

**NEW RADIUS SIZES
AVAILABLE
ON VRX SERIES!**

**VRX SERIES & VHM SERIES
HIGH PERFORMANCE
END MILLS**

EFFECTIVE JULY 18, 2005
PRICES OF ALL CATALOG ITEMS
WILL INCREASE BY 15%
(Calculate new price by
multiplying printed price by 1.15)

**No. 0601V
SUPPLEMENT TO
CATALOG 2003-04**

GARRETT TOOL[®]



Series VRX - 4 Flute Corner Radius - TiAlN Coated

TOLERANCES

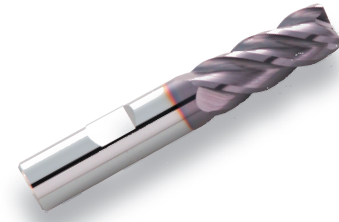
Flute Diameter: +.000 -.002" (+0.000 -0.050mm)
Shank Diameter: -.0001 -.0004" (-0.0025 -0.0100mm)
Corner Radius: +.001 -.001" (+0.025 -0.025mm)

State-of-the-art solid carbide rougher / finisher

Reduces vibration for more aggressive machining
resulting in less cycle times and greater productivity

Recommended for stainless steel, inconel, PH materials,
cold rolled steel, titanium, cast iron and tool steels

Should be run at specified parameters (see Milling Guide)



EDP# (plain)	EDP# (weldon)	Flute Diameter †	Decimal Equiv.	Corner Radius	Shank Dia.	Overall Length	Flute Length	1-11	12-25	26-49	50-100
27420	-	3mm	.1181	.20mm	3mm	50mm	8mm	9.55	9.13	8.72	8.30
27430	-	3mm	.1181	.20mm	3mm	50mm	12mm	9.55	9.13	8.72	8.30
27435	-	3mm	.1181	.50mm	3mm	50mm	12mm	9.55	9.13	8.72	8.30
27440	-	1/8 (3.17mm)	.1250	.010	1/8	1-1/2	1/4	9.55	9.13	8.72	8.30
27450	-	1/8 (3.17mm)	.1250	.010	1/8	1-1/2	1/2	9.55	9.13	8.72	8.30
27455	-	1/8 (3.17mm)	.1250	.020	1/8	1-1/2	1/2	9.55	9.13	8.72	8.30
27460	-	5/32 (3.97mm)	.1562	.010	3/16	2	5/16	13.16	12.59	12.02	11.44
27470	-	5/32 (3.97mm)	.1562	.010	3/16	2	1/2	13.16	12.59	12.02	11.44
27480	-	4mm	.1575	.30mm	6mm	50mm	8mm	16.18	15.48	14.77	14.07
27490	-	4mm	.1575	.30mm	6mm	50mm	12mm	16.18	15.48	14.77	14.07
27495	-	4mm	.1575	.50mm	6mm	50mm	12mm	16.18	15.48	14.77	14.07
27500	-	3/16 (4.76mm)	.1875	.010	3/16	2	5/16	11.99	11.47	10.95	10.43
27520	-	3/16 (4.76mm)	.1875	.010	3/16	2	9/16	11.99	11.47	10.95	10.43
27521	-	3/16 (4.76mm)	.1875	.020	3/16	2	9/16	11.99	11.47	10.95	10.43
27522	-	5mm	.1969	.30mm	6mm	50mm	10mm	15.86	15.17	14.48	13.79
27524	-	5mm	.1969	.30mm	6mm	65mm	15mm	17.57	16.81	16.04	15.28
27526	-	5mm	.1969	.50mm	6mm	65mm	15mm	17.57	16.81	16.04	15.28
27525	-	7/32 (5.56mm)	.2188	.015	1/4	2	3/8	15.25	14.59	13.92	13.26
27530	-	7/32 (5.56mm)	.2188	.015	1/4	2-1/2	3/4	16.91	16.17	15.44	14.70
27535	-	6mm	.2362	.30mm	6mm	50mm	12mm	15.35	14.68	14.02	13.35
27540	-	6mm	.2362	.30mm	6mm	65mm	19mm	17.01	16.27	15.53	14.79
27545	-	6mm	.2362	.50mm	6mm	65mm	19mm	17.01	16.27	15.53	14.79
27547	-	6mm	.2362	1.0mm	6mm	65mm	19mm	17.01	16.27	15.53	14.79
27548	-	6mm	.2362	1.5mm	6mm	65mm	19mm	17.01	16.27	15.53	14.79
27560	-	1/4 (6.35mm)	.2500	.015	1/4	2	3/8	14.77	14.13	13.49	12.84
27580	-	1/4 (6.35mm)	.2500	.015	1/4	2-1/2	3/4	16.36	15.65	14.94	14.23
27581	-	1/4 (6.35mm)	.2500	.030	1/4	2-1/2	3/4	16.36	15.65	14.94	14.23
27583	-	1/4 (6.35mm)	.2500	.060	1/4	2-1/2	3/4	16.36	15.65	14.94	14.23
27585	-	7mm	.2756	.30mm	8mm	50mm	12mm	23.94	22.90	21.86	20.82
27590	-	7mm	.2756	.30mm	8mm	65mm	22mm	26.32	25.18	24.03	22.89
27595	-	9/32 (7.14mm)	.2812	.015	5/16	2	7/16	23.08	22.08	21.07	20.07
27597	-	9/32 (7.14mm)	.2812	.015	5/16	2-1/2	13/16	25.37	24.27	23.16	22.06
27600	-	5/16 (7.94mm)	.3125	.020	5/16	2	7/16	20.16	19.28	18.41	17.53
27620	-	5/16 (7.94mm)	.3125	.020	5/16	2-1/2	13/16	22.16	21.20	20.23	19.27
27622	-	5/16 (7.94mm)	.3125	.030	5/16	2-1/2	13/16	22.16	21.20	20.23	19.27
27624	-	5/16 (7.94mm)	.3125	.060	5/16	2-1/2	13/16	22.16	21.20	20.23	19.27

