



# 7701 VRD 16 Contour Milling Cutter

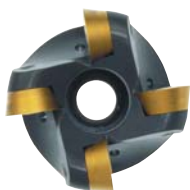


7701 VRD 16 Shell Mill Fixation		Dimensions (inch)						Spares			
EDP #	Part Number	D <sub>1</sub>	D <sub>2</sub>	H	d <sub>1</sub>	a	No. of Inserts	EDP#		EDP#	
015395	A7701VRD16-A052R	2.05	1.42	2.17	0.75	0.315	4	015266	D5013T	015241	T20
015396	A7701VRD16-A066R	2.60	1.97	2.17	1.00	0.315	4	015266	D5013T	015241	T20
015397	A7701VRD16-A080R	3.15	2.52	2.17	1.00	0.315	5	015266	D5013T	015241	T20
015398	A7701VRD16-A100R	3.94	3.31	2.17	1.25	0.315	6	015266	D5013T	015241	T20
015399	A7701VRD16-A125R	4.92	4.29	2.17	1.50	0.315	7	015266	D5013T	015241	T20
015400	A7701VRD16-160R	6.30	5.67	2.17	1.50	0.315	8	015266	D5013T	015241	T20

## 7701 VRD 16 Technical Advice



Milling Cutter Order Example: **A7701VRD16-A125R**  
 Milling Insert Order Example: **RDMW1606MOS X500**  
 For complete cutting conditions refer to page: **208**

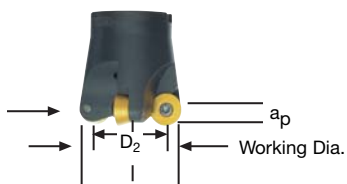


Shell Mill Fixation

### 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



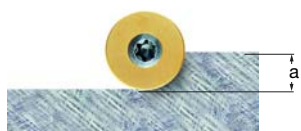
### To find programmed feedrate:

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

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:

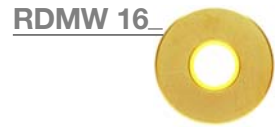
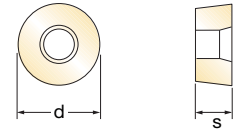
$$h_m = \frac{f_z}{\sqrt{\frac{D}{a_p}} \times \sqrt{\frac{D_w}{a_e}}}$$



Depth of Cut (a)



## Inserts for 7701 VRD 16



EDP#	Part Number	Grade	Application & Material			Dimensions (inch)				
			Roughing ▼	Semi-Finishing ▼▼	Finishing ▼▼▼	d	l	s	r	h <sub>m</sub> min
017673	RDMW1606M0S	SF30				0.630	-	0.250	0.315	0.0118
015183	RDMW1606M0S	X500	◆◆◆			0.630	-	0.250	0.315	0.0118

## RD\_16 Recommended Cutting Conditions

Material	▼ Roughing			▼▼ Semi-Finishing			▼▼▼ Finishing		
	Speed V <sub>C</sub> (feet/min)	Feed h <sub>m</sub> (inch)	D.O.C. a <sub>p</sub> (inch)	Speed V <sub>C</sub> (feet/min)	Feed h <sub>m</sub> (inch)	D.O.C. a <sub>p</sub> (inch)	Speed V <sub>C</sub> (feet/min)	Feed h <sub>m</sub> (inch)	D.O.C. a <sub>p</sub> (inch)
◆ Unalloyed Steels	600 - 720	0.014 - 0.024	0.06 - 0.31	-	-	-	-	-	-
◆ Alloyed Steels	230 - 360	0.012 - 0.020	0.06 - 0.31	-	-	-	-	-	-
◆ Stainless Steels	-	-	-	-	-	-	-	-	-
◆ PH Stainless	-	-	-	-	-	-	-	-	-
◆ Cast Irons	460 - 910	0.012 - 0.020	0.06 - 0.31	-	-	-	-	-	-
◆ Aluminum & Alloys	-	-	-	-	-	-	-	-	-
◆ High Temp. Alloys	-	-	-	-	-	-	-	-	-
◆ Hard Steels (52-56 HRC)	-	-	-	-	-	-	-	-	-

h<sub>m</sub> = average chip thickness

### Star Guide Key to Recommended Tools

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