STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) DC (in) ø0.236 - ø0.311	ø0.315 - 0.390	ø0.394 - ø0.469	ø0.472 - ø0.547	ø0.551 - ø0.626	ø0.630 - ø0.783	ø0.787 - ø1.020
P	Low carbon steel (C < 0.3) 1018, 1020, 1026, etc.	262 - 459	0.004 - 0.005	0.005 - 0.010	0.006 - 0.011	0.007 - 0.012	0.008 - 0.014	0.010 - 0.018	0.010 - 0.018
P	High carbon steel (C > 0.3) 1045, 1055, etc.	230 - 394	0.004 - 0.005	0.005 - 0.010	0.006 - 0.011	0.007 - 0.012	0.008 - 0.014	0.010 - 0.018	0.010 - 0.018
P	Low alloy steel 5120, etc.	230 - 394	0.003 - 0.005	0.004 - 0.010	0.006 - 0.011	0.006 - 0.013	0.007 - 0.014	0.009 - 0.016	0.010 - 0.018
P	Alloy steel 4140, 8620, etc.	131 - 295	0.003 - 0.005	0.004 - 0.010	0.006 - 0.011	0.006 - 0.013	0.007 - 0.014	0.009 - 0.016	0.010 - 0.018
M	Stainless steel 304SS, 316SS, 17-4PH, etc.	98 - 230	0.003 - 0.004	0.004 - 0.006	0.005 - 0.007	0.006 - 0.008	0.006 - 0.009	0.006 - 0.010	0.007 - 0.012
K	Gray cast iron Class 25, Class 30, etc.	262 - 591	0.005 - 0.007	0.006 - 0.012	0.008 - 0.014	0.010 - 0.016	0.012 - 0.018	0.014 - 0.022	0.014 - 0.024
K	Ductile cast iron 60-40-18, 60-55-06, etc.	262 - 459	0.005 - 0.007	0.006 - 0.012	0.008 - 0.014	0.010 - 0.016	0.012 - 0.018	0.014 - 0.022	0.014 - 0.024
N	Aluminum alloys 6061, 7075, etc.	262 - 722	0.004 - 0.008	0.008 - 0.014	0.010 - 0.016	0.012 - 0.018	0.014 - 0.020	0.016 - 0.024	0.020 - 0.030
S	Titanium alloys Ti-6Al-4V, etc.	66 - 164	0.002 - 0.003	0.002 - 0.005	0.003 - 0.006	0.004 - 0.011	0.005 - 0.008	0.006 - 0.009	0.007 - 0.011
S	Nickel-based alloys	66 - 164	0.002 - 0.003	0.002 - 0.004	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.005 - 0.009	0.006 - 0.009
H	Hardened steel	66 - 164	0.002 - 0.003	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.009	0.006 - 0.010

Cutting conditions in the above table show standard cutting conditions.
Cutting conditions may change due to the rigidity and power of the machine and the workpiece material.
Machined hole diameter may change depending upon the rigidity of the machine tool or cutting conditions.
In case of L/D = 8,12 drill, the recommended range of cutting speeds and feeds is between the minimum and median values listed above.

CLAMPING KEY FOR MEASURING UN-CLAMPING TORQUE

To check drill body duration, measure un-clamping torque by using a torque-driver
Recommended value of un-clamping torque that means usable limit of a drill body shown in below table.

Clamping key for measuring un-clamping torque:
KHS-TID10-19.99

* The clamping key can be used with general torque drivers.

Head Designation	Recommended value of un-clamping torque that means usable limit of a drill body (N·m)	(cN·m)
DM*100-109	0.2	20
DM*110-119	0.2	20
DM*120-129	0.25	25
DM*130-139	0.25	25
DM*140-149	0.3	30
DM*150-159	0.3	30
DM*160-169	0.35	35
DM*170-179	0.35	35
DM*180-189	0.4	40
DM*190-199	0.4	40