

Recommended Cutting Data

Negative

ISO	Workpiece materials	Hardness	Cutting Range	Application	Geometries	Grade	Min-Optimum-Max			
							Cutting Speed Vc(m/min)	Depth of Cut ap(mm)	Feed rate f(mm)	
P	Low Carbon Steel	≤HB180	superfinishing &Finishing	Continuous	PS	GP91TF	220-300-380	0.08-0.15-0.30	0.03-0.08-0.15	
			Finishing	Continuous	QF	GP31TM	220-300-380	0.40-0.80-1.50	0.04-0.12-0.22	
						GP91TM	200-280-350	0.40-1.00-2.00	0.08-0.20-0.30	
						GP1105	220-280-380	0.40-0.80-2.00	0.08-0.15-0.35	
						GP1115	200-260-360	0.40-0.80-2.00	0.08-0.15-0.35	
						GP1120	200-260-360	0.40-0.80-2.00	0.08-0.15-0.35	
						GP1225	180-240-320	0.40-0.80-2.00	0.08-0.15-0.35	
			Semi-finishing	Continuous	QM	GP91TM	200-260-330	0.50-1.50-3.00	0.15-0.22-0.35	
						GP1105	200-260-360	0.80-2.00-4.00	0.15-0.20-0.40	
						GP1115	180-230-320	0.80-2.00-4.00	0.15-0.20-0.40	
						GP1120	180-230-320	0.80-2.00-4.00	0.15-0.20-0.40	
				Interruption		GP1225	160-210-300	0.80-2.00-4.00	0.15-0.20-0.40	
						GP31TM	220-300-380	0.30-1.00-3.00	0.05-0.12-0.28	
				Continuous	TP	GP91TM	200-280-350	0.30-1.20-3.00	0.05-0.15-0.28	
						GP31TM	200-280-350	0.50-1.00-3.00	0.10-0.15-0.35	
				Continuous	TS	GP91TM	200-260-330	0.50-1.20-3.00	0.10-0.20-0.35	
						GP31TM	180-240-330	1.00-1.50-3.50	0.18-0.20-0.35	
						GP91TM	180-230-320	1.00-1.50-3.50	0.18-0.25-0.40	
						GP1120	180-220-320	1.00-2.50-4.50	0.18-0.25-0.45	
				Interruption		SV	GP1225	160-200-300	1.00-2.50-4.50	0.18-0.25-0.45
							GP1105	130-190-270	1.50-3.50-6.00	0.20-0.30-0.60
			Roughing	Continuous	QR	GP1225	120-170-250	1.50-3.50-6.00	0.20-0.30-0.60	
						GP1135	110-150-230	1.50-3.50-6.00	0.20-0.30-0.60	
			Heavy Cutting	Continuous		QH	GP1105	100-150-240	3.00-6.00-12.0	0.35-0.60-1.10
					GP1225		90-140-210	3.00-6.00-12.0	0.35-0.60-1.10	
					GP1135		80-130-190	3.00-6.00-12.0	0.35-0.60-1.10	
			Interruption							
	Carbon Steel & Alloy Steel	HB180-280	superfinishing &Finishing	Continuous	PS	GP91TF	200-270-350	0.08-0.15-0.30	0.03-0.08-0.15	
			Finishing	Continuous	QF	GP31TM	200-270-350	0.40-0.80-1.50	0.04-0.12-0.22	
						GP91TM	180-250-330	0.40-1.00-2.00	0.08-0.20-0.30	
						GP1105	200-250-340	0.40-0.80-2.00	0.08-0.15-0.35	
						GP1115	180-230-320	0.40-0.80-2.00	0.08-0.15-0.35	
						GP1120	180-230-320	0.40-0.80-2.00	0.08-0.15-0.35	
						GP1225	160-200-300	0.40-0.80-2.00	0.08-0.15-0.35	
			Semi-finishing	Continuous	QM	GP91TM	180-230-310	0.50-1.50-3.00	0.15-0.20-0.35	
GP1105						160-230-320	0.80-2.00-4.00	0.15-0.22-0.40		
GP1115						140-210-300	0.80-2.00-4.00	0.15-0.20-0.40		
GP1120						140-210-300	0.80-2.00-4.00	0.15-0.20-0.40		
Interruption				GP1225		120-190-280	0.80-2.00-4.00	0.15-0.20-0.40		
				GP31TM		200-270-350	0.30-1.00-2.50	0.05-0.12-0.28		
Continuous				TP	GP91TM	180-250-330	0.30-1.20-2.50	0.05-0.15-0.28		
					GP31TM	180-250-330	0.50-1.00-3.00	0.10-0.15-0.35		
Continuous										
Continuous										
Continuous										