EDP# (plain)	EDP# (weldon)	Flute Diameter †	Decimal Equiv.	Corner Radius	Shank Dia.	Overall Length	Flute Length	1-11	12-25	26-49	50-100
27630	-	8mm	.3150	.50mm	8mm	50mm	12mm	20.91	20.00	19.09	18.18
27640	-	8mm	.3150	.50mm	8mm	65mm	22mm	22.99	21.99	20.99	19.99
27642	-	8mm	.3150	1.0mm	8mm	65mm	22mm	22.99	21.99	20.99	19.99
27643	-	8mm	.3150	1.5mm	8mm	65mm	22mm	22.99	21.99	20.99	19.99
27645	-	11/32 (8.73mm)	.3438	.020	3/8	2	1/2	26.93	25.76	24.59	23.42
27650	-	11/32 (8.73mm)	.3438	.020	3/8	2-1/2	7/8	29.28	28.01	26.73	25.46
27655	-	9mm	.3543	.50mm	10mm	50mm	14mm	32.52	31.11	29.69	28.28
27657	-	9mm	.3543	.50mm	10mm	65mm	22mm	35.35	33.81	32.28	30.74
27660	-	3/8 (9.52mm)	.3750	.020	3/8	2	1/2	23.81	22.77	21.74	20.70
27680	-	3/8 (9.52mm)	.3750	.020	3/8	2-1/2	7/8	25.88	24.75	23.63	22.50
27682	-	3/8 (9.52mm)	.3750	.030	3/8	2-1/2	7/8	25.88	24.75	23.63	22.50
27684	-	3/8 (9.52mm)	.3750	.060	3/8	2-1/2	7/8	25.88	24.75	23.63	22.50
27690	-	10mm	.3937	.50mm	10mm	50mm	16mm	28.74	27.49	26.24	24.99
27700	-	10mm	.3937	.50mm	10mm	65mm	22mm	31.25	29.89	28.53	27.17
27702	-	10mm	.3937	1.0mm	10mm	65mm	22mm	31.25	29.89	28.53	27.17
27705	-	7/16 (11.11mm)	.4375	.020	7/16	2-1/2	5/8	31.31	29.95	28.59	27.23
27710	-	7/16 (11.11mm)	.4375	.020	7/16	2-3/4	7/8	31.31	29.95	28.59	27.23
27715	-	12mm	.4724	.50mm	12mm	65mm	19mm	41.25	39.46	37.66	35.87
27720	-	12mm	.4724	.50mm	12mm	75mm	32mm	46.03	44.03	42.03	40.03
27722	-	12mm	.4724	1.0mm	12mm	75mm	32mm	46.03	44.03	42.03	40.03
27730	-	12mm	.4724	1.5mm	12mm	75mm	32mm	46.03	44.03	42.03	40.03
27735	-	12mm	.4724	2.0mm	12mm	75mm	32mm	46.03	44.03	42.03	40.03
27741	* 27740	1/2 (12.70mm)	.5000	.020	1/2	2-1/2	5/8	39.56	37.84	36.12	34.40
27761	* 27760	1/2 (12.70mm)	.5000	.020	1/2	3	1-1/4	44.15	42.23	40.31	38.39
27763	* 27762	1/2 (12.70mm)	.5000	.030	1/2	3	1-1/4	44.15	42.23	40.31	38.39
27767	* 27764	1/2 (12.70mm)	.5000	.060	1/2	3	1-1/4	44.15	42.23	40.31	38.39
27769	* 27768	1/2 (12.70mm)	.5000	.120	1/2	3	1-1/4	44.15	42.23	40.31	38.39
27766	* 27765	14mm	.5512	.50mm	14mm	75mm	19mm	65.15	62.32	59.48	56.65
27771	* 27770	14mm	.5512	.50mm	14mm	88mm	32mm	66.96	64.05	61.14	58.23
27781	* 27780	5/8 (15.87mm)	.6250	.025	5/8	3	3/4	68.39	65.42	62.44	59.47
27801	* 27800	5/8 (15.87mm)	.6250	.025	5/8	3-1/2	1-1/4	70.30	67.24	64.19	61.13
27803	* 27802	5/8 (15.87mm)	.6250	.060	5/8	3-1/2	1-1/4	70.30	67.24	64.19	61.13
27805	* 27804	5/8 (15.87mm)	.6250	.120	5/8	3-1/2	1-1/4	70.30	67.24	64.19	61.13
27811	* 27810	16mm	.6299	.50mm	16mm	75mm	19mm	71.39	68.29	65.18	62.08
27821	* 27820	16mm	.6299	.50mm	16mm	88mm	32mm	73.36	70.17	66.98	63.79
27823	* 27822	16mm	.6299	1.0mm	16mm	88mm	32mm	73.36	70.17	66.98	63.79
27825	* 27824	16mm	.6299	2.0mm	16mm	88mm	32mm	73.36	70.17	66.98	63.79
27831	* 27830	18mm	.7087	.80mm	18mm	75mm	22mm	102.99	98.51	94.03	89.56
27836	* 27835	18mm	.7087	.80mm	18mm	100mm	38mm	105.31	100.73	96.15	91.57
27841	* 27840	3/4 (19.05mm)	.7500	.030	3/4	3	7/8	98.66	94.37	90.08	85.79
27861	* 27860	3/4 (19.05mm)	.7500	.030	3/4	4	1-1/2	100.81	96.43	92.04	87.66
27865	* 27864	3/4 (19.05mm)	.7500	.060	3/4	4	1-1/2	100.81	96.43	92.04	87.66
27867	* 27866	3/4 (19.05mm)	.7500	.120	3/4	4	1-1/2	100.81	96.43	92.04	87.66
27871	* 27870	20mm	.7874	1.0mm	20mm	75mm	22mm	139.53	133.46	127.40	121.33
27881	* 27880	20mm	.7874	1.0mm	20mm	100mm	38mm	142.67	136.47	130.26	124.06
27891	* 27890	20mm	.7874	1.5mm	20mm	100mm	38mm	142.67	136.47	130.26	124.06
27911	* 27910	22mm	.8661	1.0mm	22mm	100mm	38mm	156.73	149.92	143.10	136.29
27941	* 27940	25mm	.9843	1.0mm	25mm	100mm	38mm	163.52	156.41	149.30	142.19
27951	* 27950	25mm	.9843	1.5mm	25mm	100mm	38mm	163.52	156.41	149.30	142.19
27961	* 27960	1 (25.40mm)	1.000	.035	1	4	1	172.11	164.63	157.14	149.66
27971	* 27970	1 (25.40mm)	1.000	.035	1	4	1-1/2	172.11	164.63	157.14	149.66

