

Recommended Cutting Conditions

◆ TGF insert (Ground Chipbreaker)

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)								① f for Grooving (mm/rev) ② f for Longitudinal turning (mm/rev) ③ // ap (mm)				Remarks
	Cermet			PVD Coated Carbide		Carbide	CBN	PCD	TGF32% 033~050	TGF32% 075~095	TGF32% 100~145	TGF32% 150~250	
	TN90	TC40	TC60	PR930	PR1115	KW10	KBN510	KPD001 (KPD010)					
Carbon Steel	☆ 150-220	☆ 150-220	☆ 100-150	☆ 80-180	★ 80-180	-	-	-	①0.01~0.05 ②Not recom. ③Not recom.	①0.02~0.07 ②Not recom. ③Not recom.	①0.03~0.08 ②0.03~0.06 ③Max. 0.2	①0.03~0.08 ②0.03~0.06 ③Max. 0.2	
Alloy Steel	☆ 130-200	☆ 130-200	☆ 80-130	☆ 80-160	★ 80-160	-	-	-	①0.01~0.04 ②Not recom. ③Not recom.	①0.02~0.06 ②Not recom. ③Not recom.	①0.03~0.07 ②0.02~0.05 ③Max. 0.2	①0.03~0.07 ②0.02~0.05 ③Max. 0.2	
Stainless Steel	☆ 70-150	-	☆ 60-100	☆ 60-130	★ 60-130	-	-	-	①0.01~0.04 ②Not recom. ③Not recom.	①0.02~0.06 ②Not recom. ③Not recom.	①0.03~0.07 ②0.02~0.05 ③Max. 0.2	①0.03~0.07 ②0.02~0.05 ③Max. 0.2	
Cast Iron	-	-	-	-	-	★ 60-100	-	-	①0.01~0.05 ②Not recom. ③Not recom.	①0.02~0.07 ②Not recom. ③Not recom.	①0.03~0.08 ②0.03~0.06 ③Max. 0.2	①0.03~0.08 ②0.03~0.06 ③Max. 0.2	
Aluminum	-	-	-	-	-	★ 150-400	-	★ 150-2000	①0.01~0.05 ②Not recom. ③Not recom.	①0.02~0.07 ②Not recom. ③Not recom.	①0.03~0.08 ②0.03~0.06 ③Max. 0.2	①0.03~0.08 ②0.03~0.06 ③Max. 0.2	
Brass	-	-	-	-	-	★ 150-300	-	★ 200-800	①0.01~0.04 ②Not recom. ③Not recom.	①0.02~0.06 ②Not recom. ③Not recom.	①0.03~0.07 ②0.02~0.05 ③Max. 0.2	①0.03~0.07 ②0.02~0.05 ③Max. 0.2	

★ : 1st Recommendation ☆ : 2nd Recommendation

◆ TG insert (Ground Chipbreaker)

⚙ changes to GBA.

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)								Feed Rate (mm/rev)					Remarks
	Cermet			PVD Coated Carbide		Carbide	CBN	PCD	TG○○% 075~095	TG○○% 125~200	TG○○% 230~300	TG○○% 330~400	TG○○% 430~450	
	TN60	TC40	TC60	PR630	PR930	KW10	KBN510	KPD001 (KPD010)						
Carbon Steel	★ 150-220	-	-	-	-	-	-	-	0.03-0.07	0.03-0.08	0.05-0.1	0.05-0.12	0.05-0.12	
Alloy Steel	★ 130-200	-	-	-	-	-	-	-	0.02-0.06	0.03-0.07	0.05-0.09	0.05-0.1	0.05-0.1	

* Above cutting condition is for external grooving. Set both cutting speed and feed rate lower than 10% for internal grooving.

★ : 1st Recommendation ☆ : 2nd Recommendation

◆ GH insert (Ground Chipbreaker)

