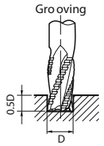
STANDARD MILLING CONDITION / AG-mill Heavy

LIST 6403

Work Material / Milling Conditions	Structural Steels, Carbon Steels		Alloy Steels, Pre-Hardened Steels		Mold Steels, Stainless Steels		Nickel Alloys, Titanium Alloys		Cast Irons		Aluminum Alloys, Copper Alloys, Nonferrous Alloys	
Dia. of Mill	150 - 155 SF M		115 - 125 SF M		95 - 105 SF M		75 - 80 SF M		175 - 185 SF M		330 - 350 SFM	
inch	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)
1/4	2,300	11.2	1,800	7.7	1,500	5.2	1,200	3.3	2,800	31.1	5,200	53.0
5/16	1,900	11.5	1,400	7.6	1,200	5.1	1,000	3.5	2,200	31.0	4,100	52.2
3/8	1,600	11.5	1,200	7.7	1,000	4.9	790	3.3	1,800	31.6	3,500	53.0
1/2	1,200	11.2	920	7.7	760	5.3	600	3.6	1,400	31.6	2,600	51.9
5/8	940	11.2	730	7.7	610	5.3	480	3.5	1,100	30.0	2,100	52.0
3/4	780	10.5	610	7.7	510	4.7	400	3.1	920	28.9	1,700	52.0
7/8	670	9.4	520	7.0	440	4.0	340	2.6	790	26.1	1,500	46.7
1	580	10.5	460	6.3	380	4.1	300	2.7	690	26.8	1,300	46.0
1-1/4	470	7.4	370	4.4	310	3.2	240	2.5	550	16.9	1,000	29.6
1-1/2	390	7.0	310	4.1	260	3.2	200	2.1	460	10.3	870	18.7
2	290	5.1	230	3.3	150	2.2	120	1.5	310	7.3	610	13.7

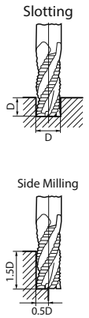


1) In dry milling which is recommended air blow, reduce the RPM and feed to 70% of above table values.
2) Adjust milling condition when unusual vibration or different sound occur.

STANDARD MILLING CONDITION / AG-mill Roughing

LIST 6485

Work Material / Milling Conditions	Structural Steels, Carbon Steels		Alloy Steels, Pre-Hardened Steels		Mold Steels, Stainless Steels		Nickel Alloys, Titanium Alloys		Cast Irons		Aluminum Alloys, Copper Alloys, Nonferrous Alloys	
Dia. of Mill	120 - 130 SF M		90 - 100 SF M		70 - 80 SF M		60 - 65 SF M		145 - 150 SF M		280 - 285 SFM	
inch	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)	RPM	Feed (IPM)
1/4	1,900	10.4	1,400	7.3	1,100	4.0	950	3.1	2,200	12.6	4,300	48.3
5/16	1,500	11.0	1,200	7.5	1,000	4.6	720	3.1	1,800	13.3	3,400	51.3
3/8	1,300	11.0	1,000	7.6	760	4.6	630	3.2	1,500	13.5	2,900	51.7
1/2	950	11.0	720	7.6	570	4.7	470	3.3	1,100	13.5	2,200	51.7
5/8	760	11.0	570	7.5	460	4.7	380	3.3	900	13.5	1,700	51.3
3/4	630	11.0	480	7.5	380	4.5	320	3.3	750	13.5	1,400	50.8
7/8	540	11.8	410	8.6	330	5.3	270	3.6	640	16.3	1,200	59.2
1	470	11.4	360	7.9	290	5.0	240	3.2	560	15.7	1,100	54.4
1-1/4	380	11.4	290	7.7	230	4.8	190	3.5	450	15.2	860	55.6
1-1/2	320	8.0	240	4.7	190	3.4	160	2.6	370	10.1	720	38.8
2	240	5.3	180	3.7	140	2.5	120	1.7	280	7.2	540	25.9



1) In dry milling which is recommended air blow, reduce the RPM and feed to 70% of above table values.
2) Adjust milling condition when unusual vibration or different sound occur.