* Tools with weldon flats

989-463-6171

800-248-9003

fax 989-463-3609

4 Flute - Series VRX

Extra Length - Corner Radius - TiAlN Coated

EDP# (plain)	EDP# (weldon)	Flute Diameter †	Decimal Equiv.	Corner Radius	Shank Dia.	Overall Length	Flute Length	Reach	Neck Dia.	1-11	12-25	26-49	50-100
63100	-	3/16 (4.76mm)	.1875	.010	3/16	4	5/16	-	-	22.34	21.37	20.40	19.43
63110	-	5mm	.1969	.30mm	6mm	100mm	10mm	-	-	33.66	32.20	30.73	29.27
63120	-	7/32 (5.56mm)	.2188	.015	1/4	4	3/8	-	-	32.51	31.10	29.68	28.27
63130	-	6mm	.2362	.30mm	6mm	100mm	12mm	32mm	5.70mm	32.82	31.39	29.97	28.54
63140	-	1/4 (6.35mm)	.2500	.015	1/4	4	3/8	1-1/4	.240	31.69	30.31	28.93	27.56
63150	-	9/32 (7.14mm)	.2812	.015	5/16	4	7/16	-	-	43.83	41.92	40.02	38.11
63160	-	5/16 (7.94mm)	.3125	.020	5/16	4	7/16	1-7/8	.300	42.73	40.87	39.01	37.16
63170	-	8mm	.3150	.50mm	8mm	100mm	12mm	47mm	7.60mm	44.21	42.29	40.37	38.44
63180	-	11/32 (8.73mm)	.3438	.020	3/8	4	1/2	-	-	46.92	44.88	42.84	40.80
63190	-	3/8 (9.52mm)	.3750	.020	3/8	4	1/2	1-7/8	.360	45.74	43.75	41.76	39.77
63200	-	10mm	.3937	.50mm	10mm	100mm	14mm	47mm	9.50mm	55.94	53.51	51.08	48.64
63210	-	7/16 (11.11mm)	.4375	.020	7/16	6	1	-	-	67.47	64.54	61.60	58.67
63220	-	12mm	.4724	.50mm	12mm	150mm	19mm	57mm	11.50mm	81.19	77.66	74.13	70.60
63231	* 63230	1/2 (12.70mm)	.5000	.020	1/2	4	5/8	2-1/4	.480	59.57	56.98	54.39	51.80
63241	* 63240	1/2 (12.70mm)	.5000	.020	1/2	6	2	-	-	73.80	70.59	67.38	64.17
63251	* 63250	14mm	.5512	.50mm	14mm	150mm	19mm	57mm	13.50mm	107.92	103.23	98.54	93.84
63261	* 63260	14mm	.5512	.50mm	14mm	150mm	50mm	-	-	100.52	96.15	91.78	87.41
63271	* 63270	5/8 (15.87mm)	.6250	.025	5/8	6	3/4	3-1/4	.600	112.59	107.69	102.80	97.90
63281	* 63280	5/8 (15.87mm)	.6250	.025	5/8	6	2	-	-	105.19	100.62	96.04	91.47
63291	* 63290	16mm	.6299	.50mm	16mm	150mm	19mm	82mm	15.25mm	112.59	107.69	102.80	97.90
63301	* 63300	18mm	.7087	.80mm	18mm	150mm	25mm	82mm	17.25mm	164.11	156.97	149.84	142.71
63311	* 63310	3/4 (19.05mm)	.7500	.030	3/4	5	2	-	-	139.84	133.76	127.68	121.60
63321	* 63320	3/4 (19.05mm)	.7500	.030	3/4	6	1	3-1/4	.730	173.54	165.99	158.45	150.91
63331	* 63330	20mm	.7874	1.0mm	20mm	150mm	25mm	82mm	19.30mm	182.78	174.83	166.89	158.94
63341	* 63340	22mm	.8661	1.0mm	22mm	150mm	25mm	82mm	21.50mm	197.88	189.28	180.67	172.07
63351	* 63350	25mm	.9843	1.0mm	25mm	125mm	50mm	-	-	204.14	195.26	186.39	177.51
63361	* 63360	25mm	.9843	1.0mm	25mm	150mm	32mm	82mm	24.40mm	273.76	261.86	249.95	238.05
63371	* 63370	1 (25.40mm)	1.000	.035	1	5	2	-	-	211.76	202.55	193.35	184.14
63381	* 63380	1 (25.40mm)	1.000	.035	1	6	1-1/4	3-1/4	.980	286.04	273.60	261.17	248.73

* Tools with weldon flats

Series VRX - 4 Flute Ball End - TiAlN Coated

TOLERANCES

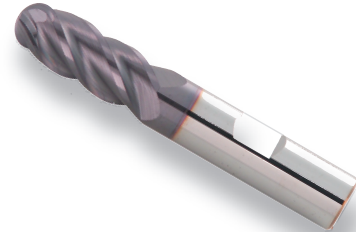
Flute Diameter: +.000 - .002" (+0.000 - 0.050mm)
Shank Diameter: -.0001 -.0004" (-0.0025 - 0.0100mm)
Ball Radius: +.000 - .001" (+0.000 - 0.025mm)

State-of-the-art solid carbide rougher / finisher

Reduces vibration for more aggressive machining
resulting in less cycle times and greater productivity

Recommended for stainless steel, inconel, PH materials,
cold rolled steel, titanium, cast iron and tool steels

Should be run at specified parameters (see *Milling Guide*)



