



90° MILL FAMILY WITH A GROWING NUMBER OF OPTIONS!

Diameters:
Ø.500" - Ø 3.000"

Depth of Cut:
.35" Max.

Insert Series:
BOCT09, BODT09, BOMT09,
ZOMT09

Materials:
Aluminum, Iron, Steel, Stainless
Steel, Hi-Temps, Titanium, Hard
Steel

Multi-Purpose



PCD Tip



Hard Steel & Long L/D



Polished for Alum



Chip Splitters



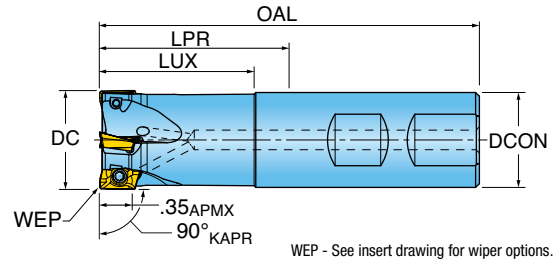
**PRODUCT
ANNOUNCEMENT
UPDATE
2019**

General Features:

- BOMT offers 2X positive rake and 2X face clearance when compared to APKT/AOMT; resulting in higher efficiency, less heat and more aggressive ramping capability.
- Diverse range of insert corner and grade options for a broad range of materials and milling methods
- HiPos+ 09 insert size maximizes cutter density to promote accelerated feed rates
- Carbide inserts equipped with 2 indexes; PCD with 1 index
- Inserts with integrated wiper flats typically produce surface finishes between 32-63 Ra

HIPOST[™] SERIES: 12J1P (WELDON SHANK)

90° END MILL

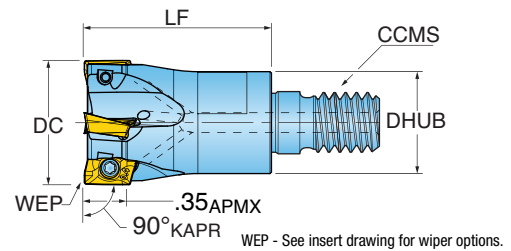


Part Number	DC Cutting Diameter	LUX Usable Length Max.	LPR Protruding Length	OAL Overall Length	ZEFF Effective Teeth	DCON Shank Diameter	CSP Coolant	RMPX Ramp Angle Max.
12J1P-0501379R01	0.500	1.18	1.34	3.25	1	0.625	Yes	1.5
12J1P-0601379R01	0.625	1.18	1.34	3.25	2	0.625	Yes	10.0
12J1P-0701784R01	0.750	1.18	1.75	3.75	2	0.750	Yes	7.0
12J1P-0701784R02	0.750	1.18	1.75	3.75	3	0.750	Yes	7.0
12J1P-0702784R01	0.750	2.75	2.75	4.75	2	0.750	Yes	7.0
12J1P-0704084R01	0.750	2.75	4.00	6.00	2	0.750	Yes	Not Recomm.
12J1P-0801784R01	0.875	1.18	1.75	3.75	3	0.750	Yes	5.5
12J1P-1001784R01	1.000	1.75	1.75	3.75	3	0.750	Yes	4.4
12J1P-1001784R02	1.000	1.75	1.75	3.75	4	0.750	Yes	4.4
12J1P-1201584R01	1.250	1.50	1.50	3.75	5	0.750	Yes	2.8
12J1P-1501780R01	1.500	1.75	1.75	4.00	6	1.000	Yes	2.4

NOTE: Cutter body must be relieved when using insert corner radii larger than R.031: Body R" = Insert R" - .02"

HIPOST[™] SERIES: 12J1P (TOPON M-ADAPTION)

