irons	460 - 910	0.004 - 0.009	0.10 - 0.16	600 - 980	0.003 - 0.007	0.03 - 0.10	660 - 1140	0.003 - 0.005	0.00 - 0.03
◆ Aluminum & Alloys	910 - 1470	0.002 - 0.005	0.10 - 0.20	1320 - 2460	0.002 - 0.005	0.03 - 0.10	2300 - 3280	0.002 - 0.005	0.00 - 0.03
◆ High Temp. Alloys	-	-	-	120 - 160	0.003 - 0.004	0.03 - 0.10	150 - 190	0.002 - 0.004	0.00 - 0.03
◆ Hard Steels (52-56 HRC)	-	-	-	170 - 270	0.002 - 0.003	0.02 - 0.04	170 - 320	0.001 - 0.002	0.00 - 0.02

$h_m$  = average chip thickness

## Star Guide Key to Recommended Tools

Material Designations								
	◆ P	◆ Unalloyed Steels	◆ M	◆ Stainless Steels	◆ K	◆ Cast Irons	◆ S	◆ High Temp. Alloys
	◆ P	◆ Alloyed Steels	◆ M	◆ PH Stainless	◆ N	◆ Aluminum & Alloys	◆ H	◆ Hard Materials