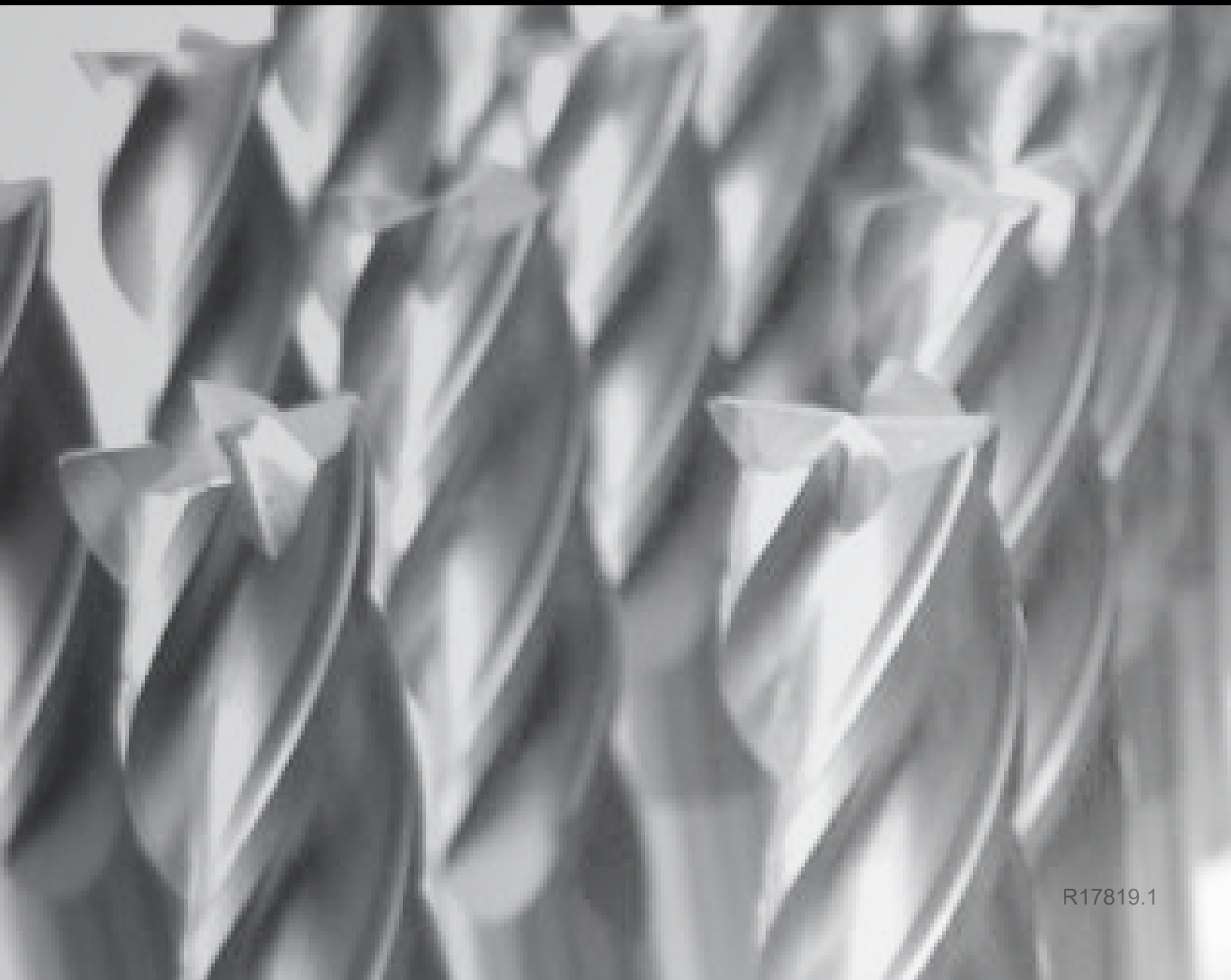
DE BOER TOOL

CUTTING TOOL EXCELLENCE



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De Boer Tool is a family-owned industrial facility operated by Gary De Boer. Since opening its doors in 2000, De Boer Tool has become a leading innovator in carbide round tool manufacturing.

Since 2000, De Boer Tool has developed cutting tool products for a wide range of industries, including automotive, defense, industrial manufacturing, medical and alternative energy. Locally, De Boer Tool's products are used in community colleges where we believe in supporting the next generation of machining technologists with superior tooling.

Under Gray De Boer's guidance, the facility has grown from 2,000 square feet with 5 employees to an 18,000-square-foot facility operating 3 shifts employing 50. De Boer Tool serves clients throughout Canada, United States and Mexico. In order to maintain a high standard of service and delivery and to further business opportunities in the U.S., the company operates satellite offices in southern Ontario. Quality management is the cornerstone of De Boer Tool's operation currently maintaining certification in ISO 9001:2015

De Boer Tool is committed to sourcing products, services and importantly, people from our local community to create quality jobs for our labour force. Our investment in high quality people, the latest in CNC automation and machine tools complemented by support technology of inspection and related softwares allows De Boer Tool to continuously innovate to overcome the most demanding machining challenges.

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All tools made at De Boer Tool have shanks ground to h6 tolerance which guarantees trouble free machining when using precision holders.

Weldon flats and whistle notches are also available for side lock holders.

Marking System

Tool Style

110 = Standard Length
111 = Corner Round
113 = Split Blank
114 = Split Blank Double End
120 = Stub Length
130 = Long Length
140 = X-Long Length
100 = Metric Stub Length
101 = Metric Standard Length
102 = Metric Long Length
103 = Metric X-Long Length
180 = Straight Flute
420 = Rotary Bur
510 = A-Mill Rougher
520 = A-Mill Semi-Finisher
550 = A-Mill Finisher
590 = AluMini
600 = X-MILL Stub Length
601 = X-MILL Standard Length
606 = X-MILL Long Reach
607 = X-MILL Long Reach
608 = X-MILL Long Reach
611 = T-Mill
650 = Feed Mill
705 = UN Thread Mill (TMUG)
710 = Metric Thread Mill (TMMG)
725 = NPT Thread Mill
900 = High Velocity

110

Diameter

Inch example:
0250 = 1/4" (0.25")

Metric example:
025 = 2.5mm

0500

Coating

A = All-4

A

110-0500-401A

No. of Flutes

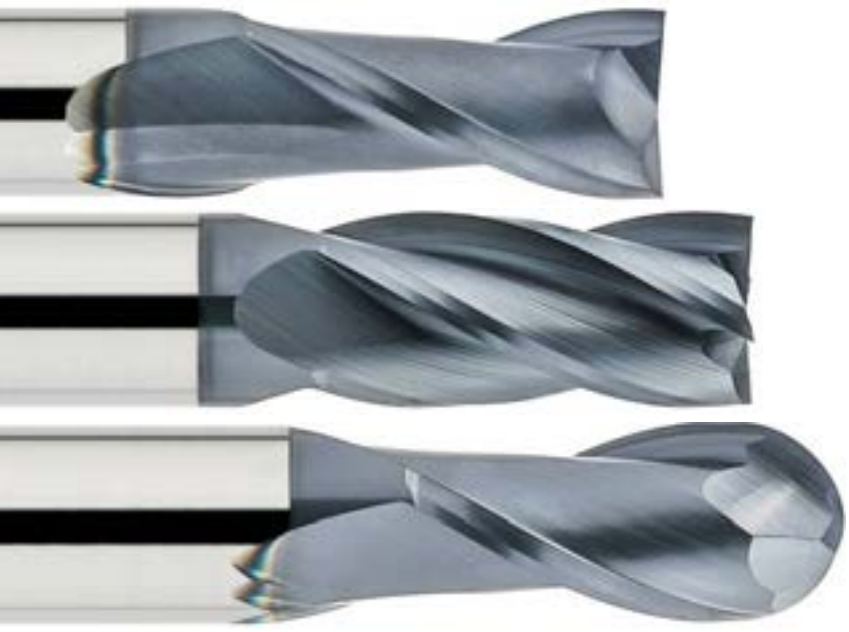
Example:
4 = 4 Flutes

4

End Geometry

01 = Square corner
02 = Ball Nose
30 = Single Lip (Point Angle)
60 = Single Lip (Point Angle)
90 = Single Lip (Point Angle)
R = Radius/Corner Round

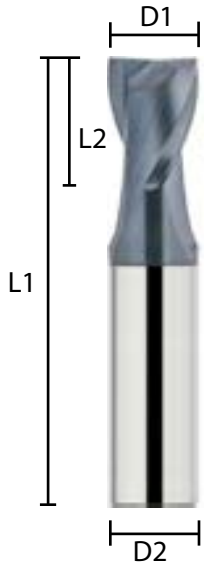
01



Stub Length Series End Mills have a shorter length of cut to minimize vibration. They are made from high quality micrograin carbide with standard geometry for multi-purpose machining. They have a 30° helix, right-hand cut, and are centre cutting.

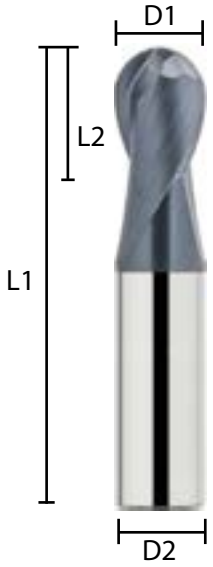
Square Corner

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
in	0.005	1/8	1.5	0.007	120-0005-201	120-0005-201A
	0.010	1/8	1.5	0.015	120-0010-201	120-0010-201A
	0.015	1/8	1.5	0.022	120-0015-201	120-0015-201A
	0.020	1/8	1.5	0.030	120-0020-201	120-0020-201A
	0.025	1/8	1.5	0.037	120-0025-201	120-0025-201A
	1/32	1/8	1.5	0.063	120-0031-201	120-0031-201A
	3/64	1/8	1.5	0.094	120-0046-201	120-0046-201A
	1/16	1/8	1.5	0.125	120-0062-201	120-0062-201A
	5/64	1/8	1.5	0.156	120-0078-201	120-0078-201A
	3/32	1/8	1.5	0.188	120-0093-201	120-0093-201A
	1/8	1/8	1.5	0.250	120-0125-201	120-0125-201A
	3/16	3/16	2.0	0.375	120-0187-201	120-0187-201A
	1/4	1/4	2.0	0.500	120-0250-201	120-0250-201A
	5/16	5/16	2.0	0.500	120-0312-201	120-0312-201A
	3/8	3/8	2.0	0.625	120-0375-201	120-0375-201A
	1/2	1/2	2.5	0.625	120-0500-201	120-0500-201A
	5/8	5/8	3.0	0.750	120-0625-201	120-0625-201A
	3/4	3/4	3.0	1.000	120-0750-201	120-0750-201A
	1	1	3.0	1.000	120-1000-201	120-1000-201A



Ball Nose

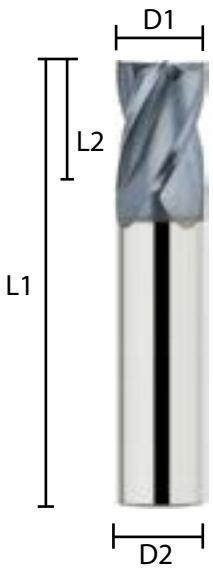
	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
in	0.010	1/8	1.5	0.015	120-0010-202	120-0010-202A
	0.015	1/8	1.5	0.022	120-0015-202	120-0015-202A
	0.020	1/8	1.5	0.030	120-0020-202	120-0020-202A
	0.025	1/8	1.5	0.037	120-0025-202	120-0025-202A
	1/32	1/8	1.5	0.063	120-0031-202	120-0031-202A
	3/64	1/8	1.5	0.094	120-0046-202	120-0046-202A
	1/16	1/8	1.5	0.125	120-0062-202	120-0062-202A
	5/64	1/8	1.5	0.156	120-0078-202	120-0078-202A
	3/32	1/8	1.5	0.188	120-0093-202	120-0093-202A
	1/8	1/8	1.5	0.250	120-0125-202	120-0125-202A
	3/16	3/16	2.0	0.375	120-0187-202	120-0187-202A
	1/4	1/4	2.0	0.500	120-0250-202	120-0250-202A
	5/16	5/16	2.0	0.500	120-0312-202	120-0312-202A
	3/8	3/8	2.0	.6250	120-0375-202	120-0375-202A
	1/2	1/2	2.5	0.625	120-0500-202	120-0500-202A
	5/8	5/8	3.0	0.750	120-0625-202	120-0625-202A
	3/4	3/4	3.0	1.000	120-0750-202	120-0750-202A
	1	1	3.0	1.000	120-1000-202	120-1000-202A



Stub 4 Flute

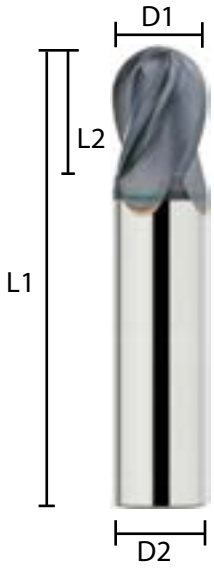
Stub Length Series End Mills have a shorter length of cut to minimize vibration. They are made from high quality micrograin carbide with standard geometry for multi-purpose machining. They have a 30° helix, right-hand cut, and are centre cutting.

