

**Stellram® tooling systems**  
for all your mold and die  
milling requirements.

**The tooling.**  
7702 VRD

**The material.**  
Tool steel, cast irons and aluminum  
alloys.

**The application.**  
Roughing and semi-finishing on 3  
dimensional molds.

## THE ADVANTAGES

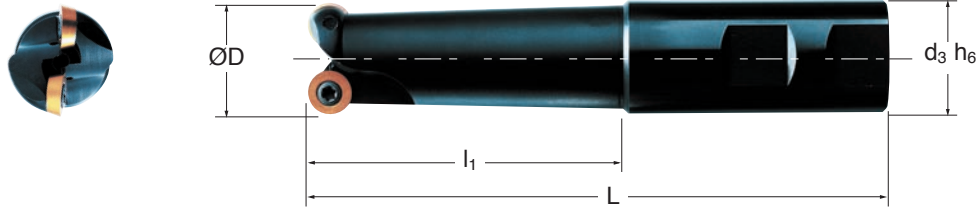
- Negative axial rake for reduced vibration
- Industry standard RD style inserts
- Mono block construction for maximum rigidity and increased performance
- 2 lengths available in every diameter to allow shortest gauge length
- Nitrided P-20 tool steel bodies for accuracy and durability
- Through tool coolant for optimum chip evacuation





# 7702 VRD



# 7702 VRD MILLING



Part Number	Dimensions (Inch)				No. of Teeth	Radial	Axial		
	ØD	L	l <sub>1</sub>	d <sub>3</sub> h <sub>6</sub>					
C7702 VRD 07WA 0.50 R2.00	0.500	3.906	2.000	0.625	1	0°	-15°	F2505T	T7
C7702 VRD 07WA 0.50 R4.00	0.500	5.905	4.000	0.625	1	0°	-15°	F2505T	T7
C7702 VRD 07WA 0.625 R2.0	0.625	3.906	2.000	0.625	2	0°	-5°	F2505T	T7
C7702 VRD 07WA 0.625 R4.0	0.625	6.030	4.000	0.750	2	0°	-5°	F2505T	T7
C7702 VRD 07WA 0.75 R2.00	0.750	4.030	2.000	0.750	2	0°	-5°	F2505T	T7
C7702 VRD 07WA 0.75 R4.00	0.750	6.280	4.000	1.000	2	0°	-5°	F2505T	T7
C7702 VRD 07WA 1.00 R2.00	1.000	4.280	2.000	1.000	4	-1°	-5°	F2505T	T7
C7702 VRD 07WA 1.00 R4.00	1.000	6.280	4.000	1.000	4	-1°	-5°	F2505T	T7
C7702 VRD 10WA 0.75 R2.75	0.750	4.780	2.750	0.750	2	0°	-5°	F3507T	T15
C7702 VRD 10WA 0.75 R4.75	0.750	6.756	4.725	1.000	2	0°	-5°	F3507T	T15
C7702 VRD 10WA 1.00 R2.75	1.000	5.030	2.750	1.000	2	0°	-5°	F3508T	T15
C7702 VRD 10WA 1.00 R4.75	1.000	7.030	4.725	1.000	2	0°	-5°	F3508T	T15
C7702 VRD 10WA 1.25 R2.75	1.250	5.030	2.750	1.250	3	0°	-5°	F3508T	T15
C7702 VRD 10WA 1.25 R4.75	1.250	7.030	4.725	1.250	3	0°	-5°	F3508T	T15
C7702 VRD 12WA 1.00 R2.75	1.000	5.030	2.750	1.250	2	0°	-5°	F3508T	T15
C7702 VRD 12WA 1.00 R4.75	1.000	7.030	4.725	1.250	2	0°	-5°	F3508T	T15
<b>C7702 VRD 12WA 1.25 R2.75</b>	1.250	5.030	2.750	1.250	3	0°	-5°	F3508T	T15
C7702 VRD 12WA 1.25 R4.75	1.250	7.030	4.725	1.250	3	0°	-5°	F3508T	T15
C7702 VRD 12WA 1.5 R2.75	1.500	5.437	2.750	1.500	3	0°	-5°	F3508T	T15
C7702 VRD 12WA 1.5 R4.75	1.500	7.437	4.725	1.500	3	0°	-5°	F3508T	T15
C7702 VRD 16WA 1.25 R2.75	1.250	5.030	2.750	1.250	2	0°	-5°	F4011T	T20
C7702 VRD 16WA 1.25 R4.75	1.250	7.030	4.725	1.250	2	0°	-5°	F4011T	T20
C7702 VRD 16WA 1.5 R2.75	1.500	5.437	2.750	1.500	2	0°	-5°	F4011T	T20
C7702 VRD 16WA 1.5 R4.75	1.500	7.437	4.725	1.500	2	0°	-5°	F4011T	T20

