



Diameters:
1.00" - 4.00"

Depth of Cut:
.23"

Cutter Series:
1WJ1F
WJ5F

Insert Series:
WNMU06
WNCU06

Insert Grades:
IN10K
IN2504
IN2505
IN2530
IN6535

Materials:
Aluminum, Iron, Steel, Stainless,
Hi-Temp Alloys



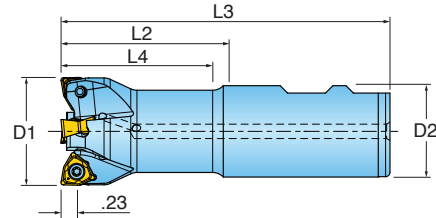
6 Positive and Economical Cutting Edges for 90° Shoulder Roughing and Aggressive Ramping

Features

- 1.00" - 4.00" cutter diameter offering
- Economical and free cutting 90 degree shoulder milling geometry
- 2-side technology applied with 6 cutting edges (3+3)
- Insert corner offerings: .015" & .031"R
- Aggressive roughing and ramping capabilities at .230 depth of cut
- Coolant thru the tool
- Equipped with fine pitched densities for high productivity machining
- Surface finishes between 63 - 125+ Ra (dependant upon corner radius & feed rate)

SERIES 1WJ1F END MILLS

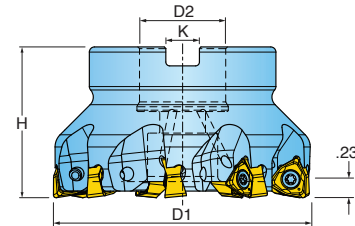
90° ROUGH AND RAMP END MILL WITH 6 INDEXES



Cutter Number	D1 Nominal Diameter	L4 Projection Length	L2 Extension Length	L3 Overall Length	D2 Shank Size/Style	Number of Inserts	Ramp Angle
1WJ1F-1001780R01	1.000	1.72	1.75	4.00	1.000" W	2	2.7
1WJ1F-1202281R01	1.250	2.22	2.25	4.50	1.250" W	3	2.0
1WJ1F-1502281R01	1.500	2.22	2.25	4.50	1.250" W	4	1.6

SERIES WJ5F FACE MILLS

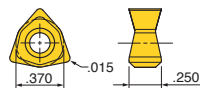
90° ROUGH AND RAMP FACE MILL WITH 6 INDEXES



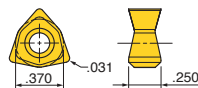
Cutter Number	D1 Nominal Diameter	Number of Inserts	H Height	D2 Bore Diameter	Keyway	Ramp Angle
WJ5F-20R01	2.000	6	1.570	0.750	0.312	1.4
WJ5F-25R01	2.500	7	1.570	0.750	0.312	1.8
WJ5F-30R01	3.000	9	1.750	1.000	0.375	2.1
WJ5F-40R01	4.000	11	2.375	1.500	0.625	2.2

INSERTS

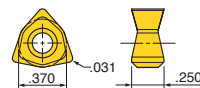
WMNU060604N



WMNU060608N



WMCU060608FN-P



Part Number	Corner	Application	Grades				
			IN10K	IN2504	IN2505	IN2530	IN6535
WMNU060604N	0.015 R	Multi-Purpose			•	•	•
WMNU060608N	0.031 R	Multi-Purpose		•	•	•	•
WMCU060608FN-P	0.031 R	Aluminum	•				

HARDWARE

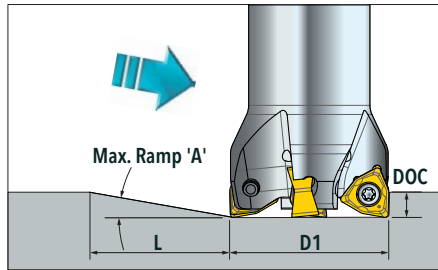
Cutter Number							
1WJ1F	SM35-088-60	DS-A00T	DS-T106B	-	DT-28-01	DS-T10B	-
WJ5F-20R01	SM35-088-60	DS-A00T	DS-T106B	SD-06-46	DT-28-01	DS-T10B	SD-06-89
WJ5F-25R01	SM35-088-60	DS-A00T	DS-T106B	SD-06-46	DT-28-01	DS-T10B	SD-06-89
WJ5F-30R01	SM35-088-60	DS-A00T	DS-T106B	SD-08-46	DT-28-01	DS-T10B	SD-08-92
WJ5F-40R01	SM35-088-60	DS-A00T	DS-T106B	SD-12-82	DT-28-01	DS-T10B	SD-12-99