NACHI AMERICA INC.

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March 2016

NACHI

AG-mill Heavy
AG-mill Roughing

Super performance from a Low Cost End mill

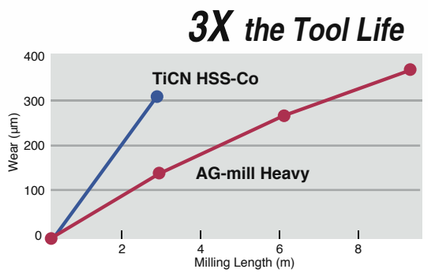
AG-mill Heavy
AG-mill Roughing

Surface Roughness (enlarge picture)

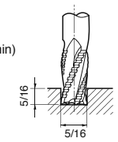
AG-mill Heavy | AG-mill Roughing

AG-mill Heavy — Excellent Chipping & Wear Resistance

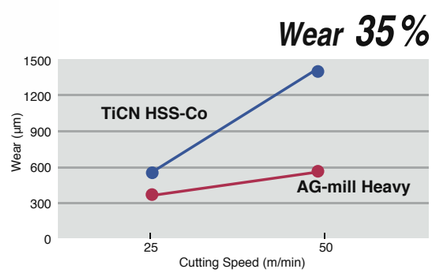
Groove milling of AG-mill Heavy



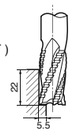
Milling condition
Tool : ϕ7.9375mm(5/16'')
Cutting Speed : 2,390rpm (197 SFM) (60m/min)
Feed : 363mm/min (14.3 IPM)
Parts Material : 1050 (S50C) 190HB
Cutting Fluid : Wet (Water Soluble)



Side milling of AG-mill Heavy



Milling condition
Tool : ϕ22mm (0.866'')
Feed : 0.062mm/t (0.00244 IPT)
Parts Material : D2 (SKD11) 210 HB
Cutting Fluid : Air (Air blow)



List No.6403 | INCH SIZES

EDP #	L6403	Dia. of Mill	Shank Diameter	Length of Cut	No. of Flutes	Overall Length
1380600	PKAG8-2	1/4	3/8	5/8	4	2-7/16
1380617	PKAG10-2	5/16	3/8	3/4	4	2-1/2
1380623	PKAG12-2	3/8	3/8	3/4	4	2-1/2
1380630	PKAG16-3	1/2	1/2	1-1/4	4	3-1/4
1380646	PKAG20-4	5/8	5/8	1-5/8	4	3-3/4
1380652	PKAG24-5	3/4	3/4	1-5/8	4	3-7/8
1380669	PKAG28-6	7/8	7/8	1-7/8	4	4-1/8
1380675	PKAG32-7	1	1	2	6	4-1/2
1380681	PKAG40-8	1-1/4	1-1/4	2	6	4-1/2
1380698	PKAG48-8	1-1/2	1-1/4	2	6	4-1/2
1380703	PKAG64-8	2	1-1/4	2	8	4-1/2

1 per tube

Selection Chart

●:Great ○:Good △:OK

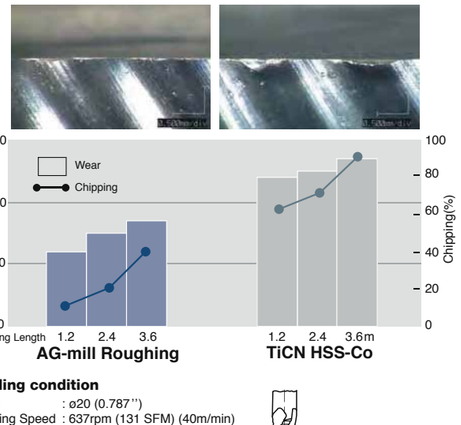
Side Milling			Grooving			Profile Milling	Rib Process	Workpiece Material																		
Rough	Semi-Finish	Finish	Rough	Semi-Finish	Finish			Structural Steel	Carbon Steel		Alloy Steel	Pre-hardened Steel	Die Steel	Hardend Steel			Stainless Steel		Titanium Alloys	Nickel Alloys	Cast Iron	Aluminum		Copper Alloys	Graphite
									Low Carbon 1010,1018	High Carbon 1045,1065			HRc 30 to 45	HRc 45 to 55	HRc 55 to 60	HRc 60 to 65	Austenitic 300 Series	Martensitic 400 Series				Casting Si ≤12%	High Si Si >13%		
●	●		●	●				●	●	●	●	○	○				●	●	●	●	○	○		○		