90° MODULAR END MILL

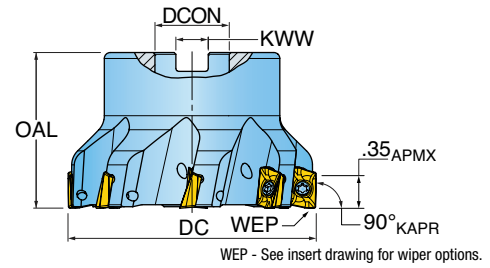


Part Number	DC Cutting Diameter	LF Functional Length	ZEFF Effective Teeth	CCMS Connection Code	DHUB Hub Diameter	CSP Coolant	RMPX Ramp Angle Max.
12J1P-06015X5R01	0.625	1.50	2	TopOn M08	0.50	Yes	10.0
12J1P-07015X6R01	0.750	1.50	3	TopOn M10	0.69	Yes	7.0
12J1P-10015X7R01	1.000	1.50	4	TopOn M12	0.81	Yes	4.4
12J1P-12017X8R01	1.250	1.75	5	TopOn M16	1.13	Yes	2.8

NOTE: Cutter body must be relieved when using insert corner radii larger than R.031: Body R" = Insert R" - .02"

HIPOST[™] SERIES: 2J1P

90° FACE MILL



Part Number	DC Cutting Diameter	OAL Overall Length	ZEFF Effective Teeth	DCON Bore Diameter	KWW Keyway	CSP Coolant	RMPX Ramp Angle Max.
2J1P-15R01	1.500	1.57	6	0.500	0.250	Yes	2.4
2J1P-20R01	2.000	1.57	7	0.750	0.312	Yes	1.3
2J1P-25R01	2.500	1.57	8	0.750	0.312	Yes	1.0
2J1P-30R01	3.000	1.75	9	1.000	0.375	Yes	0.7

NOTE: Cutter body must be relieved when using insert corner radii larger than R.031: Body R" = Insert R" - .02"

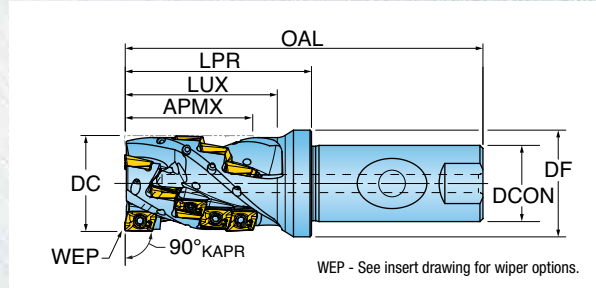
HIPOST[™] 12J1P, 2J1P INSERTS



Part Number	Application	RE Corner Radius	BS Wiper Length	L Cutting Edge Length	INSL Length	W1 Width	S Thickness	Grade	IN10K	IN2010	IN2035	IN2504	IN2505	IN2530	IN4030	IN90D
BOCT09T304FR-P	Grd/Pol for Al	0.015 R	-	0.350	0.417	0.260	0.146	•								
BOCT09T308FR-P	Grd/Pol for Al	0.031 R	-	0.350	0.414	0.260	0.144	•								
BODT09T308R	Finishing	0.031 R	0.057	0.330	0.421	0.258	0.148					•				
BODT09T308R-001	Finishing	0.031 R	0.057	0.120	0.421	0.254	0.148					•				
BOMT09T304R	Multi-Purpose	0.015 R	0.050	0.350	0.421	0.258	0.148		•				•	•	•	
BOMT09T308R	Multi-Purpose	0.031 R	0.034	0.350	0.421	0.259	0.148				•	•	•	•	•	
BOMT09T316R	Multi-Purpose	0.062 R	-	0.350	0.421	0.259	0.148				•		•	•		
BOMT09T320R	Multi-Purpose	0.078 R	-	0.350	0.421	0.259	0.148						•			
BOMT09T331R	Multi-Purpose	0.120 R	-	0.350	0.421	0.259	0.148						•	•		
BOMT09T304R-DT1	PCD Tipped	0.015 R	0.060	0.120	0.421	0.260	0.147									•
BOMT09T304R-DT2	PCD Tipped	0.015 R	0.060	0.370	0.421	0.260	0.147									•
ZOMT09T304R	Positive-Splitters	0.015 R	0.050	0.350	0.421	0.259	0.148					•		•	•	

