



**Diameters:**  
6mm to 25mm  
.250" to 1.00"

**Cutting Edge Length:**  
9mm to 38mm  
.38" to 2.00"

**Overall Length:**  
65mm to 130mm  
2.50" to 7.20"

**Number of Flutes:**  
4

**Radius:**  
0.20mm  
.10"

**Helix Angle:**  
39° - 41°

**Grade:**  
IN05S



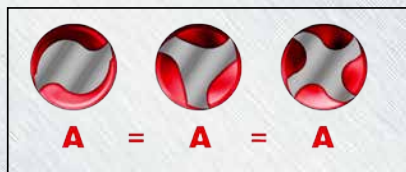
## BALANCED 4 FLUTE CHATTERFREE SOLID CARBIDE ENDMILLS FOR MACHINING ALUMINUM

Ingersoll is pleased to announce the update to our 47DRQ - 4 flute, solid carbide endmills with different helix and variable pitch for machining aluminum. This series now includes an inch offering. The new endmills expand the already available endmills family: 46DRQ inch - 3 flute endmills, providing an extra flute for higher production rates.

The 4 fluted 47DRQ/47D\_RQ endmill series, designed for both roughing and finishing operations, feature excellent chatter dampening ability. They can be used with external cooling at very high cutting speeds. The new 4 cutting edged tools were designed with core diameter and flute chip gullet section size similar to the existing 47DRQ line.

### Features

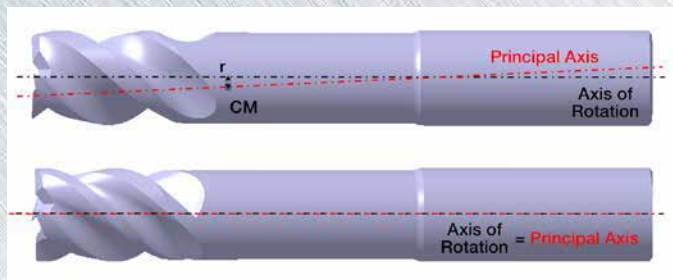
- The tools are statically and dynamically balanced by design
- Lower and fewer fluctuation bending forces
- Provides very stable machining process



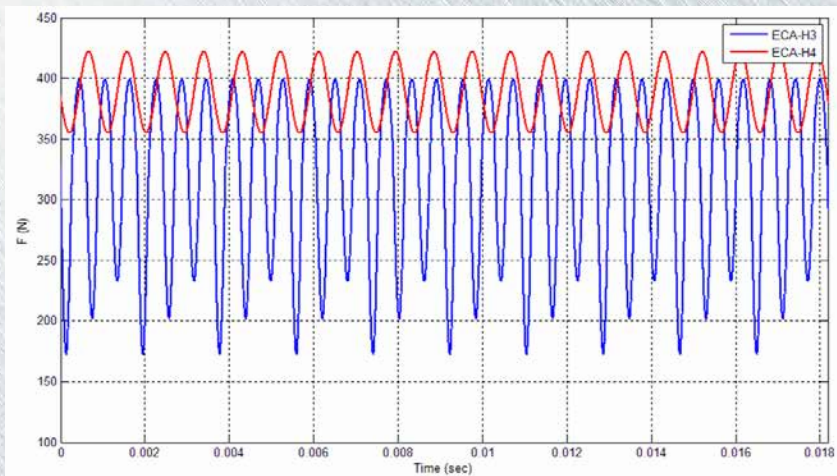
## TECHNICAL INFORMATION

### Balance Grade by Design at 33,000 RPM

		CAD Model	
		r (μm)	Balance Grade
D=12mm	46DRQ 12mm IN05S	8	G16
D=16mm	47DRQ 12mm IN05S	7	G16



### Analytical Tool Bending Force Fluctuation



**Tools**  
**46DRQ**  
**47DRQ**

**Material**  
**Aluminum 7075**

**Machining Conditions**  
 $ap = 3\text{mm}$  (.12")  
 $fz = 0.1\text{mm/t}$  (.004" IPT)  
 $n = 33,000\text{ RPM}$

Ingersoll's new StediRound endmills for machining aluminum are an excellent solution for low power machines with ISO40 or BT40 adaptations, improving material removal rate and eliminating vibration. They maximize stock removal rate and reduce cycle time in most milling operations. Their unique ground and polished geometry provides excellent bottom and side surface finish with no mismatch.

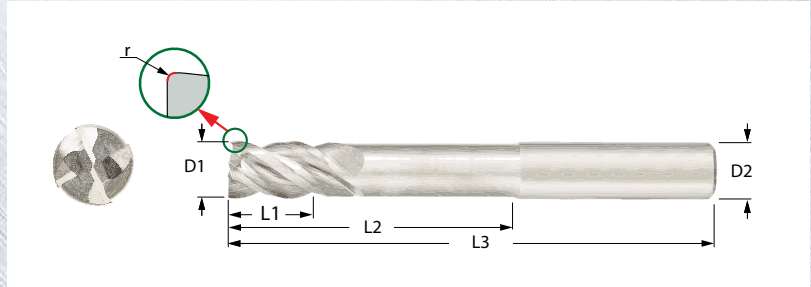
Extended tool life can be expected when machining at high material removal rates.

The new 4 fluted StediRound solid carbide endmills are available in a diameter range of 6 to 25 mm and .250" to 1.00" with milling depth to endmill diameter ratios of 3XD and 5XD (long and short necks).

Important: When machining at RPM higher than 12,000, tool and holder assembly should be balanced.

