

BIG KAISER



SPHINX HIGH PRECISION CUTTING TOOLS
MICRO END MILLS — 2019



Micro End Mills

Precision cutting tools capable of increasing productivity and meeting some of the most challenging application requirements. Sphinx micro cutting tools are produced using high quality solid carbide with a reinforced shank to maximize stability. The consistent edge preparation performed on even the smallest diameters is necessary to accurately produce modern micro workpiece geometries.

- .10-3.00mm diameter range
- \varnothing 3mm or \varnothing 4mm reinforced shank for all diameters
- Useful in ISO P, M, K, S, N and O materials (common & exotic)
- Standard coated end mills
- Standard ball nose end mills
- Standard 2-flute and 3-flute geometries
- Specials available upon request



13 New End Mill Geometries \varnothing 3mm or Smaller

2-Flute

- 4 new standard cutting lengths (5 total, incl. Art. 42000)
- 65 new end mill sizes (114 total)

3-Flute

- 4 new standard cutting lengths
- 89 new end mill sizes

Coated 3-Flute

- 2 new standard cutting lengths
- 56 new end mill sizes

Ball Nose

- 3 new standard cutting lengths
- 4 new end mill sizes

MICRO END MILLS — Ø3MM SHANK .75xD-8xD
ART. 72075, 72150, 72500 & 72800

BIG KAISER

Art. 72075

Carbide	Z 2				
ST	SST	C.I.	Al	Cu	Brass
Ti	Plastic				

Art. 72150

Carbide	Z 2				
ST	SST	C.I.	Al	Cu	Brass
Ti	Plastic				

Art. 72500

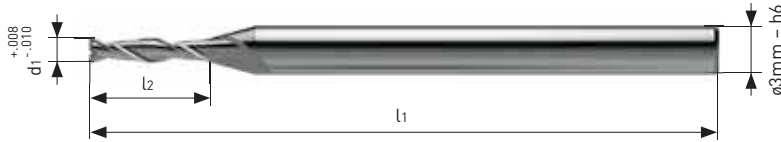
Carbide	Z 2				
ST	SST	C.I.	Al	Cu	Brass
Ti	Plastic				

