

## Recommended Cutting Conditions

VFX6

(mm)

Work Material	Cutting Edge Diameter	Number of Flutes	Recommended Insert	vc (m/min)	n (min <sup>-1</sup> )	apmax	ae	fz (mm/t)	vf (mm/min)	Q (cm <sup>3</sup> /min)	Estimated Cutting Power (kW)	Expected Torque (Nm)	Tool Life Ratio (%)	
S Titanium Alloy (Ti6Al4V)	φ63	4	LS	40	202	60	63	0.10	81	306	13.4	634	40	
		4	MS	50	253	60	38	0.10	101	229	9.5	357	60	
		4	MS	60	303	60	25	0.10	121	183	7.2	228	80	
		4	HS	60	303	60	13	0.12	146	110	4.7	148	100	
	φ80	5	LS	40	159	75	80	0.10	80	477	20.8	1250	40	
		5	MS	50	199	75	48	0.10	99	358	14.7	705	60	
		5	MS	60	239	75	32	0.10	119	286	11.2	449	80	
		5	HS	60	239	75	16	0.12	143	172	7.3	291	100	
	φ100	6	LS	40	127	90	100	0.10	76	688	29.6	2218	40	
		6	MS	50	159	90	60	0.10	95	516	20.9	1252	60	
		6	MS	60	191	90	40	0.10	115	413	16.0	798	80	
		6	HS	60	191	90	20	0.12	138	248	10.3	517	100	
	Titanium Alloy (Ti-5553)	φ63	4	LS	25	126	60	63	0.08	40	153	7.0	527	30
			4	MS	25	126	60	38	0.08	40	92	4.0	303	50
			4	MS	30	152	60	25	0.10	61	92	3.8	241	70
			4	HS	30	152	60	13	0.10	61	46	2.1	133	80
φ80		5	LS	25	99	75	80	0.08	40	239	10.8	1038	30	
		5	MS	25	99	75	48	0.08	40	143	6.2	597	50	
		5	MS	30	119	75	32	0.10	60	143	5.9	475	70	
		5	HS	30	119	75	16	0.10	60	72	3.3	263	80	
φ100		6	LS	25	80	90	100	0.08	38	344	15.3	1841	30	
		6	MS	25	80	90	60	0.08	38	206	8.8	1059	50	
		6	MS	30	95	90	40	0.10	57	206	8.4	844	70	
		6	HS	30	95	90	20	0.10	57	103	4.7	466	80	

(Note 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.

(Note 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.

(Note 3) The tool life ratio shows the standard when  $ae = \text{tool diameter} \times 20\%$  is assumed to be 100 when shoulder cutting.

(Note 4) The maximum depth of cut (apmax) varies according to the machine rigidity and power.