

RECOMMENDED CUTTING CONDITIONS OF MICRO MZE/MZS DRILLS

●MZE(External Coolant)

Work Material	Drill Diameter	φ.0394" – φ.1200" φ 1.0 – φ 2.9mm	
		Conditions Hardness	Cutting Speed (SFM)
P Mild Steel	≤180HB	75	.0035
	180–280HB	65	.003
	280–350HB	55	.0025
M Stainless Steel	≤200HB	50	.0015
K Cast Iron	Tensile Strength ≤350MPa	80	.003
	Ductile Cast Iron Tensile Strength ≤450MPa	70	.003
S Heat Resistant Alloy	—	32	.002
H Hardened Steel	40–60HRC	32	.002

●MZS(Internal Coolant)

Work Material	Drill Diameter	φ.0394" – φ.1200" φ 1.0 – φ 2.9mm	
		Conditions Hardness	Cutting Speed (SFM)
P Mild Steel	≤180HB	200	.0035
	180–280HB	175	.003
	280–350HB	150	.0025
M Stainless Steel	≤200HB	100	.0015
K Cast Iron	Tensile Strength ≤350MPa	190	.003
	Ductile Cast Iron Tensile Strength ≤450MPa	130	.003
N Aluminum Alloy	—	200	.003
S Heat Resistant Alloy	—	65	.0015

■ Special Application Notes:

- For safety and success, always pre-drill the hole with a pilot drill. This is especially true for drilling small sizes less than .078" [2mm].
- Minimum coolant pressure = **800psi** (5.5 MPa).
- Coolant must have Extreme Pressure (**EP**) Additives.
- Positive displacement type coolant pump is required.
- Coolant filter must be less than 5 microns. Fine filtration is necessary to prevent blockage of the coolant Holes.