Art. 72800

Carbide	Z 2				
ST	SST	C.I.	Al	Cu	Brass
Ti	Plastic				

MICRO END MILLS — Ø3MM SHANK .75xD-8xD

ART. 72075, 72150, 72500 & 72800



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	72075			72150			72500			72800		
		l2	l1	Catalog Number	l2	l1	Catalog Number	l2	l1	Catalog Number	l2	l1	Catalog Number
.10	.0039	—	—	—	.15	39	40.72150.0010	—	—	—	—	—	—
.15	.0059	—	—	—	.20	39	40.72150.0015	—	—	—	—	—	—
.20	.0079	.15	39	40.72075.0020	.30	39	40.72150.0020	—	—	—	—	—	—
.25	.0098	—	—	—	.35	39	40.72150.0025	—	—	—	—	—	—
.30	.0118	.25	39	40.72075.0030	.45	39	40.72150.0030	1.50	39	40.72500.0030	—	—	—
.40	.0157	.30	39	40.72075.0040	.60	39	40.72150.0040	2.00	39	40.72500.0040	3.20	39	40.72800.0040
.50	.0197	.37	39	40.72075.0050	.75	39	40.72150.0050	2.50	39	40.72500.0050	4.00	39	40.72800.0050
.60	.0236	.45	39	40.72075.0060	.90	39	40.72150.0060	3.00	39	40.72500.0060	5.00	39	40.72800.0060
.70	.0276	.53	39	40.72075.0070	1.05	39	40.72150.0070	3.50	39	40.72500.0070	5.60	39	40.72800.0070
.80	.0315	.60	39	40.72075.0080	1.20	39	40.72150.0080	4.00	39	40.72500.0080	6.00	39	40.72800.0080
.90	.0354	.70	39	40.72075.0090	1.35	39	40.72150.0090	4.50	39	40.72500.0090	7.20	39	40.72800.0090
1.00	.0394	.75	39	40.72075.0100	1.50	39	40.72150.0100	5.00	39	40.72500.0100	8.00	39	40.72800.0100
1.10	.0433	.90	39	40.72075.0110	1.65	39	40.72150.0110	5.50	39	40.72500.0110	—	—	—
1.20	.0472	.90	39	40.72075.0120	1.80	39	40.72150.0120	6.00	39	40.72500.0120	9.00	39	40.72800.0120
1.30	.0512	1.00	39	40.72075.0130	1.95	39	40.72150.0130	—	—	—	—	—	—
1.40	.0551	1.10	39	40.72075.0140	2.10	39	40.72150.0140	—	—	—	—	—	—
1.50	.0591	1.15	39	40.72075.0150	2.25	39	40.72150.0150	7.50	39	40.72500.0150	12.00	50	40.72800.0150*
1.60	.0630	1.20	39	40.72075.0160	2.40	39	40.72150.0160	—	—	—	—	—	—
1.70	.0669	1.30	39	40.72075.0170	2.55	39	40.72150.0170	—	—	—	—	—	—
1.80	.0709	1.40	39	40.72075.0180	2.70	39	40.72150.0180	—	—	—	—	—	—
1.90	.0748	1.45	39	40.72075.0190	2.85	39	40.72150.0190	—	—	—	—	—	—
2.00	.0787	1.50	39	40.72075.0200	3.00	39	40.72150.0200	10.00	39	40.72500.0200	16.00	50	40.72800.0200*
2.50	.0984	—	—	—	—	—	—	12.50	39	40.72500.0250	20.00	50	40.72800.0250*

* Indicates ø4mm - h6 shank

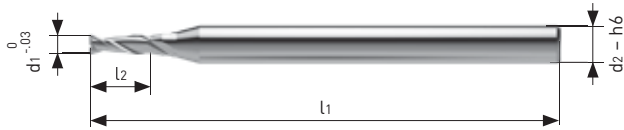
• For entire Cutting Tool Systems and Operating Parameters, please see catalog — Sphinx High Precision Cutting Tools Vol. 2

MICRO END MILLS

END MILL Ø3MM SHANK 3XD — ART. 42000

Art. 42000

Carbide	Z 2						
ST	SST	C.I.	Al	Cu	Brass	Ti	Plastic



※All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l1	d2	Catalog Number
.10	.0039	.30	38	3.00	40.42000.0010
.15	.0059	.45	38	3.00	40.42000.0015
.20	.0079	.60	38	3.00	40.42000.0020
.25	.0098	.75	38	3.00	40.42000.0025
.30	.0118	.90	38	3.00	40.42000.0030
.35	.0138	1.05	38	3.00	40.42000.0035
.40	.0157	1.20	38	3.00	40.42000.0040
.45	.0177	1.35	38	3.00	40.42000.0045
.50	.0197	1.50	38	3.00	40.42000.0050
.55	.0217	1.65	38	3.00	40.42000.0055
.60	.0236	1.80	38	3.00	40.42000.0060
.65	.0256	1.95	38	3.00	40.42000.0065
.70	.0276	2.10	38	3.00	40.42000.0070
.75	.0295	2.25	38	3.00	40.42000.0075
.80	.0315	2.40	38	3.00	40.42000.0080
.85	.0335	2.55	38	3.00	40.42000.0085
.90	.0354	2.70	38	3.00	40.42000.0090
.95	.0374	2.85	38	3.00	40.42000.0095
1.00	.0394	3.00	38	3.00	40.42000.0100
1.05	.0413	3.10	38	3.00	40.42000.0105
1.10	.0433	3.30	38	3.00	40.42000.0110
1.15	.0453	3.40	38	3.00	40.42000.0115
1.20	.0472	3.60	38	3.00	40.42000.0120
1.25	.0492	3.70	38	3.00	40.42000.0125
1.30	.0512	3.90	38	3.00	40.42000.0130