EDP# (plain)	EDP# (weldon)	Flute Diameter †	Decimal Equiv.	Shank Dia.	Overall Length	Flute Length	1-11	12-25	26-49	50-100
28470	-	4mm	.1575	6mm	50mm	8mm	16.18	15.48	14.77	14.07
28480	-	4mm	.1575	6mm	50mm	12mm	16.18	15.48	14.77	14.07
28490	-	3/16 (4.76mm)	.1875	3/16	2	5/16	11.99	11.47	10.95	10.43
28500	-	3/16 (4.76mm)	.1875	3/16	2	9/16	11.99	11.47	10.95	10.43
28510	-	5mm	.1969	6mm	50mm	10mm	15.86	15.17	14.48	13.79
28520	-	5mm	.1969	6mm	65mm	15mm	17.57	16.81	16.04	15.28
28530	-	6mm	.2362	6mm	50mm	12mm	15.35	14.68	14.02	13.35
28540	-	6mm	.2362	6mm	65mm	19mm	17.01	16.27	15.53	14.79
28570	-	1/4 (6.35mm)	.2500	1/4	2	3/8	14.77	14.13	13.49	12.84
28580	-	1/4 (6.35mm)	.2500	1/4	2-1/2	3/4	16.36	15.65	14.94	14.23
28610	-	5/16 (7.94mm)	.3125	5/16	2	7/16	20.16	19.28	18.41	17.53
28620	-	5/16 (7.94mm)	.3125	5/16	2-1/2	13/16	22.16	21.20	20.23	19.27
28630	-	8mm	.3150	8mm	50mm	12mm	20.91	20.00	19.09	18.18
28640	-	8mm	.3150	8mm	65mm	22mm	22.99	21.99	20.99	19.99
28670	-	3/8 (9.52mm)	.3750	3/8	2	1/2	23.81	22.77	21.74	20.70
28680	-	3/8 (9.52mm)	.3750	3/8	2-1/2	7/8	25.88	24.75	23.63	22.50
28690	-	10mm	.3937	10mm	50mm	16mm	28.74	27.49	26.24	24.99
28700	-	10mm	.3937	10mm	65mm	22mm	31.25	29.89	28.53	27.17
28705	-	7/16 (11.11mm)	.4375	7/16	2-1/2	5/8	31.31	29.95	28.59	27.23
28710	-	7/16 (11.11mm)	.4375	7/16	2-3/4	7/8	31.31	29.95	28.59	27.23
28715	-	12mm	.4724	12mm	65mm	19mm	41.25	39.46	37.66	35.87
28720	-	12mm	.4724	12mm	75mm	32mm	46.03	44.03	42.03	40.03
28751	* 28750	1/2 (12.70mm)	.5000	1/2	2-1/2	5/8	39.56	37.84	36.12	34.40
28761	* 28760	1/2 (12.70mm)	.5000	1/2	3	1-1/4	44.15	42.23	40.31	38.39
28771	* 28770	1/2 (12.70mm)	.5000	1/2	4	5/8	52.18	49.91	47.64	45.37
28781	* 28870	14mm	.5512	14mm	75mm	19mm	65.15	62.32	59.48	56.65
28786	* 28785	14mm	.5512	14mm	88mm	32mm	66.96	64.05	61.14	58.23
28796	* 28795	5/8 (15.87mm)	.6250	5/8	3	3/4	68.39	65.42	62.44	59.47
28801	* 28800	5/8 (15.87mm)	.6250	5/8	3-1/2	1-1/4	70.30	67.24	64.19	61.13
28806	* 28805	5/8 (15.87mm)	.6250	5/8	6	2	105.19	100.62	96.04	91.47
28811	* 28810	16mm	.6299	16mm	75mm	19mm	71.39	68.29	65.18	62.08
28821	* 28820	16mm	.6299	16mm	88mm	32mm	73.36	70.17	66.98	63.79
28831	* 28830	18mm	.7087	18mm	75mm	22mm	102.99	98.51	94.03	89.56
28836	* 28835	18mm	.7087	18mm	100mm	38mm	105.31	100.73	96.15	91.57

* Tools with weldon flats

989-463-6171

800-248-9003

fax 989-463-3609

Series VRX - 4 Flute Ball End - TIALN Coated (cont'd.)