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)								① f for Grooving (mm/rev) ② f for Longitudinal turning (mm/rev) ③ // ap (mm)				Remarks
	Cermet			PVD Coated Carbide		Ceramic			GH 40~50	GH 55~70	GH 75~80	GH 100~120	
	TN90	TC40	TC60	PR630	PR930	KW10	A65	A66N					
Carbon Steel	☆ 150-220	☆ 150-220	☆ 100-150	☆ 80-200	★ 80-180	-	-	-	①0.07~0.2 ②0.07~0.15 ③Max. 1.0	①0.07~0.2 ②0.07~0.15 ③Max. 1.0	①0.1~0.25 ②0.1~0.2 ③Max. 1.5	①0.15~0.3 ②0.15~0.25 ③Max. 2.0	
Alloy Steel	☆ 130-200	☆ 130-200	☆ 80-130	☆ 80-180	★ 80-160	-	-	-	①0.07~0.18 ②0.07~0.13 ③Max. 1.0	①0.07~0.18 ②0.07~0.13 ③Max. 1.0	①0.1~0.23 ②0.1~0.18 ③Max. 1.5	①0.15~0.27 ②0.15~0.22 ③Max. 2.0	
Stainless Steel	☆ 70-150	-	☆ 60-100	☆ 60-150	★ 60-130	-	-	-	①0.07~0.16 ②0.07~0.13 ③Max. 1.0	①0.07~0.16 ②0.07~0.13 ③Max. 1.0	①0.1~0.21 ②0.1~0.18 ③Max. 1.5	①0.15~0.25 ②0.15~0.22 ③Max. 2.0	
Cast Iron	-	-	-	-	-	★ 60-100	☆ 150-300	☆ 150-300	KW10 ①0.07~0.2 ②0.07~0.15 ③Max. 1.0 A65 / A66N ①0.03~0.07 ②Not recom. ③Not recom.	KW10 ①0.07~0.2 ②0.07~0.15 ③Max. 1.0 A65 / A66N ①0.03~0.07 ②Not recom. ③Not recom.	KW10 ①0.1~0.25 ②0.1~0.2 ③Max. 1.5 A65 / A66N ①0.05~0.09 ②Not recom. ③Not recom.	KW10 ①0.15~0.3 ②0.15~0.25 ③Max. 2.0 A65 / A66N ①0.05~0.09 ②Not recom. ③Not recom.	
Aluminum	-	-	-	-	-	★ 150-400	-	-	①0.07~0.2 ②0.07~0.15 ③Max. 1.0	①0.07~0.2 ②0.07~0.15 ③Max. 1.0	①0.1~0.25 ②0.1~0.2 ③Max. 1.5	①0.15~0.3 ②0.15~0.25 ③Max. 2.0	
Brass	-	-	-	-	-	★ 150-300	-	-	①0.07~0.2 ②0.07~0.15 ③Max. 1.0	①0.07~0.2 ②0.07~0.15 ③Max. 1.0	①0.1~0.25 ②0.1~0.2 ③Max. 1.5	①0.15~0.3 ②0.15~0.25 ③Max. 2.0	
Hard Materials	-	-	-	-	-	-	☆ 40-80	☆ 40-80	①0.02~0.05 ②0.01~0.03 ③Max. 0.1	①0.02~0.05 ②0.01~0.03 ③Max. 0.2	①0.02~0.05 ②0.01~0.04 ③Max. 0.2		

* Above cutting condition is for external grooving. Set both cutting speed and feed rate lower than 10% for internal grooving.

★ : 1st Recommendation ☆ : 2nd Recommendation

◆ GHU insert (Molded Chipbreaker)

Workpiece Material	Recommended Insert Grade (Cutting Speed: m/min)								① f for Grooving (mm/rev) ② f for Longitudinal turning (mm/rev) ③ // ap (mm)			Remarks
	Cermet			CVD Coated Carbide	PVD Coated Carbide		Ceramic		GHU 40	GHU 50	GHU 60	
	TN60	TC40	TC60	CR9025	PR630	PR930	A65	A66N				
Carbon Steel	☆ 130-200	-	-	☆ 80-180	-	-	-	-	①0.06~0.12 ②0.05~0.1 ③Max. 1.0	①0.06~0.12 ②0.05~0.1 ③Max. 1.0	①0.06~0.15 ②0.05~0.12 ③Max. 1.5	
Alloy Steel	☆ 100-180	-	-	☆ 80-160	-	-	-	-	①0.06~0.12 ②0.05~0.1 ③Max. 1.0	①0.06~0.12 ②0.05~0.1 ③Max. 1.0	①0.06~0.15 ②0.05~0.12 ③Max. 1.5	
Stainless Steel	-	-	-	☆ 60-130	-	-	-	-	①0.06~0.1 ②0.05~0.08 ③Max. 0.8	①0.06~0.1 ②0.05~0.08 ③Max. 0.8	①0.06~0.12 ②0.05~0.1 ③Max. 1.2	

* Above cutting condition is for external grooving. Set both cutting speed and feed rate lower than 10% for internal grooving.

★ : 1st Recommendation ☆ : 2nd Recommendation

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Grooving