

Radius End Mill for Hardened Steel

# ***EPDREH-TH3***

Epoch Deep Radius Evolution Hard-TH3



[www.moldino.eu](http://www.moldino.eu)

*Deep milling radius end mill for hardened steel*

**Features of EPDREH-TH3**

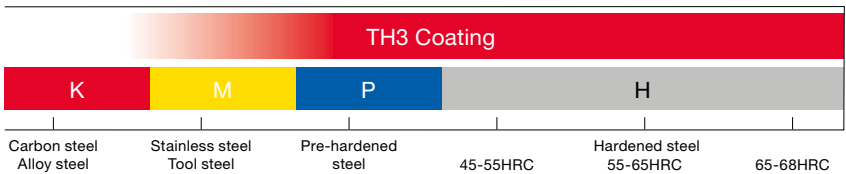


- 01** Centerline reference for corner radius
- 02** TH3 Coating
- 03** Positive bottom cutting edge

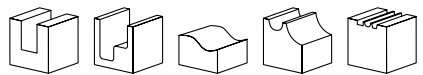
**Line-up:** 53 (2-flute)  
266 (4-flute)

**DC:** 0.2 – 6.0 mm

**Recommended usage**



**Applications**



**Customer need and product benefit**

High-precision (deep) machining of hardened steels with easy setup, long tool life and best possible surface quality.



**Challenge**

High-accuracy machining requires precise corner radius. Short tool life in automated processes, sharpens the challenge.

**Solution**

The corner radius uses the tool centerline as reference, which allows high-accuracy machining. TH3 coating and high-hard carbide grade for maximum tool life. Positive bottom cutting edge for improved surface quality.

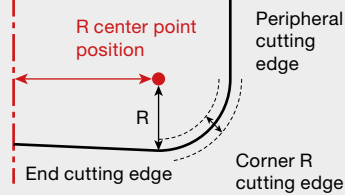
Feature

**01**

Centerline reference for corner radius

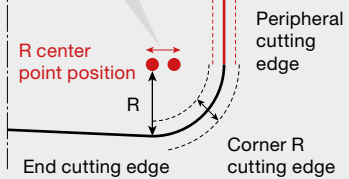
**Centerline Reference  
(EPDREH-TH3)**

 Tool centerline  
forms datum

 R center point position  
does not vary because the  
tool centerline forms the  
datum.

 Impact on tool precision  
= Radius variations

**Diameter Reference  
(Typical radius end mill)**

 Using the tool diameter  
as the datum means the R  
center position varies with  
outer diameter tolerances.

 Peripheral edge  
forms datum

 Impact on tool precision  
= Variations in tool diameter + Radius variations

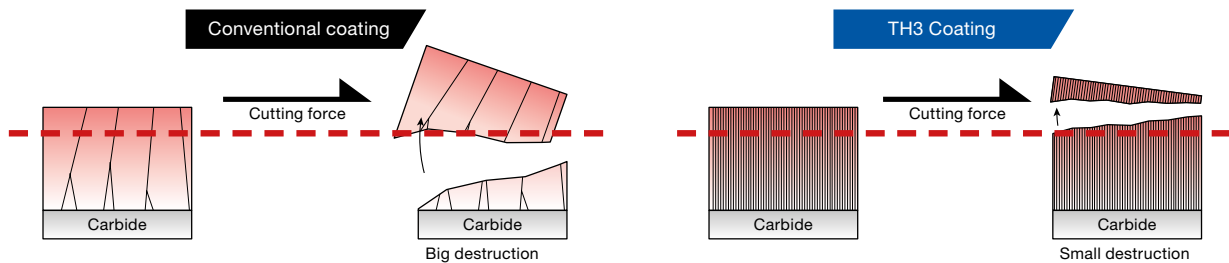
Feature

**02**

TH3 coating


**TH3 Coating**

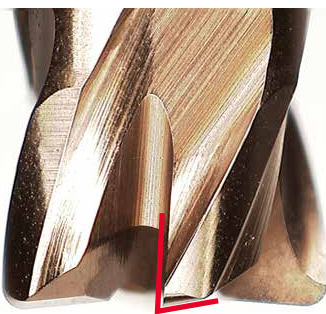
TH3 features a special nanostructure to minimize degradation of the coating layer!



Feature

**03**

Positive bottom cutting edge


**EPDREH-TH3  
with positive bottom rake**

**Similar end mill  
with neutral bottom rake**


VANADIS23 (63 HRC)

DC 1 mm

 $V_c$  31 m/min

 $f_z$  0.016 mm/t


Finished surfaces of hardened steels can be uneven when machining for extended periods. The positive bottom cutting edge of EPDREH-TH3 improves the surface quality and therefore reduces polishing time.

## EPDREH-TH3 2 flute line-up overview



RE (mm)	Tool Diameter DC (mm)						
	0.2	0.3	0.4	0.5	0.6	0.8	1
0.02	○	○	○	○	○	○	○
0.05	●	●	●	●	○	○	●
0.1			●	●	●	●	●
0.2						●	●

LN (mm)	Tool Diameter DC (mm)						
	0.2	0.3	0.4	0.5	0.6	0.8	1
0.5	●						
1	●	●	●	●			
2		●	●	●	●	●	●
3				●			
4					●	●	●
6							●
8							●

## EPDREH-TH3 4 flute line-up overview



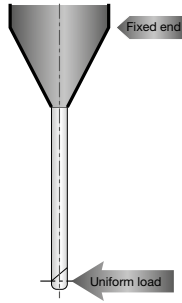
RE (mm)	Tool Diameter DC (mm)						
	1	1.5	2	3	4	5	6
0.02	○	○	○				
0.05	●	○	●	○			
0.1	●	●	●	○	○	○	○
0.2	●	●	●	●	●	○	●
0.3	○	○	○	○	○	○	●
0.5		●	●	●	●	●	●
1					●	●	●

LN (mm)	Tool Diameter DC (mm)						
	1	1.5	2	3	4	5	6
1.5	○						
2	●	○					
2.5	○		○				
3	○	○	○				
4	●	●	●	○			
5	○	○	○				
6	●	●	●	○			
8	●	●	●	●	○		
10		○	○	○	○	○	
12		●	●	●	●		○
14				○	○		
15						●	
16				●	●		
18				○	○		●
20				●	●	○	
22					○		
24					●		●
25						●	
30							●

Drawing Nomenclature (mm)	
DC	Diameter Cutting
LN	Length Neck
RE	Radius Edge

● Stock Item ○ Non-Stock Item (min. order qty. 5 pcs.)

## EPDREH-TH3 Calculated deflection – Criteria for tool selection



### Note:

- The calculated deflections are based on MOLDINO equations that treat the tool as an elastic body.
- The data here does not account for flute and does not indicate deflection accurately.
- This is not a guarantee of accuracy. Actual deflection will vary during machining.

### Method of calculation:

- Calculated as a cantilever beam.
- The start of the taper is set as a fixed end.
- A uniform load is applied to the outermost diameter section of the flute tip.
- The deflection is calculated at the outermost diameter section of the flute tip (loading point).



### Deflection characteristics:

- Smaller values indicate greater rigidity.
- EPDREH-2010-2-002-TH3 = 0.36, EPDREH-2010-4-002-TH3 = 1.61:  
under neck length 2 is stiffer ( $1.61 / 0.36 = 4.47$  times stiffer) than under neck 4.

## EPDREH-TH3 2 flute

RE (mm)	LN (mm)	Tool Diameter DC (mm)						
		0.2	0.3	0.4	0.5	0.6	0.8	1
0.02	0.5	3.86						
	1	19.84	4.09	1.53	0.77			
	2		23.37	7.51	3.28	1.72	0.66	0.36
	3				9.12			
	4					9.67	3.26	1.61
	6							4.54
	8							9.86

RE (mm)	LN (mm)	Tool Diameter DC (mm)						
		0.2	0.3	0.4	0.5	0.6	0.8	1
0.05	0.5	3.42						
	1	18.34	3.82	1.45	0.74			
	2		22.45	7.23	3.17	1.67	0.64	0.35
	3				8.88			
	4					9.48	3.20	1.59
	6							4.48
	8							9.76

RE (mm)	LN (mm)	Tool Diameter DC (mm)					
		0.4	0.5	0.6	0.8	1	
0.1	1	1.31	0.67				
	2	6.77	2.98	1.57	0.61	0.34	
	3		8.49				
	4			9.16	3.10	1.54	
	6					4.38	
	8					9.59	
	0.2	2				0.55	0.31
		4				2.90	1.44
6						4.19	
8						9.26	

## EPDREH-TH3 4 flute

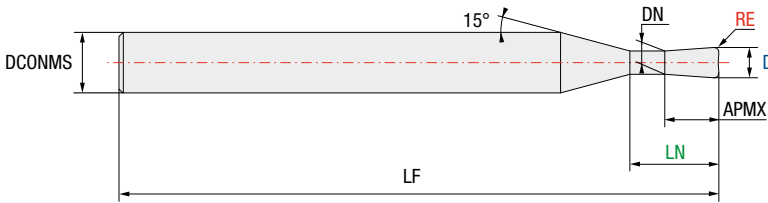
RE (mm)	LN (mm)	Tool Diameter DC (mm)						
		1	1.5	2	3	4	5	6
0.02	1.5	0.21						
	2	0.34	0.10					
	2.5	0.52		0.06				
	3	0.77	0.21	0.08				
	4	1.50	0.37	0.14				
	5	2.62	0.62	0.22				
	6	4.20	0.97	0.34				
	8	9.11	2.02	0.69				
	10		3.65	1.23				
	12		6.01	2.01				
	0.05	1.5	0.20					
		2	0.33	0.10				
2.5		0.51		0.06				
3		0.75	0.20	0.08				
4		1.47	0.37	0.14	0.04			
5		2.58	0.61	0.22				
6		4.15	0.96	0.34	0.09			
8		9.02	2.00	0.69	0.17			
10			3.62	1.22	0.29			
12			5.97	2.00	0.46			
0.1		1.5	0.19					
		2	0.32	0.10				
	2.5	0.49		0.06				
	3	0.73	0.20	0.08				
	4	1.43	0.36	0.13	0.04			
	5	2.51	0.60	0.22				
	6	4.05	0.94	0.33	0.09			
	8	8.86	1.96	0.68	0.17	0.06		
	10		3.57	1.21	0.29	0.09	0.03	
	12		5.90	1.97	0.46	0.15	0.02	
	14				0.68	0.22		
	15						0.10	
16				0.97	0.31			

RE (mm)	LN (mm)	Tool Diameter DC (mm)					
		1	1.5	2	3	4	5
0.1	18				1.33	0.43	0.06
	20				1.77	0.57	0.22
	22					0.74	
	24					0.94	0.14
	25						0.40
	30						0.28
0.2	1.5	0.18					
	2	0.29	0.09				
	2.5	0.45		0.05			
	3	0.67	0.18	0.07			
	4	1.34	0.34	0.13	0.04		
	5	2.38	0.57	0.21			
	6	3.88	0.90	0.32	0.09		
	8	8.56	1.90	0.65	0.16	0.05	
	10		3.48	1.18	0.28	0.09	0.03
	12		5.76	1.93	0.45	0.15	0.02
	14				0.67	0.22	
	15						0.10
	16				0.95	0.31	
	18				1.31	0.42	0.06
	20				1.74	0.56	0.21
22					0.73		
24					0.92	0.14	
25						0.40	
30						0.27	
0.3	1.5	0.16					
	2	0.26	0.08				
	2.5	0.41		0.05			
	3	0.62	0.17	0.07			
	4	1.26	0.32	0.12	0.04		
	5	2.26	0.54	0.20			
	6	3.70	0.86	0.31	0.08		
	8	8.27	1.84	0.63	0.16	0.05	
	10		3.38	1.15	0.27	0.09	0.03
	12		5.63	1.88	0.44	0.14	0.02
	14				0.65	0.21	
	15						0.10

RE (mm)	LN (mm)	Tool Diameter DC (mm)						
		1.5	2	3	4	5	6	
0.3	16			0.93	0.30			
	18			1.29	0.41		0.06	
	20				1.72	0.55	0.21	
	22					0.72		
	24					0.91	0.14	
	25						0.39	
	30						0.27	
	0.5	2	0.07					
		2.5		0.04				
		3	0.15	0.06				
4		0.29	0.11	0.04				
5		0.49	0.18					
6		0.79	0.28	0.08				
8		1.72	0.59	0.15	0.05			
10		3.20	1.09	0.26	0.09	0.03		
12		5.37	1.80	0.42	0.14	0.02		
14				0.63	0.20			
15						0.09		
16				0.90	0.29			
18				1.25	0.40		0.06	
20				1.67	0.54	0.20		
22					0.70			
24				0.89		0.14		
25					0.38			
30						0.27		
1	8				0.04			
	10				0.08	0.03		
	12				0.12		0.02	
	14				0.19			
	15					0.08		
	16					0.27		
	18					0.37	0.05	
	20					0.50	0.19	
	22					0.66		
	24					0.84	0.13	
25						0.36		
30						0.25		

# EPDREH-TH3 2 flute

2 flute    Rake angle negative    Helix 30°    h4 DCOMMS=4    Carbide    TH3 coating    68 HRC



Material selection matrix:

P	M	K
N	S	H

Effective under-neck length diagram showing Draft angle and Interference angle B2.

