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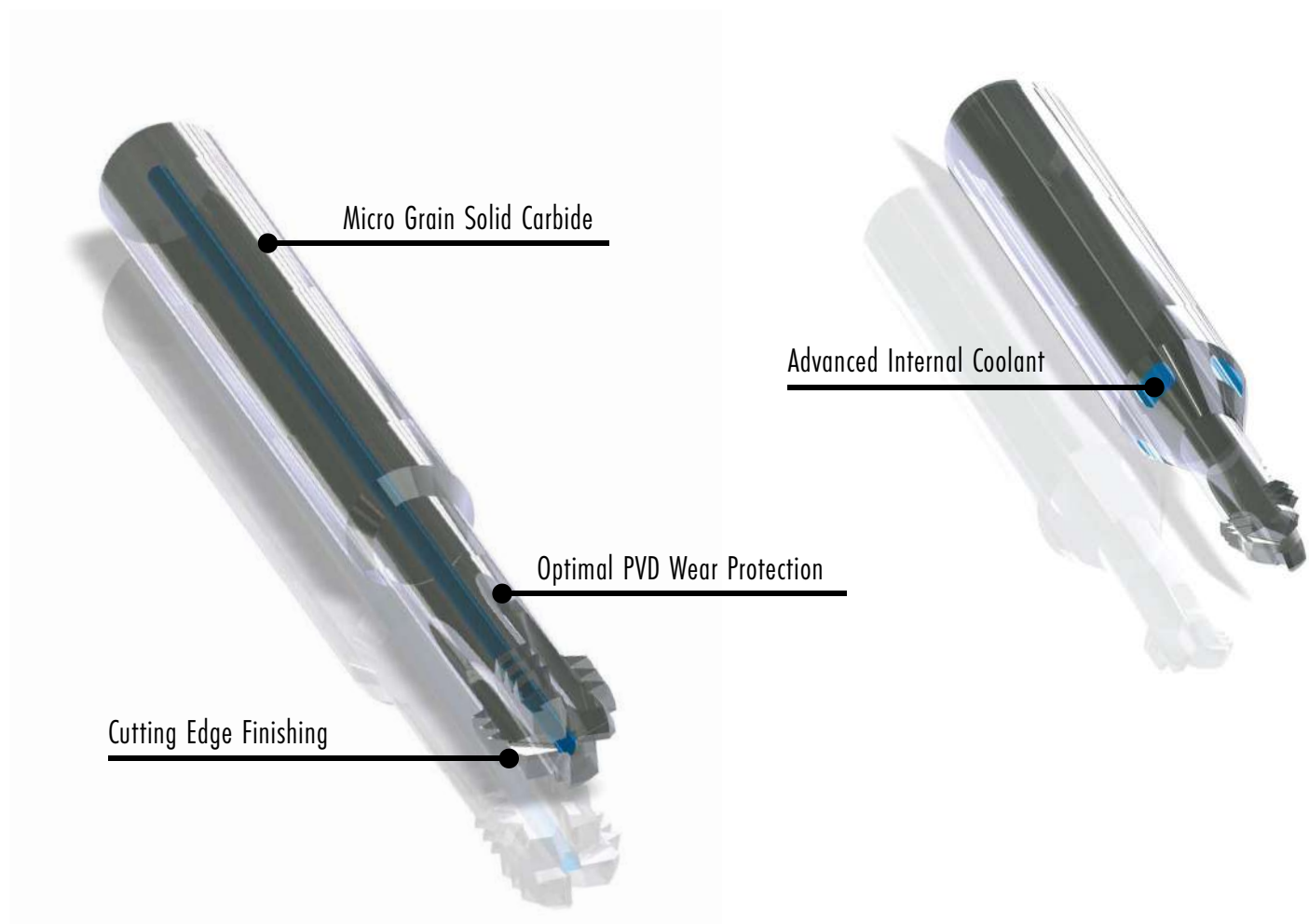
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EN-ID-1015