EDP# (plain)	EDP# (weldon)	Flute Diameter †	Decimal Equiv.	Shank Dia.	Overall Length	Flute Length	1-11	12-25	26-49	50-100
28841	* 28840	3/4 (19.05mm)	.7500	3/4	3	7/8	98.66	94.37	90.08	85.79
28861	* 28860	3/4 (19.05mm)	.7500	3/4	4	1-1/2	100.81	96.43	92.04	87.66
28866	* 28865	3/4 (19.05mm)	.7500	3/4	5	2	139.84	133.76	127.68	121.60
28871	* 28870	20mm	.7874	20mm	75mm	22mm	139.53	133.46	127.40	121.33
28881	* 28880	20mm	.7874	20mm	100mm	38mm	142.67	136.47	130.26	124.06
28901	* 28900	25mm	.9843	25mm	100mm	38mm	163.52	156.41	149.30	142.19
28911	* 28910	1 (25.40mm)	1.000	1	4	1	172.11	164.63	157.14	149.66
28916	* 28915	1 (25.40mm)	1.000	1	4	1-1/2	172.11	164.63	157.14	149.66
28931	* 28930	1 (25.40mm)	1.000	1	5	2	211.76	202.55	193.35	184.14

TOLERANCES

Flute Diameter: +.000 - .002" (+0.000 - 0.050mm)
 Shank Diameter: -.0001 - .0004" (-0.0025 - 0.0100mm)
 Chamfer Length: +.005 - .000" (+0.127 - 0.000mm)

4 Flute - Series VHM (VRX Hog Mill) TIALN Coated

State-of-the-art solid carbide rougher using VRX technology

Reduces tool pressure for more aggressive machining

Recommended for stainless steel, inconel, PH materials,
cold rolled steel, titanium, cast iron and tool steels

Furnished with a standard 45° lead chamfer

Should be run at specified parameters (see *Milling Guide*)



EDP#	Flute Diameter †	Decimal Equivalent	Chamfer Length	Shank Diameter	Overall Length	Flute Length	1-11	12-25	26-49	50-100
49490	6mm	.2362	.50mm	6mm	50mm	12mm	25.00	23.91	22.83	21.74
49500	6mm	.2362	.50mm	6mm	65mm	19mm	27.68	26.48	25.27	24.07
49520	1/4 (6.35mm)	.2500	.020	1/4	2	3/8	24.01	22.97	21.92	20.88
49540	1/4 (6.35mm)	.2500	.020	1/4	2-1/2	3/4	27.39	26.20	25.01	23.82
49550	7mm	.2756	.50mm	8mm	50mm	12mm	34.01	32.53	31.05	29.57
49555	7mm	.2756	.50mm	8mm	65mm	22mm	36.77	35.17	33.57	31.97
49570	9/32 (7.14mm)	.2812	.020	5/16	2	7/16	33.40	31.95	30.50	29.04
49575	9/32 (7.14mm)	.2812	.020	5/16	2-1/2	13/16	35.98	34.42	32.85	31.29
49580	5/16 (7.94mm)	.3125	.020	5/16	2	7/16	29.18	27.91	26.64	25.37
49600	5/16 (7.94mm)	.3125	.020	5/16	2-1/2	13/16	31.45	30.08	28.72	27.35

