

RECOMMENDED CUTTING CONDITIONS

Workpiece Material	Aluminium Nitride				Alumina				Zirconia			
	Dia. DC (mm)	Cutting speed (m/min)	Revolution (min ⁻¹)	Feed rate (mm/rev)	Step (mm)	Cutting speed (m/min)	Revolution (min ⁻¹)	Feed rate (mm/rev)	Step (mm)	Cutting speed (m/min)	Revolution (min ⁻¹)	Feed rate (mm/rev)
0.05	3	20000	0.000015	0.001	3	20000	0.00001	0.001	3	20000	0.00001	0.001
0.08	5	20000	0.00003	0.003	5	20000	0.00002	0.002	5	20000	0.00002	0.001
0.1	6	20000	0.0002	0.01	6	20000	0.0001	0.005	6	20000	0.0001	0.003
0.16	9	18000	0.0002	0.01	9	18000	0.0001	0.005	9	18000	0.0001	0.003
0.2	9	15000	0.0002	0.01	9	15000	0.0001	0.005	9	15000	0.0001	0.003
0.32	12	12000	0.0002	0.01	12	12000	0.0001	0.005	12	12000	0.0001	0.003
0.4	15	12000	0.0002	0.01	15	12000	0.0001	0.005	15	12000	0.0001	0.003
0.5	19	12000	0.0002	0.01	19	12000	0.0001	0.005	19	12000	0.0001	0.003
0.6	19	10000	0.0002	0.01	19	10000	0.0001	0.005	19	10000	0.0001	0.003
0.8	25	10000	0.0002	0.01	25	10000	0.0001	0.005	25	10000	0.0001	0.003
1	31	10000	0.0002	0.01	31	10000	0.0001	0.005	31	10000	0.0001	0.003
1.2	30	8000	0.00025	0.01	30	8000	0.00015	0.005	30	8000	0.00015	0.003
1.6	40	8000	0.0003	0.01	40	8000	0.0002	0.005	40	8000	0.0002	0.003
2	38	6000	0.0003	0.01	38	6000	0.0002	0.005	38	6000	0.0002	0.003
3	47	5000	0.0003	0.01	47	5000	0.0003	0.005	47	5000	0.0002	0.003

Workpiece Material	Silicon Carbide Silicon Nitride				Quartz Glass			
	Dia. DC (mm)	Cutting speed (m/min)	Revolution (min ⁻¹)	Feed rate (mm/rev)	Step (mm)	Cutting speed (m/min)	Revolution (min ⁻¹)	Feed rate (mm/rev)
0.05	3	20000	0.000005	0.0005	3	20000	0.000015	0.001
0.08	5	20000	0.00001	0.001	5	20000	0.00003	0.005
0.1	6	20000	0.00005	0.002	6	20000	0.0002	0.05
0.16	9	18000	0.00005	0.002	9	18000	0.0002	0.05
0.2	9	15000	0.00005	0.002	9	15000	0.0002	0.05
0.32	12	12000	0.00005	0.002	12	12000	0.0002	0.05
0.4	15	12000	0.00005	0.002	15	12000	0.0003	0.05
0.5	19	12000	0.00005	0.002	19	12000	0.0003	0.05
0.6	19	10000	0.00005	0.002	19	10000	0.0003	0.05
0.8	25	10000	0.00005	0.002	25	10000	0.0003	0.05
1	31	10000	0.00005	0.002	31	10000	0.0003	0.05
1.2	30	8000	0.00007	0.002	30	8000	0.0004	0.05
1.6	40	8000	0.0001	0.002	40	8000	0.0004	0.05
2	38	6000	0.0001	0.002	38	6000	0.0004	0.05
3	47	5000	0.0001	0.002	47	5000	0.0005	0.05

Note 1) Depending on the type of machine, it is possible to apply cutting speeds over 20000min⁻¹.

Note 2) Use water-soluble coolant or grinding fluid when working.

Note 3) The intermediate diameter revolution is not tabulated. It is matched to the large diameter side and closest drill diameter conditions or by calculating the cutting speed of the closest drill diameter. Set the feed rate per revolution to a suitable value with the recommended feed rate of the closest drill diameter as the standard.