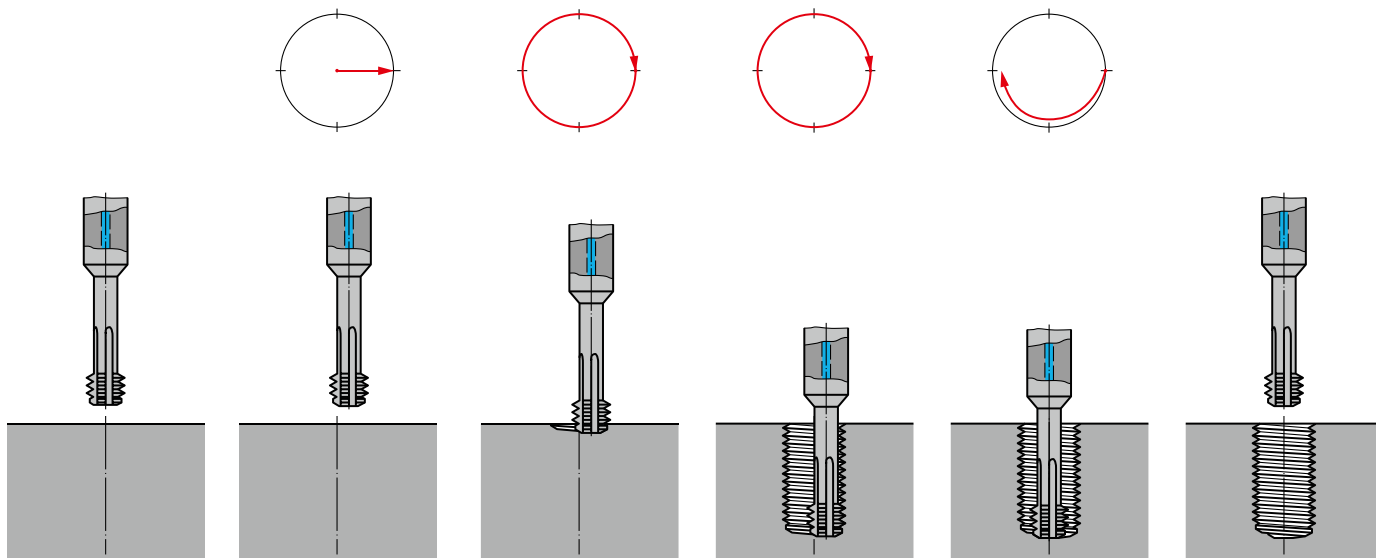
THREADING SOLUTIONS

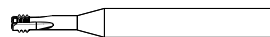
Circular Thread Milling **EVOLVED**



Thread Milling Cycle

- Left rotation (counterclockwise)
- Threading up to $3 \times D_1$ possible
- Use internal coolant for best chip evacuation (min 20 bar)





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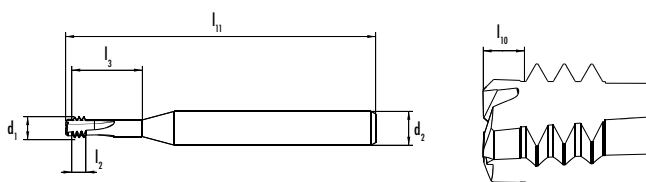


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$\varnothing D_1$ M	P mm	d_1 mm	l_{11} mm	l_2 mm	l_3 mm	d_2 h6 mm	l_{10} mm	
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ID

3	0.50	2.43	55	1.5	7.5	4	0.75	3
4	0.70	3.05	55	2.1	10.1	6	1.05	3
5	0.80	4.08	55	2.4	12.4	6	1.20	3
6	1.00	4.50	64	3.0	15.0	6	1.50	4
8	1.25	5.95	64	3.8	19.8	6	1.88	4
10	1.50	7.95	74	4.5	24.5	8	2.25	4
12	1.75	9.95	80	5.3	29.3	10	2.63	4
16	2.00	11.95	92	6.0	38.0	12	3.00	4

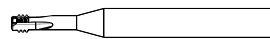
181605
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$\varnothing D_1$ M	P mm	d_1 mm	l_{11} mm	l_2 mm	l_3 mm	d_2 h6 mm	l_{10} mm	
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ID

3	0.50	2.43	55	1.5	10.5	4	0.75	3
4	0.70	3.05	55	2.1	14.1	6	1.05	3
5	0.80	4.08	55	2.4	17.4	6	1.20	3
6	1.00	4.50	72	3.0	21.0	6	1.50	4
8	1.25	5.95	72	3.8	27.8	6	1.88	4
10	1.50	7.95	90	4.5	34.5	8	2.25	4
12	1.75	9.95	102	5.3	41.3	10	2.63	4
16	2.00	11.95	115	6.0	54.0	12	3.00	4