The 2-flute tool uses a backdraft profile (with strong back taper).

RE Tolerance  
±0.005 mm

ID Code	Item Code	Stock	Size (mm)							Effective under-neck length with respect to draft angle (mm)					
			DC	RE	LN	APMX	DN	LF	DCONMS	B2(°)	0.5°	1.0°	1.5°	2.0°	3.0°
EP2221	EPDREH-2002-0.5-002-TH3	○	0.2	0.02	0.5	0.15	0.17	50	4	13.90	0.57	0.59	0.61	0.63	0.68
EP2222	EPDREH-2002-1-002-TH3	○	0.2	0.02	1.0	0.15	0.17	50	4	13.08	1.09	1.12	1.16	1.21	1.30
EP2224	EPDREH-2002-0.5-005-TH3	●	0.2	0.05	0.5	0.15	0.17	50	4	13.95	0.57	0.59	0.61	0.63	0.67
EP2226	EPDREH-2002-1-005-TH3	●	0.2	0.05	1.0	0.15	0.17	50	4	13.13	1.08	1.12	1.16	1.20	1.30
EP2227	EPDREH-2003-1-002-TH3	○	0.3	0.02	1.0	0.25	0.27	50	4	13.06	1.09	1.12	1.16	1.21	1.30
EP2228	EPDREH-2003-2-002-TH3	○	0.3	0.02	2.0	0.25	0.27	50	4	11.65	2.12	2.19	2.27	2.36	2.55
EP2231	EPDREH-2003-1-005-TH3	●	0.3	0.05	1.0	0.25	0.27	50	4	13.10	1.08	1.12	1.16	1.20	1.30
EP2234	EPDREH-2003-2-005-TH3	●	0.3	0.05	2.0	0.25	0.27	50	4	11.68	2.12	2.19	2.27	2.35	2.54
EP2236	EPDREH-2004-1-002-TH3	○	0.4	0.02	1.0	0.30	0.37	50	4	13.03	1.09	1.12	1.16	1.21	1.30
EP2237	EPDREH-2004-2-002-TH3	○	0.4	0.02	2.0	0.30	0.37	50	4	11.59	2.12	2.19	2.27	2.36	2.55
EP2239	EPDREH-2004-1-005-TH3	●	0.4	0.05	1.0	0.30	0.37	50	4	13.08	1.08	1.12	1.16	1.20	1.30
EP2241	EPDREH-2004-2-005-TH3	●	0.4	0.05	2.0	0.30	0.37	50	4	11.63	2.12	2.19	2.27	2.35	2.54
EP2243	EPDREH-2004-1-01-TH3	●	0.4	0.10	1.0	0.30	0.37	50	4	13.16	1.08	1.12	1.15	1.19	1.28
EP2244	EPDREH-2004-2-01-TH3	●	0.4	0.10	2.0	0.30	0.37	50	4	11.69	2.12	2.19	2.26	2.34	2.53
EP2246	EPDREH-2005-1-002-TH3	○	0.5	0.02	1.0	0.35	0.47	50	4	13.01	1.09	1.12	1.16	1.21	1.30
EP2247	EPDREH-2005-2-002-TH3	○	0.5	0.02	2.0	0.35	0.47	50	4	11.53	2.12	2.19	2.27	2.36	2.55
EP2248	EPDREH-2005-3-002-TH3	○	0.5	0.02	3.0	0.35	0.47	50	4	10.36	3.15	3.26	3.38	3.51	3.79
EP2249	EPDREH-2005-1-005-TH3	●	0.5	0.05	1.0	0.35	0.47	50	4	13.06	1.08	1.12	1.16	1.20	1.30
EP2250	EPDREH-2005-2-005-TH3	●	0.5	0.05	2.0	0.35	0.47	50	4	11.57	2.12	2.19	2.27	2.35	2.54
EP2251	EPDREH-2005-3-005-TH3	●	0.5	0.05	3.0	0.35	0.47	50	4	10.39	3.15	3.26	3.38	3.50	3.78
EP2253	EPDREH-2005-1-01-TH3	●	0.5	0.10	1.0	0.35	0.47	50	4	13.14	1.08	1.12	1.15	1.19	1.28
EP2254	EPDREH-2005-2-01-TH3	●	0.5	0.10	2.0	0.35	0.47	50	4	11.64	2.12	2.19	2.26	2.34	2.53
EP2255	EPDREH-2005-3-01-TH3	●	0.5	0.10	3.0	0.35	0.47	50	4	10.44	3.15	3.26	3.37	3.49	3.77
EP2257	EPDREH-2006-2-002-TH3	○	0.6	0.02	2.0	0.40	0.57	50	4	11.34	2.12	2.19	2.27	2.36	2.55
EP2258	EPDREH-2006-4-002-TH3	○	0.6	0.02	4.0	0.40	0.57	50	4	9.22	4.19	4.33	4.49	4.66	5.03
EP2259	EPDREH-2006-2-005-TH3	○	0.6	0.05	2.0	0.40	0.57	50	4	11.38	2.12	2.19	2.27	2.35	2.54
EP2260	EPDREH-2006-4-005-TH3	○	0.6	0.05	4.0	0.40	0.57	50	4	9.24	4.19	4.33	4.48	4.65	5.03
EP2262	EPDREH-2006-2-01-TH3	●	0.6	0.10	2.0	0.40	0.57	50	4	11.45	2.12	2.19	2.26	2.34	2.53
EP2264	EPDREH-2006-4-01-TH3	●	0.6	0.10	4.0	0.40	0.57	50	4	9.29	4.18	4.33	4.48	4.64	5.01
EP2267	EPDREH-2008-2-002-TH3	○	0.8	0.02	2.0	0.50	0.77	50	4	11.21	2.12	2.19	2.27	2.36	2.55
EP2268	EPDREH-2008-4-002-TH3	○	0.8	0.02	4.0	0.50	0.77	50	4	9.02	4.19	4.33	4.49	4.66	5.03
EP2269	EPDREH-2008-2-005-TH3	○	0.8	0.05	2.0	0.50	0.77	50	4	11.25	2.12	2.19	2.27	2.35	2.54
EP2270	EPDREH-2008-4-005-TH3	○	0.8	0.05	4.0	0.50	0.77	50	4	9.05	4.19	4.33	4.48	4.65	5.03
EP2271	EPDREH-2008-2-01-TH3	●	0.8	0.10	2.0	0.50	0.77	50	4	11.31	2.12	2.19	2.26	2.34	2.53
EP2272	EPDREH-2008-4-01-TH3	●	0.8	0.10	4.0	0.50	0.77	50	4	9.10	4.18	4.33	4.48	4.64	5.01
EP2275	EPDREH-2008-2-02-TH3	●	0.8	0.20	2.0	0.50	0.77	50	4	11.45	2.11	2.18	2.25	2.33	2.50
EP2276	EPDREH-2008-4-02-TH3	●	0.8	0.20	4.0	0.50	0.77	50	4	9.19	4.18	4.32	4.47	4.63	4.99



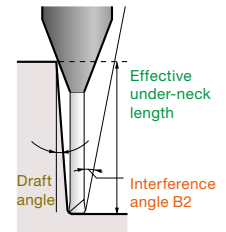
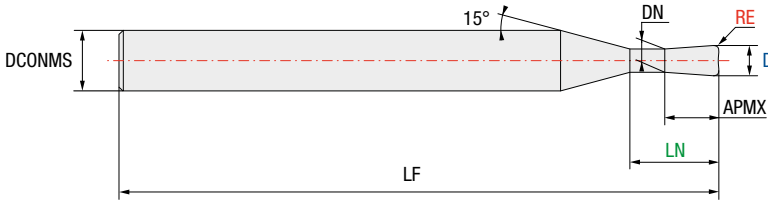
The actual effective under neck length with respect to the draft angle differs from the Epoch Deep Radius Evolution EPDRE-ATH. Please be sure to check this.

● Stock Item    ○ Non-Stock Item (min. order qty. 5 pcs.)

# EPDREH-TH3 2 flute

2 flute	Rake angle negative	Helix 30°	h4 DCONMS=4	Carbide	TH3 coating	68 HRC
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P	M	K
N	S	H



RE Tolerance  
 ±0.005 mm

The 2-flute tool uses a backdraft profile (with strong back taper).

ID Code	Item Code	Stock	Size (mm)							Effective under-neck length with respect to draft angle (mm)					
			DC	RE	LN	APMX	DN	LF	DCONMS	B2(°)	0.5°	1.0°	1.5°	2.0°	3.0°
EP2279	EPDREH-2010-2-002-TH3	○	1	0.02	2	0.8	0.94	50	4	10.92	2.18	2.25	2.33	2.42	2.62
EP2280	EPDREH-2010-4-002-TH3	○	1	0.02	4	0.8	0.94	50	4	8.72	4.24	4.39	4.55	4.72	5.10
EP2281	EPDREH-2010-6-002-TH3	○	1	0.02	6	0.8	0.94	50	4	7.26	6.31	6.53	6.77	7.02	7.59
EP2282	EPDREH-2010-8-002-TH3	○	1	0.02	8	0.8	0.94	50	4	6.22	8.38	8.67	8.98	9.32	10.07
EP2283	EPDREH-2010-2-005-TH3	●	1	0.05	2	0.8	0.94	50	4	10.96	2.18	2.25	2.33	2.42	2.61
EP2284	EPDREH-2010-4-005-TH3	●	1	0.05	4	0.8	0.94	50	4	8.75	4.24	4.39	4.55	4.72	5.09
EP2285	EPDREH-2010-6-005-TH3	●	1	0.05	6	0.8	0.94	50	4	7.28	6.31	6.53	6.76	7.02	7.58
EP2286	EPDREH-2010-8-005-TH3	●	1	0.05	8	0.8	0.94	50	4	6.23	8.38	8.67	8.98	9.32	10.07
EP2287	EPDREH-2010-2-01-TH3	●	1	0.10	2	0.8	0.94	50	4	11.03	2.17	2.25	2.32	2.41	2.60
EP2288	EPDREH-2010-4-01-TH3	●	1	0.10	4	0.8	0.94	50	4	8.80	4.24	4.39	4.54	4.71	5.08
EP2289	EPDREH-2010-6-01-TH3	●	1	0.10	6	0.8	0.94	50	4	7.31	6.31	6.53	6.76	7.01	7.57
EP2290	EPDREH-2010-8-01-TH3	●	1	0.10	8	0.8	0.94	50	4	6.25	8.38	8.67	8.97	9.31	10.06
EP2292	EPDREH-2010-2-02-TH3	●	1	0.20	2	0.8	0.94	50	4	11.17	2.17	2.24	2.31	2.39	2.57
EP2293	EPDREH-2010-4-02-TH3	●	1	0.20	4	0.8	0.94	50	4	8.89	4.24	4.38	4.53	4.69	5.06
EP2294	EPDREH-2010-6-02-TH3	●	1	0.20	6	0.8	0.94	50	4	7.37	6.31	6.52	6.75	6.99	7.54
EP2295	EPDREH-2010-8-02-TH3	●	1	0.20	8	0.8	0.94	50	4	6.30	8.37	8.66	8.96	9.29	10.03



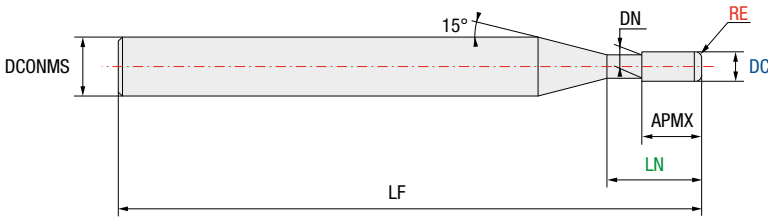
The actual effective under neck length with respect to the draft angle differs from the Epoch Deep Radius Evolution EPDRE-ATH. Please be sure to check this.