d1	d1 (in.)	l2	l1	d2	Catalog Number
1.35	.0531	4.00	38	3.00	40.42000.0135
1.40	.0551	4.20	38	3.00	40.42000.0140
1.45	.0571	4.30	38	3.00	40.42000.0145
1.50	.0591	4.50	38	3.00	40.42000.0150
1.55	.0610	4.60	38	3.00	40.42000.0155
1.60	.0630	4.80	38	3.00	40.42000.0160
1.65	.0650	4.90	38	3.00	40.42000.0165
1.70	.0669	5.10	38	3.00	40.42000.0170
1.75	.0689	5.20	38	3.00	40.42000.0175
1.80	.0709	5.40	38	3.00	40.42000.0180
1.85	.0728	5.50	38	3.00	40.42000.0185
1.90	.0748	5.70	38	3.00	40.42000.0190
1.95	.0768	5.80	38	3.00	40.42000.0195
2.00	.0787	6.00	38	3.00	40.42000.0200
2.10	.0827	6.30	38	3.00	40.42000.0210
2.20	.0866	6.60	38	3.00	40.42000.0220
2.30	.0906	6.90	38	3.00	40.42000.0230
2.40	.0945	7.20	38	3.00	40.42000.0240
2.50	.0984	7.50	38	3.00	40.42000.0250
2.60	.1024	7.80	38	3.00	40.42000.0260
2.70	.1063	8.10	38	3.00	40.42000.0270
2.80	.1102	8.40	38	3.00	40.42000.0280
2.90	.1142	8.70	38	3.00	40.42000.0290
3.00	.1181	9.00	38	3.00	40.42000.0300

MICRO END MILLS — Ø3MM SHANK 1xD-3xD COATED

ART. 43105 & 43305



Art. 43105

Carbide Z 3 35° 1xd

Plunge Straight Groove Angular Groove Front Side Finishing

Side Finishing Angular Circular

ST SST C.I. Al Cu Brass

Mg Ti HST Plastic

Art. 43305

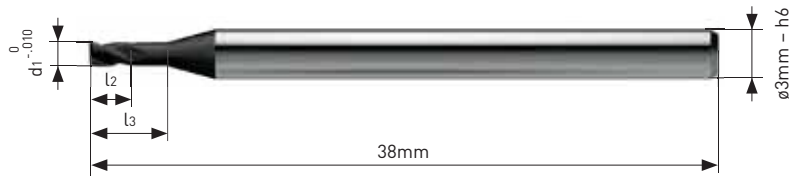
Carbide Z 3 35° 3xd

Plunge Straight Groove Angular Groove Front Side Finishing

Side Finishing Angular Circular

ST SST C.I. Al Cu Brass

Mg Ti HST Plastic



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	43105		43305		
		l2	Catalog Number	l2	l3	Catalog Number
.30	.0118	.30	40.43105.0030	.30	.90	40.43305.0030
.40	.0157	.40	40.43105.0040	.40	1.20	40.43305.0040
.50	.0197	.50	40.43105.0050	.50	1.50	40.43305.0050
.60	.0236	.60	40.43105.0060	.60	1.80	40.43305.0060
.70	.0276	.70	40.43105.0070	.70	2.10	40.43305.0070
.80	.0315	.80	40.43105.0080	.80	2.40	40.43305.0080
.90	.0354	.90	40.43105.0090	.90	2.70	40.43305.0090
1.00	.0394	1.00	40.43105.0100	1.00	3.00	40.43305.0100
1.10	.0433	1.10	40.43105.0110	1.10	3.30	40.43305.0110
1.20	.0472	1.20	40.43105.0120	1.20	3.60	40.43305.0120
1.30	.0512	1.30	40.43105.0130	1.30	3.90	40.43305.0130
1.40	.0551	1.40	40.43105.0140	1.40	4.20	40.43305.0140
1.50	.0591	1.50	40.43105.0150	1.50	4.50	40.43305.0150
1.60	.0630	1.60	40.43105.0160	1.60	4.80	40.43305.0160