* Tools with weldon flats

EDP#	Flute Diameter †	Decimal Equivalent	Chamfer Length	Shank Diameter	Overall Length	Flute Length	1-11	12-25	26-49	50-100
49610	8mm	.3150	.50mm	8mm	50mm	12mm	29.80	28.50	27.21	25.91
49620	8mm	.3150	.50mm	8mm	65mm	22mm	32.12	30.72	29.33	27.93
49625	11/32 (8.73mm)	.3438	.025	3/8	2	1/2	37.88	36.23	34.59	32.94
49630	11/32 (8.73mm)	.3438	.025	3/8	2-1/2	7/8	43.11	41.24	39.36	37.49
49635	9mm	.3543	.50mm	10mm	50mm	14mm	46.46	44.44	42.42	40.40
49637	9mm	.3543	.50mm	10mm	65mm	22mm	50.50	48.30	46.11	43.91
49640	3/8 (9.52mm)	.3750	.025	3/8	2	1/2	33.48	32.02	30.57	29.11
49660	3/8 (9.52mm)	.3750	.025	3/8	2-1/2	7/8	38.11	36.45	34.80	33.14
49670	10mm	.3937	.50mm	10mm	50mm	16mm	41.06	39.27	37.49	35.70
49680	10mm	.3937	.50mm	10mm	65mm	22mm	44.62	42.68	40.74	38.80
49690	7/16 (11.11mm)	.4375	.025	7/16	2-1/2	5/8	44.84	42.89	40.94	38.99
49700	7/16 (11.11mm)	.4375	.025	7/16	2-3/4	1	44.84	42.89	40.94	38.99
* 49710	12mm	.4724	.80mm	12mm	65mm	19mm	48.14	46.05	43.95	41.86
* 49720	12mm	.4724	.80mm	12mm	75mm	32mm	53.72	51.38	49.05	46.71
* 49740	1/2 (12.70mm)	.5000	.030	1/2	2-1/2	5/8	46.10	44.10	42.09	40.09
* 49760	1/2 (12.70mm)	.5000	.030	1/2	3	1-1/4	51.51	49.27	47.03	44.79
* 49765	14mm	.5512	.80mm	14mm	75mm	19mm	76.20	72.89	69.57	66.26
* 49770	14mm	.5512	.80mm	14mm	88mm	32mm	78.33	74.92	71.52	68.11
* 49780	5/8 (15.87mm)	.6250	.035	5/8	3	3/4	79.96	76.48	73.01	69.53
* 49800	5/8 (15.87mm)	.6250	.035	5/8	3-1/2	1-1/4	82.08	78.51	74.94	71.37
* 49820	5/8 (15.87mm)	.6250	.035	5/8	4	1-5/8	86.48	82.72	78.96	75.20
* 49830	16mm	.6299	1.0mm	16mm	75mm	19mm	83.49	79.86	76.23	72.60
* 49840	16mm	.6299	1.0mm	16mm	88mm	32mm	85.68	81.95	78.23	74.50
* 49845	18mm	.7087	1.0mm	18mm	75mm	22mm	120.46	115.22	109.98	104.75
* 49850	18mm	.7087	1.0mm	18mm	100mm	38mm	123.17	117.81	112.46	107.10
* 49860	3/4 (19.05mm)	.7500	.040	3/4	3	7/8	115.46	110.44	105.42	100.40
* 49880	3/4 (19.05mm)	.7500	.040	3/4	4	1-5/8	117.85	112.73	107.60	102.48
* 49890	20mm	.7874	1.0mm	20mm	75mm	22mm	163.20	156.10	149.01	141.91
* 49900	20mm	.7874	1.0mm	20mm	100mm	38mm	166.77	159.52	152.27	145.02
* 49905	22mm	.8661	1.0mm	22mm	100mm	22mm	183.31	175.34	167.37	159.40
* 49910	22mm	.8661	1.0mm	22mm	100mm	38mm	183.31	175.34	167.37	159.40
* 49915	25mm	.9843	1.0mm	25mm	100mm	25mm	191.25	182.93	174.62	166.31