Square Corner



	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
in	0.015	1/8	1.5	0.022	120-0015-401	120-0015-401A
	0.020	1/8	1.5	0.030	120-0020-401	120-0020-401A
	0.025	1/8	1.5	0.037	120-0025-401	120-0025-401A
	1/32	1/8	1.5	0.063	120-0031-401	120-0031-401A
	3/64	1/8	1.5	0.094	120-0046-401	120-0046-401A
	1/16	1/8	1.5	0.125	120-0062-401	120-0062-401A
	5/64	1/8	1.5	0.156	120-0078-401	120-0078-401A
	3/32	1/8	1.5	0.188	120-0093-401	120-0093-401A
	1/8	1/8	1.5	0.250	120-0125-401	120-0125-401A
	3/16	3/16	2.0	0.375	120-0187-401	120-0187-401A
	1/4	1/4	2.0	0.500	120-0250-401	120-0250-401A
	5/16	5/16	2.0	0.500	120-0312-401	120-0312-401A
	3/8	3/8	2.0	0.625	120-0375-401	120-0375-401A
	1/2	1/2	2.5	0.625	120-0500-401	120-0500-401A
	5/8	5/8	3.0	.750	120-0625-401	120-0625-401A
	3/4	3/4	3.0	1.000	120-0750-401	120-0750-401A
	1	1	3.0	1.000	120-1000-401	120-1000-401A

Ball Nose

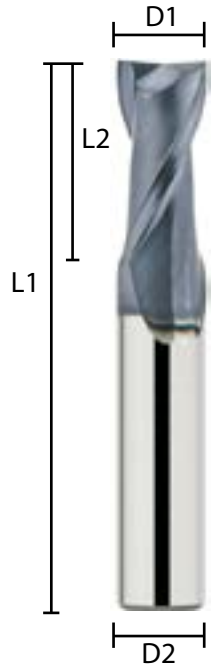


	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
in	0.015	1/8	1.5	0.022	120-0015-402	120-0015-402A
	0.020	1/8	1.5	0.030	120-0020-402	120-0020-402A
	0.025	1/8	1.5	0.037	120-0025-402	120-0025-402A
	1/32	1/8	1.5	0.063	120-0031-402	120-0031-402A
	3/64	1/8	1.5	0.094	120-0046-402	120-0046-402A
	1/16	1/8	1.5	0.125	120-0062-402	120-0062-402A
	5/64	1/8	1.5	0.156	120-0078-402	120-0078-402A
	3/32	1/8	1.5	0.188	120-0093-402	120-0093-402A
	1/8	1/8	1.5	0.250	120-0125-402	120-0125-402A
	3/16	3/16	2.0	0.375	120-0187-402	120-0187-402A
	1/4	1/4	2.0	0.500	120-0250-402	120-0250-402A
	5/16	5/16	2.0	0.500	120-0312-402	120-0312-402A
	3/8	3/8	2.0	0.625	120-0375-402	120-0375-402A
	1/2	1/2	2.5	0.625	120-0500-402	120-0500-402A
	5/8	5/8	3.0	0.750	120-0625-402	120-0625-402A
	3/4	3/4	3.0	1.000	120-0750-402	120-0750-402A
	1	1	3.0	1.000	120-1000-402	120-1000-402A

Square Corner

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
in	0.005	1/8	1.5	0.015	110-0005-201	110-0005-201A
	0.010	1/8	1.5	0.030	110-0010-201	110-0010-201A
	0.015	1/8	1.5	0.045	110-0015-201	110-0015-201A
	0.020	1/8	1.5	0.060	110-0020-201	110-0020-201A
	0.025	1/8	1.5	0.075	110-0025-201	110-0025-201A
	1/32	1/8	1.5	0.094	110-0031-201	110-0031-201A
	3/64	1/8	1.5	0.141	110-0046-201	110-0046-201A
	1/16	1/8	1.5	0.188	110-0062-201	110-0062-201A
	5/64	1/8	1.5	0.250	110-0078-201	110-0078-201A
	3/32	1/8	1.5	0.344	110-0093-201	110-0093-201A
	7/64	1/8	1.5	0.375	110-0109-201	110-0109-201A
	1/8	1/8	1.5	0.500	110-0125-201	110-0125-201A
	9/64	3/16	2.0	0.563	110-0140-201	110-0140-201A
	5/32	3/16	2.0	0.563	110-0156-201	110-0156-201A
	11/64	3/16	2.0	0.563	110-0171-201	110-0171-201A
	3/16	3/16	2.0	0.625	110-0187-201	110-0187-201A
	13/64	1/4	2.5	0.625	110-0203-201	110-0203-201A
	7/32	1/4	2.5	0.625	110-0218-201	110-0218-201A
	15/64	1/4	2.5	0.750	110-0234-201	110-0234-201A
	1/4	1/4	2.5	0.750	110-0250-201	110-0250-201A
	17/64	5/16	2.5	0.813	110-0265-201	110-0265-201A
	9/32	5/16	2.5	0.813	110-0281-201	110-0281-201A
	19/64	5/16	2.5	0.813	110-0296-201	110-0296-201A
	5/16	5/16	2.5	0.813	110-0312-201	110-0312-201A
	21/64	3/8	2.5	0.875	110-0328-201	110-0328-201A
	11/32	3/8	2.5	0.875	110-0343-201	110-0343-201A
	23/64	3/8	2.5	0.875	110-0359-201	110-0359-201A
	3/8	3/8	2.5	0.875	110-0375-201	110-0375-201A
	25/64	7/16	2.5	0.875	110-0390-201	110-0390-201A
	13/32	7/16	2.5	0.875	110-0406-201	110-0406-201A
	27/64	7/16	2.5	0.875	110-0421-201	110-0421-201A
	7/16	7/16	2.5	1.000	110-0437-201	110-0437-201A
	29/64	1/2	3.0	1.000	110-0453-201	110-0453-201A
	15/32	1/2	3.0	1.000	110-0468-201	110-0468-201A
	31/64	1/2	3.0	1.000	110-0484-201	110-0484-201A
	1/2	1/2	3.0	1.000	110-0500-201	110-0500-201A
	9/16	9/16	3.5	1.125	110-0562-201	110-0562-201A
	5/8	5/8	3.5	1.250	110-0625-201	110-0625-201A
	11/16	3/4	4.0	1.500	110-0687-201	110-0687-201A
	3/4	3/4	4.0	1.500	110-0750-201	110-0750-201A
	7/8	7/8	4.0	1.500	110-0875-201	110-0875-201A
	1	1	4.0	1.500	110-1000-201	110-1000-201A

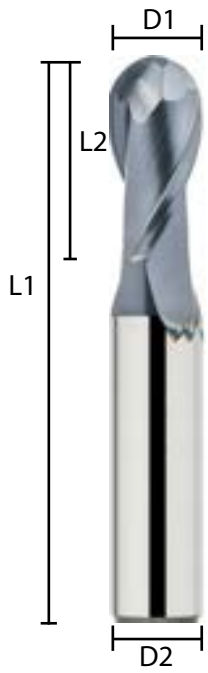
Standard Series End Mills incorporate standard geometry for an excellent general-purpose end mill. They are suited for a variety of milling applications. They have a 30° helix, right-hand cut, and are centre cutting.



Standard 2 Flute

Ball Nose

Standard Series End Mills incorporate standard geometry for an excellent general-purpose end mill. They are suited for a variety of milling applications. They have a 30° helix, right-hand cut, and are centre cutting.

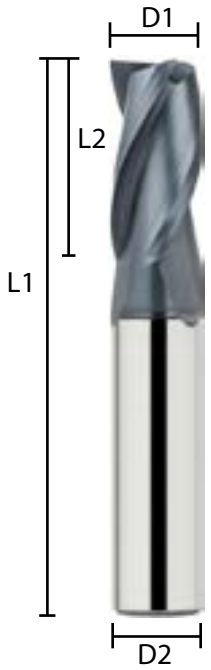


	D1 Dia.	D2 Shank	L1 OAL	L2 LOC	Part #	Coated Part #
in	0.010	1/8	1.5	0.030	110-0010-202	110-0010-202A
	0.015	1/8	1.5	0.045	110-0015-202	110-0015-202A
	0.020	1/8	1.5	0.060	110-0020-202	110-0020-202A
	0.025	1/8	1.5	0.075	110-0025-202	110-0025-202A
	1/32	1/8	1.5	0.094	110-0031-202	110-0031-202A
	3/64	1/8	1.5	0.141	110-0046-202	110-0046-202A
	1/16	1/8	1.5	0.188	110-0062-202	110-0062-202A
	5/64	1/8	1.5	0.250	110-0078-202	110-0078-202A
	3/32	1/8	1.5	0.344	110-0093-202	110-0093-202A
	7/64	1/8	1.5	0.375	110-0109-202	110-0109-202A
	1/8	1/8	1.5	0.500	110-0125-202	110-0125-202A
	9/64	3/16	2.0	0.563	110-0140-202	110-0140-202A
	5/32	3/16	2.0	0.344	110-0156-202	110-0156-202A
	11/64	3/16	2.0	0.563	110-0171-202	110-0171-202A
	3/16	3/16	2.0	0.625	110-0187-202	110-0187-202A
	13/64	1/4	2.5	0.625	110-0203-202	110-0203-202A
	7/32	1/4	2.5	0.625	110-0218-202	110-0218-202A
	15/64	1/4	2.5	0.750	110-0234-202	110-0234-202A
	1/4	1/4	2.5	0.750	110-0250-202	110-0250-202A
	17/64	5/16	2.5	0.813	110-0265-202	110-0265-202A
	9/32	5/16	2.5	0.813	110-0281-202	110-0281-202A
	19/64	5/16	2.5	0.813	110-0296-202	110-0296-202A
	5/16	5/16	2.5	0.813	110-0312-202	110-0312-202A
	21/64	3/8	2.5	0.875	110-0328-202	110-0328-202A
	11/32	3/8	2.5	0.875	110-0343-202	110-0343-202A
	23/64	3/8	2.5	0.875	110-0359-202	110-0359-202A
	3/8	3/8	2.5	0.875	110-0375-202	110-0375-202A
	25/64	7/16	2.5	0.875	110-0390-202	110-0390-202A
	13/32	7/16	2.5	0.875	110-0406-202	110-0406-202A
	27/64	7/16	2.5	0.875	110-0421-202	110-0421-202A
	7/16	7/16	2.75	1.000	110-0437-202	110-0437-202A
	29/64	1/2	3.0	1.000	110-0453-202	110-0453-202A
	15/32	1/2	3.0	1.000	110-0468-202	110-0468-202A
	31/64	1/2	3.0	1.000	110-0484-202	110-0484-202A
	1/2	1/2	3.0	1.000	110-0500-202	110-0500-202A
	9/16	9/16	3.5	1.125	110-0562-202	110-0562-202A
	5/8	5/8	3.5	1.250	110-0625-202	110-0625-202A
	11/16	3/4	4.0	1.500	110-0687-202	110-0687-202A
	3/4	3/4	4.0	1.500	110-0750-202	110-0750-202A
	7/8	7/8	4.0	1.500	110-0875-202	110-0875-202A
	1	1	4.0	1.500	110-1000-202	110-1000-202A

Standard Series End Mills incorporate standard geometry for an excellent general-purpose end mill. They are suited for a variety of milling applications. They have a 30° helix, right-hand cut, and arecentre cutting.

