



THE FUTURE OF PRECISION MACHINING

DENTAL LINE





Specially designed tools for dental applications on
materials : Zirconium Oxide, Cobalt Chrome /
Titanium and PMMA





Cobalt Chrome / Titanium

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	A79	SE 45 Miniature Torus with Long Neck Endmill		3
	A76	BN 60 Miniature with Long Neck Endmill		4

PMMA

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	G76	AL BN Miniature with Long Neck Endmill		6
	H55	AL SE Miniature Torus with Long Neck Endmill		5

Zirconium Oxide

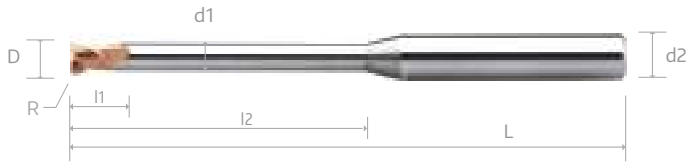
	EDP No.	Design		Page
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A79

SE 45 MINIATURE TORUS ENDMILLS WITH LONG NECK



Cobalt Chrome / Titanium

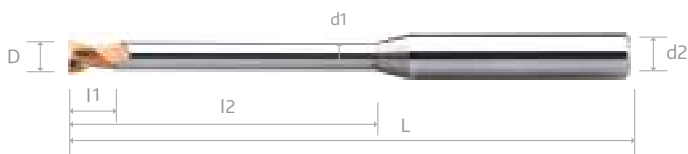


EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						
	D	R	l1	l2	d1	L	d2 (h6)
= * + Ø data							
A79 0030 050 0400 020 R010	0.3	0.03	0.4	2	0.27	50	4
A79 0100 050 0400 040 R020	1	0.2	1.5	4	0.9	50	4
A79 0150 050 0400 060 R010	1.5	0.1	2.3	6	1.4	50	4
A79 0150 050 0400 080 R010	1.5	0.1	2.3	8	1.4	50	4
A79 0150 050 0400 120 R010	1.5	0.1	2.3	12	1.4	50	4
A79 0150 050 0400 160 R010	1.5	0.1	2.3	16	1.4	50	4
A79 0150 050 0400 080 R030	1.5	0.3	2.3	8	1.4	50	4
A79 0200 050 0400 120 R020	2	0.2	3	12	1.9	50	4
A79 0200 050 0400 160 R020	2	0.2	3	16	1.9	50	4
A79 0200 060 0400 200 R020	2	0.2	3	20	1.9	60	4
A79 0200 050 0400 080 R050	2	0.5	3	8	1.9	50	4
A79 0300 050 0600 100 R050	3	0.5	4.5	10	2.8	50	6
A79 0300 060 0600 160 R050	3	0.5	4.5	16	2.8	60	6
A79 0400 060 0600 150 R050	4	0.5	4.5	15	3.7	60	6

A56

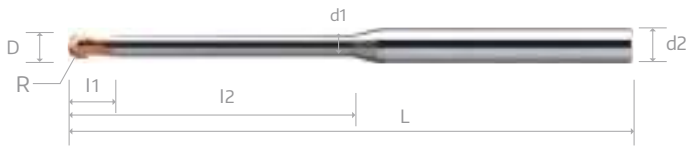
SE 60 MINIATURE ENDMILLS WITH LONG NECK

Cobalt Chrome / Titanium



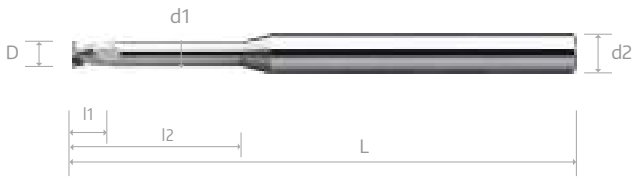
EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					
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= * + Ø data						
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A56 0050 050 0400 060	0.5	0.7	6	0.45	50	4
A56 0100 050 0400 060	1	1.5	6	0.9	50	4
A56 0100 050 0400 100	1	1.5	10	0.9	50	4
A56 0150 050 0400 080	1.5	2.3	8	1.4	50	4
A56 0150 050 0400 160	1.5	2.3	16	1.4	50	4
A56 0150 060 0400 200	1.5	2.3	20	1.4	60	4
A56 0200 050 0400 100	2	3	10	1.9	50	4
A56 0200 060 0400 200	2	3	20	1.9	60	4

