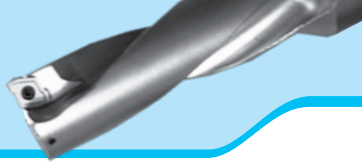


Magic Drill DRZ



DRZ Recommended Cutting Conditions (Coolant)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: sfm)										Cutting Diameter ØDc (inch)	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	★	☆	-	☆	☆	☆	☆	☆	-	-	Ø0.512~Ø0.610	.0024~.0039	.0024~.0039	.0016~.0032	-
	400-725	400-725	-	400-725	400-800	400-800	400-725	400-725	-	-	Ø0.630~Ø1.024	.0032~.0059	.0032~.0059	.0024~.0047	-
											Ø1.063~Ø1.968	.0032~.0071	.0032~.0059	.0024~.0047	.0020~.0035
											Ø1.969~	.0032~.0071	.0032~.0059	.0024~.0047	-
Carbon Steel	★	☆	-	☆	☆	☆	☆	☆	-	-	Ø0.512~Ø0.610	.0024~.0039	.0024~.0039	.0016~.0032	-
	325-525	325-525	-	325-525	400-600	400-600	325-525	325-525	-	-	Ø0.630~Ø1.024	.0032~.0059	.0032~.0059	.0024~.0047	-
											Ø1.063~Ø1.968	.0032~.0071	.0032~.0059	.0024~.0047	.0020~.0035
											Ø1.969~	.0032~.0071	.0032~.0059	.0024~.0047	-
Alloy Steel	★	☆	-	☆	☆	☆	☆	☆	-	-	Ø0.512~Ø0.610	.0024~.0039	.0024~.0039	.0016~.0032	-
	250-460	250-460	-	250-460	325-525	325-525	250-460	250-460	-	-	Ø0.630~Ø1.024	.0032~.0059	.0032~.0059	.0024~.0047	-
											Ø1.063~Ø1.968	.0032~.0071	.0032~.0059	.0024~.0047	.0020~.0035
											Ø1.969~	.0032~.0071	.0032~.0059	.0024~.0047	-
Mold Steel	★	☆	-	☆	☆	☆	☆	☆	-	-	Ø0.512~Ø0.610	.0016~.0032	.0016~.0032	.0012~.0028	-
	230-425	230-425	-	230-425	250-500	250-500	230-425	230-425	-	-	Ø0.630~Ø1.024	.0032~.0047	.0024~.0039	.0024~.0032	-
											Ø1.063~Ø1.968	.0032~.0059	.0024~.0047	.0024~.0039	.0016~.0028
											Ø1.969~	.0032~.0059	.0024~.0047	.0024~.0039	-
Stainless Steel (Austenitic related)	☆	★	-	☆	☆	☆	☆	☆	-	-	Ø0.512~Ø0.610	.0016~.0032	.0016~.0032	.0012~.0024	-
	200-400	200-400	-	200-400	230-460	230-460	200-400	200-400	-	-	Ø0.630~Ø1.024	.0024~.0039	.0024~.0039	.0016~.0032	-
											Ø1.063~Ø1.968	.0024~.0039	.0024~.0047	.0016~.0032	.0016~.0028
											Ø1.969~	.0024~.0047	.0024~.0047	.0016~.0032	-
Gray Cast Iron	-	-	★	-	-	-	-	-	☆	☆	Ø0.512~Ø0.610	.0032~.0047	.0032~.0039	.0024~.0032	-
			325-500	-	-	-	-	-	325-500	325-400	Ø0.630~Ø1.024	.0039~.018	.0039~.0059	.0032~.0047	-
											Ø1.063~Ø1.968	.0039~.0078	.0039~.018	.0032~.0059	.0024~.0039
											Ø1.969~	.0039~.0078	.0039~.018	.0032~.0059	-
Nodular Cast Iron	-	-	★	-	-	-	-	-	☆	☆	Ø0.512~Ø0.610	.0032~.0047	.0032~.0039	.0024~.0032	-
			250-400	-	-	-	-	-	250-400	250-325	Ø0.630~Ø1.024	.0039~.018	.0039~.0059	.0032~.0047	-
											Ø1.063~Ø1.968	.0039~.0078	.0039~.018	.0032~.0059	.0024~.0039
											Ø1.969~	.0039~.0078	.0039~.018	.0032~.0059	-
Non-ferrous Metals	-	-	-	-	-	-	-	-	-	★	Ø0.512~Ø0.610	.0024~.0047	.0024~.0039	.0016~.0032	-
										600-2000	Ø0.630~Ø1.024	.0032~.0071	.0032~.0059	.0024~.0059	-
											Ø1.063~Ø1.968	.0032~.0078	.0032~.0071	.0024~.0059	.0020~.0039
Titanium Alloys	-	-	-	-	-	-	-	-	-	★	Ø0.512~Ø0.610	.0020~.0024	.0020~.0024	.0020~.0024	-
										130-230	Ø0.630~Ø1.024	.0020~.0028	.0020~.0028	.0020~.0028	-
											Ø1.063~Ø1.968	.0024~.0032	.0024~.0032	.0024~.0032	.0016~.0020
											Ø1.969~	.0024~.0032	.0024~.0032	.0024~.0032	-

