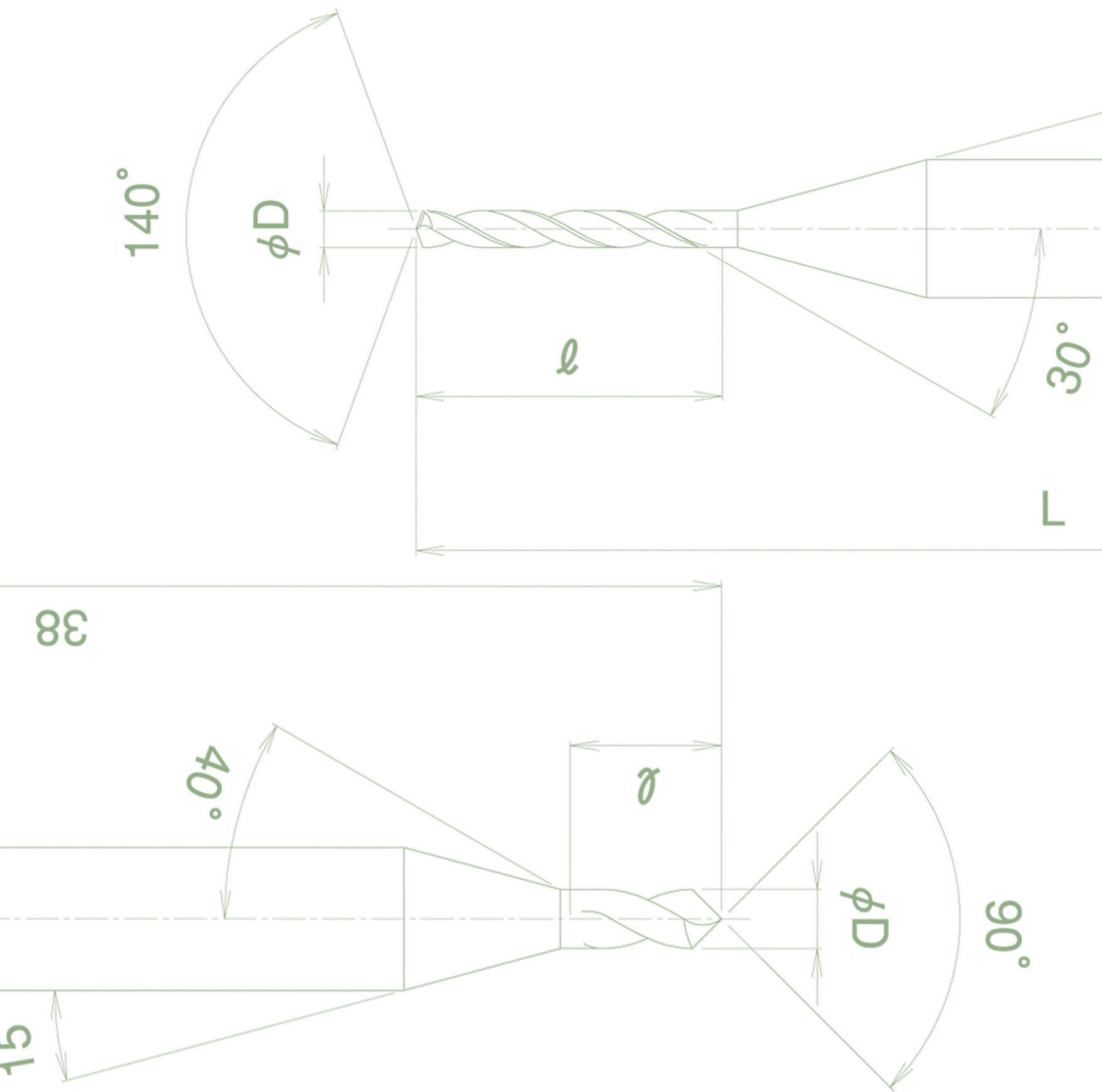

Drilling Conditions

ADRS/ADR/ADRSL/ADRL

Work Materials	Carbon steels 1010, 1018, 1035, 1045, 1065		Alloy Steels 4140, 4340		Prehardened Steels Tool Steels Die Steels 30~38HRC		Stainless Steels Austenitic 304, 316		Stainless Steels Martensitic Ferritic 420, 440, 430	
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 6061, 7075		Copper Alloys		Resin	
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	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.