Cobalt Chrome / Titanium



EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						
	D	R	l1	l2	d1	L	d2 (h6)
A76 0060 050 0400 030	0.6	0.3	0.5	3	0.55	50	4
A76 0100 050 0400 040	1	0.5	0.8	4	0.9	50	4
A76 0100 050 0400 080	1	0.5	0.8	8	0.9	50	4
A76 0100 050 0400 100	1	0.5	0.8	10	0.9	50	4
A76 0100 050 0400 120	1	0.5	0.8	12	0.9	50	4
A76 0150 050 0400 080	1.5	0.75	1.2	8	1.4	50	4
A76 0150 050 0400 100	1.5	0.75	1.2	10	1.4	50	4
A76 0150 050 0400 120	1.5	0.75	1.2	12	1.4	50	4
A76 0200 050 0400 080	2	1	1.6	8	1.9	50	4
A76 0200 050 0400 120	2	1	1.6	12	1.9	50	4
A76 0200 050 0400 160	2	1	1.6	16	1.9	50	4
A76 0300 050 0600 100	3	1.5	2.4	10	2.8	50	6
A76 0300 060 0600 160	3	1.5	2.4	16	2.8	60	6
A76 0300 060 0600 200	3	1.5	2.4	20	2.8	60	6
A76 0400 060 0600 160	4	2	3.2	16	3.7	60	6

PMMA

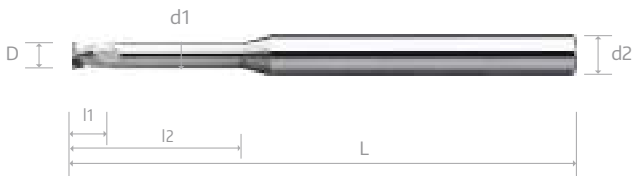


EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)					
	D	l1	l2	d1	L	d2 (h6)
= * + Ø data						
G68 0050 050 0400 040	0.5	0.7	4	0.45	50	4
G68 0050 050 0400 060	0.5	0.7	6	0.45	50	4
G68 0100 050 0400 060	1	1.5	6	0.9	50	4
G68 0100 050 0400 100	1	1.5	10	0.9	50	4
G68 0150 050 0400 080	1.5	2.3	8	1.4	50	4
G68 0150 050 0400 160	1.5	2.3	16	1.4	50	4
G68 0150 060 0400 200	1.5	2.3	20	1.4	60	4
G68 0200 050 0400 100	2	3	10	1.9	50	4
G68 0200 060 0400 200	2	3	20	1.9	60	4

H55

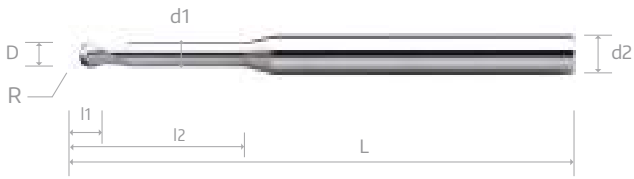
AL SE MINIATURE TORUS ENDMILLS WITH LONG NECK

PMMA



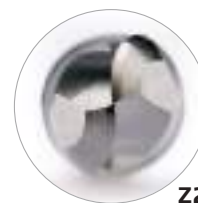
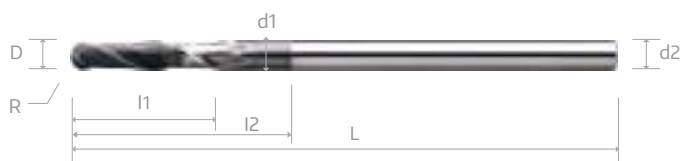
EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						
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= * + Ø data							
H55 0030 050 0400 020	0.3	0.05	0.4	2	0.27	50	4
H55 0100 050 0400 060	1	0.1	1.5	6	0.9	50	4
H55 0150 050 0400 060	1.5	0.2	2.3	6	1.4	50	4
H55 0150 050 0400 080	1.5	0.2	2.3	8	1.4	50	4
H55 0150 050 0400 120	1.5	0.2	2.3	12	1.4	50	4
H55 0150 050 0400 160	1.5	0.2	2.3	16	1.4	50	4
H55 0200 050 0400 120	2	0.2	3	12	1.9	50	4
H55 0200 050 0400 160	2	0.2	3	16	1.9	50	4
H55 0200 060 0400 200	2	0.2	3	20	1.9	60	4
H55 0300 050 0600 100	3	0.3	4.5	10	2.8	50	6
H55 0300 060 0600 160	3	0.3	4.5	16	2.8	60	6
H55 0400 060 0600 150	4	0.4	4.5	15	3.7	60	6