• Apply a sufficient amount of coolant.

★ 1st Recommendation ☆: 2nd Recommendation



Magic Drill DRZ

Drilling

Recommended Cutting Conditions : Holeshot Drill (DR)

Workpiece Material	Feed Rate (ipr)	Recommended Cutting Condition (Cutting Speed SFM)							Remarks
		Cermet	PVD Coated				MEGACOAT	Carbide	
		TN60	PR660	PR830	PR905	PR915	PR1230	KW10	
Low Carbon Steel	.0015-.0035	-	☆ 800~900	☆ 800~900	-	-	★ 800~900	-	Coolant
Carbon Steel	.005-.009	-	☆ 400~800	☆ 400~800	-	-	★ 400~800	-	
Alloy Steel	.004-.010	-	☆ 250~750	☆ 250~750	-	-	★ 250~750	-	
Tool Steel	.004-.010	-	☆ 250~750	☆ 250~750	-	-	★ 250~750	-	
Stainless Steel (Austenitic)	.0025-.006	-	☆ 200~600	☆ 200~600	-	-	★ 200~600	-	
Gray Cast Iron	.005-.011	-	-	-	★ 400~800	-	-	☆ 400~800	
Nodular Cast Iron (Ductile)	.004-.010	-	-	-	★ 300~500	-	-	☆ 300~500	
Non-ferrous Metal	.008-.010	☆ 1800~2000	-	-	-	-	-	★ 1800~2000	
Heat Resistant Alloy (Inconel 718)	.0010-.0015	-	-	☆ 75~150	-	☆ 100~150	★ 75~150	-	
Titanium Alloy	.0025-.0030	-	-	-	★ 100~210	★ 100~210	-	☆ 150~250	

★ : 1st Recommendation ☆ : 2nd Recommendation



Magic Drill DR

Drilling



Recommended Cutting Conditions : Coremaster Coredrill (CD)

