

ADRS/ADR/ADRSL/ADRL/ADR-SP

Work Materials	Carbon steels		Alloy Steels		Prehardened Steels Tool Steels Die Steels		Stainless Steels Austenitic		Stainless Steels Martensitic Ferritic	
	1010, 1018, 1035, 1045, 1065		4140, 4340				304, 316		420, 440, 430	
					30~38HRC					
Drill Diameter (mm)	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
Ø0.02~ 0.09	10,000→ 20,000	0.00004~ 0.00006	10,000→ 20,000	0.00004~ 0.00006	10,000→ 20,000	0.00004	10,000→ 20,000	0.00002~ 0.00004	10,000→ 20,000	0.00004~ 0.00006
Ø0.10~ 0.29	19,000~ 13,000	0.00008~ 0.0004	16,000~ 11,000	0.00006~ 0.00028	13,000~ 8,800	0.00004~ 0.00016	10,000~ 5,000	0.00002~ 0.00004	13,000~ 8,800	0.00002~ 0.00004
Ø0.30~ 0.49	13,000~ 12,000	0.0004~ 0.0008	11,000~ 9,700	0.00028~ 0.0004	8,800~ 6,500	0.00012~ 0.0002	5,000~ 4,500	0.00004~ 0.0002	8,800~ 6,500	0.00004~ 0.0002
Ø0.50~ 0.99	12,000~ 9,600	0.0008~ 0.0016	9,700~ 6,400	0.0004~ 0.0008	6,500~ 4,800	0.0002~ 0.0004	4,500~ 3,200	0.0002~ 0.0004	6,500~ 4,800	0.0002~ 0.0004
Ø1.00~ 1.99	9,600~ 6,400	0.0012~ 0.0024	6,400~ 4,000	0.0008~ 0.002	3,100~ 2,400	0.0004~ 0.0012	3,200~ 2,400	0.0004~ 0.0012	4,800~ 3,200	0.0004~ 0.0012
Ø2.00~ 3.00	6,400~ 4,200	0.0028~ 0.004	4,000~ 3,200	0.002~ 0.0032	2,400~ 1,600	0.0008~ 0.0016	2,400~ 1,800	0.0012~ 0.002	3,200~ 2,100	0.0012~ 0.002

Work Materials	Aluminum Alloys		Copper Alloys		Resin	
	6061, 7075					
	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
Drill Diameter (mm)	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
Ø0.02~ 0.09	10,000→ 30,000	0.00004~ 0.00012	10,000→ 20,000	0.00004~ 0.0002	10,000→ 20,000	0.00004~ 0.00012
Ø0.10~ 0.29	22,200~ 16,500	0.0002~ 0.0008	16,000~ 11,000	0.00008~ 0.00032	20,000~ 15,000	0.0002~ 0.0004
Ø0.30~ 0.49	16,500~ 13,000	0.0008~ 0.0016	11,000~ 11,500	0.00032~ 0.0006	15,000~ 15,000	0.0004~ 0.0008
Ø0.50~ 0.99	13,000~ 12,700	0.0016~ 0.0024	11,500~ 9,600	0.0006~ 0.0016	15,000~ 10,000	0.0008~ 0.0016
Ø1.00~ 1.99	12,700~ 6,400	0.0024~ 0.0047	9,600~ 4,800	0.0016~ 0.0032	10,000~ 6,000	0.002~ 0.0028
Ø2.00~ 3.00	6,400~ 5,300	0.005~ 0.008	4,800~ 4,200	0.0032~ 0.006	6,000~ 5,000	0.0028~ 0.004

Drill Diameter	Pecking Distance
Ø0.02~Ø0.49	10% of drill diameter
Ø0.50~Ø1.00	20% of drill diameter
Above Ø1.00	*25-50% of drill diameter

*Start at 25% and increase if needed, to 50%

Remarks:

- 1) Guide-holes are necessary when drilling under Ø1.0mm (0.0394"). Guide-hole prevents chippings and tool breakage during initial drilling.
- 2) Runout (with drill in spindle) should be less than 0.003mm (0.00012").
- 3) If your machine cannot meet the recommended rotation speed, please use the higher speed and adjust the feed rate appropriately.
- 4) For drills under Ø0.5mm (0.0197"), set machine/spindle at the most stable speed rather than following the recommended conditions shown in table.
- 5) For drills under Ø0.1mm (0.0039"), it is recommended to start with the lowest rotation speed indicated on the table.

Reference: 10,000→20,000 should be started from 10,000.