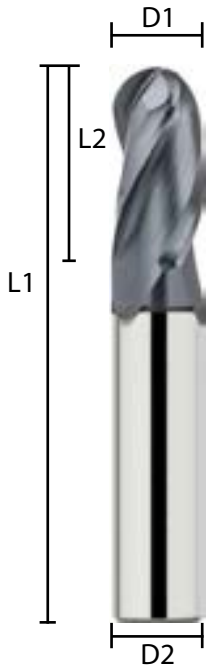
Square Corner

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
in	1/32	1/8	1.5	0.094	110-0031-301	110-0031-301A
	3/64	1/8	1.5	0.141	110-0046-301	110-0046-301A
	1/16	1/8	1.5	0.188	110-0062-301	110-0062-301A
	5/64	1/8	1.5	0.250	110-0078-301	110-0078-301A
	3/32	1/8	1.5	0.344	110-0093-301	110-0093-301A
	1/8	1/8	1.5	0.500	110-0125-301	110-0125-301A
	5/32	3/16	2.0	0.563	110-0156-301	110-0156-301A
	3/16	3/16	2.0	0.625	110-0187-301	110-0187-301A
	7/32	1/4	2.5	0.625	110-0218-301	110-0218-301A
	1/4	1/4	2.5	0.750	110-0250-301	110-0250-301A
	5/16	5/16	2.5	0.813	110-0312-301	110-0312-301A
	3/8	3/8	2.5	0.875	110-0375-301	110-0375-301A
	1/2	1/2	3.0	1.000	110-0500-301	110-0500-301A
	5/8	5/8	3.5	1.250	110-0625-301	110-0625-301A
	3/4	3/4	4.0	1.500	110-0750-301	110-0750-301A
	7/8	7/8	4.0	1.500	110-0875-301	110-0875-301A
	1	1	4.0	1.500	110-1000-301	110-1000-301A



Ball Nose

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
in	1/32	1/8	1.5	0.094	110-0031-302	110-0031-302A
	3/64	1/8	1.5	0.141	110-0046-302	110-0046-302A
	1/16	1/8	1.5	0.188	110-0062-302	110-0062-302A
	5/64	1/8	1.5	0.250	110-0078-302	110-0078-302A
	3/32	1/8	1.5	0.344	110-0093-302	110-0093-302A
	1/8	1/8	1.5	0.500	110-0125-302	110-0125-302A
	3/16	3/16	2.0	0.625	110-0187-302	110-0187-302A
	1/4	1/4	2.5	0.750	110-0250-302	110-0250-302A
	5/16	5/16	2.5	0.813	110-0312-302	110-0312-302A
	3/8	3/8	2.5	0.875	110-0375-302	110-0375-302A
	1/2	1/2	3.0	1.000	110-0500-302	110-0500-302A
	5/8	5/8	3.5	1.250	110-0625-302	110-0625-302A
	3/4	3/4	4.0	1.500	110-0750-302	110-0750-302A
	7/8	7/8	4.0	1.500	110-0875-302	110-0875-302A
	1	1	4.0	1.500	110-1000-302	110-1000-302A

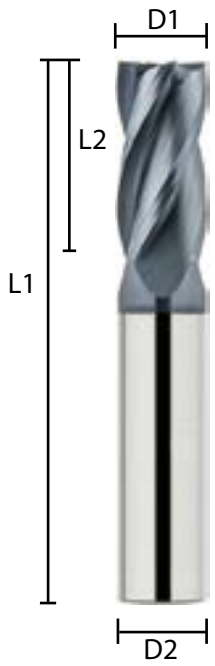


Standard 4 Flute

Square Corner

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
in	0.015	1/8	1.5	0.045	110-0015-401	110-0015-401A
	0.02	1/8	1.5	0.060	110-0020-401	110-0020-401A
	0.025	1/8	1.5	0.075	110-0025-401	110-0025-401A
	1/32	1/8	1.5	0.094	110-0031-401	110-0031-401A
	3/64	1/8	1.5	0.141	110-0046-401	110-0046-401A
	1/16	1/8	1.5	0.188	110-0062-401	110-0062-401A
	5/64	1/8	1.5	0.250	110-0078-401	110-0078-401A
	3/32	1/8	1.5	0.344	110-0093-401	110-0093-401A
	7/64	1/8	1.5	0.375	110-0109-401	110-0109-401A
	1/8	1/8	1.5	0.500	110-0125-401	110-0125-401A
	9/64	3/16	2.0	0.563	110-0140-401	110-0140-401A
	5/32	3/16	2.0	0.563	110-0156-401	110-0156-401A
	11/64	3/16	2.0	0.563	110-0171-401	110-0171-401A
	3/16	3/16	2.0	0.625	110-0187-401	110-0187-401A
	13/64	1/4	2.5	0.625	110-0203-401	110-0203-401A
	7/32	1/4	2.5	0.625	110-0218-401	110-0218-401A
	15/64	1/4	2.5	0.750	110-0234-401	110-0234-401A
	1/4	1/4	2.5	0.750	110-0250-401	110-0250-401A
	17/64	5/16	2.5	0.813	110-0265-401	110-0265-401A
	9/32	5/16	2.5	0.813	110-0281-401	110-0281-401A
	19/64	5/16	2.5	0.813	110-0296-401	110-0296-401A
	5/16	5/16	2.5	0.813	110-0312-401	110-0312-401A
	21/64	3/8	2.5	0.875	110-0328-401	110-0328-401A
	11/32	3/8	2.5	0.875	110-0343-401	110-0343-401A
	23/64	3/8	2.5	0.875	110-0359-401	110-0359-401A
	3/8	3/8	2.5	0.875	110-0375-401	110-0375-401A
	25/64	7/16	2.5	0.875	110-0390-401	-
	13/32	7/16	2.5	0.875	110-0406-401	110-0406-401A
	27/64	7/16	2.5	0.875	110-0421-401	110-0421-401A
	7/16	7/16	2.75	1.000	110-0437-401	110-0437-401A
	29/64	1/2	3.0	1.000	110-0453-401	110-0453-401A
	15/32	1/2	3.0	1.000	110-0468-401	110-0468-401A
	31/64	1/2	3.0	1.000	110-0484-401	110-0484-401A
	1/2	1/2	3.0	1.000	110-0500-401	110-0500-401A
	9/16	9/16	3.5	1.125	110-0562-401	110-0562-401A
	5/8	5/8	3.5	1.250	110-0625-401	110-0625-401A
	11/16	3/4	4.0	1.500	110-0687-401	110-0687-401A
	3/4	3/4	4.0	1.500	110-0750-401	110-0750-401A
	7/8	7/8	4.0	1.500	110-0875-401	110-0875-401A
	1	1	4.0	1.500	110-1000-401	110-1000-401A

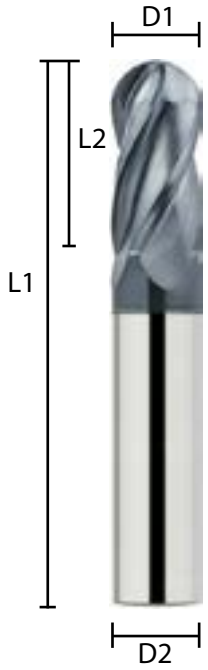
Standard Series End Mills incorporate standard geometry for an excellent general-purpose end mill. They are suited for a variety of milling applications. They have a 30° helix, right-hand cut, and are centre cutting.



Ball Nose

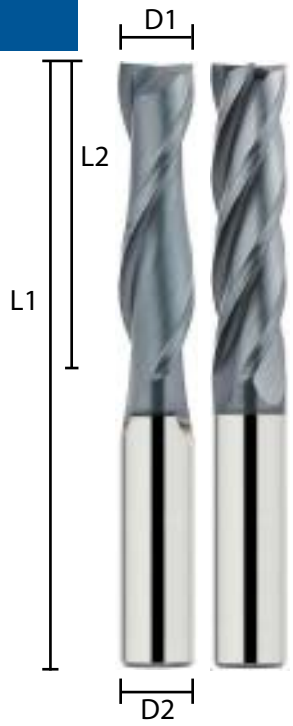
	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
in	0.015	1/8	1.5	0.045	110-0015-402	110-0015-402A
	0.02	1/8	1.5	0.060	110-0020-402	110-0020-402A
	0.025	1/8	1.5	0.075	110-0025-402	110-0025-402A
	1/32	1/8	1.5	0.094	110-0031-402	110-0031-402A
	3/64	1/8	1.5	0.141	110-0046-402	110-0046-402A
	1/16	1/8	1.5	0.188	110-0062-402	110-0062-402A
	5/64	1/8	1.5	0.250	110-0078-402	110-0078-402A
	3/32	1/8	1.5	0.344	110-0093-402	110-0093-402A
	7/64	1/8	1.5	0.375	110-0109-402	110-0109-402A
	1/8	1/8	1.5	0.500	110-0125-402	110-0125-402A
	9/64	3/16	2.0	0.563	110-0140-402	110-0140-402A
	5/32	3/16	2.0	0.563	110-0156-402	110-0156-402A
	11/64	3/16	2.0	0.563	110-0171-402	110-0171-402A
	3/16	3/16	2.0	0.625	110-0187-402	110-0187-402A
	13/64	1/4	2.5	0.625	110-0203-402	110-0203-402A
	7/32	1/4	2.5	0.625	110-0218-402	110-0218-402A
	15/64	1/4	2.5	0.750	110-0234-402	110-0234-402A
	1/4	1/4	2.5	0.750	110-0250-402	110-0250-402A
	17/64	5/16	2.5	0.813	110-0265-402	110-0265-402A
	9/32	5/16	2.5	0.813	110-0281-402	110-0281-402A
	19/64	5/16	2.5	0.813	110-0296-402	110-0296-402A
	5/16	5/16	2.5	0.813	110-0312-402	110-0312-402A
	21/64	3/8	2.5	0.875	110-0328-402	110-0328-402A
	11/32	3/8	2.5	0.875	110-0343-402	110-0343-402A
	23/64	3/8	2.5	0.875	110-0359-402	110-0359-402A
	3/8	3/8	2.5	0.875	110-0375-402	110-0375-402A
	25/64	7/16	2.5	0.875	110-0390-402	110-0390-402A
	13/32	7/16	2.5	0.875	110-0406-402	110-0406-402A
	27/64	7/16	2.5	0.875	110-0421-402	110-0421-402A
	7/16	7/16	2.75	1.000	110-0437-402	110-0437-402A
	29/64	1/2	3.0	1.000	110-0453-402	110-0453-402A
	15/32	1/2	3.0	1.000	110-0468-402	110-0468-402A
	31/64	1/2	3.0	1.000	110-0484-402	110-0484-402A
	1/2	1/2	3.0	1.000	110-0500-402	110-0500-402A
	9/16	9/16	3.5	1.125	110-0562-402	110-0562-402A
	5/8	5/8	3.5	1.250	110-0625-402	110-0625-402A
	11/16	3/4	4.0	1.500	110-0687-402	110-0687-402A
	3/4	3/4	4.0	1.500	110-0750-402	110-0750-402A
	7/8	7/8	4.0	1.500	110-0875-402	110-0875-402A
	1	1	4.0	1.500	110-1000-402	110-1000-402A

Standard Series End Mills incorporate standard geometry for an excellent general-purpose end mill. They are suited for a variety of milling applications. They have a 30° helix, right-hand cut, and are centre cutting.