● Stock Item ○ Non-Stock Item (min. order qty. 5 pcs.)



# EPDREH-TH3 4 flute

4 flute | Rake angle negative | Helix 30° | h4 DCONMS=4 | Carbide | TH3 coating | 68 HRC



Material selection: P, M, K, N, S, H

RE Tolerance  
±0.005 mm

ID Code	Item Code	Stock	Size (mm)							Effective under-neck length with respect to draft angle (mm)					
			DC	RE	LN	APMX	DN	LF	DCONMS	B2(°)	0.5°	1.0°	1.5°	2.0°	3.0°
EP2299	EPDREH-4010-1.5-002-TH3	○	1	0.02	1.5	0.6	0.96	50	4	11.81	1.62	1.68	1.74	1.80	1.95
EP2300	EPDREH-4010-2-002-TH3	○	1	0.02	2.0	0.6	0.96	50	4	11.06	2.14	2.21	2.29	2.38	2.57
EP2301	EPDREH-4010-2.5-002-TH3	○	1	0.02	2.5	0.6	0.96	50	4	10.40	2.66	2.75	2.85	2.95	3.19
EP2302	EPDREH-4010-3-002-TH3	○	1	0.02	3.0	0.6	0.96	50	4	9.81	3.17	3.28	3.40	3.53	3.81
EP2303	EPDREH-4010-4-002-TH3	○	1	0.02	4.0	0.6	0.96	50	4	8.81	4.21	4.35	4.51	4.68	5.06
EP2304	EPDREH-4010-5-002-TH3	○	1	0.02	5.0	0.6	0.96	50	4	8.00	5.24	5.42	5.62	5.83	6.30
EP2305	EPDREH-4010-6-002-TH3	○	1	0.02	6.0	0.6	0.96	50	4	7.32	6.27	6.49	6.73	6.98	7.54
EP2306	EPDREH-4010-8-002-TH3	○	1	0.02	8.0	0.6	0.96	50	4	6.26	8.34	8.63	8.94	9.28	10.03
EP2307	EPDREH-4010-1.5-005-TH3	○	1	0.05	1.5	0.6	0.96	50	4	11.85	1.62	1.68	1.73	1.80	1.94
EP2308	EPDREH-4010-2-005-TH3	●	1	0.05	2.0	0.6	0.96	50	4	11.10	2.14	2.21	2.29	2.37	2.56
EP2309	EPDREH-4010-2.5-005-TH3	○	1	0.05	2.5	0.6	0.96	50	4	10.43	2.65	2.75	2.84	2.95	3.18
EP2310	EPDREH-4010-3-005-TH3	○	1	0.05	3.0	0.6	0.96	50	4	9.84	3.17	3.28	3.40	3.52	3.81
EP2311	EPDREH-4010-4-005-TH3	●	1	0.05	4.0	0.6	0.96	50	4	8.84	4.21	4.35	4.51	4.67	5.05
EP2312	EPDREH-4010-5-005-TH3	○	1	0.05	5.0	0.6	0.96	50	4	8.02	5.24	5.42	5.61	5.82	6.29
EP2313	EPDREH-4010-6-005-TH3	●	1	0.05	6.0	0.6	0.96	50	4	7.34	6.27	6.49	6.72	6.97	7.53
EP2314	EPDREH-4010-8-005-TH3	●	1	0.05	8.0	0.6	0.96	50	4	6.28	8.34	8.63	8.94	9.27	10.02
EP2315	EPDREH-4010-1.5-01-TH3	○	1	0.10	1.5	0.6	0.96	50	4	11.93	1.62	1.67	1.73	1.79	1.93
EP2316	EPDREH-4010-2-01-TH3	●	1	0.10	2.0	0.6	0.96	50	4	11.17	2.14	2.21	2.28	2.37	2.55
EP2317	EPDREH-4010-2.5-01-TH3	○	1	0.10	2.5	0.6	0.96	50	4	10.50	2.65	2.74	2.84	2.94	3.17
EP2318	EPDREH-4010-3-01-TH3	○	1	0.10	3.0	0.6	0.96	50	4	9.90	3.17	3.28	3.39	3.52	3.79
EP2319	EPDREH-4010-4-01-TH3	●	1	0.10	4.0	0.6	0.96	50	4	8.89	4.20	4.35	4.50	4.67	5.04
EP2320	EPDREH-4010-5-01-TH3	○	1	0.10	5.0	0.6	0.96	50	4	8.06	5.24	5.42	5.61	5.82	6.28
EP2321	EPDREH-4010-6-01-TH3	●	1	0.10	6.0	0.6	0.96	50	4	7.37	6.27	6.49	6.72	6.96	7.52
EP2322	EPDREH-4010-8-01-TH3	●	1	0.10	8.0	0.6	0.96	50	4	6.30	8.34	8.63	8.93	9.26	10.01
EP2324	EPDREH-4010-1.5-02-TH3	○	1	0.20	1.5	0.6	0.96	50	4	12.10	1.62	1.67	1.72	1.78	1.90
EP2325	EPDREH-4010-2-02-TH3	●	1	0.20	2.0	0.6	0.96	50	4	11.31	2.13	2.20	2.27	2.35	2.53
EP2326	EPDREH-4010-2.5-02-TH3	○	1	0.20	2.5	0.6	0.96	50	4	10.62	2.65	2.74	2.83	2.93	3.15
EP2327	EPDREH-4010-3-02-TH3	○	1	0.20	3.0	0.6	0.96	50	4	10.01	3.17	3.27	3.38	3.50	3.77
EP2328	EPDREH-4010-4-02-TH3	●	1	0.20	4.0	0.6	0.96	50	4	8.98	4.20	4.34	4.49	4.65	5.01
EP2329	EPDREH-4010-5-02-TH3	○	1	0.20	5.0	0.6	0.96	50	4	8.14	5.23	5.41	5.60	5.80	6.25
EP2330	EPDREH-4010-6-02-TH3	●	1	0.20	6.0	0.6	0.96	50	4	7.44	6.27	6.48	6.71	6.95	7.50
EP2331	EPDREH-4010-8-02-TH3	●	1	0.20	8.0	0.6	0.96	50	4	6.35	8.33	8.62	8.92	9.25	9.98
EP2335	EPDREH-4010-1.5-03-TH3	○	1	0.30	1.5	0.6	0.96	50	4	12.27	1.61	1.66	1.71	1.76	1.88
EP2336	EPDREH-4010-2-03-TH3	○	1	0.30	2.0	0.6	0.96	50	4	11.46	2.13	2.19	2.26	2.34	2.50
EP2337	EPDREH-4010-2.5-03-TH3	○	1	0.30	2.5	0.6	0.96	50	4	10.76	2.65	2.73	2.82	2.91	3.12
EP2338	EPDREH-4010-3-03-TH3	○	1	0.30	3.0	0.6	0.96	50	4	10.13	3.16	3.26	3.37	3.49	3.74
EP2339	EPDREH-4010-4-03-TH3	○	1	0.30	4.0	0.6	0.96	50	4	9.07	4.20	4.33	4.48	4.64	4.99



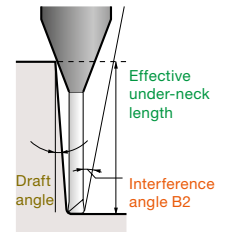
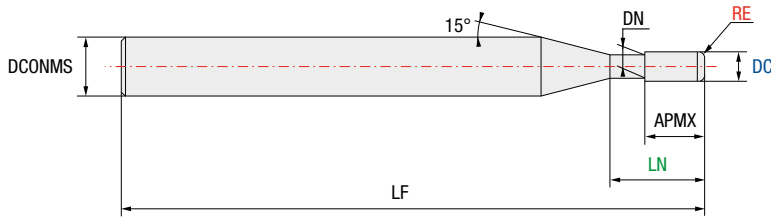
The actual effective under neck length with respect to the draft angle differs from the Epoch Deep Radius Evolution EPDRE-ATH. Please be sure to check this.

● Stock Item ○ Non-Stock Item (min. order qty. 5 pcs.)



# EPDREH-TH3 4 flute

4 flute   Rake angle negative   Helix 30°   h4 DCONMS=4   Carbide   TH3 coating   68 HRC