AG-mill Roughing — Excellent Chipping & Wear Resistance

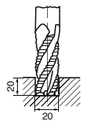
Super Performance from a Low Cost End mill

- Increased Cost Performance in semi-finish (AG Heavy) and Rough milling (AG Roughing) operations.
- Newly developed "Super HSS-Co" Material.
- Advanced technological "AG Coating" results in longer tool life.
- Improved "Chip Breaking" action with both fine and heavy tooth serrations.

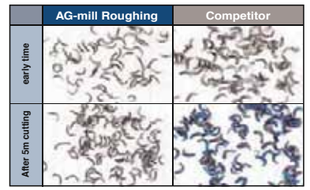
Groove milling of AG-mill Roughing



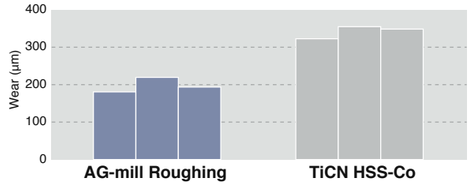
Milling condition
Tool : ø20 (0.787'')
Cutting Speed : 637rpm (131 SFM) (40m/min)
Feed : 255mm/min (10 IPM)
Parts Material : 1050 (S50C) 180 HB
Cutting Fluid : Wet (Water Soluble)



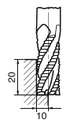
Comparison of cutting chips



Side milling of AG-mill Roughing



Milling condition
Tool : ø20 (0.787'')
Cutting Speed : 355rpm (72 SFM) (22m/min)
Feed : 132mm/min (5.2 IPM)
Parts Material : D2 (SKD11) 210 HB
Cutting Fluid : Wet (Water Soluble)



List No.6485 | INCH SIZES

EDP #	L6485	Dia. of Mill	Shank Diameter	Length of Cut	No. of Flutes	Overall Length
1380710	PQFAG8-2	1/4	3/8	5/8	4	2-7/16
1380726	PQFAG10-2	5/16	3/8	3/4	4	2-1/2
1380732	PQFAG12-2	3/8	3/8	3/4	4	2-1/2
1380749	PQFAG16-3	1/2	1/2	1-1/4	4	3-1/4
1380755	PQFAG20-4	5/8	5/8	1-5/8	4	3-3/4
1380761	PQFAG24-5	3/4	3/4	1-5/8	4	3-7/8
1380778	PQFAG28-6	7/8	7/8	1-7/8	5	4-1/8
1380784	PQFAG32-7	1	1	2	5	4-1/2
1380790	PQFAG40-8	1-1/4	1-1/4	2	6	4-1/2
1380806	PQFAG48-8	1-1/2	1-1/4	2	6	4-1/2
1380812	PQFAG64-8	2	1-1/4	2	8	4-1/2

1 per tube

Selection Chart

●:Great ○:Good △:OK

Side Milling			Grooving			Profile Milling	Rib Process	Workpiece Material																		
Rough	Semi-Finish	Finish	Rough	Semi-Finish	Finish			Structural Steel	Carbon Steel		Alloy Steel	Pre-hardened Steel	Die Steel	Hardend Steel			Stainless Steel		Titanium Alloys	Nickel Alloys	Cast Iron	Aluminum		Copper Alloys	Graphite
									Low Carbon 1010,1018	High Carbon 1045,1065			HRc 30 to 45	HRc 45 to 55	HRc 55 to 60	HRc 60 to 65	Austenitic 300 Series	Martensitic 400 Series				Casting Si ≤12%	High Si Si >13%		
●			●					●	●	●	●	○	○				●	●	●	●	○	○		○		