Recommended Cutting Data

Negative

ISO	Workpiece materials	Hardness	Cutting Range	Application	Geometries	Grade	Min-Optimum-Max				
							Cutting Speed Vc(m/min)	Depth of Cut ap(mm)	Feed rate f(mm)		
P	Carbon Steel & Alloy Steel	HB180-280	Semi-finishing	Continuous	SV	GP31TM	160-220-310	1.00-1.50-3.50	0.18-0.20-0.35		
						GP91TM	160-210-300	1.00-1.50-3.50	0.18-0.25-0.40		
				Interrtuption		GP1120	140-200-300	1.00-2.50-4.50	0.18-0.25-0.45		
						GP1225	120-180-280	1.00-2.50-4.50	0.18-0.25-0.45		
			Finishing	Continuous	QR	GP1105	120-180-260	1.50-3.50-6.00	0.20-0.30-0.60		
						GP1225	110-160-240	1.50-3.50-6.00	0.20-0.30-0.60		
				Interrtuption		GP1135	100-140-220	1.50-3.50-6.00	0.20-0.30-0.60		
						Heavy Cutting	Continuous	QH	GP1105	90-140-230	3.00-6.00-12.0
			GP1225	80-130-200	3.00-6.00-12.0				0.35-0.60-1.10		
			Interrtuption	GP1135	70-120-180		3.00-6.00-12.0		0.35-0.60-1.10		
				HB280-350	Finishing		Continuous		QF	GP31TM	180-250-320
			GP91TM			170-230-300		0.40-1.00-2.00		0.08-0.20-0.30	
		GP1105	160-200-270			0.40-0.80-2.00		0.08-0.15-0.35			
		GP1115	150-180-250			0.40-0.80-2.00		0.08-0.15-0.35			
		GP1120	150-180-250			0.40-0.80-2.00		0.08-0.15-0.35			
		GP1225	130-150-230			0.40-0.80-2.00		0.08-0.15-0.35			
		Semi-finishing	Continuous		QM	GP91TM	160-210-300	0.50-1.50-3.00	0.15-0.22-0.35		
						GP1105	120-180-250	0.80-2.00-4.00	0.15-0.20-0.40		
						GP1115	110-170-240	0.80-2.00-4.00	0.15-0.20-0.40		
						GP1120	110-170-240	0.80-2.00-4.00	0.15-0.20-0.40		
						GP1225	100-150-220	0.80-2.00-4.00	0.15-0.20-0.40		
						Continuous	TP	GP31TM	180-250-320	0.30-1.00-2.50	0.05-0.12-0.28
			GP91TM	170-230-300	0.30-1.20-2.50			0.05-0.15-0.28			
			Continuous	TS	GP31TM		170-230-300	0.50-1.00-3.00	0.10-0.15-0.35		
					GP91TM		150-210-280	0.50-1.20-3.00	0.10-0.20-0.35		
			Continuous	SV	GP31TM		140-190-270	1.00-1.50-3.50	0.18-0.20-0.35		
					GP91TM		140-180-260	1.00-1.50-3.50	0.18-0.25-0.40		
					GP1120	110-160-240	1.00-2.50-4.50	0.18-0.25-0.45			
					GP1225	100-140-220	1.00-2.50-4.50	0.18-0.25-0.45			
					Roughing	Continuous	QR	GP1105	100-150-210	2.00-3.50-6.50	0.20-0.30-0.60
								GP1225	90-140-200	2.00-3.50-6.50	0.20-0.30-0.60
			Interrtuption	GP1135		80-120-180	2.00-3.50-6.50	0.20-0.30-0.60			
				Heavy Cutting		QH	GP1105	80-110-190	3.00-6.00-12.0	0.35-0.60-1.10	
			GP1225				70-100-170	3.00-6.00-12.0	0.35-0.60-1.10		
		GP1135	60-90-150				3.00-6.00-12.0	0.35-0.60-1.10			