HI_oPOS⁺ SERIES: 22J3P

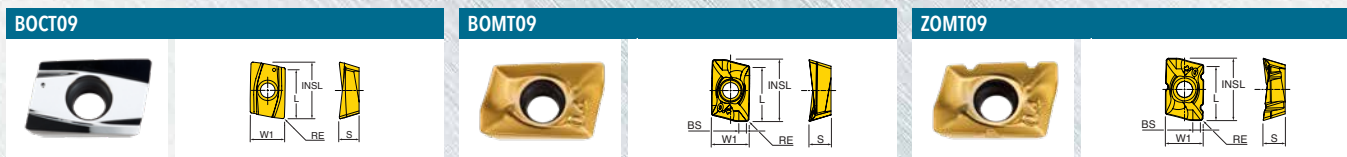
90° END MILL; ALL EFFECTIVE, RH HELIX



Part Number	DC Cutting Diameter	APMX Depth of Cut Max.	LUX Usable Length Max.	LPR Protruding Length	OAL Overall Length	ZEFF Effective Teeth	ZNP Periphery Insert Count	DF Flange Diameter	DCON Cutting Diameter	CSP Coolant	RMPX Ramp Angle Max.
22J3P-1001780R01	1.000	1.35	1.75	1.75	4.00	2	6	-	1.000	Yes	4
22J3P-1202480R01	1.250	1.68	2.00	2.45	4.70	3	12	1.400	1.000	Yes	2.5
22J3P-1502881R01	1.500	2.00	2.36	2.80	5.00	4	20	1.650	1.250	Yes	2

NOTE: Cutter body must be relieved when using insert corner radii larger than R.031: Body R" = Insert R" - .02"

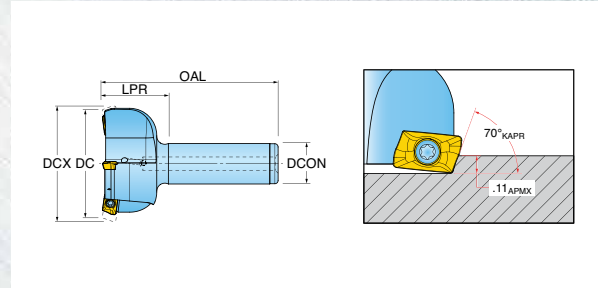
HI_oPOS⁺ 22J3P INSERTS



Part Number	Application	Insert Station	RE Corner Radius	BS Wiper Length	L Cutting Edge Length	INSL Length	W1 Width	S Thickness	Grade	IN10K	IN2010	IN2035	IN2504	IN2505	IN2530	IN4030
BOCT09T304FR-P	Grd/Pol for Al	End/Side	0.015 R	-	0.350	0.417	0.260	0.146	•							
BOCT09T308FR-P	Grd/Pol for Al	End/Side	0.031 R	-	0.350	0.414	0.260	0.144	•							
BOMT09T304R	Multi-Purpose	End/Side	0.015 R	0.050	0.350	0.421	0.258	0.148		•				•	•	•
BOMT09T308R	Multi-Purpose	End/Side	0.031 R	0.034	0.350	0.421	0.259	0.148				•	•	•	•	•
BOMT09T316R	Multi-Purpose	End	0.062 R	-	0.350	0.421	0.259	0.148				•		•	•	
BOMT09T331R	Multi-Purpose	End	0.120 R	-	0.350	0.421	0.259	0.148				•		•	•	
ZOMT09T304R	Positive-Splitters	End/Side	0.015 R	0.050	0.350	0.421	0.259	0.148				•		•	•	•

