



Diameters:
0.250" - 0.750"

Cutting Edge Length:
0.500" - 1.500"

Overall Length:
2.50" - 5.00"

Number of Flutes:
4

Radius:
0.010" - 0.040"

Helix Angle:
35° and 37°

Grade:
IN2005

Series 47D...RQ (Relieved Neck) Solid Carbide Endmills with Variable Pitch and Different Helix Angles

Ingersoll's new 4 Flute Series 47D...RQ features a solid carbide endmill with different helix and variable pitch. 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 4 flutes includes the standard feature of a variable pitch endmill as well as different helix flutes: two 35° helix flutes and two 37° helix flutes. Designed to maximize stock removal rate and reduce cycle time in most milling operations. The unique geometry provides excellent surface finish and a long tool life while machining at high material removal rates.

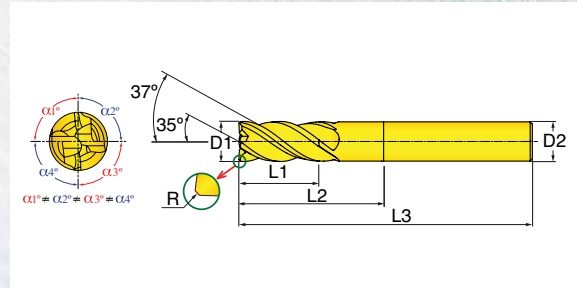
Features and Benefits:

- Excellent chatter dampening due to their variable pitch
- With radius and relieved neck up to 2XD
- 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 (35° and 37°) and variable pitch



HYPERROUNDS™ SERIES 47D_RQ (4 FLUTE)

4 FLUTE ENDMILLS, WITH RELIEVED NECKS, DIFFERENT HELIX AND VARIABLE PITCH FOR CHATTER DAMPENING WITH CORNER RADII



Grade	P	M	K	N _(K)	S _(M)	H _(PR)
IN2005	+	+	+		+	

	e8
	h6

	≈ 35°
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	≈ 37°
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	≤ 54 HRC
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⊕ Preferred choice ○ Second choice

Cutter Number	Helix (deg)	D1 Diameter	Z Flutes	R Radius	L3 Overall Length	L2 Height	L1 Cut Length	D2 Shank Size/Style
47D-2550R6RQ01	35 & 37	0.250	4	0.010	2.50	0.750	0.50	.250" C
47D-3162R7RQ01	35 & 37	0.312	4	0.015	2.50	1.000	0.63	.312" C
47D-3775R8RQ02	35 & 37	0.375	4	0.020	3.00	1.250	0.75	.375" C
47D-377577RQ02	35 & 37	0.375	4	0.020	3.00	1.250	0.75	.375" W
47D-5010S4RQ02	35 & 37	0.500	4	0.023	3.00	1.500	1.00	.500" C
47D-501078RQ02	35 & 37	0.500	4	0.023	3.00	1.500	1.00	.500" W
47D-6212S6RQ03	35 & 37	0.625	4	0.030	4.00	1.700	1.25	.625" C
47D-621279RQ03	35 & 37	0.625	4	0.030	4.00	1.700	1.25	.625" W
47D-7515S7RQ04	35 & 37	0.750	4	0.040	5.00	2.250	1.50	.750" C
47D-751584RQ04	35 & 37	0.750	4	0.040	5.00	2.250	1.50	.750" W

HYPERROUNDS™ 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		Feed rate per tooth fz ft/min		Cutting depth ap recomm. for	Cutting Width
		End mill		End mill			
		Full slot	Shoulder	Full slot	Shoulder	End mill in	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 $n_{max} = 40000 \text{ min}^{-1}$