Workpiece Material	Feed Rate (ipr)	Recommended Cutting Condition (Cutting Speed SFM)							Remarks
		Cermet	PVD Coated				MEGACOAT	Carbide	
		TN60	PR660	PR830	PR905	PR915	PR1230	KW10	
Low Carbon Steel	.0015-.0035	-	☆ 800~900	☆ 800~900	-	-	★ 800~900	-	Coolant
Carbon Steel	.005-.009	-	☆ 400~800	☆ 400~800	-	-	★ 400~800	-	
Alloy Steel	.004-.010	-	☆ 250~750	☆ 250~750	-	-	★ 250~750	-	
Tool Steel	.004-.010	-	☆ 250~750	☆ 250~750	-	-	★ 250~750	-	
Stainless Steel (Austenitic)	.0025-.006	-	☆ 200~600	☆ 200~600	-	-	★ 200~600	-	
Gray Cast Iron	.005-.011	-	-	-	★ 400~800	-	-	☆ 400~800	
Nodular Cast Iron (Ductile)	.004-.010	-	-	-	★ 300~500	-	-	☆ 300~500	
Non-ferrous Metal	.008-.010	☆ 1800~2000	-	-	-	-	-	★ 1800~2000	
Heat Resistant Alloy (Inconel 718)	.0010-.0015	-	-	☆ 75~150	-	☆ 100~150	★ 75~150	-	
Titanium Alloy	.0025-.0030	-	-	-	★ 100~210	★ 100~210	-	☆ 150~250	

★ : 1st Recommendation ☆ : 2nd Recommendation

Recommended Cutting Conditions : Mini-Magic Drill (DRS)

Workpiece Material	Feed Rate (ipr)	Recommended Grade (sfm)		
		MEGACOAT		PVD Coated Carbide
		PR1230	PR1210	PR660
Low Carbon Steel	.0024	★ 270~330	-	☆ 270~330
Carbon Steel	.003~.004	★ 270~330	-	☆ 270~330
Alloy Steel	.0016~.0024	★ 270	-	☆ 270
Mold Steel	.0016~.0024	★ 270	-	☆ 270
Stainless Steel (Austenitic related)	.002~.0024	★ 230~270	-	☆ 230~270
Gray Cast Iron	.003~.004	-	★ 80~100	-

Technical Information

Recommended Cutting Conditions : Stinger Drill (SDR)

Material	Condition	Insert Grade*	SFM	FPT
Copper		TN60	900-2000	0.001-0.003
		KW10	800-1900	0.001-0.003
High Temp Alloys		PR830	75-125	0.0005-0.0008
Stainless Steel	17-4	PR830	450	0.0009-0.0012
	300 Series	CA2335	300-500	0.0012-0.0015
		PR830	400-600	0.0012-0.0015
	304	CA2335	300-600	0.0008-0.0012
		PR830	400-700	0.0008-0.0012
	400 Series	CA2335	400-600	0.0012-0.0015
PR830		500-700	0.0012-0.0015	
Steel, Low Carbon	Annealed	TN60	600-900	0.0012-0.0018
		PR830	500-700	0.0012-0.0018
	Carburized, 35-50 Rc	TN60	300-400	0.0012-0.0018
		PR830	250-350	0.0012-0.0018
Steel, Medium Carbon	17-32 Rc	TN60	500-700	0.0012-0.003
		PR830	400-600	0.0012-0.003
Titanium Alloys		KW10	150-250	0.0008-0.0012
Tool Steel	Annealed	TN60	350-450	0.001-0.0015
		TN60	150-250	0.0007-0.0012
4130, 4140, 4150	Annealed	TN60	500-700	0.0012-0.003
	35-50 Rc	PR830	400-600	0.0012-0.003
6150	Annealed	TN60	500-600	0.0012-0.0015
		PR830	400-600	0.0012-0.0015
Aluminum		TN60	1000+	0.002-0.006
		KW10	900-1800	0.002-0.006
Brass		TN60	900-1500	0.001-0.003
		KW10	800-1400	0.001-0.003
Bronze		TN60	500-900	0.001-0.003
		KW10	400-600	0.001-0.003
Cast Iron	Gray	TN60	500-900	0.001-0.003
		KW10	300-500	0.001-0.003
		CA2335	300-500	0.001-0.003
	Nodular (Ductile)	TN60	500-700	0.001-0.003
		KW10	300-500	0.001-0.003
		CA2335	350-450	0.001-0.0022
	Malleable	TN60	400-800	0.001-0.003
		KW10	300-500	0.001-0.003
		CA2335	300-500	0.001-0.003

*Unless noted, use the same grade insert in all pockets



Technical
Information

Drilling