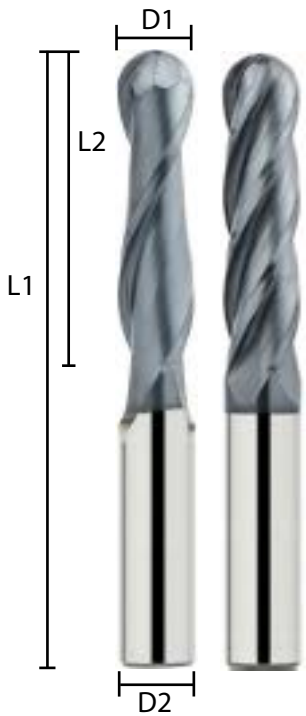
Long 2 & 4 Flute

Long Series End Mills have a larger core diameter and longer length of cut for long reach milling applications. They provide increased strength and reduced chatter. They have a 30° helix, right-hand cut, and are centre cutting.



Square Corner

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	2 Flute Part #	2 Flute Coated Part #	4 Flute Part #	4 Flute Coated Part #
in	1/32	1/8	2.0	0.125	130-0031-201	130-0031-201A	130-0031-401	130-0031-401A
	3/64	1/8	2.0	0.188	130-0046-201	130-0046-201A	130-0046-401	130-0046-401A
	1/16	1/8	2.0	0.250	130-0062-201	130-0062-201A	130-0062-401	130-0062-401A
	5/64	1/8	2.0	0.833	130-0078-201	130-0078-201A	130-0078-401	130-0078-401A
	3/32	1/8	2.0	0.484	130-0093-201	130-0093-201A	130-0093-401	130-0093-401A
	1/8	1/8	2.0	0.625	130-0125-201	130-0125-201A	130-0125-401	130-0125-401A
	3/16	3/16	2.5	0.750	130-0187-201	130-0187-201A	130-0187-401	130-0187-401A
	1/4	1/4	3.0	1.125	130-0250-201	130-0250-201A	130-0250-401	130-0250-401A
	5/16	5/16	3.0	1.125	130-0312-201	130-0312-201A	130-0312-401	130-0312-401A
	3/8	3/8	3.0	1.125	130-0375-201	130-0375-201A	130-0375-401	130-0375-401A
	1/2	1/2	4.0	2.000	130-0500-201	130-0500-201A	130-0500-401	130-0500-401A
	1/2	1/2	4.0	1.625	-	-	130-A500-401	130-A500-401A
	1/2	1/2	4.0	1.000	-	-	130-B500-401	130-B500-401A
	5/8	5/8	5.0	2.250	130-0625-201	130-0625-201A	130-0625-401	130-0625-401A
	3/4	3/4	5.0	2.250	130-0750-201	130-0750-201A	130-0750-401	130-0750-401A
	1	1	5.0	2.250	130-1000-201	130-1000-201A	130-1000-401	130-1000-401A



Ball Nose

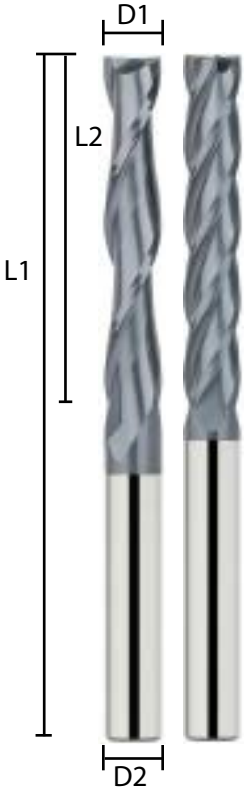
	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	2 Flute Part #	2 Flute Coated Part #	4 Flute Part #	4 Flute Coated Part #
in	1/32	1/8	2.0	0.125	130-0031-202	130-0031-202A	130-0031-402	130-0031-402A
	3/64	1/8	2.0	0.188	130-0046-202	130-0046-202A	130-0046-402	130-0046-402A
	1/16	1/8	2.0	0.250	130-0062-202	130-0062-202A	130-0062-402	130-0062-402A
	5/64	1/8	2.0	0.833	130-0078-202	130-0078-202A	130-0078-402	130-0078-402A
	3/32	1/8	2.0	0.484	130-0093-202	130-0093-202A	130-0093-402	130-0093-402A
	1/8	1/8	2.0	0.625	130-0125-202	130-0125-202A	130-0125-402	130-0125-402A
	3/16	3/16	2.5	0.750	130-0187-202	130-0187-202A	130-0187-402	130-0187-402A
	1/4	1/4	3.0	1.125	130-0250-202	130-0250-202A	130-0250-402	130-0250-402A
	5/16	5/16	3.0	1.125	130-0312-202	130-0312-202A	130-0312-402	130-0312-402A
	3/8	3/8	3.0	1.125	130-0375-202	130-0375-202A	130-0375-402	130-0375-402A
	1/2	1/2	4.0	2.000	130-0500-202	130-0500-202A	130-0500-402	130-0500-402A
	1/2	1/2	4.0	1.625	-	-	130-A500-402	130-A500-402A
	1/2	1/2	4.0	1.000	-	-	130-B500-402	130-B500-402A
	5/8	5/8	5.0	2.250	130-0625-202	130-0625-202A	130-0625-402	130-0625-402A
	3/4	3/4	5.0	2.250	130-0750-202	130-0750-202A	130-0750-402	130-0750-402A
	1	1	5.0	2.250	130-1000-202	130-1000-202A	130-1000-402	130-1000-402A

X-Long 2 & 4 Flute

X-Long Series End Mills have a larger core diameter and a longer length of cut for long reach milling applications. They provide increased strength and reduced chatter. They have a 30° helix, right-hand cut, and are centre cutting.

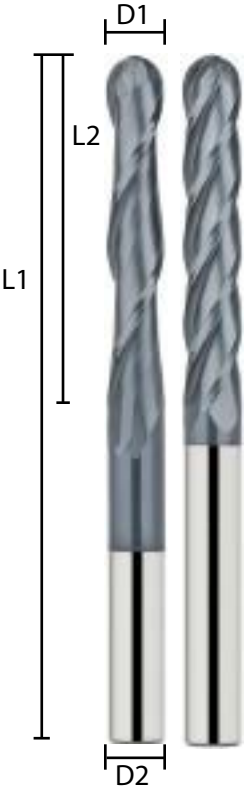
Square Corner

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	2 Flute Part #	2 Flute Coated Part #	4 Flute Part #	4 Flute Coated Part #
in	1/32	1/8	3.0	0.156	140-0031-201	140-0031-201A	140-0031-401	140-0031-401A
	3/64	1/8	3.0	0.234	140-0046-201	140-0046-201A	140-0046-401	140-0046-401A
	1/16	1/8	3.0	0.313	140-0062-201	140-0062-201A	140-0062-401	140-0062-401A
	5/64	1/8	3.0	0.391	140-0078-201	140-0078-201A	140-0078-401	140-0078-401A
	3/32	1/8	3.0	0.563	140-0093-201	140-0093-201A	140-0093-401	140-0093-401A
	1/8	1/8	3.0	0.750	140-0125-201	140-0125-201A	140-0125-401	140-0125-401A
	3/16	3/16	3.0	1.125	140-0187-201	140-0187-201A	140-0187-401	140-0187-401A
	1/4	1/4	4.0	1.500	140-0250-201	140-0250-201A	140-0250-401	140-0250-401A
	5/16	5/16	4.0	1.625	140-0312-201	140-0312-201A	140-0312-401	140-0312-401A
	3/8	3/8	4.0	2.000	140-0375-201	140-0375-201A	140-0375-401	140-0375-401A
	1/2	1/2	6.0	3.000	140-0500-201	140-0500-201A	140-0500-401	140-0500-401A
	5/8	5/8	6.0	3.000	140-0625-201	140-0625-201A	140-0625-401	140-0625-401A
	3/4	3/4	6.0	3.000	140-0750-201	140-0750-201A	140-0750-401	140-0750-401A
	1	1	6.0	3.000	140-1000-201	140-1000-201A	140-1000-401	140-1000-401A
	1	1	7.0	4.000	-	-	140-100B-401	140-100B-401A
	1	1	8.0	5.000	-	-	140-100C-401	140-100C-401A



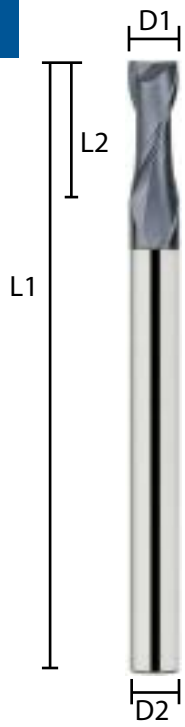
Ball Nose

	D1 Dia.w	D2 Shank Dia.	L1 OAL	L2 LOC	2 Flute Part #	2 Flute Coated Part #	4 Flute Part #	4 Flute Coated Part #
in	1/32	1/8	3.0	0.156	140-0031-202	140-0031-202A	140-0031-402	140-0031-402A
	3/64	1/8	3.0	0.234	140-0046-202	140-0046-202A	140-0046-402	140-0046-402A
	1/16	1/8	3.0	0.313	140-0062-202	140-0062-202A	140-0062-402	140-0062-402A
	5/64	1/8	3.0	0.391	140-0078-202	140-0078-202A	140-0078-402	140-0078-402A
	3/32	1/8	3.0	0.563	140-0093-202	140-0093-202A	140-0093-402	140-0093-402A
	1/8	1/8	3.0	0.750	140-0125-202	140-0125-202A	140-0125-402	140-0125-402A
	3/16	3/16	3.0	1.125	140-0187-202	140-0187-202A	140-0187-402	140-0187-402A
	1/4	1/4	4.0	1.500	140-0250-202	140-0250-202A	140-0250-402	140-0250-402A
	5/16	5/16	4.0	1.625	140-0312-202	140-0312-202A	140-0312-402	140-0312-402A
	3/8	3/8	4.0	2.000	140-0375-202	140-0375-202A	140-0375-402	140-0375-402A
	1/2	1/2	6.0	3.000	140-0500-202	140-0500-202A	140-0500-402	140-0500-402A
	5/8	5/8	6.0	3.000	140-0625-202	140-0625-202A	140-0625-402	140-0625-402A
	3/4	3/4	6.0	3.000	140-0750-202	140-0750-202A	140-0750-402	140-0750-402A
	1	1	6.0	3.000	140-1000-202	140-1000-202A	140-1000-402	140-1000-402A
	1	1	7.0	4.000	-	-	140-100B-402	140-100B-402A
	1	1	8.0	5.000	-	-	140-100C-402	140-100C-402A



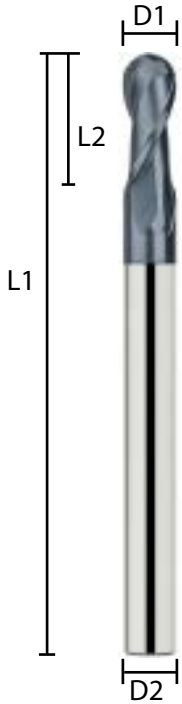
Long Reach 2 & 4 Flute

Long Reach End Mills have a larger core diameter and longer length of cut for long reach milling applications. They provide increased strength and reduced chatter. They have a 30° helix, right-hand cut, and are centre cutting.