**C7702 VRD 12 WA 1.25 R 2.75**

CUTTER  
TYPE

INSERT  
STYLE

INSERT  
SIZE

FIXATION  
W = Weldon  
A = Through  
Coolant


CUTTING  
DIAMETER

HAND  
R = Right  
L = Left

PROJECTION

## Inserts



Part Number	Bore Ø Inch	Penetration 
RDHW 0702 M0T or RDET 0702 M0E -701	0.500-0.921	15.3°
RDHW 0702 M0T or RDET 0702 M0E -701	0.500-0.921	15.3°
RDHW 0702 M0T or RDET 0702 M0E -701	0.782-1.171	11.2°
RDHW 0702 M0T or RDET 0702 M0E -701	0.782-1.171	11.2°
RDHW 0702 M0T or RDET 0702 M0E -701	1.064-1.421	8.8°
RDHW 0702 M0T or RDET 0702 M0E -701	1.064-1.421	8.8°
RDHW 0702 M0T or RDET 0702 M0E -701	1.511-1.921	6.1°
RDHW 0702 M0T or RDET 0702 M0E -701	1.511-1.921	6.1°
RDHW 1003 M0T or RDET 1003 M0E -701	0.828-1.500	13.0°
RDHW 1003 M0T or RDET 1003 M0E -701	0.828-1.500	13.0°
RDHW 1003 M0T or RDET 1003 M0E -701	1.275-1.921	9.5°
RDHW 1003 M0T or RDET 1003 M0E -701	1.275-1.921	9.5°
RDHW 1003 M0T or RDET 1003 M0E -701	1.801-2.421	7.2°
RDHW 1003 M0T or RDET 1003 M0E -701	1.801-2.421	7.2°
RDHW 12T3 M0T or RDET 12T3 M0E -701	1.102-1.921	11.0°
RDHW 12T3 M0T or RDET 12T3 M0E -701	1.102-1.921	11.0°
RDHW 12T3 M0T or RDET 12T3 M0E -701	1.643-2.421	8.2°
RDHW 12T3 M0T or RDET 12T3 M0E -701	1.643-2.421	8.2°
RDHW 12T3 M0T or RDET 12T3 M0E -701	2.208-2.921	6.6°
RDHW 12T3 M0T or RDET 12T3 M0E -701	2.208-2.921	6.6°
RDHW 1604 M0T or RDET 1604 M0E -701	1.328-2.421	11.2°
RDHW 1604 M0T or RDET 1604 M0E -701	1.328-2.421	11.2°
RDHW 1604 M0T or RDET 1604 M0E -701	1.893-2.921	8.8°
RDHW 1604 M0T or RDET 1604 M0E -701	1.893-2.921	8.8°

## Insert Grade

**SP4036**

Multi layer TiAlN in PVD coated K20 micrograin carbide for reducing a built-up edge.