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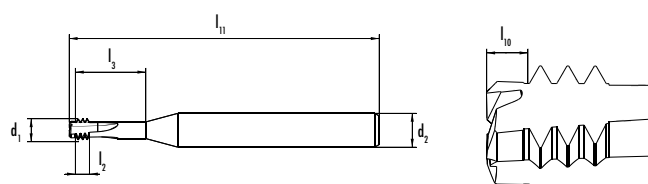


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$\varnothing D_1$ UNCTPI	P mm	d_1 mm	l_{11} mm	l_2 mm	l_3 mm	d_2 h6 mm	l_{10} mm	
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4	40	2.11	55	1.9	7.6	4	0.95	3
6	32	2.59	55	2.4	9.4	4	1.19	3
8	32	3.10	55	2.4	10.8	6	1.19	3
10	24	3.60	55	3.2	12.9	6	1.59	3
1/4	20	4.80	64	3.8	16.6	6	1.91	4
5/16	18	5.95	64	4.2	20.2	6	2.12	4
3/8	16	7.10	74	4.8	23.9	8	2.38	4
1/2	13	9.95	80	5.9	31.3	10	2.93	4
5/8	11	11.95	92	6.9	38.7	12	3.46	4

ID

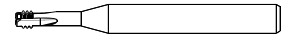
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$\varnothing D_1$ UNCTPI	P mm	d_1 mm	l_{11} mm	l_2 mm	l_3 mm	d_2 h6 mm	l_{10} mm	
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4	40	2.11	55	1.9	10.5	4	0.95	3
6	32	2.59	55	2.4	12.9	4	1.19	3
8	32	3.10	55	2.4	14.9	6	1.19	3
10	24	3.60	55	3.2	17.7	6	1.59	3
1/4	20	4.80	72	3.8	22.9	6	1.91	4
5/16	18	5.95	72	4.2	28.1	6	2.12	4
3/8	16	7.10	90	4.8	33.4	8	2.38	4
1/2	13	9.95	102	5.9	44.0	10	2.93	4
5/8	11	11.95	115	6.9	54.6	12	3.46	4

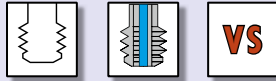
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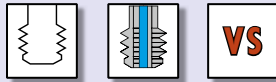


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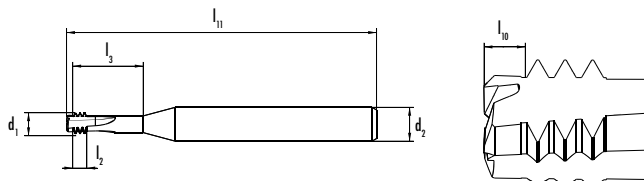


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$\varnothing D_1$ UNFTPI	P mm	d_1 mm	l_{11} mm	l_2 mm	l_3 mm	d_2 h6 mm	l_{10}	
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ID

4	48	2.23	55	1.6	7.3	4	0.79	3
8	36	3.10	55	2.1	10.5	6	1.06	3
10	32	3.91	55	2.4	12.1	6	1.19	3
1/4	28	4.80	64	2.7	15.5	6	1.36	4
5/16	24	5.95	64	3.2	19.1	6	1.59	4
3/8	24	7.10	74	3.2	22.3	8	1.59	4
7/16	20	7.95	74	3.8	26.1	8	1.91	4
1/2	20	9.95	80	3.8	29.3	10	1.91	4
5/8	18	11.95	92	4.2	36.0	12	2.12	4

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$\varnothing D_1$ UNFTPI	P mm	d_1 mm	l_{11} mm	l_2 mm	l_3 mm	d_2 h6 mm	l_{10}	
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ID

4	48	2.23	55	1.6	10.2	4	0.79	3
8	36	3.10	55	2.1	14.7	6	1.06	3
10	32	3.91	55	2.4	16.9	6	1.19	3
1/4	28	4.80	72	2.7	21.8	6	1.36	4
5/16	24	5.95	72	3.2	27.0	6	1.59	4
3/8	24	7.10	90	3.2	31.8	8	1.59	4
7/16	20	7.95	90	3.8	37.2	8	1.91	4
1/2	20	9.95	102	3.8	42.0	10	1.91	4
5/8	18	11.95	115	4.2	51.9	12	2.12	4

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Cutting Speeds and Feed Rates