d1	d1 (in.)	43105		43305		
		l2	Catalog Number	l2	l3	Catalog Number
1.70	.0669	1.70	40.43105.0170	1.70	5.10	40.43305.0170
1.80	.0709	1.80	40.43105.0180	1.80	5.40	40.43305.0180
1.90	.0748	1.90	40.43105.0190	1.90	5.70	40.43305.0190
2.00	.0787	2.00	40.43105.0200	2.00	6.00	40.43305.0200
2.10	.0827	2.10	40.43105.0210	2.10	6.30	40.43305.0210
2.20	.0866	2.20	40.43105.0220	2.20	6.60	40.43305.0220
2.30	.0906	2.30	40.43105.0230	2.30	6.90	40.43305.0230
2.40	.0945	2.40	40.43105.0240	2.40	7.20	40.43305.0240
2.50	.0984	2.50	40.43105.0250	2.50	7.50	40.43305.0250
2.60	.1024	2.60	40.43105.0260	2.60	7.80	40.43305.0260
2.70	.1063	2.70	40.43105.0270	2.70	8.10	40.43305.0270
2.80	.1102	2.80	40.43105.0280	2.80	8.40	40.43305.0280
2.90	.1142	2.90	40.43105.0290	2.90	8.70	40.43305.0290
3.00	.1181	3.00	40.43105.0300	3.00	9.00	40.43305.0300

• For entire Cutting Tool Systems and Operating Parameters, please see catalog — Sphinx High Precision Cutting Tools Vol. 2

MICRO END MILLS — Ø3MM SHANK 1.3xD-8xD
ART. 73130, 73200, 73300 & 73800

Art. 73130

Carbide	Z 3				
Plunge	Straight Groove	Angular Groove	Front Side Finishing		
Side Finishing	Angular	Circular			
ST	SST	C.I.	Al	Cu	Brass
Ti					

Art. 73200

Carbide	Z 3				
Plunge	Straight Groove	Angular Groove	Front Side Finishing		
Side Finishing	Angular	Circular			
ST	SST	C.I.	Al	Cu	Brass
Ti					

Art. 73300

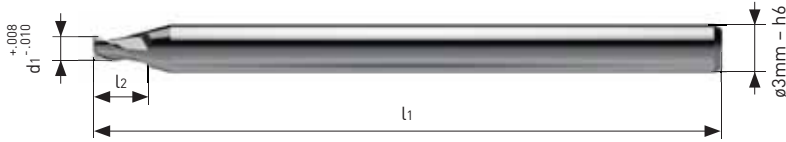
Carbide	Z 3				
Plunge	Straight Groove	Angular Groove	Front Side Finishing		
Side Finishing	Angular	Circular			
ST	SST	C.I.	Al	Cu	Brass
Ti					

Art. 73800

Carbide	Z 3				
Plunge	Straight Groove	Angular Groove	Front Side Finishing		
Side Finishing	Angular	Circular			
ST	SST	C.I.	Al	Cu	Brass
Ti					