RE Tolerance  
 ±0.005 mm

ID Code	Item Code	Stock	Size (mm)							Effective under-neck length with respect to draft angle (mm)					
			DC	RE	LN	APMX	DN	LF	DCONMS	B2(°)	0.5°	1.0°	1.5°	2.0°	3.0°
EP2340	EPDREH-4010-5-03-TH3	○	1.0	0.30	5	0.6	0.96	50	4	8.21	5.23	5.40	5.59	5.79	6.23
EP2341	EPDREH-4010-6-03-TH3	○	1.0	0.30	6	0.6	0.96	50	4	7.50	6.26	6.47	6.70	6.94	7.47
EP2342	EPDREH-4010-8-03-TH3	○	1.0	0.30	8	0.6	0.96	50	4	6.39	8.33	8.61	8.91	9.23	9.96
EP2343	EPDREH-4015-2-002-TH3	○	1.5	0.02	2	0.9	1.44	50	4	10.45	2.18	2.25	2.33	2.42	2.62
EP2344	EPDREH-4015-3-002-TH3	○	1.5	0.02	3	0.9	1.44	50	4	9.13	3.21	3.32	3.44	3.57	3.86
EP2345	EPDREH-4015-4-002-TH3	○	1.5	0.02	4	0.9	1.44	50	4	8.11	4.24	4.39	4.55	4.72	5.10
EP2346	EPDREH-4015-5-002-TH3	○	1.5	0.02	5	0.9	1.44	50	4	7.29	5.28	5.46	5.66	5.87	6.35
EP2347	EPDREH-4015-6-002-TH3	○	1.5	0.02	6	0.9	1.44	50	4	6.62	6.31	6.53	6.77	7.02	7.59
EP2348	EPDREH-4015-8-002-TH3	○	1.5	0.02	8	0.9	1.44	50	4	5.59	8.38	8.67	8.98	9.32	10.07
EP2349	EPDREH-4015-10-002-TH3	○	1.5	0.02	10	0.9	1.44	50	4	4.84	10.45	10.81	11.20	11.62	12.56
EP2350	EPDREH-4015-12-002-TH3	○	1.5	0.02	12	0.9	1.44	50	4	4.27	12.51	12.95	13.42	13.92	15.05
EP2351	EPDREH-4015-2-005-TH3	○	1.5	0.05	2	0.9	1.44	50	4	10.50	2.18	2.25	2.33	2.42	2.61
EP2352	EPDREH-4015-3-005-TH3	○	1.5	0.05	3	0.9	1.44	50	4	9.17	3.21	3.32	3.44	3.57	3.85
EP2353	EPDREH-4015-4-005-TH3	○	1.5	0.05	4	0.9	1.44	50	4	8.14	4.24	4.39	4.55	4.72	5.09
EP2354	EPDREH-4015-5-005-TH3	○	1.5	0.05	5	0.9	1.44	50	4	7.31	5.28	5.46	5.66	5.87	6.34
EP2355	EPDREH-4015-6-005-TH3	○	1.5	0.05	6	0.9	1.44	50	4	6.64	6.31	6.53	6.76	7.02	7.58
EP2356	EPDREH-4015-8-005-TH3	○	1.5	0.05	8	0.9	1.44	50	4	5.60	8.38	8.67	8.98	9.32	10.07
EP2357	EPDREH-4015-10-005-TH3	○	1.5	0.05	10	0.9	1.44	50	4	4.85	10.45	10.81	11.20	11.61	12.55
EP2358	EPDREH-4015-12-005-TH3	○	1.5	0.05	12	0.9	1.44	50	4	4.27	12.51	12.95	13.41	13.91	15.04
EP2359	EPDREH-4015-2-01-TH3	○	1.5	0.10	2	0.9	1.44	50	4	10.57	2.17	2.25	2.32	2.41	2.60
EP2360	EPDREH-4015-3-01-TH3	○	1.5	0.10	3	0.9	1.44	50	4	9.23	3.21	3.32	3.43	3.56	3.84
EP2361	EPDREH-4015-4-01-TH3	●	1.5	0.10	4	0.9	1.44	50	4	8.18	4.24	4.39	4.54	4.71	5.08
EP2362	EPDREH-4015-5-01-TH3	○	1.5	0.10	5	0.9	1.44	50	4	7.35	5.28	5.46	5.65	5.86	6.33
EP2363	EPDREH-4015-6-01-TH3	●	1.5	0.10	6	0.9	1.44	50	4	6.67	6.31	6.53	6.76	7.01	7.57
EP2364	EPDREH-4015-8-01-TH3	●	1.5	0.10	8	0.9	1.44	50	4	5.63	8.38	8.67	8.97	9.31	10.06
EP2365	EPDREH-4015-10-01-TH3	○	1.5	0.10	10	0.9	1.44	50	4	4.87	10.44	10.80	11.19	11.61	12.54
EP2366	EPDREH-4015-12-01-TH3	●	1.5	0.10	12	0.9	1.44	50	4	4.29	12.51	12.94	13.41	13.91	15.03
EP2367	EPDREH-4015-2-02-TH3	○	1.5	0.20	2	0.9	1.44	50	4	10.73	2.17	2.24	2.31	2.39	2.57
EP2368	EPDREH-4015-3-02-TH3	○	1.5	0.20	3	0.9	1.44	50	4	9.35	3.20	3.31	3.42	3.54	3.81
EP2369	EPDREH-4015-4-02-TH3	●	1.5	0.20	4	0.9	1.44	50	4	8.27	4.24	4.38	4.53	4.69	5.06
EP2370	EPDREH-4015-5-02-TH3	○	1.5	0.20	5	0.9	1.44	50	4	7.42	5.27	5.45	5.64	5.84	6.30
EP2371	EPDREH-4015-6-02-TH3	●	1.5	0.20	6	0.9	1.44	50	4	6.73	6.31	6.52	6.75	6.99	7.54
EP2372	EPDREH-4015-8-02-TH3	●	1.5	0.20	8	0.9	1.44	50	4	5.67	8.37	8.66	8.96	9.29	10.03
EP2373	EPDREH-4015-10-02-TH3	○	1.5	0.20	10	0.9	1.44	50	4	4.90	10.44	10.80	11.18	11.59	12.52
EP2374	EPDREH-4015-12-02-TH3	●	1.5	0.20	12	0.9	1.44	50	4	4.31	12.51	12.94	13.40	13.89	15.00
EP2375	EPDREH-4015-2-03-TH3	○	1.5	0.30	2	0.9	1.44	50	4	10.89	2.17	2.23	2.30	2.38	2.55
EP2376	EPDREH-4015-3-03-TH3	○	1.5	0.30	3	0.9	1.44	50	4	9.47	3.20	3.30	3.41	3.53	3.79



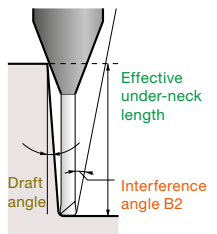
The actual effective under neck length with respect to the draft angle differs from the Epoch Deep Radius Evolution EPDRE-ATH. Please be sure to check this.

● Stock Item   ○ Non-Stock Item (min. order qty. 5 pcs.)

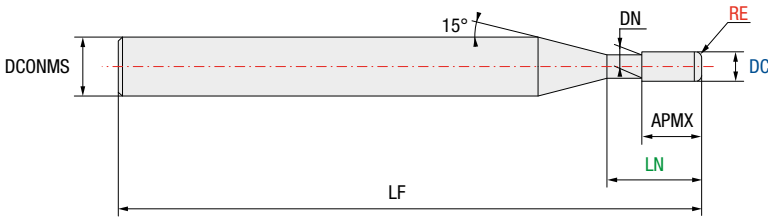
# EPDREH-TH3 4 flute

4 flute   Rake angle negative   Helix 30°   h4 DCONMS=4   Carbide   TH3 coating   68 HRC

Material selection: P, M, K, N, S, H



Effective under-neck length  
Draft angle  
Interference angle B2



RE Tolerance  
±0.005 mm

ID Code	Item Code	Stock	Size (mm)							Effective under-neck length with respect to draft angle (mm)					
			DC	RE	LN	APMX	DN	LF	DCONMS	B2(°)	0.5°	1.0°	1.5°	2.0°	3.0°
EP2377	EPDREH-4015-4-03-TH3	○	1.5	0.3	4	0.9	1.44	50	4	8.37	4.24	4.37	4.52	4.68	5.03
EP2378	EPDREH-4015-5-03-TH3	○	1.5	0.3	5	0.9	1.44	50	4	7.50	5.27	5.44	5.63	5.83	6.28
EP2379	EPDREH-4015-6-03-TH3	○	1.5	0.3	6	0.9	1.44	50	4	6.79	6.30	6.51	6.74	6.98	7.52
EP2380	EPDREH-4015-8-03-TH3	○	1.5	0.3	8	0.9	1.44	50	4	5.72	8.37	8.65	8.95	9.28	10.01
EP2381	EPDREH-4015-10-03-TH3	○	1.5	0.3	10	0.9	1.44	50	4	4.93	10.44	10.79	11.17	11.58	12.49
EP2382	EPDREH-4015-12-03-TH3	○	1.5	0.3	12	0.9	1.44	50	4	4.34	12.50	12.93	13.39	13.88	14.98
EP2383	EPDREH-4015-2-05-TH3	○	1.5	0.5	2	0.9	1.44	50	4	11.23	2.16	2.22	2.28	2.35	2.50
EP2384	EPDREH-4015-3-05-TH3	○	1.5	0.5	3	0.9	1.44	50	4	9.72	3.19	3.29	3.39	3.50	3.74
EP2385	EPDREH-4015-4-05-TH3	●	1.5	0.5	4	0.9	1.44	50	4	8.57	4.23	4.36	4.50	4.65	4.99
EP2386	EPDREH-4015-5-05-TH3	○	1.5	0.5	5	0.9	1.44	50	4	7.66	5.26	5.43	5.61	5.80	6.23
EP2387	EPDREH-4015-6-05-TH3	●	1.5	0.5	6	0.9	1.44	50	4	6.92	6.30	6.50	6.71	6.95	7.47
EP2388	EPDREH-4015-8-05-TH3	●	1.5	0.5	8	0.9	1.44	50	4	5.81	8.36	8.64	8.93	9.25	9.96
EP2389	EPDREH-4015-10-05-TH3	○	1.5	0.5	10	0.9	1.44	50	4	5.00	10.43	10.78	11.15	11.55	12.44
EP2390	EPDREH-4015-12-05-TH3	●	1.5	0.5	12	0.9	1.44	50	4	4.39	12.50	12.92	13.36	13.85	14.93
EP2391	EPDREH-4020-2.5-002-TH3	○	2.0	0.02	2.5	1.2	1.92	50	4	8.91	2.73	2.83	2.93	3.04	3.28
EP2392	EPDREH-4020-3-002-TH3	○	2.0	0.02	3	1.2	1.92	50	4	8.27	3.25	3.36	3.48	3.61	3.91
EP2393	EPDREH-4020-4-002-TH3	○	2.0	0.02	4	1.2	1.92	50	4	7.24	4.28	4.43	4.59	4.76	5.15
EP2394	EPDREH-4020-5-002-TH3	○	2.0	0.02	5	1.2	1.92	50	4	6.43	5.32	5.50	5.70	5.91	6.39
EP2395	EPDREH-4020-6-002-TH3	○	2.0	0.02	6	1.2	1.92	50	4	5.78	6.35	6.57	6.81	7.06	7.63
EP2396	EPDREH-4020-8-002-TH3	○	2.0	0.02	8	1.2	1.92	50	4	4.82	8.42	8.71	9.02	9.36	10.12
EP2397	EPDREH-4020-10-002-TH3	○	2.0	0.02	10	1.2	1.92	50	4	4.13	10.49	10.85	11.24	11.66	12.61
EP2398	EPDREH-4020-12-002-TH3	○	2.0	0.02	12	1.2	1.92	50	4	3.61	12.55	12.99	13.46	13.96	15.09
EP2399	EPDREH-4020-2.5-005-TH3	○	2.0	0.05	2.5	1.2	1.92	50	4	8.95	2.73	2.83	2.93	3.03	3.28
EP2400	EPDREH-4020-3-005-TH3	○	2.0	0.05	3	1.2	1.92	50	4	8.31	3.25	3.36	3.48	3.61	3.90
EP2401	EPDREH-4020-4-005-TH3	●	2.0	0.05	4	1.2	1.92	50	4	7.26	4.28	4.43	4.59	4.76	5.14
EP2402	EPDREH-4020-5-005-TH3	○	2.0	0.05	5	1.2	1.92	50	4	6.45	5.32	5.50	5.70	5.91	6.38
EP2403	EPDREH-4020-6-005-TH3	●	2.0	0.05	6	1.2	1.92	50	4	5.80	6.35	6.57	6.80	7.06	7.63
EP2404	EPDREH-4020-8-005-TH3	●	2.0	0.05	8	1.2	1.92	50	4	4.83	8.42	8.71	9.02	9.36	10.11
EP2405	EPDREH-4020-10-005-TH3	○	2.0	0.05	10	1.2	1.92	50	4	4.13	10.48	10.85	11.24	11.66	12.60
EP2406	EPDREH-4020-12-005-TH3	●	2.0	0.05	12	1.2	1.92	50	4	3.62	12.55	12.99	13.45	13.96	15.09
EP2407	EPDREH-4020-2.5-01-TH3	○	2.0	0.10	2.5	1.2	1.92	50	4	9.02	2.73	2.82	2.92	3.03	3.26
EP2408	EPDREH-4020-3-01-TH3	○	2.0	0.10	3	1.2	1.92	50	4	8.37	3.25	3.36	3.47	3.60	3.89
EP2409	EPDREH-4020-4-01-TH3	●	2.0	0.10	4	1.2	1.92	50	4	7.31	4.28	4.43	4.58	4.75	5.13
EP2410	EPDREH-4020-5-01-TH3	○	2.0	0.10	5	1.2	1.92	50	4	6.49	5.31	5.50	5.69	5.90	6.37
EP2411	EPDREH-4020-6-01-TH3	●	2.0	0.10	6	1.2	1.92	50	4	5.83	6.35	6.57	6.80	7.05	7.62
EP2412	EPDREH-4020-8-01-TH3	●	2.0	0.10	8	1.2	1.92	50	4	4.85	8.42	8.71	9.02	9.35	10.10
EP2413	EPDREH-4020-10-01-TH3	○	2.0	0.10	10	1.2	1.92	50	4	4.15	10.48	10.84	11.23	11.65	12.59

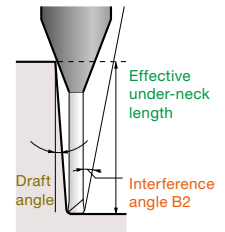
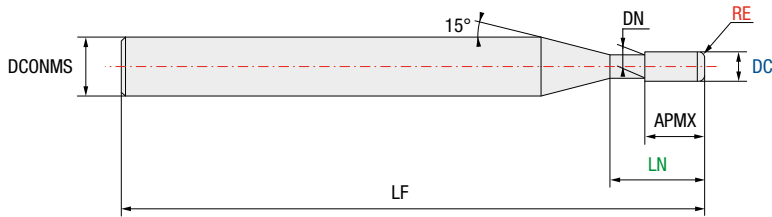


The actual effective under neck length with respect to the draft angle differs from the Epoch Deep Radius Evolution EPDRE-ATH. Please be sure to check this.

● Stock Item ○ Non-Stock Item (min. order qty. 5 pcs.)