Square Corner

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	2 Flute Part #	2 Flute Coated Part #	4 Flute Part #	4 Flute Coated Part #
in	1/8	1/8	3.0	0.375	140-A125-201	140-A125-201A	140-A125-401	140-A125-401A
	1/8	1/8	4.0	0.750	140-B125-201	140-B125-201A	140-B125-401	140-B125-401A
	3/16	3/16	4.0	0.625	140-A187-201	140-A187-201A	140-A187-401	140-A187-401A
	3/16	3/16	4.0	1.125	140-B187-201	140-B187-201A	140-B187-401	140-B187-401A
	1/4	1/4	6.0	0.875	140-A250-201	140-A250-201A	140-A250-401	140-A250-401A
	1/4	1/4	4.0	1.000	-	-	140-C250-401	140-C250-401A
	5/16	5/16	6.0	1.000	140-A312-201	140-A312-201A	140-A312-401	140-A312-401A
	3/8	3/8	6.0	1.000	140-A375-201	140-A375-201A	140-A375-401	140-A375-401A
	1/2	1/2	6.0	1.250	140-A500-201	140-A500-201A	140-A500-401	140-A500-401A
	1/2	1/2	6.0	2.000	-	-	140-B500-401	140-B500-401A
	1/2	1/2	8.0	1.000	-	-	140-C500-401	140-C500-401A
	5/8	5/8	6.0	1.250	140-A625-201	140-A625-201A	140-A625-401	140-A625-401A
	3/4	3/4	6.0	1.375	140-A750-201	140-A750-201A	140-A750-401	140-A750-401A
	1	1	6.0	1.375	140-100A-201	140-100A-201A	140-100A-401	140-100A-401A

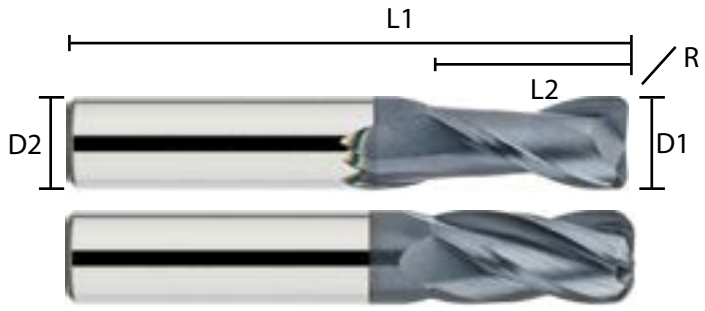


Ball Nose

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	2 Flute Part #	2 Flute Coated Part #	4 Flute Part #	4 Flute Coated Part #
in	1/8	1/8	3.0	0.375	140-A125-202	140-A125-202A	140-A125-402	140-A125-402A
	1/8	1/8	4.0	0.750	140-B125-202	140-B125-202A	140-B125-402	140-B125-402A
	3/16	3/16	4.0	0.625	140-A187-202	140-A187-202A	140-A187-402	140-A187-402A
	3/16	3/16	4.0	1.125	140-B187-202	140-B187-202A	140-B187-402	140-B187-402A
	1/4	1/4	6.0	0.875	140-A250-202	140-A250-202A	140-A250-402	140-A250-402A
	1/4	1/4	4.0	1.000	-	-	140-C250-402	140-C250-402A
	5/16	5/16	6.0	1.000	140-A312-202	140-A312-202A	140-A312-402	140-A312-402A
	3/8	3/8	6.0	1.000	140-A375-202	140-A375-202A	140-A375-402	140-A375-402A
	1/2	1/2	6.0	1.250	140-A500-202	140-A500-202A	140-A500-402	140-A500-402A
	1/2	1/2	6.0	2.000	-	-	140-B500-402	140-B500-402A
	1/2	1/2	8.0	1.000	-	-	140-C500-402	140-C500-402A
	5/8	5/8	6.0	1.250	140-A625-202	140-A625-202A	140-A625-402	140-A625-402A
	5/8	5/8	8.0	1.250	-	-	140-C625-402	140-C625-402A
	3/4	3/4	6.0	1.375	140-A750-202	140-A750-202A	140-A750-402	140-A750-402A
	3/4	3/4	8.0	1.500	-	-	140-B750-402	140-B750-402A
	1	1	6.0	1.375	140-100A-202	140-100A-202A	140-100A-402	140-100A-402A

Corner Radius 2 & 4 Flute

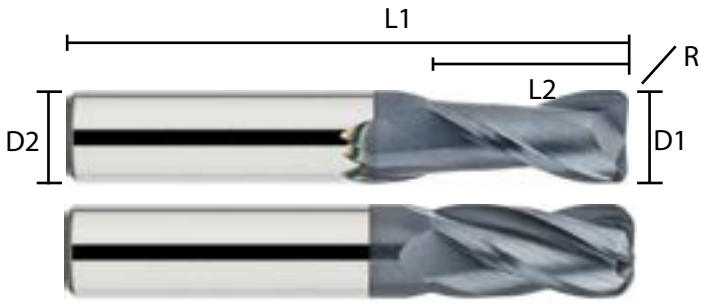
Corner Radius Series End Mills incorporate standard geometry for an excellent general-purpose End Mill. They are suited for a variety of milling applications. They have a 30° helix, right-hand cut, and are centre cutting.



	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	R Radius	2 Flute Part #	2 Flute Coated Part #	4 Flute Part #	4 Flute Coated Part #
in	1/16	1/8	2.0	0.188	0.005	110-0062-2R05	110-0062-2AR05	110-0062-4R05	110-0062-4AR05
	1/16	1/8	2.0	0.188	0.010	110-0062-2R10	110-0062-2AR10	110-0062-4R10	110-0062-4AR10
	1/16	1/8	2.0	0.188	0.015	110-0062-2R15	110-0062-2AR15	110-0062-4R15	110-0062-4AR15
	5/64	1/8	2.0	0.250	0.005	-	-	110-0078-4R05	110-0078-4AR05
	5/64	1/8	2.0	0.250	0.010	110-0078-2R10	110-0078-2AR10	110-0078-4R10	110-0078-4AR10
	5/64	1/8	2.0	0.250	0.015	110-0078-2R15	110-0078-2AR15	110-0078-4R15	110-0078-4AR15
	3/32	1/8	2.0	0.344	0.005	110-0093-2R05	110-0093-2AR05	110-0093-4R05	110-0093-4AR05
	3/32	1/8	2.0	0.344	0.010	110-0093-2R10	110-0093-2AR10	110-0093-4R10	110-0093-4AR10
	3/32	1/8	2.0	0.344	0.015	110-0093-2R15	110-0093-2AR15	110-0093-4R15	110-0093-4AR15
	3/32	1/8	2.0	0.344	0.020	110-0093-2R20	110-0093-2AR20	110-0093-4R20	110-0093-4AR20
	1/8	1/8	2.0	0.500	0.005	110-0125-2R05	110-0125-2AR05	110-0125-4R05	110-0125-4AR05
	1/8	1/8	2.0	0.500	0.010	110-0125-2R10	110-0125-2AR10	110-0125-4R10	110-0125-4AR10
	1/8	1/8	2.0	0.500	0.015	110-0125-2R15	110-0125-2AR15	110-0125-4R15	110-0125-4AR15
	1/8	1/8	2.0	0.500	0.020	110-0125-2R20	110-0125-2AR20	110-0125-4R20	110-0125-4AR20
	1/8	1/8	2.0	0.500	0.030	110-0125-2R30	110-0125-2AR30	110-0125-4R30	110-0125-4AR30
	5/32	3/16	2.0	0.563	0.010	-	110-0156-2AR10	-	110-0156-4AR10
	5/32	3/16	2.0	0.563	0.020	-	110-0156-2AR20	-	110-0156-4AR20

Corner Radius 2 & 4 Flute

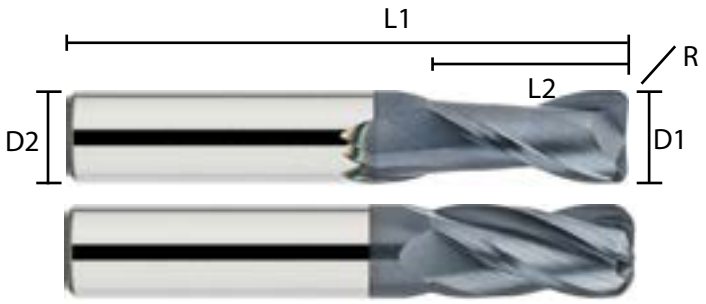
Corner Radius Series End Mills incorporate standard geometry for an excellent general-purpose End Mill. They are suited for a variety of milling applications. They have a 30° helix, right-hand cut, and are centre cutting.



	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	R Radius	2 Flute Part #	2 Flute Coated Part #	4 Flute Part #	4 Flute Coated Part #
in	3/16	3/16	2.0	0.625	0.005	110-0187-2R05	110-0187-2AR05	110-0187-4R05	110-0187-4AR05
	3/16	3/16	2.0	0.625	0.010	110-0187-2R10	110-0187-2AR10	110-0187-4R10	110-0187-4AR10
	3/16	3/16	2.0	0.625	0.015	-	-	110-0187-4R15	110-0187-4AR15
	3/16	3/16	2.0	0.625	0.020	110-0187-2R20	110-0187-2AR20	110-0187-4R20	110-0187-4AR20
	3/16	3/16	2.0	0.625	0.030	110-0187-2R30	110-0187-2AR30	110-0187-4R30	110-0187-4AR30
	3/16	3/16	2.0	0.625	0.060	-	-	110-0187-4R60	110-0187-4AR60
	3/16	3/16	2.5	0.750	0.030	130-0187-2R30	130-0187-2AR30	130-0187-4R30	130-0187-4AR30
	3/16	3/16	2.5	0.625	0.060	-	-	130-A187-4R60	130-A187-4AR60
	3/16	3/16	4.0	0.625	0.030	-	-	-	140-0187-4AR30
	1/4	1/4	2.5	0.750	0.005	110-0250-2R05	110-0250-2AR05	110-0250-4R05	110-0250-4AR05
	1/4	1/4	2.5	0.750	0.010	110-0250-2R10	110-0250-2AR10	110-0250-4R10	110-0250-4AR10
	1/4	1/4	2.5	0.750	0.015	110-0250-2R15	110-0250-2AR15	110-0250-4R15	110-0250-4AR15
	1/4	1/4	2.5	0.750	0.020	110-0250-2R20	110-0250-2AR20	110-0250-4R20	110-0250-4AR20
	1/4	1/4	2.5	0.750	0.030	110-0250-2R30	110-0250-2AR30	110-0250-4R30	110-0250-4AR30
	1/4	1/4	2.5	0.750	0.040	110-0250-2R40	110-0250-2AR40	110-0250-4R40	110-0250-4AR40
	1/4	1/4	2.5	0.750	0.060	-	130-0250-2AR60	110-0250-4R60	110-0250-4AR60
	1/4	1/4	3.0	1.125	0.010	-	110-0250-2AR10	-	130-0250-4AR10
	1/4	1/4	3.0	1.125	0.030	-	-	130-0250-4R30	130-0250-4AR30
	1/4	1/4	3.0	1.125	0.060	130-0250-2R60	130-0250-2AR60	130-0250-4R60	130-0250-4AR60
	1/4	1/4	4.0	1.500	0.030	140-0250-2R30	140-0250-2AR30	140-0250-4R30	140-0250-4AR30
	1/4	1/4	4.0	1.500	0.060	140-0250-2R60	140-0250-2AR60	140-0250-4R60	140-0250-4AR60
	1/4	1/4	6.0	0.875	0.030	-	-	140-A250-4R30	140-A250-4AR30
	1/4	1/4	6.0	0.875	0.060	-	-	140-A250-4R60	140-A250-4AR60
	5/16	5/16	2.5	0.813	0.015	110-0312-2R15	110-0312-2AR15	110-0312-4R15	110-0312-4AR15
	5/16	5/16	2.5	0.813	0.020	110-0312-2R20	110-0312-2AR20	110-0312-4R20	110-0312-4AR20
	5/16	5/16	2.5	0.813	0.030	110-0312-2R30	110-0312-2AR30	110-0312-4R30	110-0312-4AR30
	5/16	5/16	2.5	0.813	0.040	110-0312-2R40	110-0312-2AR40	110-0312-4R40	110-0312-4AR40
	5/16	5/16	2.5	0.813	0.040	-	-	110-0312-4R60	110-0312-4AR60
	5/16	5/16	3.0	1.125	0.030	-	-	130-0312-4R30	130-0312-4AR30
	5/16	5/16	3.0	1.125	0.060	-	-	130-0312-4R60	130-0312-4AR60
	5/16	5/16	4.0	1.625	0.030	140-0312-2R30	140-0312-2AR30	140-0312-4R30	140-0312-4AR30

