

Recommended cutting conditions

Recommended cutting conditions for TEZD-MS/ML/XL type

Work material	Steel for structure, carbon steel C50 (~280HB)		Alloy steel 1.7223 (280~350HB)		Stainless steel SUS304 (~280HB)		Grey cast iron GG25 (Tensile strength ~350MPa)		Nodular cast iron GGG40 (Tensile strength ~450MPa)	
	V_c (m/min)	f (mm/rev)	n (min ⁻¹)	V_f (mm/min)	n (min ⁻¹)	V_f (mm/min)	n (min ⁻¹)	V_f (mm/min)	n (min ⁻¹)	V_f (mm/min)
V_c (m/min)	75~90		70~90		45		85~110		60~90	
f (mm/rev)	0.3~0.35		0.22~0.25		0.25		0.3~0.4		0.15~0.28	
Drill dia. (mm)	n (min ⁻¹)	V_f (mm/min)	n (min ⁻¹)	V_f (mm/min)	n (min ⁻¹)	V_f (mm/min)	n (min ⁻¹)	V_f (mm/min)	n (min ⁻¹)	V_f (mm/min)
14	1,700	510	1,600	350	1,000	250	1,900	570	1,500	450
15	1,600	480	1,500	350	950	240	1,900	570	1,400	420
16	1,500	450	1,400	340	890	220	1,900	570	1,350	400
17	1,400	450	1,300	330	840	210	1,800	570	1,250	400
18	1,300	450	1,250	310	790	200	1,700	570	1,000	350
19	1,250	440	1,200	300	750	190	1,600	560	1,000	350
20	1,200	420	1,100	280	710	180	1,600	560	1,000	350
21	1,200	420	1,100	280	680	170	1,550	540	1,000	350
22	1,200	420	1,050	260	650	160	1,500	530	1,000	350
23	1,200	420	1,050	260	620	155	1,450	510	1,000	350
24	1,200	420	1,050	260	600	150	1,400	490	1,000	350
25	1,150	400	1,050	260	570	140	1,350	470	1,000	350
26	1,110	390	1,050	260	550	140	1,300	460	1,000	350
27	1,070	370	1,000	250	530	135	1,250	460	950	330
28	1,030	360	1,000	250	510	130	1,200	460	950	330
29	990	350	950	240	495	125	1,150	460	950	330
30	960	340	950	240	480	120	1,150	460	950	330
31	930	330	900	225	460	115	1,100	440	850	300
32	900	315	900	225	445	110	1,100	440	850	300

- Note) 1. Above cutting conditions are for general guidance.
 2. The figures to be adjusted according to machining shape, purpose and rigidity of machine and work clamping.
 3. In case of using TEZD-XL type (8D), recommend to reduce 20% both n and V_f in the above cutting conditions.
 And recommend to guide hole drilling by TEZD-MS type (3D) with the same diameter as the TEZD-XL type (Depth of guide hole is 0.5D).
 4. Please see page 14 for recommended Cutting conditions using TEZ*S inserts.
 5. When machining stainless steel, TEZ*S type is recommended.

● Recommended cutting conditions for TEZD/TEZDtype using TEZ*S inserts

Work material	Titanium alloy 30~42HRC (Ti-6Al-4V)		Stainless steel (~280HB) (SUS304)	
	V_c (m/min)	f (mm/rev)	V_c (m/min)	f (mm/rev)
	35~60		45~80	
	0.15~0.2		0.15~0.2	
Drill dia. (mm)	n (min ⁻¹)	V_f (mm/min)	n (min ⁻¹)	V_f (mm/min)
14	1,130	170	1,360	200
15	1,060	170	1,270	200
16	990	160	1,190	190
17	930	160	1,120	190
18	880	160	1,060	190
19	830	160	1,000	190
20	790	160	950	190

V_c : Cutting speed n : Spindle speed V_f : Feed speed f : feed

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 2. The figures to be adjusted according to machining shape, purpose and rigidity of machine and work clamping.
 3. In case of using TEZD-XL type (8D), recommend to reduce 20% both n and V_f in the above cutting conditions.
 And recommend to guide hole drilling by TEZD-MS type (3D) with the same diameter as the TEZD-XL type (Depth of guide hole is 0.5D).