ADRS-SV/ADR-SV/ADRSL-SV/ADRL-SV

Work Materials	Carbon steels 1010, 1018, 1035, 1045, 1065		Alloy Steels 4140, 4340		Prehardened Steels Tool Steels Die Steels 30~38HRC		Stainless Steels Austenitic 304, 316		Stainless Steels Martensitic Ferritic 420, 440, 430	
Drill Diameter (mm)	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
Ø0.03~0.09	10,000→20,000	0.00004~0.00006	10,000→20,000	0.00004~0.00006	10,000→20,000	0.00004	10,000→15,000	0.00004~0.00006	10,000→20,000	0.00004~0.00008
Ø0.10~0.29	25,000~20,000	0.00008~0.0004	20,000~15,000	0.00006~0.00028	17,000~13,000	0.00004~0.00016	15,000~7,500	0.00002~0.00004	20,000~13,000	0.00002~0.00004
Ø0.30~0.49	20,000~18,000	0.0004~0.0008	15,000	0.00028~0.0004	13,000~10,000	0.00012~0.0002	10,000~8,000	0.00008~0.0004	13,000~9,500	0.00008~0.0004
Ø0.50~0.99	18,000~15,000	0.0008~0.0016	15,000~9,500	0.0004~0.0008	10,000~7,000	0.0002~0.0004	8,000~6,000	0.0006~0.0008	9,500~7,000	0.0006~0.0008
Ø1.00~1.99	15,000~9,500	0.0012~0.0024	9,500~6,000	0.0008~0.002	7,000~4,000	0.0004~0.0012	6,000~4,000	0.0008~0.0016	7,000~4,000	0.0008~0.0016
Ø2.00~3.00	9,500~6,300	0.0028~0.004	6,000~4,800	0.002~0.0032	4,000~3,000	0.0008~0.0016	4,000~3,700	0.0012~0.002	4,000~3,000	0.0012~0.002

Work Materials	Aluminum Alloys 6061, 7075		Copper Alloys	
Drill Diameter (mm)	Speed RPM	Feed IPR	Speed RPM	Feed IPR
Ø0.03~0.09	10,000→30,000	0.0004~0.0002	10,000→20,000	0.00004~0.00012
Ø0.10~0.29	30,000~25,000	0.0002~0.0008	20,000~17,000	0.00008~0.00032
Ø0.30~0.49	25,500~20,000	0.0008~0.0016	17,000~15,000	0.00032~0.0006
Ø0.50~0.99	20,000~18,000	0.0016~0.0024	15,000~13,000	0.0006~0.0016
Ø1.00~1.99	18,000~10,000	0.0024~0.005	13,000~7,500	0.0016~0.0032
Ø2.00~3.00	10,000~7,000	0.005~0.008	7,500~6,500	0.0032~0.006

Drill Diameter	Pecking Distance
Ø0.03~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

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.

ADR-SUS/ADRL-SUS

Work Materials	Stainless Steels Austenitic 304, 316		Stainless Steels Martensitic Ferritic 420, 440, 430		Stainless Steels Precipitation 17-4PH		Nickel Alloys Inconel/Hasteroy		Nickel Alloys Kovar	
Drill Diameter (mm)	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
Ø0.10~0.29	10,000	0.00001~0.00004	12,500~11,200	0.00002~0.00004	7,100	0.00001~0.00003	4,300	0.00001~0.00003	9,500	0.00001~0.00003
Ø0.30~0.49	8,500~7,900	0.00006~0.00012	10,500~10,000	0.00006~0.00012	6,400~6,000	0.00004~0.00008	3,900~3,600	0.00004~0.00008	8,500~7,900	0.00006~0.00012
Ø0.50~0.79	7,600~6,800	0.00016~0.0004	9,600~9,100	0.00016~0.0004	5,700~5,100	0.00014~0.0003	4,900~4,400	0.00012~0.00024	7,600~6,800	0.00016~0.0004
Ø0.80~1.49	6,800~6,400	0.0006~0.0008	8,800~8,000	0.0006~0.0008	5,100~4,800	0.0004~0.0006	3,100~2,900	0.00028~0.0004	6,800~6,400	0.0006~0.0008
Ø1.50~2.09	4,300~3,200	0.0008~0.0012	5,300~4,000	0.0012 0.002	3,200~2,400	0.0008~0.0012	2,000~1,500	0.0008~0.0012	4,300~3,200	0.0012~0.002
Ø2.10~3.00	2,700	0.0012~0.002	3,200	0.0028	2,000	0.0016	1,200	0.0016	2,700	0.0028