# EPDREH-TH3 4 flute

4 flute   Rake angle negative   Helix 30°   h4 DCONMS=4   h5 DCONMS=6   Carbide   TH3 coating   68 HRC



RE Tolerance  
 ±0.005 mm

ID Code	Item Code	Stock	Size (mm)							Effective under-neck length with respect to draft angle (mm)					
			DC	RE	LN	APMX	DN	LF	DCONMS	B2(°)	0.5°	1.0°	1.5°	2.0°	3.0°
EP2414	EPDREH-4020-12-01-TH3	●	2	0.10	12	1.2	1.92	50	4	3.63	12.55	12.98	13.45	13.95	15.07
EP2415	EPDREH-4020-2.5-02-TH3	○	2	0.20	2.5	1.2	1.92	50	4	9.17	2.73	2.81	2.91	3.01	3.24
EP2416	EPDREH-4020-3-02-TH3	○	2	0.20	3	1.2	1.92	50	4	8.49	3.24	3.35	3.46	3.59	3.86
EP2417	EPDREH-4020-4-02-TH3	●	2	0.20	4	1.2	1.92	50	4	7.40	4.28	4.42	4.57	4.74	5.10
EP2418	EPDREH-4020-5-02-TH3	○	2	0.20	5	1.2	1.92	50	4	6.56	5.31	5.49	5.68	5.89	6.35
EP2419	EPDREH-4020-6-02-TH3	●	2	0.20	6	1.2	1.92	50	4	5.89	6.34	6.56	6.79	7.04	7.59
EP2420	EPDREH-4020-8-02-TH3	●	2	0.20	8	1.2	1.92	50	4	4.89	8.41	8.70	9.01	9.34	10.08
EP2421	EPDREH-4020-10-02-TH3	○	2	0.20	10	1.2	1.92	50	4	4.18	10.48	10.84	11.22	11.64	12.56
EP2422	EPDREH-4020-12-02-TH3	●	2	0.20	12	1.2	1.92	50	4	3.65	12.55	12.98	13.44	13.93	15.05
EP2425	EPDREH-4020-2.5-03-TH3	○	2	0.30	2.5	1.2	1.92	50	4	9.31	2.72	2.81	2.90	3.00	3.22
EP2426	EPDREH-4020-3-03-TH3	○	2	0.30	3	1.2	1.92	50	4	8.62	3.24	3.34	3.45	3.57	3.84
EP2427	EPDREH-4020-4-03-TH3	○	2	0.30	4	1.2	1.92	50	4	7.50	4.27	4.41	4.56	4.72	5.08
EP2428	EPDREH-4020-5-03-TH3	○	2	0.30	5	1.2	1.92	50	4	6.64	5.31	5.48	5.67	5.87	6.32
EP2429	EPDREH-4020-6-03-TH3	○	2	0.30	6	1.2	1.92	50	4	5.95	6.34	6.55	6.78	7.02	7.57
EP2430	EPDREH-4020-8-03-TH3	○	2	0.30	8	1.2	1.92	50	4	4.93	8.41	8.69	8.99	9.32	10.05
EP2431	EPDREH-4020-10-03-TH3	○	2	0.30	10	1.2	1.92	50	4	4.21	10.48	10.83	11.21	11.62	12.54
EP2432	EPDREH-4020-12-03-TH3	○	2	0.30	12	1.2	1.92	50	4	3.67	12.54	12.97	13.43	13.92	15.03
EP2433	EPDREH-4020-2.5-05-TH3	○	2	0.50	2.5	1.2	1.92	50	4	9.62	2.72	2.79	2.88	2.97	3.17
EP2434	EPDREH-4020-3-05-TH3	○	2	0.50	3	1.2	1.92	50	4	8.89	3.23	3.33	3.43	3.54	3.79
EP2435	EPDREH-4020-4-05-TH3	●	2	0.50	4	1.2	1.92	50	4	7.70	4.27	4.40	4.54	4.69	5.03
EP2436	EPDREH-4020-5-05-TH3	○	2	0.50	5	1.2	1.92	50	4	6.79	5.30	5.47	5.65	5.84	6.27
EP2437	EPDREH-4020-6-05-TH3	●	2	0.50	6	1.2	1.92	50	4	6.08	6.33	6.54	6.76	6.99	7.52
EP2438	EPDREH-4020-8-05-TH3	●	2	0.50	8	1.2	1.92	50	4	5.02	8.40	8.68	8.97	9.29	10.00
EP2439	EPDREH-4020-10-05-TH3	○	2	0.50	10	1.2	1.92	50	4	4.27	10.47	10.82	11.19	11.59	12.49
EP2440	EPDREH-4020-12-05-TH3	●	2	0.50	12	1.2	1.92	50	4	3.72	12.54	12.96	13.41	13.89	14.98
EP2443	EPDREH-4030-4-005-TH3	○	3	0.05	4	1.8	2.88	50	6	8.66	4.36	4.51	4.67	4.84	5.23
EP2444	EPDREH-4030-6-005-TH3	○	3	0.05	6	1.8	2.88	50	6	7.22	6.43	6.65	6.89	7.14	7.72
EP2445	EPDREH-4030-8-005-TH3	○	3	0.05	8	1.8	2.88	55	6	6.19	8.49	8.79	9.10	9.44	10.21
EP2446	EPDREH-4030-10-005-TH3	○	3	0.05	10	1.8	2.88	55	6	5.41	10.56	10.93	11.32	11.74	12.69
EP2447	EPDREH-4030-12-005-TH3	○	3	0.05	12	1.8	2.88	60	6	4.81	12.63	13.07	13.54	14.04	15.18
EP2448	EPDREH-4030-14-005-TH3	○	3	0.05	14	1.8	2.88	60	6	4.33	14.70	15.21	15.75	16.34	17.67
EP2449	EPDREH-4030-16-005-TH3	○	3	0.05	16	1.8	2.88	60	6	3.93	16.76	17.35	17.97	18.64	20.15
EP2450	EPDREH-4030-18-005-TH3	○	3	0.05	18	1.8	2.88	65	6	3.60	18.83	19.49	20.19	20.94	22.64
EP2451	EPDREH-4030-20-005-TH3	○	3	0.05	20	1.8	2.88	65	6	3.33	20.90	21.62	22.40	23.24	25.12
EP2452	EPDREH-4030-4-01-TH3	○	3	0.10	4	1.8	2.88	50	6	8.71	4.36	4.51	4.67	4.84	5.22
EP2453	EPDREH-4030-6-01-TH3	○	3	0.10	6	1.8	2.88	50	6	7.25	6.43	6.65	6.88	7.14	7.71
EP2454	EPDREH-4030-8-01-TH3	○	3	0.10	8	1.8	2.88	55	6	6.21	8.49	8.79	9.10	9.44	10.19



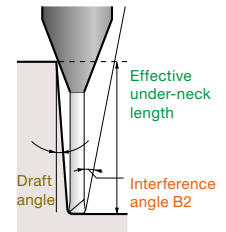
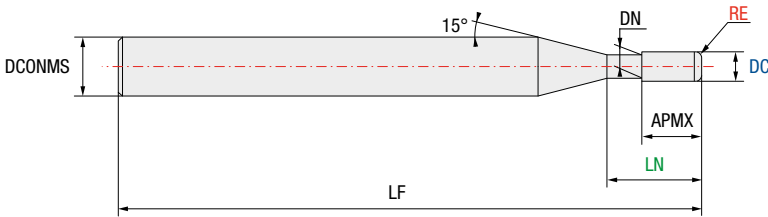
The actual effective under neck length with respect to the draft angle differs from the Epoch Deep Radius Evolution EPDRE-ATH. Please be sure to check this.

● Stock Item   ○ Non-Stock Item (min. order qty. 5 pcs.)

**EPDREH-TH3 4 flute**

4 flute   Rake angle negative   Helix 30°   h5 DCONMS=6   Carbide   TH3 coating   68 HRC

P M K  
N S H



RE Tolerance  
±0.005 mm

ID Code	Item Code	Stock	Size (mm)							Effective under-neck length with respect to draft angle (mm)					
			DC	RE	LN	APMX	DN	LF	DCONMS	B2(°)	0.5°	1.0°	1.5°	2.0°	3.0°
EP2455	EPDREH-4030-10-01-TH3	○	3	0.1	10	1.8	2.88	55	6	5.43	10.56	10.92	11.32	11.74	12.68
EP2456	EPDREH-4030-12-01-TH3	○	3	0.1	12	1.8	2.88	60	6	4.82	12.63	13.06	13.53	14.04	15.17
EP2457	EPDREH-4030-14-01-TH3	○	3	0.1	14	1.8	2.88	60	6	4.34	14.69	15.20	15.75	16.34	17.65
EP2458	EPDREH-4030-16-01-TH3	○	3	0.1	16	1.8	2.88	60	6	3.94	16.76	17.34	17.97	18.64	20.14
EP2459	EPDREH-4030-18-01-TH3	○	3	0.1	18	1.8	2.88	65	6	3.61	18.83	19.48	20.18	20.93	22.63
EP2460	EPDREH-4030-20-01-TH3	○	3	0.1	20	1.8	2.88	65	6	3.33	20.90	21.62	22.40	23.23	25.11
EP2461	EPDREH-4030-4-02-TH3	○	3	0.2	4	1.8	2.88	50	6	8.80	4.35	4.50	4.65	4.82	5.20
EP2462	EPDREH-4030-6-02-TH3	○	3	0.2	6	1.8	2.88	50	6	7.31	6.42	6.64	6.87	7.12	7.68
EP2463	EPDREH-4030-8-02-TH3	●	3	0.2	8	1.8	2.88	55	6	6.25	8.49	8.78	9.09	9.42	10.17
EP2464	EPDREH-4030-10-02-TH3	○	3	0.2	10	1.8	2.88	55	6	5.46	10.56	10.92	11.30	11.72	12.66
EP2465	EPDREH-4030-12-02-TH3	●	3	0.2	12	1.8	2.88	60	6	4.85	12.62	13.06	13.52	14.02	15.14
EP2466	EPDREH-4030-14-02-TH3	○	3	0.2	14	1.8	2.88	60	6	4.36	14.69	15.20	15.74	16.32	17.63
EP2467	EPDREH-4030-16-02-TH3	●	3	0.2	16	1.8	2.88	60	6	3.96	16.76	17.34	17.95	18.62	20.12
EP2468	EPDREH-4030-18-02-TH3	○	3	0.2	18	1.8	2.88	65	6	3.63	18.83	19.47	20.17	20.92	22.60
EP2469	EPDREH-4030-20-02-TH3	●	3	0.2	20	1.8	2.88	65	6	3.35	20.89	21.61	22.39	23.22	25.09
EP2470	EPDREH-4030-4-03-TH3	○	3	0.3	4	1.8	2.88	50	6	8.89	4.35	4.49	4.64	4.81	5.17
EP2471	EPDREH-4030-6-03-TH3	○	3	0.3	6	1.8	2.88	50	6	7.37	6.42	6.63	6.86	7.11	7.66
EP2472	EPDREH-4030-8-03-TH3	○	3	0.3	8	1.8	2.88	55	6	6.30	8.49	8.77	9.08	9.41	10.15
EP2473	EPDREH-4030-10-03-TH3	○	3	0.3	10	1.8	2.88	55	6	5.50	10.55	10.91	11.29	11.71	12.63
EP2474	EPDREH-4030-12-03-TH3	○	3	0.3	12	1.8	2.88	60	6	4.88	12.62	13.05	13.51	14.01	15.12
EP2475	EPDREH-4030-14-03-TH3	○	3	0.3	14	1.8	2.88	60	6	4.38	14.69	15.19	15.73	16.31	17.60
EP2476	EPDREH-4030-16-03-TH3	○	3	0.3	16	1.8	2.88	60	6	3.98	16.76	17.33	17.94	18.61	20.09
EP2477	EPDREH-4030-18-03-TH3	○	3	0.3	18	1.8	2.88	65	6	3.64	18.82	19.47	20.16	20.90	22.58
EP2478	EPDREH-4030-20-03-TH3	○	3	0.3	20	1.8	2.88	65	6	3.36	20.89	21.61	22.38	23.20	25.06
EP2479	EPDREH-4030-4-05-TH3	○	3	0.5	4	1.8	2.88	50	6	9.07	4.34	4.48	4.62	4.78	5.12
EP2480	EPDREH-4030-6-05-TH3	○	3	0.5	6	1.8	2.88	50	6	7.50	6.41	6.62	6.84	7.08	7.61
EP2481	EPDREH-4030-8-05-TH3	●	3	0.5	8	1.8	2.88	55	6	6.39	8.48	8.76	9.06	9.38	10.10
EP2482	EPDREH-4030-10-05-TH3	○	3	0.5	10	1.8	2.88	55	6	5.57	10.55	10.90	11.27	11.68	12.58
EP2483	EPDREH-4030-12-05-TH3	●	3	0.5	12	1.8	2.88	60	6	4.93	12.61	13.04	13.49	13.98	15.07
EP2484	EPDREH-4030-14-05-TH3	○	3	0.5	14	1.8	2.88	60	6	4.43	14.68	15.18	15.71	16.28	17.56
EP2485	EPDREH-4030-16-05-TH3	●	3	0.5	16	1.8	2.88	60	6	4.01	16.75	17.31	17.92	18.58	20.04
EP2486	EPDREH-4030-18-05-TH3	○	3	0.5	18	1.8	2.88	65	6	3.67	18.82	19.45	20.14	20.87	22.53
EP2487	EPDREH-4030-20-05-TH3	●	3	0.5	20	1.8	2.88	65	6	3.38	20.88	21.59	22.36	23.17	25.01
EP2488	EPDREH-4040-8-01-TH3	○	4	0.1	8	3.5	3.85	55	6	4.77	8.55	8.84	9.16	9.50	10.26
EP2489	EPDREH-4040-10-01-TH3	○	4	0.1	10	3.5	3.85	60	6	4.09	10.62	10.98	11.38	11.80	12.75
EP2490	EPDREH-4040-12-01-TH3	○	4	0.1	12	3.5	3.85	60	6	3.58	12.68	13.12	13.59	14.10	15.24
EP2491	EPDREH-4040-14-01-TH3	○	4	0.1	14	3.5	3.85	60	6	3.18	14.75	15.26	15.81	16.40	17.72

