3N1 ROUNDS

Diameters:
0.250" - 0.750"

Cutting Edge Length:
0.500" - 1.870"

Overall Length:
2.50" - 4.00"

Number of Flutes:
4, 5

Corner Configurations:
0.050" - 0.150"

Helix Angle:
38°

Grade:
IN2006

Series 45D...RP

4- and 5-Flute 38° High-Feed Roughing Endmills feature Variable Pitch and Chip Splitters

Ingersoll's series 45D...RP solid carbide roughing endmills give you the optimal solution for all roughing operations. This series covers a wide range of applications including slotting, pocketing, helical interpolation and contouring.

Features and Benefits

- 4- and 5-flutes with 38° and large corner radii
- An endmill that provides the highest advantage in cavity milling and heavy roughing cuts
- The serrated cutting edge features flat peaks which leave a better surface finish when compared to competitors' roughing endmills

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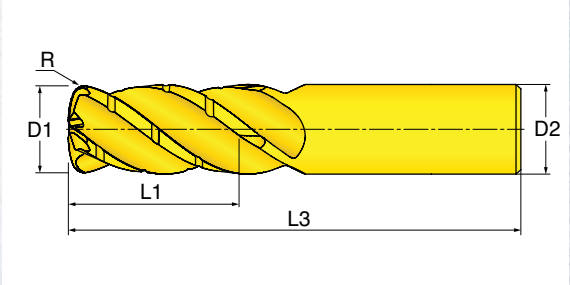
Ingersoll Cutting Tools

3N1 ROUNDS SERIES 45D_RP

4 & 5 FLUTE HI FEED ROUGHING END MILL W/ VARIABLE PITCH & CHIP SPLITTERS



Grade	P	M	K	N (K)	S (M)	H (P/K)
IN2006	+	+	0		+	

+ Preferred choice ○ Second choice

△ e9
□ h6

λ = 38°
≤63 HRC

Cutter Number	Helix (deg)	D1 Diameter	Z Flutes	R Radius	L3 Overall Length	L1 Cut Length	D2 Shank Size/Style
45D-2550S3RP05	38.0	0.250	4	0.050	2.50	0.50	.250" C
45D-3162R7RP06	38.0	0.312	4	0.060	2.50	0.63	.312" C
45D-3775R8RP07	38.0	0.375	4	0.070	3.00	0.75	.375" C
45D-5010S4RP10	38.0	0.500	4	0.100	3.00	1.00	.500" C
45D-6212S6RP13	38.0	0.625	4	0.130	3.50	1.20	.625" C
45D-7515S7RP15	38.0	0.750	4	0.150	4.00	1.50	.750" C
45D-3793R8RP70	38.0	0.375	5	0.070	3.00	0.94	.375" C
45D-5012S4RP10	38.0	0.500	5	0.100	3.00	1.25	.500" C
45D-6215S6RP13	38.0	0.625	5	0.130	3.50	1.56	.625" C
45D-7518S7RP15	38.0	0.750	5	0.150	4.00	1.87	.750" C

ROUND LINE - HIGH FEED END MILL (4 FLUTE) OPERATING GUIDELINES Series 45A

Workpiece Material	Diameter / Programming radius in	cutting speed Vc in/min	feed per tooth fz (in)	recommended cutting depth ap (in)	
Unalloyed steel **P**	.250 R.040	650 - 950	.012	.012	
	.312 R.065	650 - 950	.015	.015	
	.375 R.080	650 - 950	.020	.020	
	.500 R.100	650 - 950	.020	.025	
	.625 R.125	650 - 950	.025	.030	
	.750 R.160	650 - 950	.030	.040	
	1.00 R.145	650 - 950	.030	.045	
High Carbon steel **P**	.250 R.040	600 - 850	.012	.012	
	.312 R.065	600 - 850	.015	.015	
	.375 R.080	600 - 850	.020	.020	
	.500 R.100	600 - 850	.020	.025	
	.625 R.125	600 - 850	.025	.030	
	.750 R.160	600 - 850	.030	.040	
	1.00 R.145	600 - 850	.030	.045	
Alloyed / Tool steel < 1400N/mm² **P**	.250 R.040	500 - 700	.012	.008	
	.312 R.065	500 - 700	.015	.012	
	.375 R.080	500 - 700	.020	.015	
	.500 R.100	500 - 700	.020	.020	
	.625 R.125	500 - 700	.025	.025	
	.750 R.160	500 - 700	.030	.030	
	1.00 R.145	500 - 700	.030	.040	
Stainless steel **M**	.250 R.040	450 - 650	.012	.008	
	.312 R.065	450 - 650	.015	.012	
	.375 R.080	450 - 650	.020	.015	
	.500 R.100	450 - 650	.020	.020	
	.625 R.125	450 - 650	.025	.025	
	.750 R.160	450 - 650	.030	.030	
	1.00 R.145	450 - 650	.030	.040	
Gray cast iron **K**	.250 R.040	650 - 950	.012	.012	
	.312 R.065	650 - 950	.015	.015	
	.375 R.080	650 - 950	.020	.020	
	.500 R.100	650 - 950	.020	.025	
	.625 R.125	650 - 950	.025	.030	
	.750 R.160	650 - 950	.030	.040	
	1.00 R.145	650 - 950	.030	.045	
Cast alloys **K**	.250 R.040	500 - 700	.012	.008	
	.312 R.065	500 - 700	.015	.012	
	.375 R.080	500 - 700	.020	.015	
	.500 R.100	500 - 700	.020	.020	
	.625 R.125	500 - 700	.025	.025	
	.750 R.160	500 - 700	.030	.030	
	1.00 R.145	500 - 700	.030	.040	

ROUND LINE - HIGH FEED END MILL (4 FLUTE) OPERATING GUIDELINES Series 45A

Workpiece Material	Diameter / Programming radius in	cutting speed Vc in/min	feed per tooth fz (in)	recommended cutting depth ap (in)	
Super alloys **S**	.250 R.040	130 - 250	.008	.004	
	.312 R.065	130 - 250	.008	.008	
	.375 R.080	130 - 250	.012	.012	
	.500 R.100	130 - 250	.012	.012	
	.625 R.125	130 - 250	.015	.020	
	.750 R.160	130 - 250	.015	.020	
	1.00 R.145	130 - 250	.018	.020	
Hardened steel < 50 HRC	.250 R.040	300 - 450	.012	.004	
	.312 R.065	300 - 450	.012	.008	
	.375 R.080	300 - 450	.015	.012	
	.500 R.100	300 - 450	.015	.012	
	.625 R.125	300 - 450	.020	.020	
	.750 R.160	300 - 450	.020	.020	
	1.00 R.145	300 - 450	.020	.020	
Hardened steel < 58 HRC	.250 R.040	150 - 250	.008	.004	
	.312 R.065	150 - 250	.008	.008	
	.375 R.080	150 - 250	.012	.008	
	.500 R.100	150 - 250	.012	.012	
	.625 R.125	150 - 250	.015	.015	
	.750 R.160	150 - 250	.015	.015	
	1.00 R.145	150 - 250	.015	.015	