* 49920	25mm	.9843	1.0mm	25mm	100mm	38mm	191.25	182.93	174.62	166.31
* 49925	1 (25.40mm)	1.000	.040	1	4	1	197.93	189.32	180.72	172.11
* 49930	1 (25.40mm)	1.000	.040	1	4	1-1/2	197.93	189.32	180.72	172.11
* 49940	1 (25.40mm)	1.000	.040	1	5	2	243.69	233.09	222.50	211.91

* Tools with weldon flats

GARR TOOL VRX/VHM Series Milling Guide

Material	Rc	SFM (Vc)	CPT (CHIPLOAD PER TOOTH) Recommendations - (Fz)							*Profiling	Slotting	
			3/16	1/4	5/16	3/8	1/2	5/8	3/4			1
Stainless Steel: 303		290-375	.0008-.0010	.0010-.0015	.0013-.0020	.0015-.0020	.0020-.0030	.0025-.0035	.0030-.0040	.0035-.0045	1 x D	1 x D
Stainless Steel: 304, 316, 400 Series, Kovar, Invar		250-300	.0006-.0010	.0008-.0015	.0010-.0020	.0012-.0020	.0015-.0020	.0020-.0025	.0025-.0030	.0025-.0035	1 x D	1 x D
Stainless Steel: 304L, 316L, 17/4, 15/5, 13/8, PH Materials	<32	250-280	.0006-.0008	.0007-.0010	.0010-.0015	.0015-.0020	.0015-.0025	.0020-.0030	.0025-.0035	.0030-.0040	1 x D	1 x D
	>32	200-250	.0006-.0008	.0007-.0010	.0008-.0010	.0010-.0015	.0010-.0020	.0015-.0025	.0020-.0030	.0020-.0030	0.5 x D	0.5 x D
High Temperature Alloys: Inconel 625/718, A286	<32	125-175	.0008-.0010	.0010-.0015	.0012-.0020	.0020-.0025	.0025-.0030	.0030-.0035	.0030-.0035	.0030-.0040	0.5 x D	0.3 x D
	>32	80-100	.0007-.0010	.0008-.0010	.0010-.0015	.0010-.0015	.0010-.0015	.0012-.0020	.0015-.0025	.0015-.0025	0.2 x D	0.2 x D
Titanium: 6AL4V, CP		150-200	.0008-.0010	.0010-.0015	.0010-.0020	.0015-.0020	.0020-.0030	.0025-.0030	.0030-.0035	.0030-.0040	1 x D	1 x D
Carbon Steels: 1000 Series	<32	400-600	.0008-.0010	.0010-.0015	.0010-.0020	.0015-.0020	.0020-.0030	.0025-.0035	.0030-.0040	.0035-.0045	0.5 x D	1 x D
	>32	275-425	.0006-.0008	.0008-.0012	.0010-.0015	.0010-.0020	.0015-.0025	.0020-.0025	.0020-.0030	.0025-.0035	0.5 x D	1 x D
High Strength Tool Steel: 4130, 4140, A2, D2, P20, H13	<32	250-350	.0006-.0010	.0008-.0015	.0010-.0020	.0012-.0020	.0015-.0022	.0020-.0025	.0025-.0030	.0025-.0035	0.5 x D	1 x D
	>32	150-200	.0006-.0008	.0007-.0010	.0008-.0010	.0010-.0015	.0010-.0020	.0015-.0025	.0020-.0030	.0020-.0030	0.3 x D	1 x D
Grey Cast Iron		400-500	.0010-.0020	.0010-.0020	.0015-.0020	.0015-.0025	.0020-.0035	.0025-.0035	.0030-.0040	.0040-.0050	1 x D	1 x D