Recommended Cutting Data

Negative

ISO	Workpiece materials	Hardness	Cutting Range	Application	Geometries	Grade	Min-Optimum-Max		
							Cutting Speed Vc(m/min)	Depth of Cut ap(mm)	Feed rate f(mm)
M	stainless steel 303,304 and 316, etc.	≤HB300	superfinishing &Finishing	Continuous	PS	GS3115	120-190-250	0.08-0.15-0.30	0.03-0.08-0.15
						GS3125	100-170-230	0.08-0.15-0.30	0.03-0.08-0.15
			Finishing	Continuous	SF	GS3115	120-190-250	0.10-0.80-1.50	0.08-0.10-0.30
				Continuous		LF	GM3215	120-160-200	0.40-0.90-1.50
				Interrtuption	GM3225		80-130-180	0.40-0.90-1.50	0.05-0.12-0.20
				Semi-finishing	Continuous	SM	GM1115	200-250-300	1.00-2.00-3.00
			GM3215				120-160-200	1.00-2.00-3.00	0.15-0.20-0.35
			GM1125				180-230-280	1.00-2.00-3.00	0.15-0.20-0.35
			GM3225				80-130-180	1.00-2.00-3.00	0.15-0.20-0.35
			Interruption		LV	GM3215	120-160-200	0.80-2.20-4.50	0.15-0.24-0.32
						GM3225	80-130-180	0.80-2.20-4.50	0.15-0.24-0.32
			Continuous		LM	GM1115	200-250-300	0.80-1.80-3.50	0.08-0.18-0.40
						GM3215	120-160-200	0.80-1.80-3.50	0.08-0.18-0.40
						GM1125	180-230-280	0.80-1.80-3.50	0.08-0.18-0.40
						Interrtuption	GM3225	80-130-180	0.80-1.80-3.50
			Roughing	Continuous	LR	GM1115	200-250-300	1.50-3.00-5.00	0.15-0.30-0.50
						GM3215	120-160-200	1.50-3.00-5.00	0.15-0.30-0.50
						GM1125	180-230-280	1.50-3.00-5.00	0.15-0.30-0.50
						Interrtuption	GM3225	80-130-180	1.50-3.00-5.00
K	Gray cast iron FC200, FC250, FC300 etc.	≤HB300	Finishing &Semi-finishing	Continuous	UK	GK1115	230-350-500	0.50-1.50-3.00	0.10-0.20-0.40
				Interrtuption		GK1125	220-320-480	0.50-1.50-3.00	0.10-0.20-0.40
			Roughing	Continuous	HK	GK1115	220-320-480	0.50-2.00-4.00	0.10-0.25-0.50
				Interrtuption		GK1125	210-300-450	0.50-2.00-4.00	0.10-0.25-0.50
			Heavy Cutting	Continuous	Flat	GK1115	210-300-450	1.00-2.50-6.00	0.20-0.30-0.60
				Interrtuption		GK1125	200-280-430	1.00-2.50-6.00	0.20-0.30-0.60
	Ductile cast iron FCD450,FCD600 etc.	≤HB300	Finishing &Semi-finishing	Continuous	UK	GK1120	180-260-380	0.50-1.50-3.00	0.10-0.20-0.40
				Interrtuption		GK1130	160-230-350	0.50-1.50-3.00	0.10-0.20-0.40
			Roughing	Continuous	HK	GK1120	180-240-360	0.50-2.00-4.00	0.10-0.25-0.50
				Interrtuption		GK1130	160-210-340	0.50-2.00-4.00	0.10-0.25-0.50
			Heavy Cutting	Continuous	Flat	GK1120	180-220-350	1.00-2.50-6.00	0.20-0.30-0.60
				Interrtuption		GK1130	160-200-330	1.00-2.50-6.00	0.20-0.30-0.60

