

## RECOMMENDED CUTTING CONDITIONS

### VFX5

Work Material	Cutting Edge Diameter (mm)	Number of Flutes	Recommended Insert	vc (m/min)	n (min <sup>-1</sup> )	apmax (mm)	ae (mm)	fz (mm/tooth)	vf (mm/min)	Q (cm <sup>3</sup> /min)	Pc (kW)	Expected Torque (Nm)	TL (%)	
S Titanium Alloy (Ti-Al-4V)	φ40	3	LS	40	318	38	40	0.10	95	145	6.5	194	40	
		3	MS	50	398	38	24	0.10	119	109	4.5	109	60	
		3	MS	60	477	38	16	0.10	143	87	3.5	69	80	
		3	HS	60	477	38	8	0.12	172	52	2.3	45	100	
	φ50	3	LS	40	255	38	50	0.10	76	145	6.5	242	40	
		4	MS	50	318	50	30	0.10	127	191	7.9	237	60	
		4	MS	60	382	50	20	0.10	153	153	6.0	151	80	
		4	HS	60	382	50	10	0.12	183	92	3.9	98	100	
	φ63	5	LS	40	202	60	63	0.10	101	382	16.8	793	40	
		5	MS	50	253	60	38	0.10	126	286	11.8	447	60	
		5	MS	60	303	60	25	0.10	152	229	9.0	285	80	
		5	HS	60	303	60	13	0.12	182	138	5.9	185	100	
	φ80	6	LS	40	159	75	80	0.10	95	573	25.0	1500	40	
		6	MS	50	199	75	48	0.10	119	430	17.6	846	60	
		6	MS	60	239	75	32	0.10	143	344	13.5	539	80	
		6	HS	60	239	75	16	0.12	172	206	8.7	350	100	
	Titanium Alloy (Ti-5Al-5V-5Mo-3Cr)	φ40	3	LS	25	199	38	40	0.08	48	73	3.4	161	30
			3	MS	25	199	38	24	0.08	48	44	1.9	92	50
			3	MS	30	239	38	16	0.10	72	44	1.8	74	70
			3	HS	30	239	38	8	0.10	72	22	1.0	41	90
φ50		4	LS	25	159	50	50	0.08	51	127	5.8	350	30	
		4	MS	25	159	50	30	0.08	51	76	3.4	201	50	
		4	MS	30	191	50	20	0.10	76	76	3.2	160	70	
		4	HS	30	191	50	10	0.10	76	38	1.8	89	90	
φ63		5	LS	25	126	60	63	0.08	51	191	8.7	658	30	
		5	MS	25	126	60	38	0.08	51	115	5.0	378	50	
		5	MS	30	152	60	25	0.10	76	115	4.8	301	70	
		5	HS	30	152	60	13	0.10	76	57	2.6	167	90	
φ80		6	LS	25	99	75	80	0.08	48	286	13.0	1246	30	
		6	MS	25	99	75	48	0.08	48	172	7.5	716	50	
		6	MS	30	119	75	32	0.10	72	172	7.1	570	70	
		6	HS	30	119	75	16	0.10	72	86	3.9	316	90	

\*1 Please note that machining performance differs according to conditions such as the rigidity of the machinery used, workpiece clamping rigidity, the coolant supply system pressure and flow.

\*2 Internal coolant is recommended. For the tool holder, use an FMH arbor with a through coolant system. Use with external lubricating coolant is also effective.

\*3 TL: Based on  $ae = \text{outer diameter} \times 20\%$

\*4 Maximum depth of cut,  $ap$  should be changed depending on machine rigidity and power.