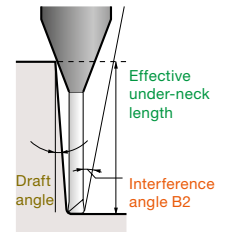
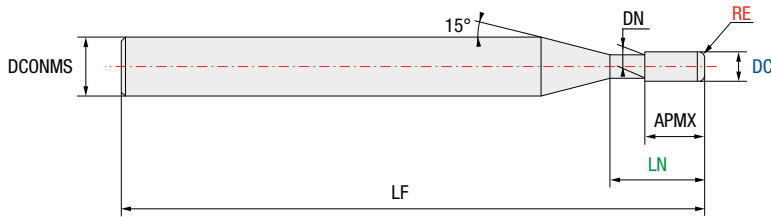


The actual effective under neck length with respect to the draft angle differs from the Epoch Deep Radius Evolution EPDRE-ATH. Please be sure to check this.

● Stock Item ○ Non-Stock Item (min. order qty. 5 pcs.)

# EPDREH-TH3 4 flute

4 flute   Rake angle negative   Helix 30°   h5 DCONMS=6   Carbide   TH3 coating   68 HRC



RE Tolerance  
 ±0.005 mm

ID Code	Item Code	Stock	Size (mm)						Effective under-neck length with respect to draft angle (mm)						
			DC	RE	LN	APMX	DN	LF	DCONMS	B2(°)	0.5°	1.0°	1.5°	2.0°	3.0°
EP2492	EPDREH-4040-16-01-TH3	○	4	0.1	16	3.5	3.85	60	6	2.87	16.82	17.40	18.03	18.70	-
EP2493	EPDREH-4040-18-01-TH3	○	4	0.1	18	3.5	3.85	60	6	2.61	18.89	19.54	20.24	21.00	-
EP2494	EPDREH-4040-20-01-TH3	○	4	0.1	20	3.5	3.85	65	6	2.39	20.95	21.68	22.46	23.30	-
EP2495	EPDREH-4040-22-01-TH3	○	4	0.1	22	3.5	3.85	65	6	2.21	23.02	23.82	24.68	25.60	-
EP2496	EPDREH-4040-24-01-TH3	○	4	0.1	24	3.5	3.85	70	6	2.05	25.09	25.96	26.89	27.90	-
EP2497	EPDREH-4040-8-02-TH3	○	4	0.2	8	3.5	3.85	55	6	4.81	8.55	8.84	9.15	9.49	10.24
EP2498	EPDREH-4040-10-02-TH3	○	4	0.2	10	3.5	3.85	60	6	4.12	10.61	10.98	11.37	11.79	12.73
EP2499	EPDREH-4040-12-02-TH3	●	4	0.2	12	3.5	3.85	60	6	3.60	12.68	13.12	13.58	14.09	15.21
EP2500	EPDREH-4040-14-02-TH3	○	4	0.2	14	3.5	3.85	60	6	3.20	14.75	15.26	15.80	16.38	17.70
EP2501	EPDREH-4040-16-02-TH3	●	4	0.2	16	3.5	3.85	60	6	2.88	16.82	17.40	18.02	18.68	-
EP2502	EPDREH-4040-18-02-TH3	○	4	0.2	18	3.5	3.85	60	6	2.62	18.88	19.53	20.23	20.98	-
EP2503	EPDREH-4040-20-02-TH3	●	4	0.2	20	3.5	3.85	65	6	2.40	20.95	21.67	22.45	23.28	-
EP2504	EPDREH-4040-22-02-TH3	○	4	0.2	22	3.5	3.85	65	6	2.22	23.02	23.81	24.67	25.58	-
EP2505	EPDREH-4040-24-02-TH3	●	4	0.2	24	3.5	3.85	70	6	2.06	25.09	25.95	26.88	27.88	-
EP2506	EPDREH-4040-8-03-TH3	○	4	0.3	8	3.5	3.85	55	6	4.85	8.54	8.83	9.14	9.47	10.22
EP2507	EPDREH-4040-10-03-TH3	○	4	0.3	10	3.5	3.85	60	6	4.15	10.61	10.97	11.36	11.77	12.70
EP2508	EPDREH-4040-12-03-TH3	○	4	0.3	12	3.5	3.85	60	6	3.63	12.68	13.11	13.57	14.07	15.19
EP2509	EPDREH-4040-14-03-TH3	○	4	0.3	14	3.5	3.85	60	6	3.22	14.75	15.25	15.79	16.37	17.67
EP2510	EPDREH-4040-16-03-TH3	○	4	0.3	16	3.5	3.85	60	6	2.90	16.81	17.39	18.01	18.67	-
EP2511	EPDREH-4040-18-03-TH3	○	4	0.3	18	3.5	3.85	60	6	2.63	18.88	19.53	20.22	20.97	-
EP2512	EPDREH-4040-20-03-TH3	○	4	0.3	20	3.5	3.85	65	6	2.41	20.95	21.67	22.44	23.27	-
EP2513	EPDREH-4040-22-03-TH3	○	4	0.3	22	3.5	3.85	65	6	2.22	23.01	23.81	24.66	25.57	-
EP2514	EPDREH-4040-24-03-TH3	○	4	0.3	24	3.5	3.85	70	6	2.07	25.08	25.95	26.87	27.87	-
EP2515	EPDREH-4040-8-05-TH3	○	4	0.5	8	3.5	3.85	55	6	4.93	8.54	8.82	9.12	9.44	10.17
EP2516	EPDREH-4040-10-05-TH3	○	4	0.5	10	3.5	3.85	60	6	4.21	10.60	10.96	11.33	11.74	12.65
EP2517	EPDREH-4040-12-05-TH3	●	4	0.5	12	3.5	3.85	60	6	3.67	12.67	13.10	13.55	14.04	15.14
EP2518	EPDREH-4040-14-05-TH3	○	4	0.5	14	3.5	3.85	60	6	3.26	14.74	15.24	15.77	16.34	17.63
EP2519	EPDREH-4040-16-05-TH3	●	4	0.5	16	3.5	3.85	60	6	2.93	16.81	17.37	17.98	18.64	-
EP2520	EPDREH-4040-18-05-TH3	○	4	0.5	18	3.5	3.85	60	6	2.66	18.87	19.51	20.20	20.94	-
EP2521	EPDREH-4040-20-05-TH3	●	4	0.5	20	3.5	3.85	65	6	2.43	20.94	21.65	22.42	23.24	-
EP2522	EPDREH-4040-22-05-TH3	○	4	0.5	22	3.5	3.85	65	6	2.24	23.01	23.79	24.63	25.54	-
EP2523	EPDREH-4040-24-05-TH3	●	4	0.5	24	3.5	3.85	70	6	2.08	25.08	25.93	26.85	27.84	-
EP2525	EPDREH-4040-8-10-TH3	○	4	1.0	8	3.5	3.85	55	6	5.15	8.52	8.78	9.06	9.37	10.04
EP2526	EPDREH-4040-10-10-TH3	○	4	1.0	10	3.5	3.85	60	6	4.37	10.59	10.92	11.28	11.67	12.53
EP2527	EPDREH-4040-12-10-TH3	●	4	1.0	12	3.5	3.85	60	6	3.79	12.65	13.06	13.50	13.97	15.02
EP2528	EPDREH-4040-14-10-TH3	○	4	1.0	14	3.5	3.85	60	6	3.35	14.72	15.20	15.71	16.26	17.50
EP2529	EPDREH-4040-16-10-TH3	●	4	1.0	16	3.5	3.85	60	6	3.00	16.79	17.34	17.93	18.56	19.99

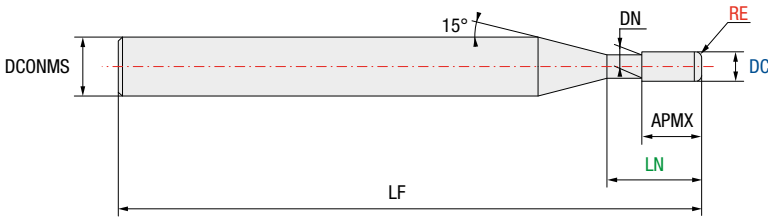


The actual effective under neck length with respect to the draft angle differs from the Epoch Deep Radius Evolution EPDRE-ATH. Please be sure to check this.

● Stock Item   ○ Non-Stock Item (min. order qty. 5 pcs.)   - No interference

**EPDREH-TH3 4 flute**

4 flute   Rake angle negative   Helix 30°   h5 DCONMS=6   Carbide   TH3 coating   68 HRC