Corner Radius 2 & 4 Flute

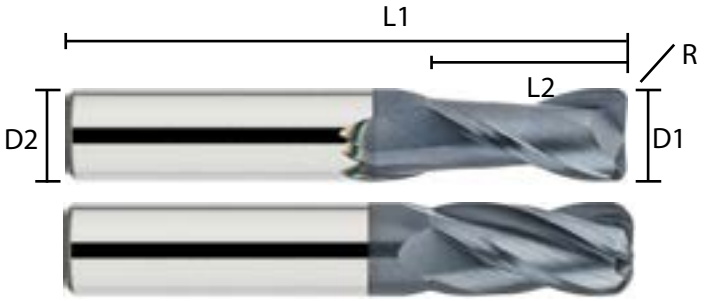
Corner Radius Series End Mills incorporate standard geometry for an excellent general-purpose End Mill. They are suited for a variety of milling applications. They have a 30° helix, right-hand cut, and are centre cutting.



	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	R Radius	2 Flute Part #	2 Flute Coated Part #	4 Flute Part #	4 Flute Coated Part #
in	3/8	3/8	2.5	0.875	0.005	110-0375-2R05	110-0375-2AR05	110-0375-4R05	110-0375-4AR05
	3/8	3/8	2.5	0.875	0.010	110-0375-2R10	110-0375-2AR10	110-0375-4R10	110-0375-4AR10
	3/8	3/8	2.5	0.875	0.015	110-0375-2R15	110-0375-2AR15	110-0375-4R15	110-0375-4AR15
	3/8	3/8	2.5	0.875	0.020	110-0375-2R20	110-0375-2AR20	110-0375-4R20	110-0375-4AR20
	3/8	3/8	2.5	0.875	0.030	110-0375-2R30	110-0375-2AR30	110-0375-4R30	110-0375-4AR30
	3/8	3/8	2.5	0.875	0.040	110-0375-2R40	110-0375-2AR40	110-0375-4R40	110-0375-4AR40
	3/8	3/8	2.5	0.875	0.060	110-0375-2R60	110-0375-2AR60	110-0375-4R60	110-0375-4AR60
	3/8	3/8	2.5	0.875	0.125	110-0375-2R125	110-0375-2AR125	110-0375-4R125	110-0375-4AR125
	3/8	3/8	3.0	1.125	0.010	130-0375-2R10	130-0375-2AR10	130-0375-4R10	130-0375-4AR10
	3/8	3/8	3.0	1.125	0.030	130-0375-2R30	130-0375-2AR30	130-0375-4R30	130-0375-4AR30
	3/8	3/8	3.0	1.000	0.060	130-0375-2R60	130-0375-2AR60	130-0375-4R60	130-0375-4AR60
	3/8	3/8	4.0	4.000	0.010	-	-	140-0375-4R10	140-0375-4AR10
	3/8	3/8	4.0	4.000	0.030	-	-	140-0375-4R30	140-0375-4AR30
	3/8	3/8	4.0	4.000	0.060	-	-	140-0375-4R60	140-0375-4AR60
	3/8	3/8	6.0	6.000	0.030	-	-	140-A375-4R30	140-A375-4AR30
	3/8	3/8	6.0	6.000	0.060	-	-	140-A375-4R60	140-A375-4AR60
	1/2	1/2	3.0	3.000	0.005	-	-	110-0500-4R05	110-0500-4AR05
	1/2	1/2	3.0	3.000	0.010	-	-	110-0500-4R10	110-0500-4AR10
	1/2	1/2	3.0	3.000	0.015	110-0500-2R15	110-0500-2AR15	110-0500-4R15	110-0500-4AR15
	1/2	1/2	3.0	3.000	0.020	110-0500-2R20	110-0500-2AR20	110-0500-4R20	110-0500-4AR20
	1/2	1/2	3.0	3.000	0.030	110-0500-2R30	110-0500-2AR30	110-0500-4R30	110-0500-4AR30
	1/2	1/2	3.0	3.000	0.040	110-0500-2R40	110-0500-2AR40	110-0500-4R40	110-0500-4AR40
	1/2	1/2	3.0	3.000	0.060	110-0500-2R60	110-0500-2AR60	110-0500-4R60	110-0500-4AR60
	1/2	1/2	3.0	3.000	0.125	-	-	110-0500-4R90	110-0500-4AR90
	1/2	1/2	3.0	3.000	0.125	110-0500-2R125	110-0500-2AR125	110-0500-4R125	110-0500-4AR125
	1/2	1/2	4.0	4.000	0.010	-	-	130-0500-4R10	130-0500-4AR10
	1/2	1/2	4.0	4.000	0.060	-	-	130-0500-4R60	130-0500-4AR60
	1/2	1/2	4.0	4.000	0.125	-	-	130-0500-4R125	130-0500-4AR125
	1/2	1/2	6.0	6.000	0.030	-	-	140-0500-4R30	140-0500-4AR30
	1/2	1/2	6.0	6.000	0.060	-	-	140-0500-4R60	140-0500-4AR60
	1/2	1/2	6.0	1.250	0.030	-	-	140-A500-4R30	140-A500-4AR30
	1/2	1/2	6.0	1.250	0.060	-	-	140-A500-4R60	140-A500-4AR60

Corner Radius 2 & 4 Flute

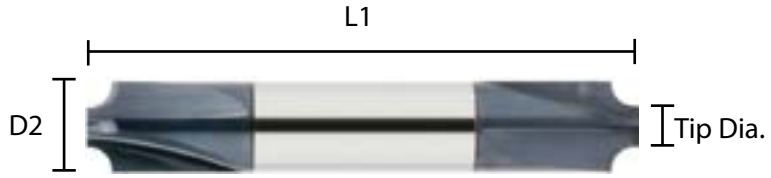
Corner Radius Series End Mills incorporate standard geometry for an excellent general-purpose End Mill. They are suited for a variety of milling applications. They have a 30° helix, right-hand cut, and are centre cutting.



	D1 Dia.	D2 Shank Dia.	R Radius	L1 OAL	L2 LOC	2 Flute Part #	2 Flute Coated Part #	4 Flute Part #	4 Flute Coated Part #
in	5/8	5/8	3.5	1.250	0.015	-	-	110-0625-4R15	110-0625-4AR15
	5/8	5/8	3.5	1.250	0.020	-	-	110-0625-4R20	110-0625-4AR20
	5/8	5/8	3.5	1.250	0.030	110-0625-2R30	110-0625-2AR30	110-0625-4R30	110-0625-4AR30
	5/8	5/8	3.5	1.250	0.040	110-0625-2R40	110-0625-2AR40	110-0625-4R40	110-0625-4AR40
	5/8	5/8	3.5	1.250	0.060	110-0625-2R60	110-0625-2AR60	110-0625-4R60	110-0625-4AR60
	5/8	5/8	3.5	1.250	0.125	-	-	110-0625-4R125	110-0625-4AR125
	3/4	3/4	4.0	1.500	0.015	-	-	110-0750-4R15	110-0750-4AR15
	3/4	3/4	4.0	1.500	0.020	-	-	110-0750-4R20	110-0750-4AR20
	3/4	3/4	4.0	1.500	0.030	-	-	110-0750-4R30	110-0750-4AR30
	3/4	3/4	4.0	1.500	0.040	-	-	110-0750-4R40	110-0750-4AR40
	3/4	3/4	4.0	1.500	0.060	-	-	110-0750-4R60	110-0750-4AR60
	3/4	3/4	4.0	1.500	0.090	110-0750-2R90	110-0750-2AR90	110-0750-4R90	110-0750-4AR90
	3/4	3/4	4.0	1.500	0.125	110-0750-2R125	110-0750-2AR125	110-0750-4R125	110-0750-4AR125
	3/4	3/4	4.0	1.500	0.250	-	-	110-0750-4R250	110-0750-4A250
	1	1	4.0	1.500	0.030	110-1000-2R30	110-1000-2AR30	110-1000-4R30	110-1000-4AR30
	1	1	4.0	1.500	0.040	-	-	-	-
	1	1	4.0	1.500	0.060	110-1000-2R60	110-1000-2AR60	110-1000-4R60	110-1000-4AR60
	1	1	4.0	1.500	0.090	-	-	-	-
	1	1	4.0	1.500	0.125	110-1000-2R125	110-1000-2AR125	110-1000-4R125	110-1000-4AR125
	1	1	6.0	1.375	0.030	140-100A-2R30	140-100A-2R30A	-	-
	1	1	6.0	1.375	0.060	140-100A-2R60	140-100A-2R60A	-	-
	1	1	6.0	1.375	0.090	140-100A-2R90	140-100A-2R90A	-	-
	1	1	6.0	1.375	0.120	140-100A-2R120	140-100A-2R120A	-	-

Corner Round

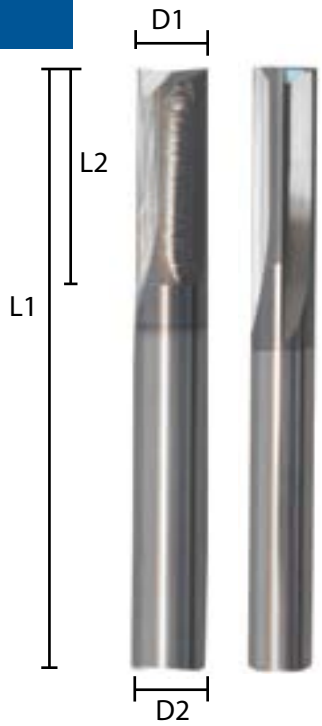
Corner Round Series End Mills incorporate standard geometry for an excellent general-purpose End Mill. They are suited for a variety of milling applications.