MICRO END MILLS — Ø3MM SHANK 1.3xD-8xD

ART. 73130, 73200, 73300 & 73800



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	73130			73200			73300			73800		
		l2	l1	Catalog Number	l2	l1	Catalog Number	l2	l1	Catalog Number	l2	l1	Catalog Number
.30	.0118	.40	39	40.73130.0030	.60	39	40.73200.0030	.90	39	40.73300.0030	—	—	—
.40	.0157	.50	39	40.73130.0040	.80	39	40.73200.0040	1.20	39	40.73300.0040	—	—	—
.45	.0177	.60	39	40.73130.0045	—	—	—	—	—	—	—	—	—
.50	.0197	.70	39	40.73130.0050	1.00	39	40.73200.0050	1.50	39	40.73300.0050	4.00	39	40.73800.0050
.60	.0236	.80	39	40.73130.0060	1.20	39	40.73200.0060	2.00	39	40.73300.0060	5.00	39	40.73800.0060
.70	.0276	.90	39	40.73130.0070	1.40	39	40.73200.0070	2.00	39	40.73300.0070	5.60	39	40.73800.0070
.75	.0295	—	—	—	1.50	39	40.73200.0075	2.00	39	40.73300.0075	—	—	—
.80	.0315	1.00	39	40.73130.0080	1.60	39	40.73200.0080	2.50	39	40.73300.0080	6.00	39	40.73800.0080
.90	.0354	1.30	39	40.73130.0090	1.80	39	40.73200.0090	2.50	39	40.73300.0090	7.20	39	40.73800.0090
1.00	.0394	1.30	39	40.73130.0100	2.00	39	40.73200.0100	3.00	39	40.73300.0100	8.00	39	40.73800.0100
1.10	.0433	1.50	39	40.73130.0110	2.20	39	40.73200.0110	3.30	39	40.73300.0110	—	—	—
1.20	.0472	1.60	39	40.73130.0120	2.40	39	40.73200.0120	4.00	39	40.73300.0120	9.00	39	40.73800.0120
1.30	.0512	1.80	39	40.73130.0130	2.60	39	40.73200.0130	4.00	39	40.73300.0130	—	—	—
1.40	.0551	1.80	39	40.73130.0140	2.80	39	40.73200.0140	4.00	39	40.73300.0140	—	—	—
1.50	.0591	2.00	39	40.73130.0150	3.00	39	40.73200.0150	4.50	39	40.73300.0150	12.00	50	40.73800.0150*
1.60	.0630	2.00	39	40.73130.0160	3.20	39	40.73200.0160	4.50	39	40.73300.0160	—	—	—
1.70	.0669	2.00	39	40.73130.0170	3.40	39	40.73200.0170	5.00	39	40.73300.0170	—	—	—
1.80	.0709	2.40	39	40.73130.0180	3.60	39	40.73200.0180	6.00	39	40.73300.0180	—	—	—
1.90	.0748	2.40	39	40.73130.0190	3.80	39	40.73200.0190	6.00	39	40.73300.0190	—	—	—
2.00	.0787	2.60	39	40.73130.0200	4.00	39	40.73200.0200	6.00	39	40.73300.0200	16.00	50	40.73800.0200*
2.10	.0827	—	—	—	4.20	39	40.73200.0210	6.50	39	40.73300.0210	—	—	—
2.20	.0866	3.00	39	40.73130.0220	4.40	39	40.73200.0220	7.00	39	40.73300.0220	—	—	—
2.30	.0906	—	—	—	4.60	39	40.73200.0230	7.00	39	40.73300.0230	—	—	—
2.40	.0945	—	—	—	4.80	39	40.73200.0240	7.50	39	40.73300.0240	—	—	—
2.50	.0984	3.30	39	40.73130.0250	5.00	39	40.73200.0250	7.50	39	40.73300.0250	20.00	50	40.73800.0250*
2.60	.1024	—	—	—	5.20	39	40.73200.0260	7.50	39	40.73300.0260	—	—	—
2.70	.1063	—	—	—	5.40	39	40.73200.0270	8.00	39	40.73300.0270	—	—	—
2.80	.1102	3.50	39	40.73130.0280	5.60	39	40.73200.0280	8.00	39	40.73300.0280	—	—	—
2.90	.1142	3.50	39	40.73130.0290	5.80	39	40.73200.0290	8.50	39	40.73300.0290	—	—	—
3.00	.1181	—	—	—	—	—	—	—	—	—	—	—	—

* Indicates ø4mm - h6 shank

• For entire Cutting Tool Systems and Operating Parameters, please see catalog — Sphinx High Precision Cutting Tools Vol. 2