Material selection: P, M, K, N, S, H

Effective under-neck length  
Draft angle  
Interference angle B2

RE Tolerance  
±0.005 mm

ID Code	Item Code	Stock	Size (mm)							Effective under-neck length with respect to draft angle (mm)					
			DC	RE	LN	APMX	DN	LF	DCONMS	B2(°)	0.5°	1.0°	1.5°	2.0°	3.0°
EP2530	EPDREH-4040-18-10-TH3	○	4	1.0	18	3.5	3.85	60	6	2.72	18.86	19.48	20.15	20.86	-
EP2531	EPDREH-4040-20-10-TH3	●	4	1.0	20	3.5	3.85	65	6	2.48	20.92	21.62	22.36	23.16	-
EP2532	EPDREH-4040-22-10-TH3	○	4	1.0	22	3.5	3.85	65	6	2.29	22.99	23.76	24.58	25.46	-
EP2533	EPDREH-4040-24-10-TH3	●	4	1.0	24	3.5	3.85	70	6	2.12	25.06	25.90	26.80	27.76	-
EP2535	EPDREH-4050-10-01-TH3	○	5	0.1	10	4	4.85	60	6	2.37	10.62	10.98	11.38	11.80	-
EP2536	EPDREH-4050-15-01-TH3	○	5	0.1	15	4	4.85	60	6	1.68	15.79	16.33	16.92	-	-
EP2537	EPDREH-4050-20-01-TH3	○	5	0.1	20	4	4.85	65	6	1.30	20.95	21.68	-	-	-
EP2538	EPDREH-4050-25-01-TH3	○	5	0.1	25	4	4.85	70	6	1.06	26.12	27.03	-	-	-
EP2539	EPDREH-4050-10-02-TH3	○	5	0.2	10	4	4.85	60	6	2.39	10.61	10.98	11.37	11.79	-
EP2540	EPDREH-4050-15-02-TH3	○	5	0.2	15	4	4.85	60	6	1.69	15.78	16.33	16.91	-	-
EP2541	EPDREH-4050-20-02-TH3	○	5	0.2	20	4	4.85	65	6	1.31	20.95	21.67	-	-	-
EP2542	EPDREH-4050-25-02-TH3	○	5	0.2	25	4	4.85	70	6	1.07	26.12	27.02	-	-	-
EP2543	EPDREH-4050-10-03-TH3	○	5	0.3	10	4	4.85	60	6	2.41	10.61	10.97	11.36	11.77	-
EP2544	EPDREH-4050-15-03-TH3	○	5	0.3	15	4	4.85	60	6	1.70	15.78	16.32	16.90	-	-
EP2545	EPDREH-4050-20-03-TH3	○	5	0.3	20	4	4.85	65	6	1.31	20.95	21.67	-	-	-
EP2546	EPDREH-4050-25-03-TH3	○	5	0.3	25	4	4.85	70	6	1.07	26.12	27.02	-	-	-
EP2547	EPDREH-4050-10-05-TH3	○	5	0.5	10	4	4.85	60	6	2.45	10.60	10.96	11.33	11.74	-
EP2548	EPDREH-4050-15-05-TH3	●	5	0.5	15	4	4.85	60	6	1.72	15.77	16.30	16.88	-	-
EP2549	EPDREH-4050-20-05-TH3	○	5	0.5	20	4	4.85	65	6	1.32	20.94	21.65	-	-	-
EP2550	EPDREH-4050-25-05-TH3	●	5	0.5	25	4	4.85	70	6	1.08	26.11	27.00	-	-	-
EP2552	EPDREH-4050-10-10-TH3	○	5	1.0	10	4	4.85	60	6	2.56	10.59	10.92	11.28	11.67	-
EP2553	EPDREH-4050-15-10-TH3	●	5	1.0	15	4	4.85	60	6	1.77	15.76	16.27	16.82	-	-
EP2554	EPDREH-4050-20-10-TH3	○	5	1.0	20	4	4.85	65	6	1.36	20.92	21.62	-	-	-
EP2555	EPDREH-4050-25-10-TH3	●	5	1.0	25	4	4.85	70	6	1.10	26.09	26.97	-	-	-

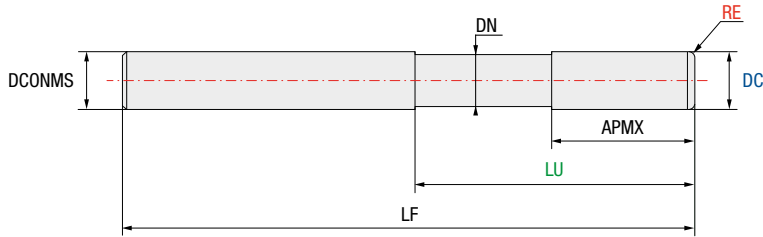


The actual effective under neck length with respect to the draft angle differs from the Epoch Deep Radius Evolution EPDRE-ATH. Please be sure to check this.

● Stock Item   ○ Non-Stock Item (min. order qty. 5 pcs.)   - No interference

# EPDREH-TH3 4 flute

4 flute   Rake angle negative   Helix 30°   h5 DCONMS=6   Carbide   TH3 coating   68 HRC



RE Tolerance  
 ±0.005 mm

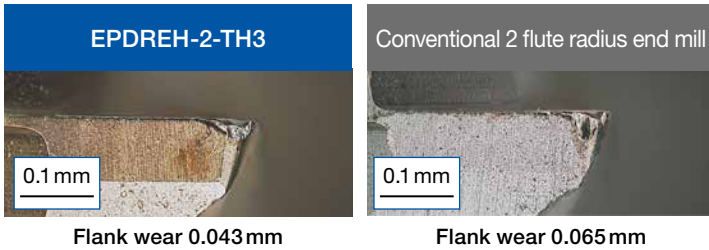
ID Code	Item Code	Stock	Size (mm)						
			DC	RE	LN	APMX	DN	LF	DCONMS
EP2557	EPDREH-4060-12-01-TH3	○	6	0.1	12	5	5.85	60	6
EP2558	EPDREH-4060-18-01-TH3	○	6	0.1	18	5	5.85	60	6
EP2559	EPDREH-4060-24-01-TH3	○	6	0.1	24	5	5.85	70	6
EP2560	EPDREH-4060-30-01-TH3	○	6	0.1	30	5	5.85	80	6
EP2561	EPDREH-4060-12-02-TH3	○	6	0.2	12	5	5.85	60	6
EP2562	EPDREH-4060-18-02-TH3	●	6	0.2	18	5	5.85	60	6
EP2563	EPDREH-4060-24-02-TH3	●	6	0.2	24	5	5.85	70	6
EP2564	EPDREH-4060-30-02-TH3	●	6	0.2	30	5	5.85	80	6
EP2565	EPDREH-4060-12-03-TH3	○	6	0.3	12	5	5.85	60	6
EP2566	EPDREH-4060-18-03-TH3	●	6	0.3	18	5	5.85	60	6
EP2567	EPDREH-4060-24-03-TH3	●	6	0.3	24	5	5.85	70	6
EP2568	EPDREH-4060-30-03-TH3	●	6	0.3	30	5	5.85	80	6
EP2569	EPDREH-4060-12-05-TH3	○	6	0.5	12	5	5.85	60	6
EP2570	EPDREH-4060-18-05-TH3	●	6	0.5	18	5	5.85	60	6
EP2571	EPDREH-4060-24-05-TH3	●	6	0.5	24	5	5.85	70	6
EP2572	EPDREH-4060-30-05-TH3	●	6	0.5	30	5	5.85	80	6
EP2573	EPDREH-4060-12-10-TH3	○	6	1	12	5	5.85	60	6
EP2574	EPDREH-4060-18-10-TH3	●	6	1	18	5	5.85	60	6
EP2575	EPDREH-4060-24-10-TH3	●	6	1	24	5	5.85	70	6
EP2576	EPDREH-4060-30-10-TH3	●	6	1	30	5	5.85	80	6

● Stock Item   ○ Non-Stock Item (min. order qty. 5 pcs.)



## EPDREH-TH3 Field data

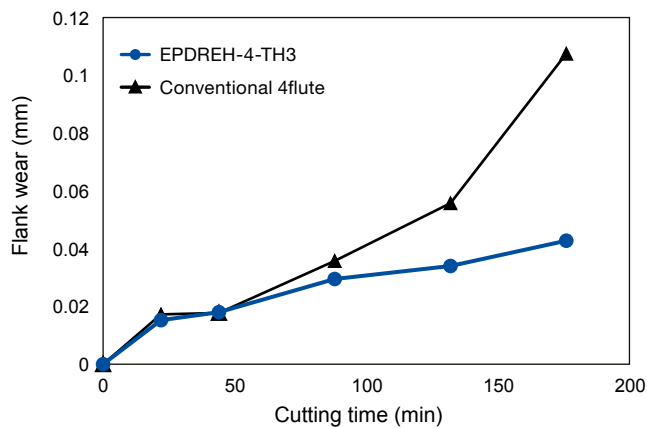
### Tool wear after 66 minutes of machining PD613 (58 HRC)



Machine	Vertical MC (HSK-F63)
Cutting method	Contour pocketing (Pocket size: 10 x 10 x 0.5 mm)

Item Code	DC mm	RE mm	LN mm	RPM min <sup>-1</sup>	V <sub>c</sub> m/min	V <sub>f</sub> mm/min	f <sub>z</sub> mm/t	a <sub>p</sub> mm	a <sub>e</sub> mm	Coolant
EPDREH-2008-2-005-TH3	0.8	0.05	2	23000	58	700	0.015	0.02	0.16	Mist blow

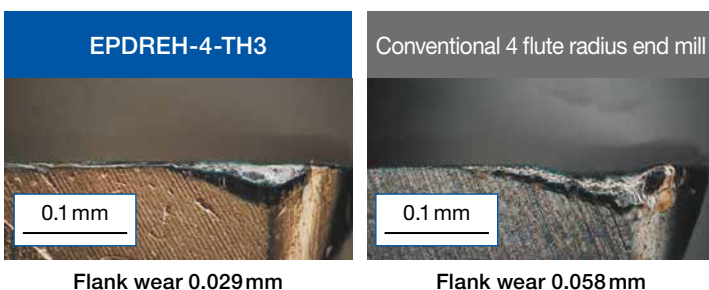
### Tool wear after 176 minutes of machining STAVAX (51 HRC)



Machine	Vertical MC (HSK-A63)
Cutting method	Bottom face cutting

Item Code	DC mm	RE mm	LN mm	RPM min <sup>-1</sup>	V <sub>c</sub> m/min	V <sub>f</sub> mm/min	f <sub>z</sub> mm/t	a <sub>p</sub> mm	a <sub>e</sub> mm	Coolant
EPDREH-4030-12-01-TH3	3	0.1	12	11000	104	1600	0.036	0.08	0.8	Mist blow

### Tool wear after 60 minutes of machining VANADIS23 (61 HRC)



Machine	Vertical MC (HSK-E32)
Cutting method	Bottom face cutting

Item Code	DC mm	RE mm	LN mm	RPM min <sup>-1</sup>	V <sub>c</sub> m/min	V <sub>f</sub> mm/min	f <sub>z</sub> mm/t	a <sub>p</sub> mm	a <sub>e</sub> mm	Coolant
EPDREH-4010-8-01-TH3	1	0.1	8	10000	31	650	0.016	0.005	0.2	Mist blow



Offers wear resistance superior to conventional tools when machining high hardened steel

## EPDREH-TH3 Field data

### Comparison of vertical wall machining accuracy PD613 (58 HRC)

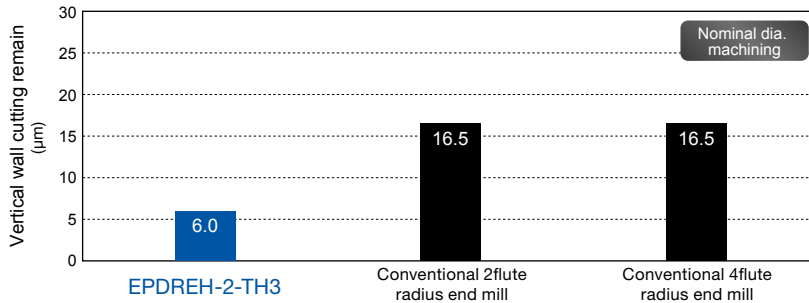
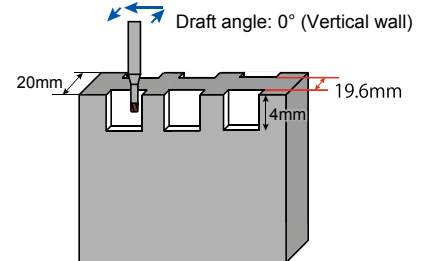


Figure machining shape



Finishing time: 10 min.

Machine Vertical MC (HSK-E25)

Item Code	DC mm	RE mm	LN mm	RPM min <sup>-1</sup>	V <sub>c</sub> m/min	V <sub>f</sub> mm/min	f <sub>z</sub> mm/t	a <sub>p</sub> mm	a <sub>e</sub> mm	Coolant
EPDREH-2008-4-02-TH3	0.8	0.2	4	23000	57.8	600	0.013	0.015	0.05	Mist blow



Reduces cutting remain by approx. 60% compared to conventional tools.

### Bottom face finishing example STAVAX (52 HRC)



Machine Vertical MC (HSK-E32)

Maintains a smooth high-quality surface even after 11 hours of continuous milling.

