

MagicDrill® DRX type

DRX type Recommended Cutting Conditions (Coolant)

Workpiece Material	Recommended Insert Grade (Cutting Speed : m/min)				Cutting Dia. øDc (mm)	Toolholder Type								
	MEGACOAT			Carbide										
	PR1230	PR1225	PR1210	GW15		2D~3D			4D			5D		
	GM GH	SM	GM	SM		f (mm/rev)								
						GM	GH	SM	GM	GH	SM	GM	GH	SM
Low Carbon Steel	☆ 120-240	★ 120-240			ø13.5~ø15	0.06~0.10	0.06~0.10	0.04~0.10	0.05~0.08	0.05~0.08	0.04~0.08	0.04~0.07	0.04~0.07	0.04~0.08
					ø16~ø18	0.06~0.12	0.06~0.12	0.06~0.12	0.05~0.10	0.05~0.10	0.05~0.10	0.05~0.08	0.05~0.08	0.04~0.09
					ø19~ø26	0.08~0.14	0.08~0.14	0.06~0.14	0.06~0.12	0.08~0.12	0.05~0.12	0.06~0.10	0.06~0.10	0.04~0.10
					ø27~ø60	0.08~0.14	0.08~0.14	0.06~0.14	0.06~0.12	0.08~0.12	0.05~0.12	0.06~0.10	0.06~0.10	0.04~0.10
Carbon Steel	★ 100-180	☆ 100-180			ø13.5~ø15	0.04~0.14	0.04~0.14	0.04~0.10	0.04~0.10	0.04~0.10	0.04~0.08	0.04~0.08	0.04~0.08	0.04~0.07
					ø16~ø18	0.06~0.16	0.06~0.16	0.06~0.12	0.05~0.12	0.05~0.12	0.05~0.10	0.05~0.10	0.05~0.10	0.05~0.08
					ø19~ø26	0.08~0.20	0.08~0.20	0.06~0.14	0.07~0.16	0.07~0.16	0.05~0.12	0.06~0.12	0.06~0.12	0.05~0.10
					ø27~ø60	0.08~0.20	0.08~0.20	0.06~0.14	0.07~0.16	0.07~0.16	0.05~0.12	0.06~0.12	0.06~0.12	0.05~0.10
Alloy steel	★ 100-160	☆ 100-160			ø13.5~ø15	0.04~0.14	0.04~0.14	0.04~0.10	0.04~0.10	0.04~0.10	0.04~0.08	0.04~0.08	0.04~0.08	0.04~0.07
					ø16~ø18	0.06~0.16	0.06~0.16	0.06~0.12	0.05~0.12	0.05~0.12	0.05~0.10	0.05~0.10	0.05~0.10	0.05~0.08
					ø19~ø26	0.08~0.20	0.08~0.20	0.06~0.14	0.07~0.16	0.07~0.16	0.05~0.12	0.06~0.12	0.06~0.12	0.05~0.10
					ø27~ø60	0.08~0.20	0.08~0.20	0.06~0.14	0.07~0.16	0.07~0.16	0.05~0.12	0.06~0.12	0.06~0.12	0.05~0.10
Die Steel	★ 80-150	☆ 80-150			ø13.5~ø15	0.04~0.08	0.04~0.08	0.04~0.08	0.04~0.07	0.04~0.07	0.04~0.07	0.04~0.06	0.04~0.06	0.04~0.06
					ø16~ø18	0.06~0.12	0.06~0.12	0.06~0.10	0.05~0.10	0.05~0.10	0.05~0.08	0.04~0.08	0.04~0.08	0.04~0.07
					ø19~ø26	0.08~0.15	0.08~0.15	0.06~0.12	0.06~0.12	0.06~0.12	0.06~0.10	0.05~0.10	0.05~0.10	0.05~0.08
					ø27~ø60	0.08~0.15	0.08~0.15	0.06~0.12	0.06~0.12	0.06~0.12	0.06~0.10	0.05~0.10	0.05~0.10	0.05~0.08
Stainless Steel	☆ 70-140	★ 70-140			ø13.5~ø15	0.06~0.10	0.06~0.10	0.04~0.10	0.05~0.08	0.05~0.08	0.04~0.08	0.04~0.07	0.04~0.08	0.04~0.08
