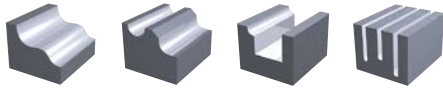


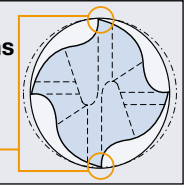
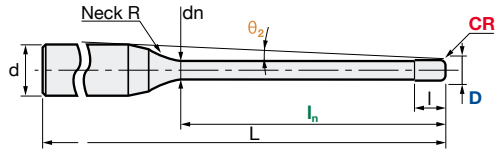
ETR | Epoch Turbo Rib

V max High Speed	▽ Roughing	▽▽ Semi-Finishing	HRC 65	Rib. Miniature	No. of Teeth 4
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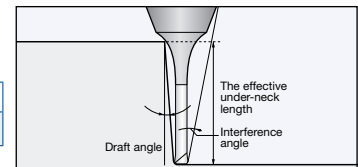
Oval Geometry for less vibrations

For tool setup be careful to measure main flute

Carbide Micro Grain	TH45+ Nano-PVD Coating	Rake Angle Negative
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Helix Angle 45°	R Tol. [mm] +/- 0.01	d Tol. h5
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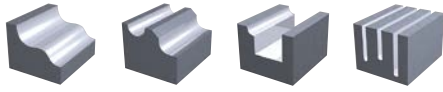


Size											Actual Effective Length in Incline Angles													
ID Code	Item Code	Z	D	CR	I _n	I	dn	L	d	Neck R	θ ₂ °	0.5°	1°	1.5°	2°	3°								
EP1763	ETR-4010-3-02-TH	4	1	0.2	3	1	0.94	50	60	60	9.66	3.69	3.86	4.01	4.14	4.39								
EP1764	ETR-4010-5-02-TH				5						8.52	5.79	6.01	6.21	6.38	6.75								
EP1765	ETR-4010-10-02-TH				10						6.58	10.98	11.32	11.58	12.09	13.39								
EP1766	ETR-4010-15-02-TH				15						5.35	16.15	16.55	17.24	18.07	20.03								
EP1767	ETR-4010-20-02-TH				20						4.51	21.29	21.92	22.94	24.06	26.66								
EP1768	ETR-4010-25-02-TH				25						3.90	26.41	27.37	28.64	30.04	33.30								
EP1769	ETR-4010-30-02-TH				30						3.44	31.52	32.82	34.34	36.02	39.94								
EP1770	ETR-40125-5-02-TH				4						1.25	0.2	5	1.25	1.18	50	60	70	8.38	5.81	6.03	6.22	6.39	6.79
EP1771	ETR-40125-10-02-TH												10						6.42	11.00	11.33	11.59	12.12	13.42
EP1772	ETR-40125-15-02-TH	15	5.20	16.16		16.56	17.26	18.10	20.06															
EP1773	ETR-40125-20-02-TH	20	4.37	21.30		21.95	22.97	24.09	26.69															
EP1774	ETR-40125-25-02-TH	25	3.77	26.42		27.39	28.67	30.07	33.33															
EP1775	ETR-40125-30-02-TH	30	3.31	31.54	32.84	34.37	36.05	39.97																
EP1776	ETR-4015-5-03-TH	4	1.5	0.3	5	1.5	1.42	50	60	70	8.28	5.83	6.05	6.23	6.40	6.79								
EP1777	ETR-4015-7.5-03-TH				7.5						7.14	8.43	8.70	8.93	9.14	10.10								
EP1778	ETR-4015-10-03-TH				10						6.28	11.02	11.34	11.60	12.13	13.42								
EP1779	ETR-4015-15-03-TH				15						5.05	16.18	16.57	17.28	18.11	20.06								
EP1780	ETR-4015-20-03-TH				20						4.23	21.31	21.96	22.98	24.09	26.69								
EP1781	ETR-4015-25-03-TH				25						3.63	26.43	27.41	28.68	30.08	33.33								
EP1782	ETR-4015-30-03-TH				30						3.19	31.55	32.86	34.38	36.06	39.97								
EP1783	ETR-40175-5-03-TH				4						1.75	0.3	5	1.75	1.65	50	60	60	8.10	5.88	6.08	6.26	6.42	6.85
EP1784	ETR-40175-10-03-TH												10						6.09	11.06	11.37	11.63	12.18	13.48
EP1785	ETR-40175-20-03-TH	20	4.07	21.34		22.01	23.03	24.15	26.76															
EP1786	ETR-4020-6-05-TH	4	2	0.5	6	2	1.92	50	60	70	7.55	6.86	7.10	7.30	7.48	8.05								
EP1787	ETR-4020-10-05-TH				10						5.98	11.01	11.33	11.59	12.09	13.36								
EP1788	ETR-4020-15-05-TH				15						4.75	16.17	16.56	17.25	18.07	19.99								
EP1789	ETR-4020-20-05-TH				20						3.94	21.31	21.95	22.95	24.06	26.63								
EP1790	ETR-4020-25-05-TH				25						3.36	26.43	27.39	28.65	30.04	33.27								
EP1791	ETR-4020-30-05-TH				30						2.93	31.54	32.84	34.36	36.02	x								
EP1792	ETR-4020-35-05-TH				35						2.60	36.67	38.29	40.06	42.00	x								
EP1793	ETR-4020-40-05-TH				40						2.34	41.88	43.73	45.76	47.99	x								
EP1794	ETR-4025-10-05-TH				4						2.5	0.5	10	2.5	2.4	50	60	70	5.57	11.05	11.36	11.61	12.15	13.42
EP1795	ETR-4025-20-05-TH	20	3.59	21.34		22.00	23.00	24.11	26.69															
EP1796	ETR-4025-30-05-TH	30	2.64	31.57		32.89	34.41	36.08	x															
EP1797	ETR-4025-40-05-TH	40	2.09	41.93		43.79	45.81	48.04	x															
EP1798	ETR-4030-10-08-TH	10	5.17	11.12		11.40	11.66	12.20	13.45															
EP1799	ETR-4030-20-08-TH	4	3	0.8	20	3	2.86	60	70	80	3.23	21.39	22.07	23.07	24.17	26.72								
EP1800	ETR-4030-30-08-TH				30						2.35	31.61	32.97	34.47	36.13	x								
EP1801	ETR-4030-40-08-TH				40						1.85	42.02	43.86	45.88	x	x								
EP1802	ETR-4030-50-08-TH				50						1.52	52.45	54.76	57.28	x	x								