Recommended Cutting Data

Positive

ISO	Workpiece materials	Hardness	Cutting Range	Application	Geometries	Grade	Min-Optimum-Max		
							Cutting Speed Vc(m/min)	Depth of Cut ap(mm)	Feed rate f(mm)
P	Low Carbon Steel	≤HB180	superfinishing & Finishing	Continuous	PS	GP91TF	220-300-380	0.08-0.15-0.30	0.03-0.08-0.15
				Continuous	GS	GP91TF	220-300-380	0.20-0.30-1.50	0.02-0.05-0.08
			Finishing	Continuous	MM	GP31TM	220-280-340	0.10-0.50-1.00	0.03-0.10-0.20
						GP91TM	200-250-310	0.10-0.60-1.50	0.03-0.12-0.20
						GP1105	190-240-320	0.10-0.60-1.50	0.05-0.10-0.20
						GP1115	180-220-300	0.10-0.60-1.50	0.05-0.10-0.20
						GP1225	170-200-280	0.10-0.60-1.50	0.05-0.10-0.20
			Finishing & Semi-finishing	Continuous	GP	GP31TM	200-250-300	0.30-0.80-1.50	0.05-0.12-0.22
						GP91TM	180-230-300	0.30-1.00-1.80	0.05-0.15-0.22
						GP1115	170-200-280	0.40-1.00-2.50	0.07-0.12-0.30
						GP1120	170-200-280	0.40-1.00-2.50	0.07-0.12-0.30
						GP1225	150-180-260	0.40-1.00-2.50	0.07-0.12-0.30
			Finishing & Semi-finishing	Continuous	TP	GP31TM	200-250-300	0.30-1.00-3.00	0.05-0.12-0.25
						GP91TM	180-230-300	0.30-1.20-3.00	0.05-0.15-0.25
			Roughing	Continuous	KM	GP1225	140-160-240	1.00-2.00-3.50	0.13-0.20-0.40
				Interruption		GP1225	130-150-230	1.00-2.00-3.50	0.13-0.20-0.40
	Carbon Steel & Alloy Steel	HB180-280	superfinishing & Finishing	Continuous	PS	GP91TF	200-250-330	0.08-0.15-0.30	0.03-0.08-0.15
				Continuous	GS	GP91TF	200-250-330	0.20-0.30-1.50	0.02-0.05-0.08
			Finishing	Continuous	MM	GS3115	120-160-200	0.50-0.70-1.50	0.05-0.10-0.20
						GM3215	120-160-200	0.50-0.70-1.50	0.05-0.10-0.20
						GM1115	200-250-300	0.50-0.70-1.50	0.05-0.10-0.20
						GM1125	180-230-280	0.50-0.70-1.50	0.05-0.10-0.20
						GM3225	80-130-180	0.50-0.70-1.50	0.05-0.10-0.20
			Finishing & Semi-finishing	Continuous	GP	GM1115	200-250-300	0.40-1.00-2.50	0.07-0.12-0.30
						GM3215	120-160-200	0.40-1.00-2.50	0.07-0.12-0.30
						GM1125	180-230-280	0.40-1.00-2.50	0.07-0.12-0.30
						GM3225	80-130-180	0.40-1.00-2.50	0.07-0.12-0.30
			Finishing & Semi-finishing	Continuous	TP	GP31TM	180-210-280	0.30-1.00-3.00	0.05-0.12-0.25
						GP91TM	160-190-270	0.30-1.20-3.00	0.05-0.15-0.25
			Roughing Cutting	Continuous	KM	GP1225	110-130-200	1.00-2.00-3.50	0.13-0.20-0.40
				Interruption		GP1225	100-120-190	1.00-2.00-3.50	0.13-0.20-0.40