Item Code	DC mm	RE mm	LN mm	RPM min <sup>-1</sup>	V <sub>c</sub> m/min	V <sub>f</sub> mm/min	f <sub>z</sub> mm/t	a <sub>p</sub> mm	a <sub>e</sub> mm	Coolant
EPDREH-2010-2-02-TH3	1	0.2	2	40000	125	400	0.005	0.005	0.005	Water base wet



The machining conditions can be adjusted to achieve an even higher quality machined face

## EPDREH-TH3 Field data

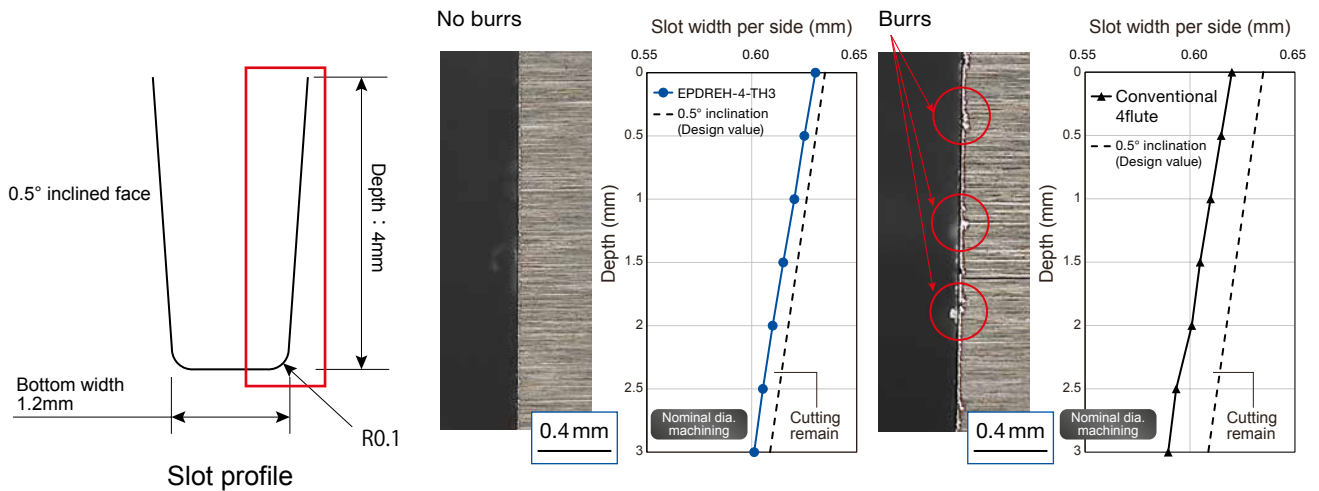
### Deep slot machining example in SKD11 / ~ 1.2379 (60 HRC)

Contour finishing, deep slot profile, machining time: 30 min.

Machine Vertical MC (HSK-E25)

EPDREH-4-TH3

Conventional 4 flute radius end mill

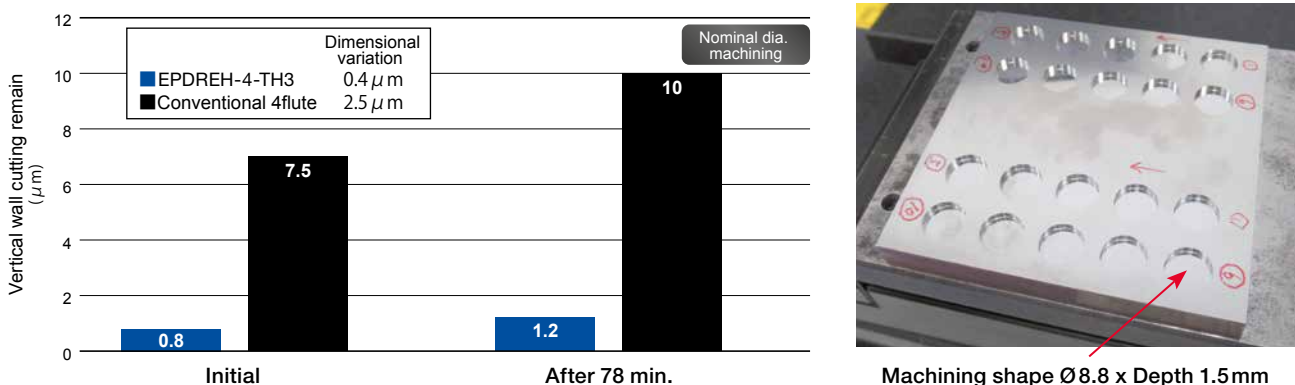


Item Code	DC mm	RE mm	LN mm	RPM min <sup>-1</sup>	V <sub>c</sub> m/min	V <sub>f</sub> mm/min	f <sub>z</sub> mm/t	a <sub>p</sub> mm	a <sub>e</sub> mm	Coolant
EPDREH-4010-4-01-TH3	1	0.1	4	18200	57	1310	0.018	0.04	0.2	Air blow

**i** Deep slots can be milled with precision and without burrs.

### Vertical wall finishing example in STAVAX (52 HRC)

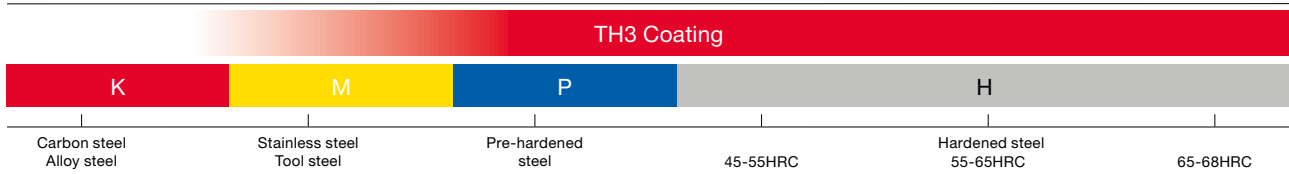
Vertical wall finishing, contour milling, total finishing time: 78 min.



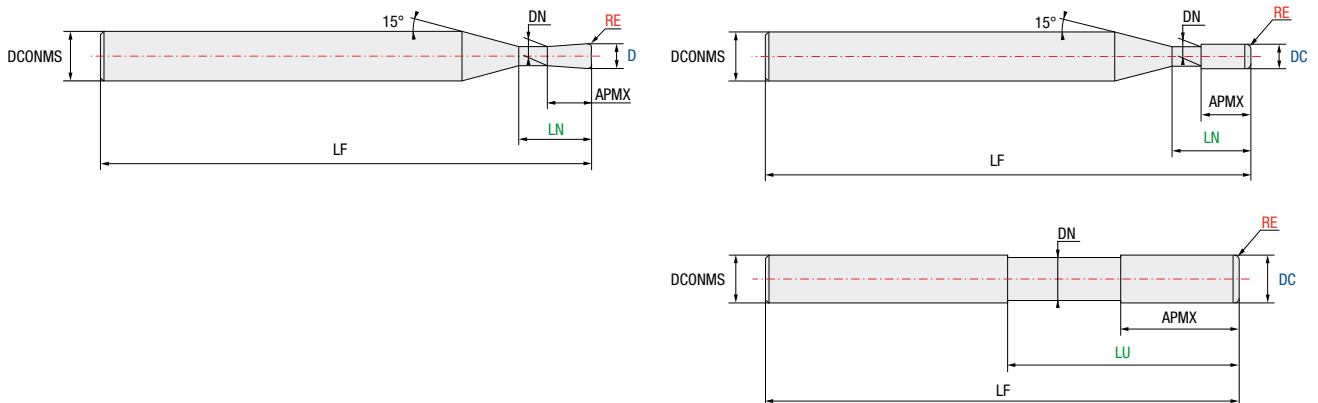
Process	Item Code	DC mm	RE mm	LN mm	RPM min <sup>-1</sup>	V <sub>c</sub> m/min	V <sub>f</sub> mm/min	f <sub>z</sub> mm/t	a <sub>p</sub> mm	Allowance mm	Coolant
Semi-finishing	EPDREH-4010-3-01-TH3	1	0.1	3	25000	79	600	0.006	0.04	0.01	Mist blow
Finishing	EPDREH-4010-3-01-TH3	1	0.1	3	25000	79	300	0.003	0.03	0	Mist blow

**i** Offers high-accuracy machining with dimensional variation of just 0.4 μm after 1 hour of finishing machining.

# EPDREH-TH3 General Technical Information



ISO 513 Symbol	Description	Examples
<b>P</b>	Non-alloy steel, low alloy steel, high alloy steel, ferritic/martensitic stainless steel, tool steel	1.2343 / X38CrMoV5-1; 1.2738 / 40CrMnNiMo8; 1.0503 / C45; 1.0570 / ST52-3; 1.1730 / C45W; 1.7131 / 16MnCr5; 1.7225 / 42CrMo4; 1.3343 / HS6-5-2; 1.0511 / C40; 1.2312 / 40CrMnMoS8-6; 1.2311 / 40CrMnMo7; 1.2344 / X40CrMoV5-1; 1.2767 / X45NiCrMo4; 1.2083 / X42Cr13; 1.2085 / X33CrS16; 1.2714 / 55NiCrMoV7; 1.2842 / 90MnCrV8;
<b>M</b>	Austenitic stainless steel	1.4301 / X5CrNi18-9; 1.4401 / X5CrNiMo17-12-2; 1.4404 / X2CrNiMo17-13-2; 1.4828 / X15CrNiSi20 12
<b>K</b>	Grey cast iron (GG), nodular cast iron (GGG), malleable cast iron	0.6025 / GG-25; GGG-40.3; 0.8155 / GTS-55-04
<b>N</b>	Aluminum wrought all, copper alloy, aluminum-cast, alloyed, non-ferrous	2.0060 / E-Cu57; 2.0321 / CuZn37; 3.0255 / Al99.5; 3.5103 / MgSE3Zn27r1
<b>S</b>	High temperature alloys, titanium and Ti alloys	1.4864 / X12NiCrSi36 16; 2.4856 / NiCr22Mo9Nb; 1.4977 / X40CoCrNi20 20; 2.4669 / NiCr15Fe7TiAl
<b>H</b>	Hardened steel, chilled cast iron, cast iron	



### Drawing Nomenclature

APMX	Cutting Edge Length	LF	Functional length
DC	Diameter Cutting	LN	Length Neck
DCONMS	Connection Diameter Machine Side	LU	Length Usage
DN	Diameter Neck	RE	Radius Edge

## **Attentions on Safety**

### **1. Cautions regarding handling**

- (1) When removing the tool from its case (packaging), be careful that the tool does not pop out or is dropped. Be particularly careful regarding contact with the tool flutes.
- (2) When handling tools with sharp cutting flutes, be careful not to touch the cutting flutes directly with your bare hands.

### **2. Cautions regarding mounting**

- (1) Before use, check the outside appearance of the tool for scratches, cracks, etc. and that it is firmly mounted in the collet chuck, etc.
- (2) When preparing for use, be sure that the inserts are firmly mounted in place and that they are firmly mounted on the arbor, etc.
- (3) If abnormal chattering, etc. occurs during use, stop the machine immediately and remove the cause of the chattering.

### **3. Cautions during use**

- (1) Before use, confirm the dimensions and direction of rotation of the tool and milling work material.
- (2) The numerical values in the standard cutting conditions table should be used as criteria when starting new work. The cutting conditions should be adjusted as appropriate when the cutting depth is large, the rigidity of the machine being used is low, or according to the conditions of the work material.
- (3) Cutting tools are made of a hard material. During use, they may break and fly off. In addition, cutting chips may also fly off. Since there is a danger of injury to workers, fire, or eye damage from such flying pieces, a safety cover should be attached when work is performed and safety equipment such as safety goggles should be worn to create a safe environment for work.
- (4) There is a risk of fire or inflammation due to sparks, heat due to breakage, and cutting chips. Do not use where there is a risk of fire or explosion. Please caution of fire while using oil base coolant, fire prevention is necessary.
- (5) Do not use the tool for any purpose other than that for which it is intended.

### **4. Cautions regarding regrinding**

- (1) If regrinding is not performed at the proper time, there is a risk of the tool breaking. Replace the tool with one in good condition, or perform regrinding.
- (2) Grinding dust will be created when regrinding a tool. When regrinding, be sure to attach a safety cover over the work area and wear safety clothes such as safety goggles, etc.
- (3) This product contains the specified chemical substance cobalt and its inorganic compounds. When performing regrinding or similar processing, be sure to handle the processing in accordance with the local laws and regulations regarding prevention of hazards due to specified chemical substances.

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**For more details please check our digital tool database**



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