MICRO END MILLS — Ø3MM SHANK .75xD-3xD BALL NOSE
ART. 74075, 74150 & 74300



Art. 74075

Carbide	Z 2				
ST	SST	C.I.	Al	Cu	Brass
Ti	Plastic				

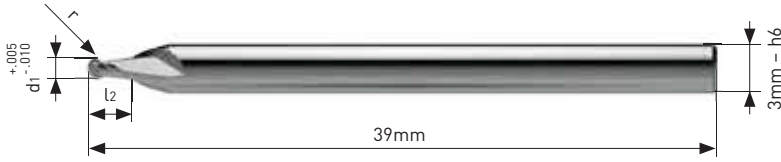
Art. 74150

Carbide	Z 2				
ST	SST	C.I.	Al	Cu	Brass
Ti	Plastic				

Art. 74300

Carbide	Z 2				
ST	SST	C.I.	Al	Cu	Brass
Ti	Plastic				

MICRO END MILLS — Ø3MM SHANK .75xD-3xD BALL NOSE ART. 74075, 74150 & 74300



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	r	74075		74150		74300	
			lz	Catalog Number	lz	Catalog Number	lz	Catalog Number
.20	.0079	.100	.15	40.74075.0020	.30	40.74150.0020	.60	40.74300.0020
.25	.0098	.125	—	—	.35	40.74150.0025	—	—
.30	.0118	.150	.20	40.74075.0030	.45	40.74150.0030	1.00	40.74300.0030
.40	.0157	.200	.30	40.74075.0040	.60	40.74150.0040	1.00	40.74300.0040
.50	.0197	.250	.37	40.74075.0050	.75	40.74150.0050	1.50	40.74300.0050
.60	.0236	.300	.45	40.74075.0060	.90	40.74150.0060	1.50	40.74300.0060
.70	.0276	.350	—	—	1.05	40.74150.0070	2.00	40.74300.0070
.80	.0315	.400	.60	40.74075.0080	1.20	40.74150.0080	2.00	40.74300.0080
.90	.0354	.450	—	—	1.35	40.74150.0090	2.50	40.74300.0090
1.00	.0394	.500	.75	40.74075.0100	1.50	40.74150.0100	3.00	40.74300.0100
1.10	.0433	.550	—	—	1.65	40.74150.0110	—	—
1.20	.0472	.600	—	—	1.80	40.74150.0120	4.00	40.74300.0110
1.30	.0512	.650	—	—	1.95	40.74150.0130	—	—
1.40	.0551	.700	—	—	2.10	40.74150.0140	4.00	40.74300.0140
1.50	.0591	.750	—	—	2.25	40.74150.0150	4.00	40.74300.0150
1.60	.0630	.800	—	—	2.40	40.74150.0160	4.00	40.74300.0160
1.80	.0709	.900	—	—	2.70	40.74150.0180	5.50	40.74300.0180
1.90	.0748	.950	—	—	—	—	—	—
2.00	.0787	1.000	—	—	3.00	40.74150.0200	6.00	40.74300.0200
2.10	.0827	1.050	—	—	—	—	6.00	40.74300.0210
2.20	.0866	1.100	—	—	—	—	6.00	40.74300.0220
2.50	.0984	1.250	—	—	—	—	7.50	40.74300.0250
2.80	.1102	1.400	—	—	—	—	8.40	40.74300.0280

• For entire Cutting Tool Systems and Operating Parameters, please see catalog — Sphinx High Precision Cutting Tools Vol. 2