PMMA



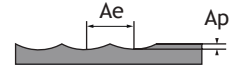
EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						
	D	R	l1	l2	d1	L	d2 (h6)
= * + Ø data							
G76 0060 050 0400 030	0.6	0.3	0.5	3	0.55	50	4
G76 0100 050 0400 040	1	0.5	0.8	4	0.9	50	4
G76 0100 050 0400 080	1	0.5	0.8	8	0.9	50	4
G76 0100 050 0400 100	1	0.5	0.8	10	0.9	50	4
G76 0100 050 0400 120	1	0.5	0.8	12	0.9	50	4
G76 0150 050 0400 080	1.5	0.75	1.2	8	1.4	50	4
G76 0150 050 0400 100	1.5	0.75	1.2	10	1.4	50	4
G76 0150 050 0400 120	1.5	0.75	1.2	12	1.4	50	4
G76 0200 050 0400 080	2	1	1.6	8	1.9	50	4
G76 0200 050 0400 120	2	1	1.6	12	1.9	50	4
G76 0200 050 0400 160	2	1	1.6	16	1.9	50	4
G76 0300 050 0600 100	3	1.5	2.4	10	2.8	50	6
G76 0300 060 0600 160	3	1.5	2.4	16	2.8	60	6
G76 0300 060 0600 200	3	1.5	2.4	20	2.8	60	6
G76 0400 060 0600 160	4	2	3.2	16	3.7	60	6

Zirconium Oxide



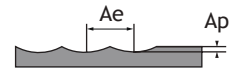
EDP No. / EDV-Nr. / CODE usine / Codice EDP	Dimension (mm)						
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= * + Ø data							
756 0050 050 0300 060	0.5	0.25	1	6	0.45	50	3
756 0060 050 0300 060	0.6	0.3	1.2	6	0.55	50	3
756 0060 050 0300 100	0.6	0.3	1.2	10	0.55	50	3
756 0100 060 0300 160	1	0.5	3	16	0.9	60	4
756 0100 060 0300 180	1	0.5	3	18	0.9	60	4
756 0100 060 0300 200	1	0.5	3	20	0.9	60	4
756 0200 060 0400 160	2	1	4	16	1.9	60	4
756 0200 060 0400 200	2	1	4	20	1.9	60	4
756 0200 060 0400 150	2	1	4	25	1.9	60	4
756 0300 075 0400 150	3	1.5	5	15	2.8	75	4
756 0300 075 0400 200	3	1.5	5	20	2.8	75	4
756 0300 075 0400 250	3	1.5	5	25	2.8	75	4

Miniature Endmills 2 Flutes - A56, A79



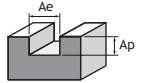
Slotting							
Working Material		Titanium			Cobalt Alloy		
Properties		-			-		
D (mm)	Effective Length	Ap (mm)	N (min ⁻¹)	Fz (mm)	Ap (mm)	N (min ⁻¹)	Fz (mm)
0.3	2	0.010	50000	0.008	0.010	50000	0.007
	4	0.015	50000	0.013	0.015	44000	0.011
0.5	6	0.010	50000	0.010	0.010	43000	0.010
	4	0.050	30000	0.028	0.050	22000	0.023
1	6	0.030	27000	0.024	0.030	21400	0.022
	10	0.020	27000	0.022	0.020	21400	0.022
	6	0.050	23000	0.044	0.050	14800	0.036
1.5	8	0.045	21200	0.039	0.045	14400	0.035
	12	0.045	21200	0.038	0.045	14400	0.035
	16	0.030	20000	0.038	0.030	14200	0.034
	20	0.030	20000	0.038	0.030	14200	0.034
2	8	0.110	18000	0.065	0.110	11200	0.049
	10	0.060	16000	0.060	0.060	10800	0.048
	12	0.060	16000	0.060	0.060	10800	0.048
	16	0.060	16000	0.060	0.060	10600	0.047
	20	0.040	16000	0.060	0.040	10600	0.047
3	10	0.160	13000	0.065	0.160	7400	0.074
	16	0.160	13000	0.065	0.160	7000	0.074
4	15	0.250	10000	0.100	0.250	5600	0.098