OPERATING GUIDELINES

SERIES 1WJ1F, WJ5F

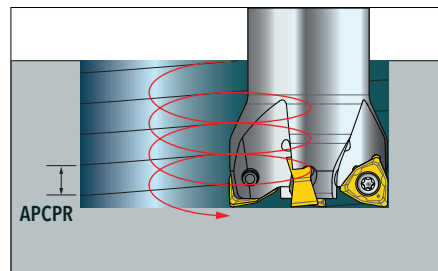
Material		Brinnell Hardness	SFM	Feed per Insert	Grades					Coolant
					IN10K	IN2504	IN2505	IN2530	IN6535	
Aluminum	7075-T6, 6061-T6, 2024	-	1500 – 8000	.004 – .010	1					Yes
Cast Iron	Gray	150-250	300 – 1000	.004 – .010		1	2			No
	Nodular		300 – 600							
Steel	Low Carbon 1018, 8620	150 – 250	400 – 1000	.004 – .010	3	2	1			No
	High Carbon F-6180, Nitralloy 52100	250 – 400	350 – 500	.004 – .008						
	Alloyed Steel 4140, 4340, 6150	150 - 300	300 – 700	.004 – .010						
	Tool Steel A-6, D-1, D-2, P20	Up to 300								
Stainless Steel	300 Series, 304, 316	-	300 – 550	.004 – .010		3	2	1		May not be required at high speeds
	400 Series 15-5PH, 17-4 PH	Up to 320	350 - 600							Yes
	13-8PH	-	200 - 400							
Nickel Alloys	Inconel 600, 706, 718, 903, Hastelloy, Waspalloy	-	75 - 120	.004 - .006			2	3	1	Yes
Titanium	6AL-4V	-	100 - 150	.004 - .006			3	2	1	Yes
Hard Steel	All	375-650	150 - 350	.003 - .005		1	2			No

STRAIGHT LINE RAMPING



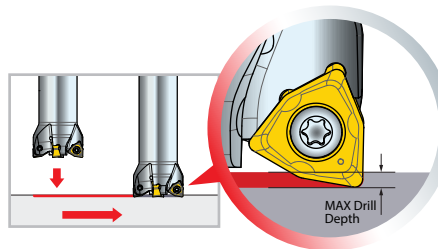
D1 Cutter Diameter	A Ramping Angle	L	DOC
1.00	2.7	4.80	0.23
1.25	2.0	6.50	0.23
1.50	1.6	8.20	0.23
2.00	1.4	9.41	0.23
2.50	1.8	7.30	0.23
3.00	2.1	6.27	0.23
4.00	2.2	5.98	0.23

HELICAL RAMPING



Cutter Diameter Using R.031 Insert	Minimum Diameter Milled Hole	Min. Advance Per Cutter Path Rev. (APCPR)	Maximum Diameter Milled Hole	Max. Advance Per Cutter Path Rev. (APCPR)
1.00	1.54	0.079	2.00	0.148
1.25	2.04	0.086	2.50	0.136
1.50	2.54	0.090	3.00	0.131
2.00	3.48	0.113	4.00	0.153
2.50	4.40	0.188	5.00	0.230
3.00	5.30	0.230	6.00	0.230
4.00	7.15	0.230	8.00	0.230

DRILL MILL POCKETING



Cutter Diameter	Maximum Drill Depth
1.00	0.035
1.25	0.035
1.50	0.034
2.00	0.044
2.50	0.068
3.00	0.100
4.00	0.137