**MICRO END MILLS — Ø3MM SHANK .75xD-3xD BALL NOSE
ART. 74075, 74150 & 74300**

Art. 74075

Carbide	Z 2				
ST	SST	C.I.	Al	Cu	Brass
Ti	Plastic				

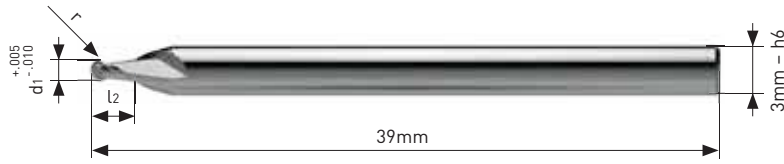
Art. 74150

Carbide	Z 2				
ST	SST	C.I.	Al	Cu	Brass
Ti	Plastic				

Art. 74300

Carbide	Z 2				
ST	SST	C.I.	Al	Cu	Brass
Ti	Plastic				

**MICRO END MILLS — Ø3MM SHANK .75xD-3xD BALL NOSE
ART. 74075, 74150 & 74300**



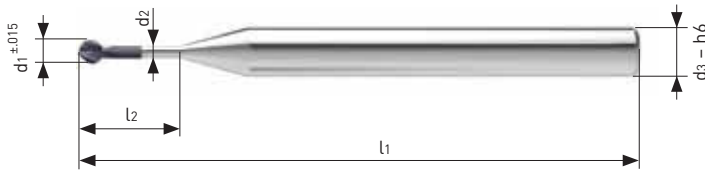
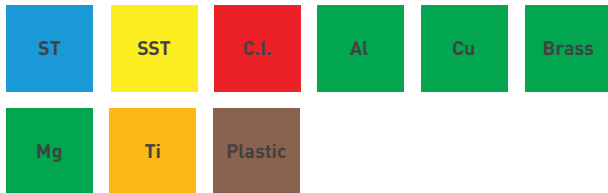
※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	r	74075		74150		74300	
			lz	Catalog Number	lz	Catalog Number	lz	Catalog Number
.20	.0079	.100	.15	40.74075.0020	.30	40.74150.0020	.60	40.74300.0020
.25	.0098	.125	—	—	.35	40.74150.0025	—	—
.30	.0118	.150	.20	40.74075.0030	.45	40.74150.0030	1.00	40.74300.0030
.40	.0157	.200	.30	40.74075.0040	.60	40.74150.0040	1.00	40.74300.0040
.50	.0197	.250	.37	40.74075.0050	.75	40.74150.0050	1.50	40.74300.0050
.60	.0236	.300	.45	40.74075.0060	.90	40.74150.0060	1.50	40.74300.0060
.70	.0276	.350	—	—	1.05	40.74150.0070	2.00	40.74300.0070
.80	.0315	.400	.60	40.74075.0080	1.20	40.74150.0080	2.00	40.74300.0080
.90	.0354	.450	—	—	1.35	40.74150.0090	2.50	40.74300.0090
1.00	.0394	.500	.75	40.74075.0100	1.50	40.74150.0100	3.00	40.74300.0100
1.10	.0433	.550	—	—	1.65	40.74150.0110	—	—
1.20	.0472	.600	—	—	1.80	40.74150.0120	4.00	40.74300.0110
1.30	.0512	.650	—	—	1.95	40.74150.0130	—	—
1.40	.0551	.700	—	—	2.10	40.74150.0140	4.00	40.74300.0140
1.50	.0591	.750	—	—	2.25	40.74150.0150	4.00	40.74300.0150
1.60	.0630	.800	—	—	2.40	40.74150.0160	4.00	40.74300.0160
1.80	.0709	.900	—	—	2.70	40.74150.0180	5.50	40.74300.0180
1.90	.0748	.950	—	—	—	—	—	—
2.00	.0787	1.000	—	—	3.00	40.74150.0200	6.00	40.74300.0200
2.10	.0827	1.050	—	—	—	—	6.00	40.74300.0210
2.20	.0866	1.100	—	—	—	—	6.00	40.74300.0220
2.50	.0984	1.250	—	—	—	—	7.50	40.74300.0250
2.80	.1102	1.400	—	—	—	—	8.40	40.74300.0280

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DEBURRING MILL (LOLLIPOP) — Ø1-6MM COATED ART. 43400

Art. 43400



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	d2	l2	l1	d3	Catalog Number
1.00	.0394	.60	4.00	60	4.00	40.43400.0100
1.50	.0591	.90	6.00	60	4.00	40.43400.0150
2.00	.0787	1.20	8.00	60	4.00	40.43400.0200
2.50	.0984	1.35	10.00	70	6.00	40.43400.0250
3.00	.1181	1.50	12.00	70	6.00	40.43400.0300
4.00	.1575	2.00	16.00	70	6.00	40.43400.0400
5.00	.1969	2.50	20.00	80	8.00	40.43400.0500
6.00	.2362	3.00	24.00	80	8.00	40.43400.0600

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