HYPER·ROUNDS™

Diameters:
0.250" – 0.750"

Cutting Edge Length:
0.630" - 1.870"

Overall Length:
2.50" – 5.00"

Number of Flutes:
5

Radius:
0.010" - 0.040"

Helix Angle:
36° - 38°

Grade:
IN2005

NEW PRODUCT ANNOUNCEMENT 2012

Series 47D...RQ (5 Flute)

Solid Carbide Endmills with Variable Pitch and Different Helix Angles

Ingersoll's new 5 Flute Series 47D...RQ features a solid carbide endmill with different helix, variable pitch and assorted radii. This endmill is designed to improve dampening performance, resulting in 20 to 25 percent prolonged tool life when compared to a standard variable pitch endmill.

The new HyperRounds endmills with 5 flutes includes the standard feature of a variable pitch endmill as well as different helix flutes: 36°-38°. Designed to maximize stock removal rate and reduce cycle time in most milling operations. The unique geometry provides excellent surface finish and long tool life while machining at high material removal rates.

Features and Benefits:

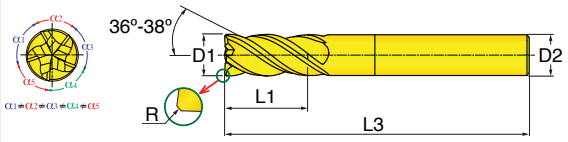
- Excellent chatter dampening due to their variable pitch
- With assorted corner radius
- Excellent solution for low power machines with CAT40 and BT40 adaptations, improving their material removal rates and minimizing vibration
- Suitable for all type of steel and high temperature alloys
- Combination different helix (36° - 38°) and variable pitch

Member IMC Group Ingersoll Cutting Tools

HYPER•ROUNDS™ SERIES 47D_RQ (5 FLUTE)

5 FLUTE ENDMILLS, WITH DIFFERENT HELIX AND VARIABLE PITCH FOR CHATTER DAMPENING, WITH CORNER RADII

Shoulder | Channel | Ramping | Helical Interp.



Grade	P	M	K	$N_{(K)}$	$S_{(M)}$	$H_{(P/K)}$
IN2005	+	+	+		+	

+ Preferred choice ○ Second choice

△	e9
□	h6

36°-38° | ≤44 HRC

Cutter Number	Helix (deg)	D1 Diameter	Z Flutes	R Radius	L3 Overall Length	L1 Cut Length	D2 Shank Size/Style
47D-2563R6RQ01	36-38	0.250	5	0.010	2.50	0.63	.250" C
47D-3178R7RQ01	36-38	0.312	5	0.015	2.50	0.78	.312" C
47D-3794R8RQ02	36-38	0.375	5	0.020	3.00	0.94	.375" C
47D-379477RQ02	36-38	0.375	5	0.020	3.00	0.94	.375" W
47D-5012S4RQ02	36-38	0.500	5	0.025	3.50	1.25	.500" C
47D-501278RQ02	36-38	0.500	5	0.025	3.50	1.25	.500" W
47D-6215S6RQ03	36-38	0.625	5	0.031	4.00	1.56	.625" C
47D-621579RQ03	36-38	0.625	5	0.031	4.00	1.56	.625" W
47D-7518S7RQ04	36-38	0.750	5	0.040	5.00	1.87	.750" C
47D-751884RQ04	36-38	0.750	5	0.040	5.00	1.87	.750" W

HYPER-ROUNDS™ OPERATING GUIDELINES

ROUND LINE - STANDARD END MILLS - Series 45B, 45D, 45J, 45M, 45N, 45P, 45X, 46D, 47C, 47D, 47J, 47N, 48C, 48D, 48J, 48N, 48U, 49D, 49J