x = no interference

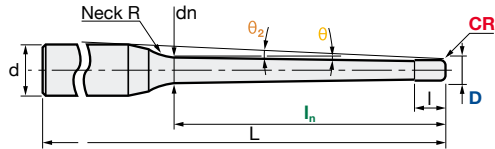
ETRP | Epoch Turbo Rib Pencil Neck

V max High Speed	▽ Roughing	▽▽ Semi-Finishing	HRC 65	▬ Rib. Miniature	No. of Teeth 4
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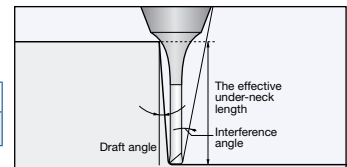
Oval Geometry for less vibrations

For tool setup be careful to measure main flute



Carbide Micro Grain	TH45+ Nano-PVD Coating	Rake Angle Negative
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Helix Angle 45°	R Tol. [mm] +/- 0.01	d Tol. h5
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ID Code	Item Code	Z	Size										Actual Effective Length in Incline Angles																					
			D	CR	In	I	dn	L	d	Neck R	θ°	θ ₂ °	0°	1°	1.5°	2°	3°																	
EP676	ETRP-4010-5-0902-TH	4	1	0.2	5	1	1.066	60	70	10	4	0.9°	8.67	2.91	5.70	5.96	6.17	6.51																
EP677	ETRP-4010-10-0902-TH				10										1.223	60	7	6.78	11.04	11.60	12.03	12.70												
EP678	ETRP-4010-15-0902-TH				15										1.380	70	7	5.57	16.35	17.25	17.89	18.89												
EP679	ETRP-4010-20-0902-TH				20										1.537	70	7	4.72	21.42	22.49	23.22	24.80												
EP680	ETRP-4010-25-0902-TH				25										1.694	80	10	4.10	26.49	27.70	28.52	30.95												
EP681	ETRP-4010-30-0902-TH				30										1.851	80	10	3.62	31.55	32.90	33.79	37.09												
EP682	ETRP-4010-35-0902-TH				35										2.008	90	10	3.24	36.61	38.08	39.03	43.24												
EP683	ETRP-4010-40-0902-TH				40										2.165	90	10	2.94	41.67	43.25	44.54	x												
EP684	ETRP-4010-45-0902-TH				45										2.322	100	10	2.68	46.73	48.41	50.08	x												
EP685	ETRP-4010-50-0902-TH				50										2.480	100	10	2.47	51.78	53.56	55.62	x												
EP686	ETRP-40125-10-0902-TH				1.25										1.25	0.2	10	1.25	1.455	60	70	10	7	0.9°	6.62	3.47	11.10	11.65	12.06	12.73				
EP687	ETRP-40125-20-0902-TH																20										1.769	70	7	4.57	21.49	22.52	23.25	24.86
EP688	ETRP-40125-30-0902-TH																30										2.083	80	10	3.49	31.61	32.93	33.81	37.15
EP689	ETRP-40125-40-0902-TH				40										2.397	90	10	2.82	41.73	43.28	44.59	x												
EP690	ETRP-40125-50-0902-TH				50										2.712	100	10	2.37	51.83	53.59	55.67	x												
EP691	ETRP-4015-10-0903-TH	1.5	1.5	0.3	10	1.5	1.687	60	70	10	7	0.9°	6.47	4.04	11.15	11.67	12.08	12.74																
EP692	ETRP-4015-20-0903-TH				20										2.001	70	7	4.43	21.54	22.55	23.27	24.88												