Work Materials	Titanium Alloys Ti-6Al-4V	
Drill Diameter (mm)	Speed RPM	Feed IPR
Ø0.10~0.29	7,400	0.00001~0.00003
Ø0.30~0.49	6,600~6,200	0.00004~0.00008
Ø0.50~0.79	5,900~5,300	0.00012~0.00024
Ø0.80~1.49	5,300~5,000	0.00028~0.0004
Ø1.50~2.09	3,400~2,500	0.0008~0.0012
Ø2.10~3.00	2,000	0.0016

Drill Diameter	Pecking Distance
Ø0.10~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.

ADR-DLC/ADRL-DLC

Work Materials	Aluminum Casting		Aluminum 6061, 7075		Copper Alloys	
Drill Diameter (mm)	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
Ø0.10~ 0.29	3,200~ 7,700	0.0004~ 0.0016	31,800~ 22,000	0.0004~ 0.002	22,300~ 11,000	0.00008~ 0.0016
Ø0.30~ 0.49	7,400~ 9,700	0.0016~ 0.0032	21,200~ 19,500	0.002~ 0.004	10,600~ 9,700	0.0016~ 0.0032
Ø0.50~ 1.00	9,500~ 19,100	0.0032~ 0.005	19,100	0.004~ 0.006	9,500~ 6,400	0.0032~ 0.005

Drill Diameter	Pecking Distance
Ø0.10~Ø0.49	10% of drill diameter
Ø0.50~Ø1.00	20% of drill diameter

Remarks:

1) Runout (with drill in spindle) should be less than 0.003mm (0.00012").
2) If your machine cannot meet the recommended rotation speed, please use the higher speed and adjust the feed rate appropriately.
3) For drills under Ø0.5mm (0.0197"), set machine/spindle at the most stable speed rather than following the recommended conditions shown in table.

ADS/ADSL

Work Materials	Carbon steels 1010, 1018, 1035, 1045, 1065		Alloy Steels 4140, 4340		Prehardened Steels Tool Steels Die Steels 30~38HRC		Stainless Steels Austenitic 304, 316		Stainless Steels Martensitic Ferritic 420, 440, 430	
Drill Diameter (mm)	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
Ø0.30~0.59	12,000~10,000	0.0002~0.0004	10,000~9500	0.00012~0.0004	8,500~7,600	0.00008~0.00032	5,300	0.00002~0.00004	8,000~6,300	0.00002~0.00004
Ø0.60~1.09	10,000~9,500	0.0004~0.0008	8,000~6,400	0.00028~0.0006	6,400~4,800	0.00012~0.0004	5,300~4,800	0.00004~0.0002	6,300~5,300	0.00004~0.0002
Ø1.10~2.09	7,200~6,400	0.0008~0.0024	5,800~3,200	0.0004~0.0008	4,400~3,200	0.0004~0.0006	4,300~3,200	0.0002~0.0008	5,300~4,700	0.0002~0.0008
Ø2.10~2.99	6,100~4,400	0.0024~0.0032	3,000~2800	0.0008~0.0016	3,000~2,800	0.0006~0.0008	3,000~2,200	0.0008~0.0012	4,500~3,300	0.0008~0.0012
Ø3.00~5.99	4,300~2,600	0.0032~0.004	2,700~2,000	0.0016~0.0032	2,700~1,900	0.0008~0.0016	2,100~1,300	0.0012~0.002	3,200~1,900	0.0012~0.002
Ø6.00~8.90	2,200~1,900	0.004~0.005	1,600~1,400	0.002~0.004	1,600~1,400	0.0008~0.0024	1,100~800	0.002~0.004	1,600~1,200	0.002~0.004
Ø9.00~13.00	1,600~1,200	0.004~0.005	1,300~1,000	0.002~0.004	1,200~900	0.0016~0.0032	700~500	0.002~0.004	1,100~750	0.002~0.004