Material	Rc	SMM (Vc)	CPT (CHIPLOAD PER TOOTH) Metric Recommendations - (Fz)							*Profiling	Slotting	
			5mm	6mm	8mm	10mm	12mm	16mm	20mm			25mm
Stainless Steel: 303		90-115	0.020-0.025	0.025-0.038	0.033-0.050	0.038-0.050	0.050-0.076	0.063-0.089	0.076-0.102	0.089-0.114	1 x D	1 x D
Stainless Steel: 304, 316, 400 Series, Kovar, Invar		75-90	0.015-0.025	0.020-0.038	0.025-0.050	0.030-0.050	0.038-0.050	0.050-0.063	0.063-0.076	0.063-0.089	1 x D	1 x D
Stainless Steel: 304L, 316L, 17/4, 15/5, 13/8, PH Materials	<32	75-85	0.015-0.020	0.018-0.025	0.025-0.038	0.038-0.050	0.038-0.063	0.050-0.076	0.063-0.089	0.076-0.102	1 x D	1 x D
	>32	60-75	0.015-0.020	0.018-0.025	0.020-0.025	0.025-0.038	0.025-0.050	0.038-0.063	0.050-0.076	0.050-0.076	0.5 x D	0.5 x D
High Temperature Alloys: Inconel 625/718, A286	<32	40-55	0.020-0.025	0.025-0.038	0.030-0.050	0.050-0.063	0.063-0.076	0.076-0.089	0.076-0.089	0.076-0.102	0.5 x D	0.3 x D
	>32	25-30	0.018-0.025	0.020-0.025	0.025-0.038	0.025-0.038	0.025-0.038	0.030-0.050	0.038-0.063	0.038-0.063	0.2 x D	0.2 x D
Titanium: 6AL4V, CP		45-60	0.020-0.025	0.025-0.038	0.025-0.050	0.038-0.050	0.050-0.076	0.063-0.076	0.076-0.089	0.076-0.102	1 x D	1 x D
Carbon Steels: 1000 Series	<32	125-185	0.020-0.025	0.025-0.038	0.025-0.050	0.038-0.050	0.050-0.076	0.063-0.089	0.076-0.102	0.089-0.114	0.5 x D	1 x D
	>32	85-130	0.015-0.020	0.020-0.030	0.025-0.038	0.025-0.050	0.038-0.063	0.050-0.063	0.050-0.076	0.063-0.089	0.5 x D	1 x D
High Strength Tool Steel: 4130, 4140, A2, D2, P20, H13	<32	75-110	0.015-0.025	0.020-0.038	0.025-0.050	0.030-0.050	0.038-0.056	0.050-0.063	0.063-0.076	0.063-0.089	0.5 x D	1 x D
	>32	45-60	0.015-0.020	0.018-0.025	0.020-0.025	0.025-0.038	0.025-0.050	0.038-0.063	0.050-0.076	0.050-0.076	0.3 x D	1 x D
Grey Cast Iron		125-150	0.025-0.050	0.025-0.050	0.038-0.050	0.038-0.063	0.050-0.089	0.063-0.089	0.076-0.102	0.102-0.127	1 x D	1 x D

* For profiling, axial = 1xD

NOTE - ABOVE ARE STARTING PARAMETERS ONLY. HIGHER RESULTS MAY BE ACHIEVED WITH OPTIMUM CONDITIONS.

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