

Recommended Cutting Conditions

DRZ Recommended Cutting Conditions (Coolant)

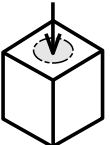
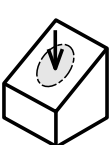
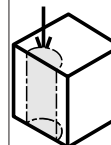
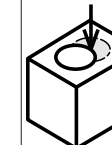
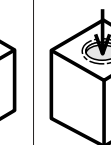
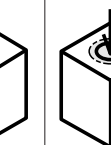
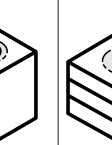
Workpiece Material	Recommended Grade (Vc m/min)										Cutting Diameter ϕ D (mm)	Holder Type (Cutting Depth)			
	MEGACOAT			PVD Coated Carbide						Carbide		2D	3D	4D	5D
	PR1230	PR1225	PR1210	PR660	PR830	PR915	PR1025	PR930	PR905	KW10					
	Standard SP SU	Standard SP SU	Standard	Standard SP SU	Standard SP	Standard	Standard SP SU	Standard SP	Standard	Standard SP					
Low-carbon Steel	★	☆		☆	☆	☆	☆	☆			ϕ 13- ϕ 15.5	0.06-0.10	0.06-0.10	0.04-0.08	-
											ϕ 16- ϕ 26.5	0.08-0.15	0.08-0.15	0.06-0.12	-
											ϕ 27- ϕ 50	0.08-0.18	0.08-0.15	0.06-0.12	0.05-0.09
											ϕ 50~	0.08-0.18	0.08-0.15	0.06-0.12	-
Carbon Steel	★	☆		☆	☆	☆	☆	☆			ϕ 13- ϕ 15.5	0.06-0.10	0.06-0.10	0.04-0.08	-
											ϕ 16- ϕ 26.5	0.08-0.15	0.08-0.15	0.06-0.12	-
											ϕ 27- ϕ 50	0.08-0.18	0.08-0.15	0.06-0.12	0.05-0.09
											ϕ 50~	0.08-0.18	0.08-0.15	0.06-0.12	-
Alloy Steel	★	☆		☆	☆	☆	☆	☆			ϕ 13- ϕ 15.5	0.06-0.10	0.06-0.10	0.04-0.08	-
											ϕ 16- ϕ 26.5	0.08-0.15	0.08-0.15	0.06-0.12	-
											ϕ 27- ϕ 50	0.08-0.18	0.08-0.15	0.06-0.12	0.05-0.09
											ϕ 50~	0.08-0.18	0.08-0.15	0.06-0.12	-
Mold Steel	★	☆		☆	☆	☆	☆	☆			ϕ 13- ϕ 15.5	0.04-0.08	0.04-0.08	0.03-0.07	-
											ϕ 16- ϕ 26.5	0.08-0.12	0.06-0.10	0.06-0.08	-
											ϕ 27- ϕ 50	0.08-0.15	0.06-0.12	0.06-0.10	0.04-0.07
											ϕ 50~	0.08-0.15	0.06-0.12	0.06-0.10	-
Stainless Steel	☆	★		☆	☆	☆	☆	☆			ϕ 13- ϕ 15.5	0.04-0.08	0.04-0.08	0.03-0.06	-
											ϕ 16- ϕ 26.5	0.06-0.10	0.06-0.10	0.04-0.08	-
											ϕ 27- ϕ 50	0.06-0.10	0.06-0.12	0.04-0.10	0.04-0.07
											ϕ 50~	0.06-0.12	0.06-0.12	0.04-0.10	-
Gray Cast Iron			★						☆	☆	ϕ 13- ϕ 15.5	0.08-0.12	0.08-0.10	0.06-0.08	-
											ϕ 16- ϕ 26.5	0.10-0.18	0.10-0.15	0.08-0.12	-
											ϕ 27- ϕ 50	0.10-0.20	0.10-0.18	0.08-0.15	0.06-0.10
											ϕ 50~	0.10-0.20	0.10-0.18	0.08-0.15	-
Nodular Cast Iron			★						☆	☆	ϕ 13- ϕ 15.5	0.08-0.12	0.08-0.10	0.06-0.08	-
											ϕ 16- ϕ 26.5	0.10-0.18	0.10-0.15	0.08-0.12	-
											ϕ 27- ϕ 50	0.10-0.20	0.10-0.18	0.08-0.15	0.06-0.10
											ϕ 50~	0.10-0.20	0.10-0.18	0.08-0.15	-
Non-ferrous Metals										★	ϕ 13- ϕ 15.5	0.06-0.12	0.06-0.10	0.04-0.08	-
											ϕ 16- ϕ 26.5	0.08-0.18	0.08-0.15	0.06-0.15	-
											ϕ 27- ϕ 50	0.08-0.20	0.08-0.18	0.06-0.15	0.05-0.10
											ϕ 50~	0.08-0.20	0.08-0.18	0.06-0.15	-
Titanium Alloys										★	ϕ 13- ϕ 15.5	0.05-0.06	0.05-0.06	0.05-0.06	-
											ϕ 16- ϕ 26.5	0.05-0.07	0.05-0.07	0.05-0.07	-
											ϕ 27- ϕ 50	0.06-0.08	0.06-0.08	0.06-0.08	0.04-0.05
											ϕ 50~	0.06-0.08	0.06-0.08	0.06-0.08	-

• Apply a sufficient amount of coolant.

★: 1st Recommendation ☆: 2nd Recommendation

◆ Cutting Conditions by Application

(Workpiece Material: C50)

Applications	Flat Surface	Slanted Surface	Half Cylindrical	Hole Expansion	Concave Surface	Pre-drilled Surface	Stacked Plates
Workpiece Shape							
DRZ type	Cutting Speed (m/min)	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	Not Available
Coolant (Internal)	Yes	Yes	Yes	Yes	Yes	Yes	Not Available

* For ap, in case of cutting pre-drilled workpieces (same as when using a Boring Bar).

Drill type	2D-3D type	4D-5D type
ap	0.1xD or less	Not recommended

e.g.) In case of cutting using DRZ3090-10 (3xD type)

① For milling, pre-drilled hole should be cut bigger than ϕ 24 (ϕ 30-0.1x30x2)

② For turning, ap should be set under ap = 3mm (0.1x30)

◆ For ap in case of using outer coolant system

• In case of using outer coolant system, chip evacuation will be bad.

Therefore ap should be measured within 1.5times (1.5xD) of cutting diameter (ϕ D).