Workpiece Material	DC in	Cutting speed vc in/min End mill Full slot	Cutting speed vc in/min End mill Shoulder	Feed rate per tooth fz ft/min End mill Full slot	Feed rate per tooth fz ft/min End mill Shoulder	Cutting depth ap recomm. for End mill in	Cutting Width Recommended ae %
Unalloyed steel **P**	.125-.250	300-600	450-800	.0006 - .0010	.0018 - .0030	.050 x D	40%
	.312-.500	300-600	450-800	.0025 -.0040	.0040 - .0055	.050 x D	40%
	.625-1.00	300-600	450-800	.0030 - .0040	.0060 - .0090	.050 x D	40%
High Carbon steel < 1100N/mm² **P**	.125-.250	250-500	325-725	.0006 - .0018	.0007 - .0025	.030 x D	30%
	.312-.500	300-600	400-650	.0020 -.0030	.0030 - .0040	.030 x D	30%
	.625-1.00	300-600	400-650	.0025 - .0040	.0040 - .0080	.030 x D	30%
Alloyed / Tool steel < 1400N/mm² **P**	.125-.250	250-450	325-525	.0006 - .0018	.0007 - .0020	.030 x D	25%
	.312-.500	250-450	325-600	.0015 -.0028	.0028 - .0040	.030 x D	25%
	.625-1.00	250-450	325-600	.0020 - .0030	.0040 - .0070	.030 x D	25%
Stainless steel **M**	.125-.250	165-300	250-450	.0040 - .0007	.0040 - .0013	.030 x D	30%
	.312-.500	165-300	250-450	.0015 - .0025	.0028 - .0040	.030 x D	30%
	.625-1.00	165-300	250-450	.0025 - .0040	.0040 - .0080	.030 x D	30%
Gray cast iron **K**	.125-.250	325-525	500-975	.0006 - .0010	.0018 - .0030	.030 x D	40%
	.312-.500	325-525	500-900	.0025 -.0040	.0040 - .0055	.030 x D	40%
	.625-1.00	250-550	500-900	.0030 - .0040	.0060 - .0090	.030 x D	40%
Cast alloys **K**	.125-.250	250-550	400-650	.0006 - .0018	.0007 - .0025	.030 x D	30%
	.312-.500	250-550	400-650	.0020 -.0030	.0030 - .0040	.030 x D	30%
	.625-1.00	250-550	400-650	.0025 - .0040	.0040 - .0080	.030 x D	30%
Aluminum **N**	.125-.250	825-2500	825-2500	.0007 - .0015	.0010 - .0030	.040 x D	30%
	.312-.500	2500-3500	3000-5000	.0035 - .0040	.0040 - .0070	.040 x D	30%
	.625-1.00	2500-3500	5000-6500	.0060 - .0070	.0070 - .0090	.040 x D	30%
Plastics **N**	.125-.250	400-650	650-1300	.0040 - .0018	.0070 - .0015	.040 x D	10%
	.312-.500	400-650	650-1300	.0020 - .0030	.0028 - .0040	.040 x D	10%
	.625-1.00	400-650	650-1300	.0028 - .0040	.0040 - .0080	.040 x D	10%
Super alloys **S**	.125-.250	65-165	100-200	.0040 - .0060	.0040 - .0010	.020 x D	10%
	.312-.500	65-165	100-200	.0010 - .0020	.0020 - .0040	.020 x D	10%
	.625-1.00	65-165	100-200	.0020 - .0030	.0040 - .0070	.020 x D	10%
Hardened steel 48 - 54 HRC	.125-.250	130-325	200-400	.0006 - .0018	.0007 - .0020	.030 x D	25%
	.312-.500	130-325	200-400	.0015 -.0028	.0028 - .0040	.030 x D	25%
	.625-1.00	130-325	200-400	.0020 - .0030	.0040 - .0070	.030 x D	25%
Hardened steel 54 - 63 HRC	.125-.250	65-165	150-250	.0040 - .0007	.0040 - .0015	.027 x D	20%
	.312-.500	65-200	150-250	.0010 -.0020	.0020 - .0030	.027 x D	20%
	.625-1.00	65-200	150-250	.0015 - .0028	.0030 - .0060	.027 x D	20%
Hardened steel > 63 HRC	.125-.250	65-100	100-200	.0040 - .0040	.0040 - .0010	.024 x D	10%
	.312-.500	65-130	100-200	.0007 -.0015	.0015 - .0025	.024 x D	10%
	.625-1.00	65-130	100-200	.0010 - .0025	.0025 - .0060	.024 x D	10%

General Information:
Machining of aluminum and duroplastics with grade IN05S, any other materials with IN2005 / IN2006. Max. cutting depth of end mills is determined by cutting length a = xxx in; for ball nose cutters max. cutting depth is determined by radius.
Please consider the limitation of max. RPM of the machine! Cutting values refer to n_{max} = 40000 min^{-1}