EP693	ETRP-4015-30-0903-TH				30										2.315	80	10	3.36	31.66	32.95	33.83	37.17												
EP694	ETRP-4015-40-0903-TH				40										2.630	90	10	2.71	41.77	43.30	44.62	x												
EP695	ETRP-4015-50-0903-TH				50										2.944	100	10	2.27	51.88	53.60	55.70	x												
EP696	ETRP-40175-10-0903-TH	1.75	1.75	0.3	10	1.75	1.909	60	70	10	7	0.9°	6.28	4.93	11.24	11.74	12.13	12.77																
EP697	ETRP-40175-20-0903-TH				20										2.223	70	7	4.26	21.64	22.61	23.32	24.97												
EP698	ETRP-40175-30-0903-TH				30										2.538	80	10	3.22	31.75	33.00	33.86	37.26												
EP699	ETRP-40175-40-0903-TH	40	2.852	90	10	2.59	41.86	43.34	44.70	x																								
EP700	ETRP-40175-50-0903-TH	50	3.166	100	10	2.16	51.95	53.64	55.78	x																								
EP701	ETRP-4020-20-0905-TH	2	2	0.5	20	2	2.486	70	80	10	7	0.9°	4.54	4.54	21.29	22.10	22.67	24.86																
EP702	ETRP-4020-30-0905-TH				30										2.800	80	7	3.10	31.69	32.96	33.83	37.16												
EP703	ETRP-4020-40-0905-TH				40										3.114	90	10	2.48	41.80	43.31	44.63	x												
EP704	ETRP-4020-50-0905-TH				50										3.428	100	10	2.07	51.90	53.16	55.71	x												
EP705	ETRP-4020-60-0905-TH				60										3.742	110	10	1.77	62.00	63.89	x	x												
EP706	ETRP-4025-20-0905-TH	2.5	2.5	0.5	20	2.5	2.950	70	80	10	7	0.9°	5.68	5.68	21.39	22.16	22.72	24.98																
EP707	ETRP-4025-30-0905-TH				30										3.264	80	7	2.79	31.80	33.02	33.88	x												
EP708	ETRP-4025-40-0905-TH				40										3.578	90	10	2.22	41.90	43.36	44.73	x												
EP709	ETRP-4025-50-0905-TH				50										3.892	100	10	1.85	52.00	53.66	x	x												
EP710	ETRP-4025-60-0905-TH	60	4.207	110	10	1.58	62.09	63.93	x	x																								
EP711	ETRP-4030-20-0908-TH	3	3	0.8	20	3	3.394	70	80	10	7	0.9°	7.45	7.45	21.50	22.22	22.76	25.05																
EP712	ETRP-4030-30-0908-TH				30										3.708	80	7	2.49	31.59	32.54	33.74	x												
EP713	ETRP-4030-40-0908-TH				40										4.022	90	10	1.96	42.03	43.42	x	x												
EP714	ETRP-4030-50-0908-TH				50										4.337	100	10	1.62	52.12	53.72	x	x												
EP715	ETRP-4030-60-0908-TH				60										4.651	110	10	1.37	62.20	x	x	x												

x = no interference

D 1 - D 3:	Roughing: Page 6 - 7	Semi-Finishing: Page 6 - 7
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