HI·POS+™ SERIES: 12L1P

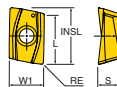
70° ROUGHING END MILL



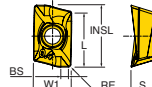
Part Number	DC Cutting Diameter	DCX Cutting Dia. Max.	KAPR Cutting Edge Angle	APMX Depth of Cut Max.	LPR Protruding Length	OAL Overall Length	ZEFF Effective Teeth	DCON Cutting Diameter	CSP Coolant
12L1P-20012S7R01	2.000	2.130	70	0.12	1.25	3.25	3	0.750	Yes

HI·POS+™ 12L1P INSERTS

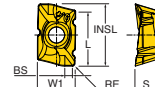
BOCT09



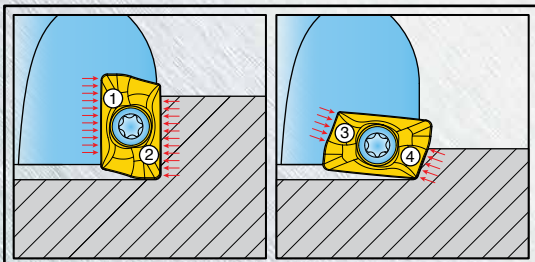
BOMT09








ZOMT09



Part Number	Application	Insert Station	RE Corner Radius	BS Wiper Length	L Cutting Edge Length	INSL Length	W1 Width	S Thickness	Grade	IN10K	IN2010	IN2035	IN2504	IN2505	IN2530	IN4030
BOCT09T304FR-P	Grd/Pol for Al	End/Side	0.015 R	-	0.350	0.417	0.260	0.146	•							
BOCT09T308FR-P	Grd/Pol for Al	End/Side	0.031 R	-	0.350	0.414	0.260	0.144	•							
BOMT09T304R	Multi-Purpose	End/Side	0.015 R	0.050	0.350	0.421	0.258	0.148		•			•	•	•	
BOMT09T308R	Multi-Purpose	End/Side	0.031 R	0.034	0.350	0.421	0.259	0.148			•	•	•	•	•	
BOMT09T316R	Multi-Purpose	End	0.062 R	-	0.350	0.421	0.259	0.148			•		•	•		
BOMT09T320R	Multi-Purpose	End	0.079 R	-	0.350	0.421	0.259	0.148					•	•		
BOMT09T331R	Multi-Purpose	End	0.120 R	-	0.350	0.421	0.259	0.148					•	•		
ZOMT09T304R	Positive-Splitters	End/Side	0.015 R	0.050	0.350	0.421	0.259	0.148				•	•	•	•	•



When using the Hi·Pos+ milling family, it is possible to make use of all four cutting edges. The first 2 edges can be used in any Hi·Pos+ 90° or lead angle endmill or facemill, then use edges 3 and 4 in 12L endmills or 2L facemills

					
	Insert Screw	Screw Driver	Retention Bolt	Retention Bolt w/Coolant	Wrench
12J1P-0501379R01	SM25-054-00	DS-T08W	-	-	--
12J1P-0601379R01	SM25-054-00	DS-T08W	-	-	-
12J1P-0701784R01	SM25-064-00	DS-T08W	-	-	-
12J1P-0701784R02	SM25-064-00	DS-T08W	-	-	-
12J1P-0702784R01	SM25-064-00	DS-T08W	-	-	-
12J1P-0704084R01	SM25-064-00	DS-T08W	-	-	-
12J1P-0801784R01	SM25-064-00	DS-T08W	-	-	-
12J1P-1001784R01	SM25-064-00	DS-T08W	-	-	-
12J1P-1001784R02	SM25-064-00	DS-T08W	-	-	-
12J1P-1201584R01	SM25-064-00	DS-T08W	-	-	-
12J1P-1501780R01	SM25-064-00	DS-T08W	-	-	-
12J1P-06015X5R01	SM25-054-00	DS-T08W	-	-	610MM
12J1P-07015X6R01	SM25-064-00	DS-T08W	-	-	615MM
12J1P-10015X7R01	SM25-064-00	DS-T08W	-	-	617MM
12J1P-12017X8R01	SM25-064-00	DS-T08W	-	-	622MM
2J1P-15R01	SM25-064-00	DS-T08W	SD-04-85	-	-
2J1P-20R01	SM25-064-00	DS-T08W	SD-06-46	SD-06-89	-
2J1P-25R01	SM25-064-00	DS-T08W	SD-06-46	SD-06-89	-
2J1P-30R01	SM25-064-00	DS-T08W	SD-08-48	SD-08-C9	-
22J3P-1001780R01	SM25-064-00	DS-T08W	-	-	-
22J3P-1202480R01	SM25-064-00	DS-T08W	-	-	-
22J3P-1502881R01	SM25-064-00	DS-T08W	-	-	-
12L1P-20012S7R01	SM25-064-00	DS-T08W	-	-	-