Miniature Ballnose Cutters 2 Flutes - A76



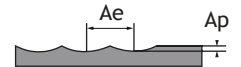
Profiling							
Working Material		Titanium			Cobalt Alloy		
Properties		-			-		
D (mm)	Effective Length	Ap (mm)	N (min ⁻¹)	Fz (mm)	Ap (mm)	N (min ⁻¹)	Fz (mm)
0.6	3	0.025	50000	0.010	0.025	47000	0.010
	4	0.050	38300	0.018	0.050	29200	0.019
1	8	0.030	34000	0.015	0.030	22500	0.017
	10	0.020	33000	0.014	0.020	22000	0.016
	12	0.020	33000	0.014	0.020	22000	0.016
	8	0.040	26000	0.032	0.040	20200	0.030
1.5	10	0.040	23400	0.028	0.040	16000	0.028
	12	0.030	23400	0.028	0.030	16000	0.028
	8	0.100	19900	0.044	0.100	16000	0.041
2	12	0.100	18000	0.037	0.100	12500	0.040
	16	0.060	18000	0.037	0.060	12500	0.040
3	10	0.160	13500	0.068	0.160	11100	0.065
	16	0.160	12000	0.060	0.160	9000	0.064
	20	0.120	12000	0.060	0.120	9000	0.064
4	16	0.200	10350	0.090	0.200	8750	0.086

Miniature Endmills 2 Flutes - G68, H55



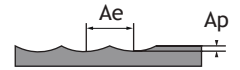
Slotting				
Working Material		PMMA		
Properties		-		
D (mm)	Effective Length	Ap (mm)	N (min ⁻¹)	Fz (mm)
0.3	2	0.012	50000	0.015
	4	0.016	50000	0.020
0.5	6	0.013	50000	0.018
	10	0.040	47000	0.023
1	6	0.025	45000	0.022
	8	0.060	32000	0.036
	12	0.055	31000	0.036
	16	0.050	30000	0.036
	20	0.035	26000	0.033
1.5	10	0.030	26000	0.026
	12	0.100	24000	0.050
	16	0.080	22000	0.048
	20	0.080	22000	0.046
2	10	0.050	22000	0.046
	16	0.210	20000	0.066
	20	0.120	20000	0.066
3	15	0.250	15000	0.100

Miniature Ballnose Cutters 2 Flutes - G76



Profiling				
Working Material		PMMA		
Properties		-		
D (mm)	Effective Length	Ap (mm)	N (min ⁻¹)	Fz (mm)
0.6	3	0.120	50000	0.014
	4	0.300	46000	0.020
1	8	0.100	43000	0.017
	10	0.075	41000	0.016
	12	0.070	41000	0.015
	12	0.160	32000	0.033
1.5	10	0.150	30000	0.029
	12	0.140	28000	0.028
	8	0.400	25000	0.046
2	12	0.200	23000	0.044
	16	0.200	22000	0.042
	10	0.600	18000	0.069
3	16	0.600	17200	0.061
	20	0.250	17200	0.061
	16	0.800	14000	0.090

Ballnose With Long Neck 2 Flutes - 756



Profiling		Zirconium Oxide			
Working Material		Zirconium Oxide			
Properties		-			
D (mm)	Effective Length	Ap (mm)	N (min ⁻¹)	Fz (mm)	
0.5	6	0.050	50000	0.007	
	6	0.100	50000	0.010	
0.6	10	0.090	50000	0.008	
	16	0.180	48000	0.013	
1	18	0.170	46000	0.012	
	20	0.150	44000	0.011	
	16	0.260	25000	0.028	
2	20	0.240	24000	0.026	
	25	0.190	23000	0.024	
	15	0.280	17200	0.042	
3	20	0.250	16800	0.040	
	25	0.200	16200	0.038	

Recommended Cutting Data
 Note: These recommended cutting conditions indicate just references. It should be adjusted due to different cutting conditions.



THE FUTURE OF PRECISION MACHINING

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