	Corner Round	D2 Shank	L1 OAL	No. of Flutes	Tip Dia.	Part #	Coated Part #
in	0.010	1/4	2.5	4	.219	111-0250-4R010	111-0250-4AR010
	0.015	1/4	2.5	4	.209	111-0250-4R015	111-0250-4AR015
	0.020	1/4	2.5	4	.199	111-0250-4R020	111-0250-4AR020
	0.032	1/4	2.5	4	.173	111-0250-4R032	111-0250-4AR032
	0.050	1/4	2.5	4	.134	111-0250-4R050	111-0250-4AR050
	0.032	3/8	2.5	4	.298	111-0375-4R032	111-0375-4AR032
	0.040	3/8	2.5	4	.284	111-0375-4R040	111-0375-4AR040
	0.050	3/8	2.5	4	.260	111-0375-4R050	111-0375-4AR050
	0.062	3/8	2.5	4	.233	111-0375-4R062	111-0375-4AR062
	0.062	1/2	3.0	4	.358	111-0500-4R062	111-0500-4AR062
	0.078	1/2	3.0	4	.324	111-0500-4R078	111-0500-4AR078
	0.093	1/2	3.0	4	.294	111-0500-4R093	111-0500-4AR093
	0.125	1/2	3.0	4	.225	111-0500-4R125	111-0500-4AR125
	0.125	5/8	3.5	4	.350	111-0625-4R125	111-0625-4AR125
	0.156	5/8	3.5	4	.278	111-0625-4R156	111-0625-4AR156
	0.187	3/4	4.0	4	.341	111-0750-4R187	111-0750-4AR187
	0.250	3/4	4.0	4	.206	111-0750-4R250	111-0750-4AR250
	0.312	1	4.0	4	.321	111-1000-4R312	111-1000-4AR312
	0.375	1	4.0	3	.195	111-1000-3R375	111-1000-3AR375

Straight Flute

The Straight Flute Series End Mills holds parallelism while milling hard materials. They are made from high quality micrograin carbide with a fine surface finish. They have a straight flute, right-hand cut, and are centre cutting.



Square Corner

	D1 & D2 Dia.	L1 OAL	L2 LOC	2 Flute Part #	2 Flute Coated Part #	4 Flute Part #	4 Flute Coated Part #
in	1/8	2.0	0.500	180-0125-201	180-0125-201A	180-0125-401	180-0125-401A
	1/8	4.0	0.625	180-A125-201	180-A125-201A	180-A125-401	180-A125-401A
	3/16	2.0	0.625	180-0187-201	180-0187-201A	180-0187-401	180-0187-401A
	3/16	6.0	0.750	180-A187-201	180-A187-201A	180-A187-401	180-A187-401A
	1/4	2.5	0.750	180-0250-201	180-0250-201A	180-0250-401	180-0250-401A
	1/4	6.0	1.000	180-A250-201	180-A250-201A	180-A250-401	180-A250-401A
	5/16	2.5	0.813	180-0312-201	180-0312-201A	180-0312-401	180-0312-401A
	5/16	6.0	1.000	180-A312-201	180-A312-201A	180-A312-401	180-A312-401A
	3/8	3.0	1.000	180-0375-201	180-0375-201A	180-0375-401	180-0375-401A
	3/8	6.0	1.000	180-A375-201	180-A375-201A	180-A375-401	180-A375-401A
	1/2	3.0	1.000	180-0500-201	180-0500-201A	180-0500-401	180-0500-401A
	1/2	6.0	1.375	180-A500-201	180-A500-201A	180-A500-401	180-A500-401A

Ball Nose

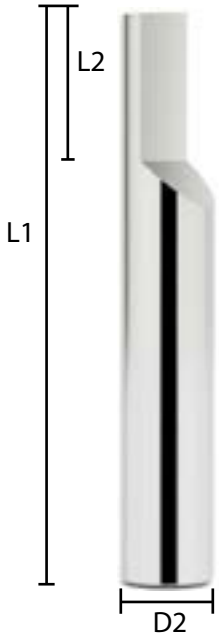
	D2 Shank Dia.	L1 OAL	L2 LOC	2 Flute Part #	2 Flute Coated Part #	4 Flute Part #	4 Flute Coated Part #
in	1/8	2.0	0.500	180-0125-202	180-0125-202A	180-0125-402	180-0125-402A
	1/8	4.0	0.625	180-A125-202	180-A125-202A	180-A125-402	180-A125-402A
	3/16	2.0	0.625	180-0187-202	180-0187-202A	180-0187-402	180-0187-402A
	3/16	6.0	0.750	180-A187-202	180-A187-202A	180-A187-402	180-A187-402A
	1/4	2.5	0.750	180-0250-202	180-0250-202A	180-0250-402	180-0250-402A
	1/4	6.0	1.000	180-A250-202	180-A250-202A	180-A250-402	180-A250-402A
	5/16	2.5	0.813	180-0312-202	180-0312-202A	180-0312-402	180-0312-402A
	5/16	6.0	1.000	180-A312-202	180-A312-202A	180-A312-402	180-A312-402A
	3/8	3.0	1.000	180-0375-202	180-0375-202A	180-0375-402	180-0375-402A
	3/8	6.0	1.000	180-A375-202	180-A375-202A	180-A375-402	180-A375-402A
	1/2	3.0	1.000	180-0500-202	180-0500-202A	180-0500-402	180-0500-402A
	1/2	6.0	1.375	180-A500-202	180-A500-202A	180-A500-402	180-A500-402A

Split Blank

Split Blank Series Tools are used in engraving and single flute milling applications. They can be custom ground, but are also available in various point angles.

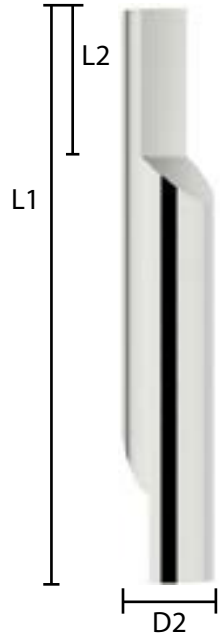
Single End

	D2 Shank Dia.	L1 OAL	L2 Split Length	Standard Part #	30° Point Part #	60° Point Part #	90° Point Part #
in	1/8	1.5	0.375	113-A125-100	113-A125-130	113-A125-160	113-A125-190
	1/8	2.0	0.375	113-B125-100	113-B125-130	113-B125-160	113-B125-190
	1/8	3.0	0.375	113-C125-100	113-C125-130	113-C125-160	113-C125-190
	3/16	2.0	0.375	113-A187-100	113-A187-130	113-A187-160	113-A187-190
	3/16	3.0	0.375	113-C187-100	113-C187-130	113-C187-160	113-C187-190
	3/16	4.0	0.375	113-D187-100	113-D187-130	113-D187-160	113-D187-190
	1/4	2.0	0.375	113-A250-100	113-A250-130	113-A250-160	113-A250-190
	1/4	3.0	0.375	113-C250-100	113-C250-130	113-C250-160	113-C250-190
	1/4	4.0	0.375	113-D250-100	113-D250-130	113-D250-160	113-D250-190
	1/4	6.0	0.375	113-E250-100	113-E250-130	113-E250-160	113-E250-190
	3/8	3.0	0.500	113-B375-100	113-B375-130	113-B375-160	113-B375-190
	3/8	4.0	0.500	113-C375-100	113-C375-130	113-C375-160	113-C375-190
	3/8	6.0	0.500	113-D375-100	113-D375-130	113-D375-160	113-D375-190
	1/2	3.0	0.625	113-A500-100	113-A500-130	113-A500-160	113-A500-190
	1/2	4.0	0.625	113-B500-100	113-B500-130	113-B500-160	113-B500-190
	1/2	6.0	0.625	113-C500-100	113-C500-130	113-C500-160	113-C500-190



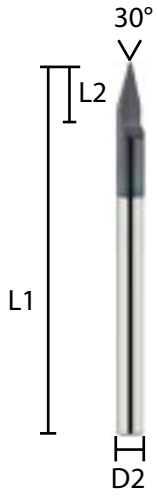
Double End

	D2 Shank Dia.	L1 OAL	L2 Split Length	Standard Part #	30° Part #	60° Part #	90° Part #
in	1/8	1.5	0.375	114-A125-100	114-A125-130	114-A125-160	114-A125-190
	1/8	2.0	0.375	114-B125-100	114-B125-130	114-B125-160	114-B125-190
	1/8	3.0	0.375	114-C125-100	114-C125-130	114-C125-160	114-C125-190
	3/16	2.0	0.375	114-A187-100	114-A187-130	114-A187-160	114-A187-190
	3/16	3.0	0.375	114-C187-100	114-C187-130	114-C187-160	114-C187-190
	3/16	4.0	0.375	114-D187-100	114-D187-130	114-D187-160	114-D187-190
	1/4	2.0	0.375	114-A250-100	114-A250-130	114-A250-160	114-A250-190
	1/4	3.0	0.375	114-C250-100	114-C250-130	114-C250-160	114-C250-190
	1/4	4.0	0.375	114-D250-100	114-D250-130	114-D250-160	114-D250-190
	1/4	6.0	0.375	114-E250-100	114-E250-130	114-E250-160	114-E250-190
	3/8	3.0	0.500	114-B375-100	114-B375-130	114-B375-160	114-B375-190
	3/8	4.0	0.500	114-C375-100	114-C375-130	114-C375-160	114-C375-190
	3/8	6.0	0.500	114-D375-100	114-D375-130	114-D375-160	114-D375-190
	1/2	3.0	0.625	114-A500-100	114-A500-130	114-A500-160	114-A500-190
	1/2	4.0	0.625	114-B500-100	114-B500-130	114-B500-160	114-B500-190
	1/2	6.0	0.625	114-C500-100	114-C500-130	114-C500-160	114-C500-190



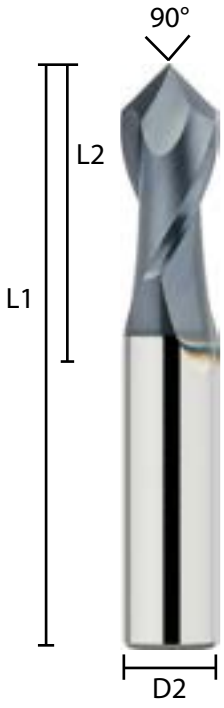
Split Blank / Chamfering Cutters

Split Blank Series Tools are used in engraving and single flute milling applications. They can be custom ground but are also available in various point angles.



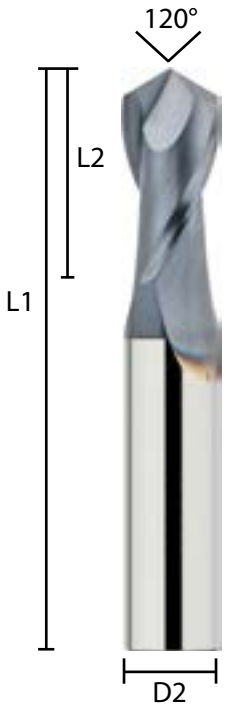
Engraving Specials

	D2 Shank Dia.	L1 OAL	L2 Split Length	Tip Size	Standard Part #	Coated Part #
in	1/8	2.0	0.120	0.005	113-B125-3005	113-B125-3005A
	1/8	2.0	0.120	0.010	113-B125-3010	113-B125-3010A
	1/8	2.0	0.120	0.015	113-B125-3015	113-B125-3015A
	1/8	2.0	0.120	0.020	113-B125-3020	113-B125-3020A
	1/8	2.0	0.120	0.025	113-B125-3025	113-B125-3025A



Chamfering Cutter 90° included

	D2 Shank Dia.	L1 OAL	L2 LOC	Standard Part #	Coated Part #
in	1/8	1.5	0.500	116-0125-2P90	116-0125-2P90A
	3/16	2.0	0.625	116-0187-2P90	116-0187-2P90A
	1/4	2.5	0.750	116-0250-2P90	116-0250-2P90A
	3/8	2.5	0.875	116-0375-2P90	116-0375-2P90A
	1/2	3.0	1.000	116-0500-2P90	116-0500-2P90A
	5/8	3.5	1.250	116-0625-2P90	116-0625-2P90A
	3/4	4.0	1.500	116-0750-2P90	116-0750-2P90A



Chamfering Cutter 120° included

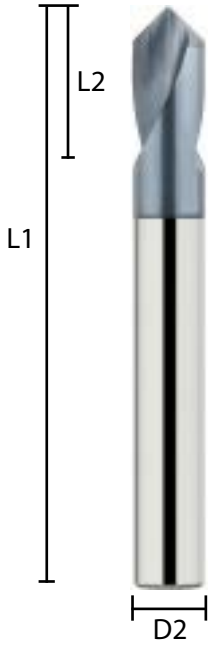
	D2 Shank Dia.	L1 OAL	L2 LOC	Standard Part #	Coated Part #
in	1/8	1.5	0.500	116-0125-2P120	116-0125-2P120A
	3/16	2	0.625	116-0187-2P120	116-0187-2P120A
	1/4	2.5	0.750	116-0250-2P120	116-0250-2P120A
	3/8	2.5	0.875	116-0375-2P120	116-0375-2P120A
	1/2	3	1.000	116-0500-2P120	116-0500-2P120A
	5/8	3.5	1.250	116-0625-2P120	116-0625-2P120A
	3/4	4	1.500	116-0750-2P120	116-0750-2P120A

Spot Drill

Carbide Spot Drills are made from premium micrograin carbide. They have a 90° or 120° point.
Cobalt Spot Drills are made from high-speed steel. They have a 90° or 120° point.