## 47DRQ SERIES - METRIC

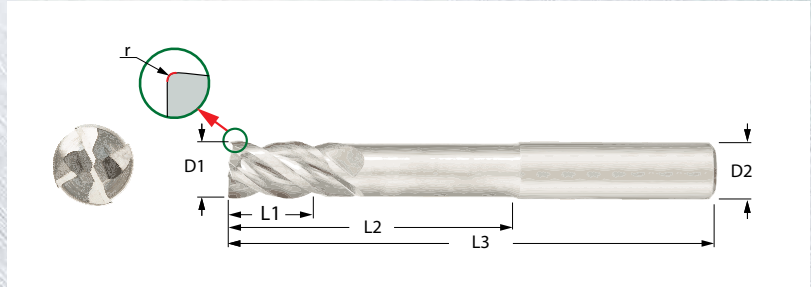
SOLID CARBIDE ENDMILLS WITH DIFFERENT HELIX AND VARIABLE PITCH  
3,4 AND 5XD NECK RELIEF FOR MACHINING ALUMINUM



Designation	Helix (degree)	D1 Diameter	Z Flutes	R Radius	L3 Overall Length	L2 Height	L1 Cut Length	D2 Shank Size/Style	Grade
47D00612T7RQ20	39-41	6.000	4	0.200	57.00	18.000	12.00	6mm Cyl	IN05S
47D00609T7RQ20	39-41	6.000	4	0.200	65.00	30.000	9.00	6mm Cyl	IN05S
47D00816T0RQ20	39-41	8.000	4	0.200	63.00	24.000	16.00	8mm Cyl	IN05S
47D00812T0RQ20	39-41	8.000	4	0.200	79.00	40.000	12.00	8mm Cyl	IN05S
47D01020T1RQ20	39-41	10.000	4	0.200	72.00	30.000	20.00	10mm Cyl	IN05S
47D01015T1RQ20	39-41	10.000	4	0.200	92.00	50.000	15.00	10mm Cyl	IN05S
47D01224T2RQ20	39-41	12.000	4	0.200	83.00	36.000	24.00	12mm Cyl	IN05S
47D01218T2RQ20	39-41	12.000	4	0.200	100.00	60.000	18.00	12mm Cyl	IN05S
47D01632T3RQ20	39-41	16.000	4	0.200	100.00	48.000	32.00	16mm Cyl	IN05S
47D01624T3RQ20	39-41	16.000	4	0.200	128.00	80.000	24.00	16mm Cyl	IN05S
47D02040T4RQ20	39-41	20.000	4	0.200	110.00	60.000	40.00	20mm Cyl	IN05S
47D02030T4RQ20	39-41	20.000	4	0.200	150.00	100.000	30.00	20mm Cyl	IN05S
47D02538T5RQ200	39-41	25.000	4	0.200	130.00	75.000	38.00	25mm Cyl	IN05S
47D02538T5RQ20	39-41	25.000	4	0.200	185.00	125.000	38.00	25mm Cyl	IN05S

## 47D\_RQ SERIES - INCH

4 FLUTE, SOLID CARBIDE ENDMILLS WITH VARIOUS HELIX, 3, 4 AND 5XD NECK RELIEF FOR MACHINING ALUMINUM



Designation	Helix (degree)	D1 Diameter	Z Flutes	R Radius	L3 Overall Length	L2 Height	L1 Cut Length	D2 Shank Size/Style	Grade
47D-2550R6RQ01	39-41	0.250	4	0.010	2.50	0.750	0.50	.250" Cyl	IN05S
47D-2537R6RQ01	39-41	0.250	4	0.010	2.50	1.200	0.38	.250" Cyl	IN05S
47D-3162R7RQ01	39-41	0.312	4	0.010	2.50	0.900	0.63	.312" Cyl	IN05S
47D-3147R7RQ01	39-41	0.312	4	0.010	2.50	1.600	0.47	.312" Cyl	IN05S
47D-3775R8RQ01	39-41	0.375	4	0.010	2.50	1.100	0.75	.375" Cyl	IN05S
47D-3756R8RQ01	39-41	0.375	4	0.010	2.50	1.800	0.56	.375" Cyl	IN05S
47D-5075S4RQ01	39-41	0.500	4	0.010	3.00	1.500	0.75	.500" Cyl	IN05S
47D-5010S4RQ01	39-41	0.500	4	0.010	4.50	2.500	1.00	.500" Cyl	IN05S
47D-6212S6RQ01	39-41	0.625	4	0.010	3.50	1.800	0.13	.625" Cyl	IN05S
47D-6212S6RQ01	39-41	0.625	4	0.010	5.00	3.100	0.13	.625" Cyl	IN05S
47D-7512S7RQ011	39-41	0.750	4	0.010	5.00	2.200	1.20	.750" Cyl	IN05S
47D-7512S7RQ01	39-41	0.750	4	0.010	6.00	3.700	1.20	.750" Cyl	IN05S
47D-1020S5RQ01	39-41	1.000	4	0.010	5.00	3.000	2.00	1.000" Cyl	IN05S
47D-1015S5RQ01	39-41	1.000	4	0.010	7.20	5.000	1.50	1.000" Cyl	IN05S

## OPERATING GUIDELINES

Workpiece Material	Cutting speed vc in m/min		Feed rate per tooth fz in mm		Cutting Depth ap recomm. for End mill mm	Cutting Width ae % Recommended	
	End mill		End mill				
DC mm	Full slot	Shoulder	Full slot	Shoulder			
Aluminum <b>N</b>	2 - 6	250 - 800	250 - 800	0,02 - 0,04	0,03 - 0,08	0,3 x D	30%
	8 - 12	800 - 1000	1000 - 1500	0,09 - 0,12	0,1 - 0,18	0,3 x D	30%
	16 - 25	800 - 1000	1500 - 2000	0,15 - 0,18	0,18 - 0,25	0,3 x D	30%