HIPOST⁺ OPERATING GUIDELINES - SERIES 12J1P, 12L1P, 2J1P

Series 12J1P, 12L1P, 2J1P														
Material	Material	Brinnell Hardness	SFM	Feed per Insert	IN10K	IN2010	IN2035	IN2504	IN2505	IN2530	IN4030	IN900	Coolant	
Aluminum	6061-T6, 7075-T6, 2024	-	1500 - 5000	.003 - .008	2							1	Yes	
Cast Iron	Gray	150 - 250	300 - 1000	.003-.006		1			2		3		No	
	Nodular		300 - 600			1		2	3					
Steel	Low Carbon 1018, 8620	100 - 250	400 - 1000	.003-.006									No	
	High Carbon F-6180	250 - 400	350 - 500					3	2	1				
	Alloyed Steel 4140, 4340	150 - 300	300 - 700											
	Tool Steel A-6, D-1, D-2	Up to 300												
Stainless Steel	300 Series, 304, 316	-	300 - 550	.003-.005									May not be required at high speeds	
	400 Series 15-5 PH	Up to 320	350 - 600			1		4	3	2				
	13-8 PH	-	200 - 400									Yes		
Nickel Alloys	Inconel, Hastelloy, Waspalloy	-	75-120	.003-.005			1		2	4	3		Yes	
Titanium	6AL-4V	-	100 - 150	.003-.005			1		4	3	2		Yes	
Hard <54 HRC	All	-	300 - 450	.002-.004				1	2				No	
Hard <63 HRC	All	-	150 - 300	.002-.003				1	2				No	



OPERATING GUIDELINES - SERIES 22J3P

Series 22J3P					IN10K	IN2010	IN2035	IN2504	IN2505	IN2530	IN4030	Coolant
Material	Material Specification	Brinnell Hardness	SFM	Feed per Insert								
Aluminum	6061-T6, 7075-T6, 2024	-	1300 - 2000	.003-.007	1							Yes
Cast Iron	Gray	150 - 250	300 - 650	.003-.006	1		4	2			3	No
	Nodular		300 - 500									
Steel	Low Carbon 1018, 8620	100 - 250	275 - 600	.003-.006			4	3	2	1		No
	High Carbon F-6180	250 - 400										
	Alloyed Steel 4140, 4340	150 - 300										
	Tool Steel A-6, D-1, D-2	Up to 300										
Stainless Steel	300 Series, 304, 316	-	250 - 400	.003-.005		1		4	3	2		May not be required at high speeds
	400 Series 15-5 PH	Up to 320										Yes
	13-8 PH	-										Yes
Nickel Alloys	Inconel, Hastelloy, Waspalloy	-	65-110	.003-.005			1	2	4	3		Yes
Titanium	6AL-4V	-	90 - 130	.003-.005			1	4	3	2		Yes