Work Materials	Cast Iron		Aluminum Alloys 6061, 7075		Copper Alloys	
Drill Diameter (mm)	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
Ø0.30~0.59	12,000~10,000	0.0004~0.0008	20,000~16,000	0.0008~0.002	20,000~16,000	0.0008~0.002
Ø0.60~1.09	10,000~9,500	0.0004~0.0016	20,000~16,000	0.0024~0.006	20,000~16,000	0.0024~0.006
Ø1.10~2.09	8,700~7,200	0.0024~0.006	16,000~13,000	0.004~0.008	16,000~13,000	0.004~0.008
Ø2.10~2.99	6,800~4,900	0.0024~0.006	13,000~10,000	0.004~0.008	13,000~10,000	0.004~0.008
Ø3.00~5.99	4,800~3,200	0.004~0.008	8,500~6,400	0.004~0.008	8,500~6,400	0.004~0.008
Ø6.00~8.90	2,600~2,000	0.006~0.01	5,300~4,000	0.008~0.012	5,300~4,000	0.008~0.012
Ø9.00~13.00	1,800~1,500	0.008~0.016	3,000~2,500	0.016~0.02	3,000~2,500	0.016~0.02

Drill Diameter	Pecking Distance
Ø0.30~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) It is recommended to start with the lowest speed and feed shown in the table. They may be gradually increased in order to obtain the most appropriate condition.
2) To prevent vibration, overhanging of the tool from the chuck should be minimized.
3) If your machine cannot meet the recommended rotation speed, please use the higher speed and adjust the feed rate appropriately.

ADL/ADLL

Work Materials	Carbon steels 1010, 1018, 1035, 1045, 1065		Alloy Steels 4140, 4340		Prehardened Steels Tool Steels Die Steels 30~38HRC		Stainless Steels Austenitic 304, 316		Stainless Steels Martensitic Ferritic 420, 440, 430	
Drill Diameter (mm)	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
Ø0.30~0.55	10,000	0.00016	9,000	0.00008	7,000	0.00006	4,000	0.00004	4,000	0.00004
Ø0.60~1.05	10,000~9,500	0.0004~0.0008	8,000~6,400	0.00028~0.0006	6,400~4,800	0.00012~0.0004	4,800~3,800	0.00004~0.0002	4,800~3,800	0.00004~0.0002
Ø1.10~2.05	7,200~6,400	0.0008~0.0024	5,800~3,200	0.0004~0.0008	4,400~3,200	0.0004~0.0006	4,300~3,200	0.0002~0.0008	4,300~3,200	0.0002~0.0008
Ø2.10~2.95	6,100~4,400	0.0024~0.0032	3,000~2,800	0.0008~0.0016	3,000~2,800	0.0006~0.0008	3,000~2,200	0.0004~0.0012	3,000~2,200	0.0004~0.0012
Ø3.00~5.95	4,300~2,600	0.0032~0.004	2,700~2,000	0.0016~0.0032	2,700~1,900	0.0008~0.0016	2,100~1,900	0.0012~0.002	2,100~1,900	0.0012~0.002
Ø6.00~8.90	2,200~1,900	0.004~0.005	1,600~1,400	0.002~0.004	1,600~1,400	0.0008~0.0024	1,600~1,200	0.002~0.004	1,600~1,200	0.002~0.004
Ø9.00~13.0	1,600~1,200	0.004~0.005	1,300~1,000	0.002~0.004	1,200~900	0.0016~0.0032	1,100~750	0.002~0.004	1,100~750	0.002~0.004