Recommended Cutting Data

Positive

ISO	Workpiece materials	Hardness	Cutting Range	Application	Geometries	Grade	Min-Optimum-Max					
							Cutting Speed Vc(m/min)	Depth of Cut ap(mm)	Feed rate f(mm)			
P	Carbon Steel & Alloy Steel	HB280-350	Finishing	Continuous	MM	GP31TM	160-220-300	0.10-0.50-1.00	0.03-0.10-0.20			
						GP91TM	140-200-280	0.10-0.60-1.50	0.03-0.12-0.20			
						GP1105	140-180-240	0.10-0.60-1.50	0.05-0.10-0.20			
						GP1115	130-160-230	0.10-0.60-1.50	0.05-0.10-0.20			
						GP1225	120-140-210	0.10-0.60-1.50	0.05-0.10-0.20			
			Finishing &Semi-finishing	Continuous	GP	GP31TM	160-200-270	0.30-0.80-1.50	0.05-0.12-0.22			
						GP91TM	130-160-250	0.30-1.00-1.80	0.05-0.15-0.22			
						GP1115	120-160-210	0.40-1.00-2.50	0.07-0.12-0.30			
						GP1120	120-160-210	0.40-1.00-2.50	0.07-0.12-0.30			
						GP1225	100-140-220	0.40-1.00-2.50	0.07-0.12-0.30			
			Finishing &Semi-finishing	Continuous	TP	GP31TM	160-200-270	0.30-1.00-3.00	0.05-0.12-0.25			
						GP91TM	130-160-250	0.30-1.20-3.00	0.05-0.15-0.25			
			Roughing	Continuous	KM	GP1225	90-110-180	1.00-2.00-3.50	0.13-0.20-0.40			
				Interruption		GP1225	80-100-170	1.00-2.00-3.50	0.13-0.20-0.40			
M	stainless steel 303, 304 and 316, etc.	≤HB300	superfinishing &Finishing	Continuous	PS	GS3125	100-170-230	0.08-0.15-0.30	0.03-0.08-0.15			
				Continuous	GS	GS3125	100-170-230	0.20-0.30-1.50	0.02-0.05-0.08			
			Finishing	Continuous	MM	GS3115	120-160-200	0.50-0.70-1.50	0.05-0.10-0.20			
						GM3215	120-160-200	0.50-0.70-1.50	0.05-0.10-0.20			
						GM1115	200-250-300	0.50-0.70-1.50	0.05-0.10-0.20			
						GM1125	180-230-280	0.50-0.70-1.50	0.05-0.10-0.20			
						GM3225	80-130-180	0.50-0.70-1.50	0.05-0.10-0.20			
			Semi-finishing	Continuous	GP	GM1115	200-250-300	0.40-1.00-2.50	0.07-0.12-0.30			
						GM3215	120-160-200	0.40-1.00-2.50	0.07-0.12-0.30			
						GM1125	180-230-280	0.40-1.00-2.50	0.07-0.12-0.30			
						GM3225	80-130-180	0.40-1.00-2.50	0.07-0.12-0.30			
			K	Gray cast iron FC200, FC250, FC300 etc.	≤HB250	Finishing &Semi-finishing	Continuous	GP	GK1115	180-280-380	0.30-0.80-2.00	0.05-0.12-0.25
							Interruption		GK1125	160-250-350	0.30-0.80-2.00	0.05-0.12-0.25
Roughing	Continuous	KM				GK1115	180-260-360	1.00-2.00-4.00	0.13-0.20-0.40			
	Interruption					GK1125	160-230-340	1.00-2.00-4.00	0.13-0.20-0.40			
Ductile cast iron FCD450, FCD600 etc.	≤HB270	Finishing &Semi-finishing		Continuous	GP	GK1115	160-250-350	0.30-0.80-2.00	0.05-0.12-0.25			
				Interruption		GK1125	140-230-330	0.30-0.80-2.00	0.05-0.12-0.25			
		Roughing		Continuous	KM	GK1115	160-230-330	1.00-2.00-4.00	0.13-0.20-0.40			
				Interruption		GK1125	140-200-310	1.00-2.00-4.00	0.13-0.20-0.40			
N	Titanium Alloy	HB90-100	Finishing &Semi-finishing	Continuous	AL	GN9115	250-700-970	0.50-1.20-3.00	0.05-0.10-0.30			
				Interruption	AL	GN9120	250-680-960	0.50-1.20-3.50	0.05-0.10-0.30			
		HB60-90		Continuous	AL	GN9130	250-650-950	0.50-1.20-4.00	0.05-0.10-0.30			
				Continuous	AL	GN9115	1000-1400-2100	0.50-1.20-3.00	0.05-0.10-0.30			
				Interruption	AL	GN9120	950-1300-2000	0.50-1.20-3.50	0.05-0.10-0.30			
				Interruption	AL	GN9130	950-1200-1950	0.50-1.20-4.00	0.05-0.10-0.30			