FEED RATES

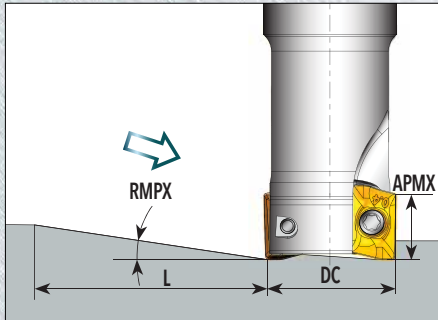
STARTING FEED RATE GUIDELINES FOR EXTENDED FLUTE MILL BASED ON RADIAL WIDTH OF CUT

Material	Material Specification	Radial WOC (Inch)	Feed Rate (APT")		
			1.00 Dia.	1.25 Dia.	1.50 Dia.
Aluminum	6061-T6, 7074-T6, 2024	0.06	0.009	0.010	0.011
		0.12	0.006	0.007	0.008
		0.25	0.004	0.005	0.006
Cast Iron	Gray / Nodular	0.06	0.009	0.010	0.011
		0.12	0.006	0.007	0.008
		0.25	0.004	0.005	0.006
Steel	Low Carbon / Alloyed / Tool Steel	0.06	0.009	0.010	0.011
		0.12	0.006	0.007	0.008
		0.25	0.004	0.005	0.006
	High Carbon	0.06	0.008	0.009	0.010
		0.12	0.005	0.006	0.007
		0.25	0.003	0.004	0.005
Stainless Steel	300 Series, 304, 316, 13-8PH	0.06	0.008	0.009	0.010
		0.12	0.005	0.006	0.007
		0.25	0.003	0.004	0.005
	400 Series 15-5PH, 17-4PH	0.06	0.008	0.009	0.010
		0.12	0.005	0.006	0.007
		0.25	0.003	0.004	0.005
Nickel Alloys	Inconel, Hastelloy, Waspalloy	0.06	0.007	0.008	0.009
		0.12	0.004	0.005	0.006
		0.25	0.002	0.003	0.004
Titanium	6AL-4V	0.06	0.008	0.009	0.010
		0.12	0.005	0.006	0.007
		0.25	0.003	0.004	0.005

These values are intended as starting parameters. Actual feed rates are to be determined by your specific application.

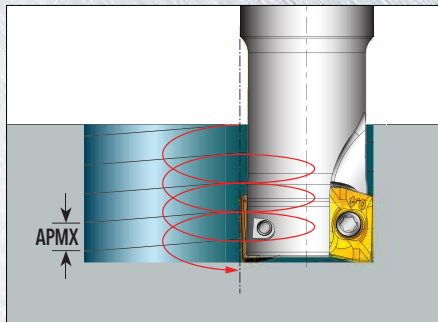
HIPOST[™] RAMPING DATA

Straight ramping



DC Cutter Diameter	RMPX Ramp Angle Max.	APMX Depth of Cut Max.	L
0.500	10.0	0.35	1.9
0.625	10.0	0.35	1.9
0.750	7.0	0.35	2.8
0.875	5.5	0.35	3.6
1.000	4.4	0.35	4.5
1.250	2.8	0.35	7.1
1.500	2.4	0.35	8.3
2.000	1.3	0.35	15.4
2.500	1.0	0.35	20.0
3.000	0.7	0.35	28.6

Helical ramping



DC Cutter Diameter (Using R.031 Insert)	Min. Dia. Milled Hole (Bottom with Cusp)	APMX / Rev.	Max. Dia. Milled Hole (Flat Bottom)	APMX / Rev.
0.500	0.62	0.08	0.96	0.23
0.625	0.78	0.08	1.21	0.33
0.750	1.02	0.11	1.46	0.28
0.875	1.27	0.11	1.71	0.24
1.000	1.52	0.11	1.96	0.22
1.250	2.02	0.11	2.46	0.18
1.500	2.52	0.14	2.96	0.20
2.000	3.52	0.10	3.96	0.13
2.500	4.52	0.10	4.96	0.12
3.000	5.52	0.10	5.96	0.10