Material groups		Material designation	Hardness (HB)	Tensile strength Rm (N/mm²)	Vc (m/min)		Feed rate fz (mm/tooth)	SFM (Surface feet/min)		Feed rate fz (inch/tooth)
						Coated			Coated	
Steels	11	Free-cutting steels	< 200	< 700	50 – 100		0.020 – 0.060	164 – 328		0.0007 – 0.0023
	12	Structural / cementation steels	< 200	< 700	50 – 100		0.010 – 0.050	164 – 328		0.0003 – 0.0019
	13	Carbon steels	< 300	< 1000	50 – 100		0.010 – 0.050	164 – 328		0.0003 – 0.0019
	14	Alloy steels <850 N/mm²	< 250	< 850	50 – 100		0.010 – 0.050	164 – 328		0.0003 – 0.0019
	15	Alloy steels hard. / temp. >850 - <1150 N/mm²	> 250	> 850	40 – 80		0.010 – 0.050	131 – 262		0.0003 – 0.0019
Stainless Steels	16	High tensile alloy steels <55 HRC	> 250	> 850	30 – 60		0.008 – 0.040	98 – 197		0.0003 – 0.0015
	21	Free machining stainless steels	< 250	< 850	40 – 80		0.010 – 0.040	131 – 262		0.0003 – 0.0015
	22	Austenitic stainless steels	< 250	< 850	30 – 50		0.010 – 0.040	98 – 164		0.0003 – 0.0015
	23	Ferritic and martensitic <850 N/mm²	< 250	< 850	30 – 60		0.010 – 0.040	98 – 197		0.0003 – 0.0015
	24	Ferritic and martens. >850 - <1150 N/mm²	> 250	> 850	30 – 50		0.010 – 0.030	98 – 164		0.0003 – 0.0011
Cast Iron	31	Cast iron	< 250	< 850	70 – 140		0.010 – 0.050	230 – 459		0.0003 – 0.0019
	32	Spheroidal graphite + malleable cast iron	< 250	< 850	50 – 100		0.010 – 0.050	164 – 328		0.0003 – 0.0019
Titanium	41	Pure titanium	< 250	< 850	30 – 50		0.010 – 0.040	98 – 164		0.0003 – 0.0015
	42	Titanium alloys	> 250	> 850	30 – 50		0.010 – 0.040	98 – 164		0.0003 – 0.0015
Nickel	51	Nickel alloys 1 <850 N/mm²	< 250	< 850	40 – 60		0.010 – 0.030	131 – 197		0.0003 – 0.0011
	52	Nickel alloys 2 >850 - <1150 N/mm²	> 250	> 850	30 – 50		0.010 – 0.030	98 – 164		0.0003 – 0.0011
	53	Nickel alloys 3 >1150 - ≤1600 N/mm²	> 340	> 1150	30 – 50		0.005 – 0.030	98 – 164		0.0002 – 0.0011
Copper	62	Short chip brass, phosphor bronze, gun metal	< 200	< 700	100 – 200		0.010 – 0.050	328 – 656		0.0003 – 0.0019
	63	Long chip brass	< 200	< 700	100 – 200		0.010 – 0.050	328 – 656		0.0003 – 0.0019
Aluminium Magnesium	71	Al unalloyed	< 100	< 350	100 – 200		0.010 – 0.050	328 – 656		0.0003 – 0.0019
	72	Al alloyed Si < 1.5 %	< 150	< 500	100 – 200		0.010 – 0.050	328 – 656		0.0003 – 0.0019
	73	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400	100 – 200		0.010 – 0.050	328 – 656		0.0003 – 0.0019
	74	Al alloyed Si > 10 %, Mg-Alloys	< 120	< 400	70 – 140		0.010 – 0.050	230 – 459		0.0003 – 0.0019
Plastic Compounds	81	Thermoplastics	-	-	80 – 180		0.050 – 0.100	262 – 590		0.0019 – 0.0039
	82	Duroplastics	-	-	80 – 180		0.020 – 0.080	262 – 590		0.0007 – 0.0031
	83	Glass fibre reinforced plastics	-	-	50 – 150		0.020 – 0.100	164 – 492		0.0007 – 0.0039
Precious Metals	91	Yellow gold	-	-	80 – 120		0.020 – 0.080	262 – 394		0.0007 – 0.0031
	92	Red gold	-	-	50 – 100		0.010 – 0.050	164 – 328		0.0003 – 0.0019
	93	White gold	-	-	40 – 80		0.010 – 0.040	131 – 262		0.0003 – 0.0015
	94	Silver	-	-	50 – 100		0.010 – 0.050	164 – 328		0.0003 – 0.0019