Work Materials	Cast Iron		Aluminum Alloys 6061, 7075		Copper Alloys	
Drill Diameter (mm)	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
Ø0.30~0.55	10,000	0.0002	10,000	0.0004~0.0008	10,000	0.0004~0.0008
Ø0.60~1.05	10,000~9,500	0.0004~0.0016	20,000~12,000	0.0024~0.006	20,000~12,000	0.0024~0.006
Ø1.10~2.05	8,700~7,200	0.0024~0.006	16,000~13,000	0.004~0.008	16,000~13,000	0.004~0.008
Ø2.10~2.95	6,800~4,900	0.0024~0.006	13,000~10,000	0.004~0.008	13,000~10,000	0.004~0.008
Ø3.00~5.95	4,800~3,200	0.004~0.008	8,500~6,400	0.008~0.01	8,500~6,400	0.008~0.01
Ø6.00~8.90	2,600~2,000	0.006~0.01	5,300~4,000	0.008~0.012	5,300~4,000	0.008~0.012
Ø9.00~13.0	1,800~1,500	0.008~0.012	3,000~2,500	0.012~0.016	3,000~2,500	0.012~0.016

Drill Diameter	Pecking Distance
Ø0.30~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) This drilling condition is based on the length from the holder to drill tip, which is 1.1 times the flute length. When the length from the holder is longer than 1.1 times of the flute length, please reduce the speed and feed appropriately.
2) It is recommended to start with the lowest speed and feed shown in the table. They may be gradually increased in order to obtain the most appropriate condition.
3) The use of drill bushes are recommended for drilling stable and precise holes.

V-ADS

Work Materials	Carbon steels 1010, 1018, 1035, 1045, 1065		Alloy Steels 4140, 4340		Prehardened Steels Tool Steels Die Steels 30~38HRC		Stainless Steels Austenitic 304, 316		Stainless Steels Martensitic Ferritic 420, 440, 430	
Drill Diameter (mm)	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
Ø0.30~0.59	14,000~12,500	0.00024~0.0005	14,000~12,500	0.00016~0.0005	11,000~9,500	0.00008~0.00032	6,600	0.00002~0.00004	10,000~8,000	0.00002~0.00004
Ø0.60~1.09	11,000~9,500	0.0005~0.001	10,000~8,000	0.00032~0.0008	8,000~6,400	0.00012~0.0004	6,600~6,200	0.00004~0.0002	8,000~6,900	0.00004~0.0002
Ø1.10~2.09	8,700~8,000	0.001~0.0028	7,200~6,400	0.0005~0.001	5,800~4,000	0.0004~0.0006	5,600~4,200	0.0002~0.0008	6,900~6,200	0.0002~0.0008
Ø2.10~2.99	7,600~5,500	0.0028~0.004	6,000~4,400	0.001~0.002	4,000~3,300	0.0006~0.0008	3,900~2,900	0.0008~0.0012	5,900~4,300	0.0008~0.0012
Ø3.00~6.00	5,300~3,200	0.004~0.005	4,200~2,500	0.002~0.004	3,200~1,900	0.0008~0.0016	2,800~1,700	0.0012~0.002	4,200~2,500	0.0012~0.002

Work Materials	Cast Iron	
Drill Diameter (mm)	Speed RPM	Feed IPR
Ø0.30~0.59	14,000~12,500	0.0005~0.001
Ø0.60~1.09	12,000	0.0005~0.002
Ø1.10~2.09	11,000~8,000	0.0028~0.008
Ø2.10~2.99	7,600~5,500	0.0028~0.008
Ø3.00~6.00	5,300~3,900	0.005~0.01

Drill Diameter	Pecking Distance
Ø0.30~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) It is recommended to start with the lowest speed and feed shown in the table. They may be gradually increased in order to obtain the most appropriate condition.
2) To prevent vibration, overhanging of the tool from the chuck should be minimized.
3) If your machine cannot meet the recommended rotation speed, please use the higher speed and adjust the feed rate appropriately.