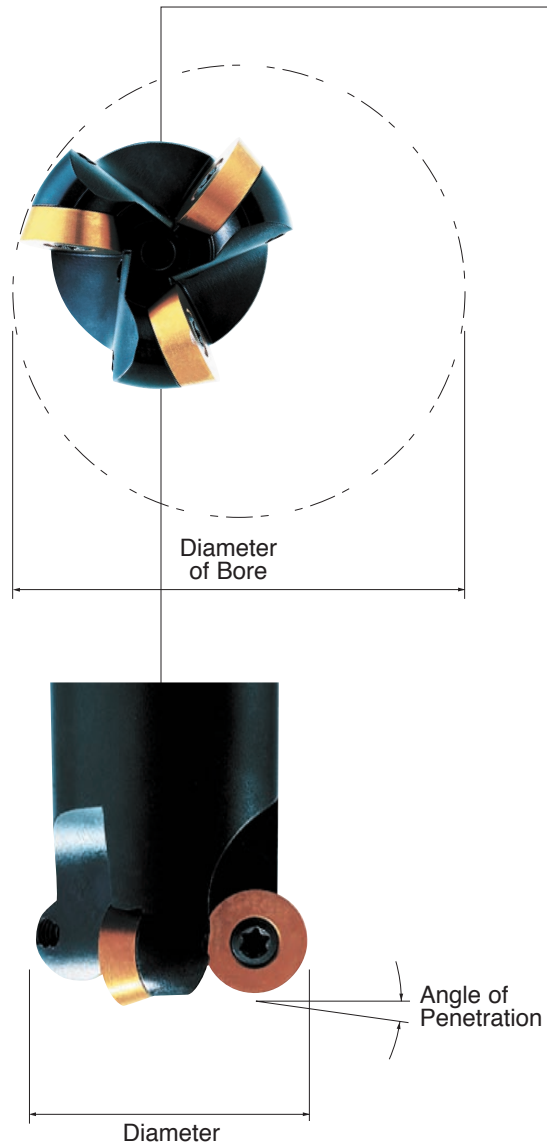
For use in:

Tool Steel

Cast Iron

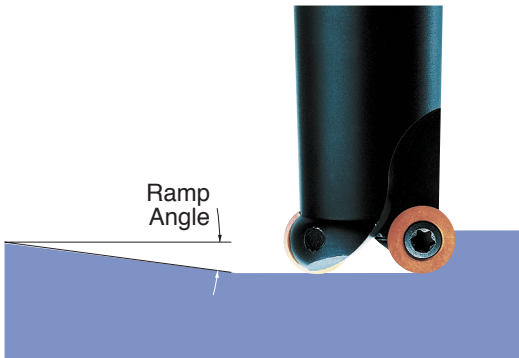
Aluminum alloys

## Drilling by Circular Interpolation



# Cutting Conditions

Material		Composition (%)			Grade	Cutting Speed (Vc) Ft/min	Feed Rate (fz) Inch/tooth				Roughing	Semi-finish
		Co.	Cr.	Ni.			RD..07	RD..10	RD..12	RD..16		
Unalloyed steel	120 - 200 HBN	< 0.4			SP4036	1300-490	0.002-0.005	0.003-0.013	0.004-0.017	0.006-0.020	RDHW...SP4036	RDET...SP4036
Alloy steel	200 - 280 HBN	> 0.4			SP4036	985-490	0.002-0.005	0.003-0.013	0.004-0.017	0.006-0.020	RDHW...SP4036	RDET...SP4036
	280 - 415 HBN				SP4036	490-330	0.002-0.003	0.003-0.009	0.004-0.011	0.006-0.013	RDHW...SP4036	RDET...SP4036
Tool steel	200 - 400 HBN				SP4036	330-260	0.002-0.003	0.003-0.009	0.004-0.011	0.006-0.013	RDHW...SP4036	RDET...SP4036
Stainless steel	400 series	< 0.3	13-19		SP4036	920-560	0.002-0.004	0.003-0.009	0.004-0.012	0.006-0.014	RDET...SP4036	RDET...SP4036
	200 series	> 0.3	13-19		SP4036	885-525	0.002-0.003	0.003-0.009	0.004-0.011	0.006-0.013	RDET...SP4036	RDET...SP4036
	300 series		~19	8-13	SP4036	985-625	0.002-0.004	0.003-0.009	0.004-0.012	0.006-0.014	RDET...SP4036	RDET...SP4036
	Precipitation hardening	< 0.1	> 15	> 15	SP4036	450-250	0.002-0.003	0.003-0.008	0.004-0.010	0.006-0.012	RDET...SP4036	RDET...SP4036
High temperature alloys	Iron based				SP4036	295-165	0.002-0.004	0.003-0.009	0.004-0.012	0.006-0.014	RDET...SP4036	RDET...SP4036
	Cobalt based				SP4036	260-130	0.002-0.003	0.003-0.008	0.004-0.010	0.006-0.012	RDET...SP4036	RDET...SP4036
	Nickel based				SP4036	200-65	0.002-0.003	0.003-0.008	0.004-0.010	0.006-0.012	RDET...SP4036	RDET...SP4036
	Titanium based				SP4036	200-125	0.002-0.003	0.003-0.009	0.004-0.011	0.006-0.013	RDET...SP4036	RDET...SP4036
Gray cast iron	< 260 HBN				SP4036	985-330	0.002-0.005	0.003-0.013	0.004-0.017	0.006-0.020	RDHW...SP4036	RDHW...SP4036
Spheroidal cast iron	140 - 180 HBN				SP4036	650-330	0.002-0.004	0.003-0.011	0.004-0.013	0.006-0.016	RDHW...SP4036	RDET...SP4036
Nodular cast iron	200 - 290 HBN				SP4036	590-330	0.002-0.004	0.003-0.011	0.004-0.014	0.006-0.017	RDHW...SP4036	RDET...SP4036
Malleable/Ductile cast iron	160 - 240 HBN				SP4036	650-330	0.002-0.004	0.003-0.011	0.004-0.014	0.006-0.017	RDHW...SP4036	RDET...SP4036
Aluminum alloys	< 6% silicon				SP4036	6500-1300	0.002-0.004	0.003-0.011	0.004-0.014	0.006-0.017	RDET...SP4036	RDET...SP4036
Aluminum + Silicon alloys	> 6% silicon				SP4036	3800-800	0.002-0.004	0.003-0.011	0.004-0.013	0.006-0.016	RDET...SP4036	RDET...SP4036

Recommended Ramp Angle		Short Series Part Number	Long Series Part Number	ØD	Linear Ramp Angle	No. of Teeth
		C7702 VRD 07WA 0.50 R2.00	C7702 VRD 07WA 0.50 R4.00	0.500	21.5°	1
		C7702 VRD 07WA 0.625 R2.0	C7702 VRD 07WA 0.625 R4.0	0.625	13.0°	2
		C7702 VRD 07WA 0.75 R2.00	C7702 VRD 07WA 0.75 R4.00	0.750	14.5°	2
		C7702 VRD 07WA 1.00 R2.00	C7702 VRD 07WA 1.00 R4.00	1.000	10.0°	4
		C7702 VRD 10WA 0.75 R2.75	C7702 VRD 10WA 0.75 R4.75	0.750	17.5°	2
		C7702 VRD 10WA 1.00 R2.75	C7702 VRD 10WA 1.00 R4.75	1.000	10.7°	2
		C7702 VRD 10WA 1.25 R2.75	C7702 VRD 10WA 1.25 R4.75	1.250	14.0°	3
		C7702 VRD 12WA 1.00 R2.75	C7702 VRD 12WA 1.00 R4.75	1.000	16.5°	2
		C7702 VRD 12WA 1.25 R2.75	C7702 VRD 12WA 1.25 R4.75	1.250	12.0°	3
		C7702 VRD 12WA 1.5 R2.75	C7702 VRD 12WA 1.5 R4.75	1.500	13.0°	3
		C7702 VRD 16WA 1.25 R2.75	C7702 VRD 16WA 1.25 R4.75	1.250	17.5°	2
		C7702 VRD 16WA 1.5 R2.75	C7702 VRD 16WA 1.5 R4.75	1.500	13.0°	2

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