RECOMMENDED CUTTING CONDITIONS

VFX6

	Work Material	Cutting Edge Diameter (inch)	Number of Flutes	Recommended Insert	Cutting Speed **vc** (SFM)	Revolution **n** (min^{-1})	Depth of Cut **apmax** (inch)	Cutting Width **ae** (inch)	Feed per Tooth **fz** (inch/t)	Table Feed **vf** (inch/min)	Chip Removal Rate **Q** ($inch^3$/min)	Estimated cutting power **PC** (HP)	Expected Torque (lbf-ft)	Tool life ratio (%)
S	Titanium Alloy (Ti6Al4V)	**ϕ2.5**	4	LS	130	199	2.362	2.500	.004	3.128	18	17.8	472	40
			4	MS	165	252	2.362	1.500	.004	3.970	14	12.7	266	60
			4	MS	195	298	2.362	1.000	.004	4.692	11	9.6	170	80
			4	HS	195	298	2.362	.500	.005	5.630	7	6.2	110	100
		ϕ3.0	5	LS	130	166	2.953	3.000	.004	3.258	29	27.7	879	40
			5	MS	165	210	2.953	1.800	.004	4.136	22	19.8	495	60
			5	MS	195	248	2.953	1.200	.004	4.887	17	14.9	316	80
			5	HS	195	248	2.953	.600	.005	5.865	10	9.7	205	100
		ϕ4.0	6	LS	130	124	3.543	4.000	.004	2.932	42	39.3	1663	40
			6	MS	165	158	3.543	2.400	.004	3.722	32	28.1	937	60
			6	MS	195	186	3.543	1.600	.004	4.399	25	21.2	599	80
			6	HS	195	186	3.543	.800	.005	5.278	15	13.8	388	100
	Titanium Alloy (Ti-5553)	**ϕ2.5**	4	LS	80	122	2.362	2.500	.003	1.540	9	9.1	392	30
			4	MS	80	122	2.362	1.500	.003	1.540	5	5.2	225	50
			4	MS	100	153	2.362	1.000	.004	2.406	6	5.2	179	70
			4	HS	100	153	2.362	.500	.004	2.406	3	2.9	99	80
		ϕ3.0	5	LS	80	102	2.953	3.000	.003	1.604	14	14.1	730	30
			5	MS	80	102	2.953	1.800	.003	1.604	9	8.1	419	50
			5	MS	100	127	2.953	1.200	.004	2.506	9	8.1	334	70
			5	HS	100	127	2.953	.600	.004	2.506	4	4.5	185	80
		ϕ4.0	6	LS	80	76	3.543	4.000	.003	1.444	20	20.1	1380	30
			6	MS	80	76	3.543	2.400	.003	1.444	12	11.5	794	50
			6	MS	100	95	3.543	1.600	.004	2.256	13	11.5	632	70
			6	HS	100	95	3.543	.800	.004	2.256	6	6.3	349	80

VFX6 (METRIC Standard)

	Work Material	Cutting Edge Diameter (mm)	Number of Flutes	Recommended Insert	Cutting Speed **vc** (SFM)	Revolution **n** (min^{-1})	Depth of Cut **apmax** (inch)	Cutting Width **ae** (inch)	Feed per Tooth **fz** (inch/t)	Table Feed **vf** (inch/min)	Chip Removal Rate **Q** ($inch^3$/min)	Estimated cutting power **PC** (HP)	Expected Torque (lbf-ft)	Tool life ratio (%)
S	Titanium Alloy (Ti6Al4V)	**ϕ63**	4	LS	130	200	2.362	2.480	.004	3.153	18	17.8	468	40
			4	MS	165	254	2.362	1.488	.004	4.002	14	12.7	263	60
			4	MS	195	300	2.362	.992	.004	4.729	11	9.6	168	80
			4	HS	195	300	2.362	.496	.005	5.675	7	6.2	109	100
		ϕ80	5	LS	130	158	2.953	3.150	.004	3.104	29	27.7	923	40
			5	MS	165	200	2.953	1.890	.004	3.939	22	19.8	520	60
			5	MS	195	236	2.953	1.260	.004	4.655	17	14.9	332	80
			5	HS	195	236	2.953	.630	.005	5.586	10	9.7	215	100
		ϕ100	6	LS	130	126	3.543	3.937	.004	2.979	42	39.3	1637	40
			6	MS	165	160	3.543	2.362	.004	3.782	32	28.1	923	60
			6	MS	195	189	3.543	1.575	.004	4.469	25	21.2	590	80
			6	HS	195	189	3.543	.787	.005	5.363	15	13.8	382	100
	Titanium Alloy (Ti-5553)	**ϕ63**	4	LS	80	123	2.362	2.480	.003	1.552	9	9.1	389	30
			4	MS	80	123	2.362	1.488	.003	1.552	5	5.2	223	50
			4	MS	100	154	2.362	.992	.004	2.425	6	5.2	178	70
			4	HS	100	154	2.362	.496	.004	2.425	3	2.9	98	80
		ϕ80	5	LS	80	97	2.953	3.150	.003	1.528	14	14.1	766	30
			5	MS	80	97	2.953	1.890	.003	1.528	9	8.1	440	50
			5	MS	100	121	2.953	1.260	.004	2.387	9	8.1	350	70
			5	HS	100	121	2.953	.630	.004	2.387	4	4.5	194	80
		ϕ100	6	LS	80	78	3.543	3.937	.003	1.467	20	20.1	1358	30
			6	MS	80	78	3.543	2.362	.003	1.467	12	11.5	781	50
			6	MS	100	97	3.543	1.575	.004	2.292	13	11.5	622	70
			6	HS	100	97	3.543	.787	.004	2.292	6	6.3	344	80

∗1 Please note that machining performance varies depending to the conditions such as machine rigidity, work clamping rigidity, coolant supply system, pressure and flow volume etc.
∗2 Internal coolant is recommended. Please use an FMH type arbor for through coolant. Using external coolant in combination with through coolant is even more effective.
∗3 The reference of tool life which we mentioned on the tables,"tool life ratio 100(%)" is when "ae = 20(%) of tool diameter". If "ae" will be bigger than 20(%) of tool diameter,tool life will decrease in "tool life ratio" on the tables.
∗4 The maximum depth of cut (apmax) varies according to the machine rigidity and power.