ADPF30

Work Materials	Carbon steels 1010, 1018, 1035, 1045, 1065		Alloy Steels 4140, 4340		Prehardened Steels Tool Steels Die Steels 30~38HRC		Stainless Steels Austenitic 304, 316		Stainless Steels Martensitic Ferritic 420, 440, 430	
Drill Diameter (mm)	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
Ø0.03~ 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~ 0.00008
Ø0.10~ 0.29	15,000~ 10,000	0.00006~ 0.00028	15,000~ 10,000	0.00006~ 0.00028	13,000~ 8,800	0.00004~ 0.00016	10,000~ 5,000	0.00004~ 0.00012	13,000~ 8,800	0.00002~ 0.00004
Ø0.30~ 0.45	10,000~ 9,500	0.00028~ 0.0004	10,000~ 9,500	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~ 0.95	9,500~ 7,700	0.0004~ 0.0008	9,500~ 7,700	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~ 1.90	7,700~ 5,100	0.0008~ 0.002	7,700~ 5,100	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	5,100~ 4,200	0.0024	5,100~ 4,200	0.0024	2,400~ 1,600	0.0008~ 0.0016	2,400~ 1,800	0.0012~ 0.002	3,200~ 2,100	0.0012~ 0.002

ADPN30

Work Materials	Aluminum Alloys 6061, 7075		Copper Alloys		Resin	
Drill Diameter (mm)	Speed RPM	Feed IPR	Speed RPM	Feed IPR	Speed RPM	Feed IPR
Ø0.03~ 0.09	10,000→ 20,000	0.00008~ 0.0002	10,000→ 20,000	0.00008~ 0.0002	10,000→ 20,000	0.00008~ 0.0002
Ø0.10~ 0.29	18,000~ 13,000	0.0002~ 0.0008	16,000~ 11,000	0.00008~ 0.00032	18,000~ 13,000	0.0002~ 0.0008
Ø0.30~ 0.45	13,000~ 10,000	0.0008~ 0.0012	11,000~ 11,500	0.00032~ 0.0006	13,000~ 10,000	0.0008~ 0.0012
Ø0.50~ 0.95	10,000	0.0012	11,500~ 9,600	0.0006~ 0.0016	10,000	0.0012
Ø1.00~ 1.90	10,000~ 5,100	0.0012~ 0.0016	9,600~ 4,800	0.0016~ 0.0032	10,000~ 5,100	0.0012~ 0.0016
Ø2.00~ 3.00	5,100~ 4,200	0.0016	4,800~ 4,200	0.0032~ 0.006	5,100~ 4,200	0.0016

Drill Diameter	Pecking Distance
Ø0.03~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) Runout (with drill in spindle) should be less than 0.003mm (0.00012").
2) If your machine cannot meet the recommended rotation speed, please use the higher speed and adjust the feed rate appropriately.
3) For drills under Ø0.5mm (0.0197"), set machine/spindle at the most stable speed rather than following the recommended conditions shown in table.
4) 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.

ASWR/ASWD

Work Materials	Aluminum Alloys 6061, 7075		Resin	
Drill Diameter (mm)	Speed RPM	Feed IPR	Speed RPM	Feed IPR
Ø0.10~0.29	20,000	0.00004~0.00012	17,000	0.00004~0.00012
Ø0.30~0.45	20,000	0.0002~0.0008	17,000	0.0002~0.0008
Ø0.50~0.75	17,000	0.0004~0.0012	14,500	0.0004~0.0012
Ø0.80~0.95	15,000	0.0008~0.0016	12,800	0.0008~0.0016
Ø1.00~1.40	12,000	0.0012~0.002	10,000	0.0012~0.002
Ø1.50~1.90	9,000	0.0012~0.002	7,700	0.0012~0.002
Ø2.00~2.90	6,500	0.0012~0.002	5,500	0.0012~0.002
Ø3.00	4,200	0.0012~0.002	3,500	0.002

Drill Diameter	Pecking Distance
Ø0.10~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) Runout (with drill in spindle) should be less than 0.003mm (0.00012").
2) If your machine cannot meet the recommended rotation speed, please use the higher speed and adjust the feed rate appropriately.
3) For drills under Ø0.5mm (0.0197"), set machine/spindle at the most stable speed rather than following the recommended conditions shown in table.