					ø16~ø18	0.06~0.10	0.06~0.10	0.06~0.12	0.05~0.08	0.05~0.08	0.05~0.11	0.04~0.07	0.04~0.07	0.04~0.10
					ø19~ø26	0.08~0.12	0.08~0.12	0.06~0.14	0.07~0.10	0.07~0.10	0.06~0.12	0.07~0.10	0.07~0.10	0.06~0.12
					ø27~ø60	0.08~0.12	0.08~0.12	0.06~0.14	0.07~0.10	0.07~0.10	0.06~0.12	0.07~0.10	0.07~0.10	0.06~0.12
Gray Cast Iron			★ 100-150		ø13.5~ø15	0.08~0.14	~	~	0.06~0.12	~	~	0.04~0.10	~	~
					ø16~ø18	0.08~0.18	~	~	0.08~0.16	~	~	0.06~0.12	~	~
					ø19~ø26	0.08~0.20	~	~	0.08~0.18	~	~	0.06~0.14	~	~
					ø27~ø60	0.08~0.20	~	~	0.08~0.18	~	~	0.06~0.14	~	~
Nodular Cast Iron			★ 80-120		ø13.5~ø15	0.08~0.12	~	~	0.06~0.10	~	~	0.04~0.08	~	~
					ø16~ø18	0.08~0.16	~	~	0.08~0.14	~	~	0.06~0.10	~	~
					ø19~ø26	0.08~0.18	~	~	0.08~0.16	~	~	0.06~0.12	~	~
					ø27~ø60	0.08~0.18	~	~	0.08~0.16	~	~	0.06~0.12	~	~
Non-ferrous Metals				★ 200-600	ø13.5~ø15	~	~	0.06~0.12	~	~	0.05~0.10	~	~	0.04~0.08
					ø16~ø18	~	~	0.08~0.14	~	~	0.06~0.12	~	~	0.05~0.10
					ø19~ø26	~	~	0.08~0.16	~	~	0.06~0.14	~	~	0.05~0.12
					ø27~ø60	~	~	0.08~0.20	~	~	0.08~0.16	~	~	0.07~0.14
Titanium Alloy				★ 40-70	ø13.5~ø15	~	~	0.05~0.08	~	~	0.04~0.07	~	~	0.04~0.06
					ø16~ø18	~	~	0.05~0.08	~	~	0.04~0.07	~	~	0.04~0.06
					ø19~ø26	~	~	0.06~0.10	~	~	0.06~0.08	~	~	0.05~0.07
					ø27~ø60	~	~	0.06~0.10	~	~	0.06~0.08	~	~	0.05~0.07

• Apply a sufficient amount of coolant.

★ : 1st. Recommendation ☆ : 2nd. Recommendation

Cutting Conditions by Application

Applications		Flat Surface	Slanted Surface	Half Cylindrical	Hole Expansion	Concave Surface	Pre-drilled Surface	Stacked Plates
Workpiece Shape								
DRX type	Cutting Speed (m/min)	120	120	120	120	120	120	Not Available
	Feed Rate (mm/rev)	0.1	0.05	0.05	0.05	Concave part 0.05 Continuous part 0.1	0.05	Not Available
Coolant (internal)		Yes	Yes	Yes	Yes	Yes	Yes	Not Available

* Cutting width (Torus-shaped part) when machining pre-drilled surface

Drill type	2D~3D	4D	5D
Cutting width (Torus-shaped part)	1/10XD or less	less than corner radius	Not Recommended

◆ Max. Depth for Machining with Outer Coolant

When machining with outer coolant, Max. depth should be 1.5 times of the cutting diameter.