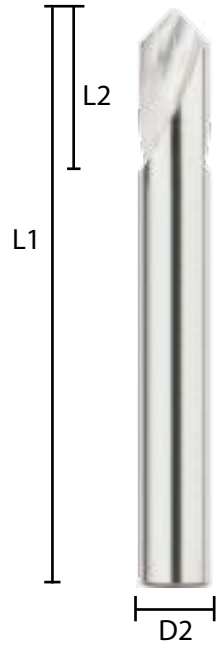
Carbide

	D2 Fraction	L1 OAL	L2 LOC	90° Point Part #	90° Point Coated Part #	120° Point Part #	120° Point Coated Part #
in	1/8	2.0	0.375	230-0125-210	230-0125-210A	230-0125-211	230-0125-211A
	3/16	2.5	0.500	230-0187-210	230-0187-210A	230-0187-211	230-0187-211A
	1/4	3.0	0.625	230-0250-210	230-0250-210A0	230-0250-211	230-0250-211A
	5/16	3.0	0.625	230-0312-210	230-0312-210A	230-0312-211	230-0312-211A
	3/8	3.0	0.750	230-0375-210	230-0375-210A	230-0375-211	230-0375-211A
	1/2	4.0	1.000	230-0500-210	230-0500-210A	230-0500-211	230-0500-211A
	5/8	3.5	1.000	230-0625-210	230-0625-210A	230-0625-211	230-0625-211A
	3/4	4.0	1.125	230-0750-210	230-0750-210A	230-0750-211	230-0750-211A



Cobalt

	D2 Dia.	L1 OAL	L2 LOC	90° Point Part #	120° Point Part #
in	1/8	2.0	0.375	235-0125-210C	235-0125-211C
	3/16	2.5	0.500	235-0187-210C	235-0187-211C
	1/4	3.0	0.625	235-0250-210C	235-0250-211C
	5/16	3.0	0.625	235-0312-210C	235-0312-211C
	3/8	3.0	0.750	235-0375-210C	235-0375-211C
	1/2	4.0	1.000	235-0500-210C	235-0500-211C
	5/8	3.5	1.000	235-0625-210C	235-0625-211C
	3/4	4.0	1.125	235-0750-210C	235-0750-211C



Rotary Burs

When ordering, specify the cut style by adding it to the end of the part #.
For example: a Cylindrical SA-3 Bur with a Double Cut would be: 420-SA3-D

** S = Standard Cut D = Double Cut

Cylindrical

	Tool #	Head Dia.	LOC	Shank Dia.	Part #
in	SA-11	1/8	0.500	1/4	420-SA11-**
	SA-14	3/16	0.625	1/4	420-SA14-**
	SA-1	1/4	0.625	1/4	420-SA1-**
	SA-2	5/16	0.750	1/4	420-SA2-**
	SA-3	3/8	0.750	1/4	420-SA3-**
	SA-4	7/16	1.000	1/4	420-SA4-**
	SA-5	1/2	1.000	1/4	420-SA5-**
	SA-6	5/8	1.000	1/4	420-SA6-**
	SA-7	3/4	1.000	1/4	420-SA7-**
	SA-15	3/4	0.500	1/4	420-SA15-**
	SA-16	3/4	0.750	1/4	420-SA16-**
	SA-9	1	1.000	1/4	420-SA9-**

Cylindrical/End Cut

	Tool #	Head Dia.	LOC	Shank Dia.	Part #
in	SB-11	1/8	0.500	1/4	420-SB11-**
	SB-14	3/16	0.625	1/4	420-SB14-**
	SB-1	1/4	0.625	1/4	420-SB1-**
	SB-2	5/16	0.750	1/4	420-SB2-**
	SB-3	3/8	0.750	1/4	420-SB3-**
	SB-4	7/16	1.000	1/4	420-SB4-**
	SB-5	1/2	1.000	1/4	420-SB5-**
	SB-6	5/8	1.000	1/4	420-SB6-**
	SB-7	3/4	1.000	1/4	420-SB7-**
	SB-15	3/4	0.500	1/4	420-SB15-**
	SB-16	3/4	0.750	1/4	420-SB16-**
	SB-9	1	1.000	1/4	420-SB9-**

Cylindrical Radius

	Tool #	Head Dia.	LOC	Shank Dia.	Part #
in	SC-11	1/8	0.500	1/4	420-SC11-**
	SC-14	3/16	0.625	1/4	420-SC14-**
	SC-1	1/4	0.625	1/4	420-SC1-**
	SC-2	5/16	0.750	1/4	420-SC2-**
	SC-3	3/8	0.750	1/4	420-SC3-**
	SC-4	7/16	1.000	1/4	420-SC4-**
	SC-5	1/2	1.000	1/4	420-SC5-**
	SC-6	5/8	1.000	1/4	420-SC6-**
	Sc7	3/4	1.000	1/4	420-SC7-**
	SC-15	3/4	0.500	1/4	420-SC15-**
	SC-16	3/4	0.750	1/4	420-SC16-**
	SC-9	1	1.000	1/4	420-SC9-**

Ball

	Tool #	Head Dia.	LOC	Shank Dia.	Part #
in	SD-11	1/8	0.094	1/4	420-SD11-**
	SD-14	3/16	0.125	1/4	420-SD14-**
	SD-1	1/4	0.188	1/4	420-SD1-**
	SD-2	5/16	0.250	1/4	420-SD2-**
	SD-3	3/8	0.313	1/4	420-SD3-**
	SD-4	7/16	0.375	1/4	420-SD4-**
	SD-5	1/2	0.438	1/4	420-SD5-**
	SD-6	5/8	0.563	1/4	420-SD6-**
	SD-7	3/4	0.688	1/4	420-SD7-**
	SD-9	1	0.938	1/4	420-SD9-**

When ordering, specify the cut style by adding it to the end of the part #.
For example: a Cylindrical SA-3 Bur with a Double Cut would be: 420-SA3-D

** S = Standard Cut D = Double Cut

Oval

	Tool #	Head Dia.	LOC	Shank Dia.	Part #
in	SE-11	3/16	0.313	1/4	420-SE11-**
	SE-1	1/4	0.375	1/4	420-SE1-**
	SE-3	3/8	0.625	1/4	420-SE3-**
	SE-5	1/2	0.875	1/4	420-SE5-**
	SE-6	5/8	1.000	1/4	420-SE6-**
	SE-7	3/4	1.000	1/4	420-SE7-**

Tree - Radius End

	Tool #	Head Dia.	LOC	Shank Dia.	Part #
in	SF-11	1/8	0.500	1/4	420-SF11-**
	SF-1	1/2	0.625	1/4	420-SF1-**
	SF-3	3/8	0.750	1/4	420-SF3-**
	SF-4	7/16	1.000	1/4	420-SF4-**
	SF-5	1/2	1.000	1/4	420-SF5-**
	SF-13	1/2	0.750	1/4	420-SF13-**
	SF-6	5/8	1.000	1/4	420-SF6-**
	SF-7	3/4	1.000	1/4	420-SF7-**
	SF-14	3/4	1.250	1/4	420-SF14-**
	SF-15	3/4	1.500	1/4	420-SF15-**

Tree - Pointed End

	Tool #	Head Dia.	LOC	Shank Dia.	Part #
in	SG-1	5/8	0.250	1/4	420-SG1-**
	SG-2	5/16	0.750	1/4	420-SG2-**
	SG-3	3/8	0.750	1/4	420-SG3-**
	SG-5	1/2	1.000	1/4	420-SG5-**
	SG-13	1/2	0.750	1/4	420-SG13-**
	SG-6	5/8	1.000	1/4	420-SG6-**
	SG-7	3/4	1.000	1/4	420-SG7-**
	SG-15	3/4	1.500	1/4	420-SG15-**

Flame

	Tool #	Head Dia.	LOC	Shank Dia.	Part #
in	SH-1	1/4	0.625	1/4	420-SH1-**
	SH-2	5/16	0.750	1/4	420-SH2-**
	SH-5	1/2	1.250	1/4	420-SH5-**
	SH-6	5/8	1.438	1/4	420-SH6-**
	SH-7	3/4	1.625	1/4	420-SH7-**

Rotary Burs

When ordering, specify the cut style by adding it to the end of the part #.
For example: a Cylindrical SA-3 Bur with a Double Cut would be: 420-SA3-D

** S = Standard Cut D = Double Cut

Cone - 60°

	Tool #	Head Dia.	LOC	Shank Dia.	Part #
in	SJ-1	1/4	0.188	1/4	420-SJ1-**
	SJ-3	3/8	0.313	1/4	420-SJ3-**
	SJ-5	1/2	0.438	1/4	420-SJ5-**
	SJ-6	5/8	0.563	1/4	420-SJ6-**
	SJ-7	3/4	0.688	1/4	420-SJ7-**
	SJ-9	1	0.938	1/4	420-SJ9-**

Cone - 90°

	Tool #	Head Dia.	LOC	Shank Dia.	Part #
in	SK-1	1/4	0.125	1/4	420-SK1-**
	SK-3	3/8	0.188	1/4	420-SK3-**
	SK-5	1/2	0.250	1/4	420-SK5-**
	SK-6	5/8	0.313	1/4	420-SK6-**
	SK-7	3/4	0.375	1/4	420-SK7-**
	SK-9	1	0.500	1/4	420-SK9-**

Cone - Radius

	Tool #	Head Dia.	LOC	Shank Dia.	Part #
in	SL-11	3/16	0.313	1/4	420-SL11-**
	SL-1	1/4	0.625	1/4	420-SL1-**
	SL-3	3/8	1.063	1/4	420-SL3-**
	SL-5	1/2	1.125	1/4	420-SL5-**
	SL-6	5/8	1.188	1/4	420-SL6-**
	SL-7	3/4	1.500	1/4	420-SL7-**

Cone - Flat

	Tool #	Head Dia.	LOC	Shank Dia.	Part #
in	SM-11	1/8	0.500	1/4	420-SM11-**
	SM-1	1/4	0.500	1/4	420-SM1-**
	SM-2	1/4	0.750	1/2	420-SM2-**
	SM-3	1/4	1.000	1/4	420-SM3-**
	SM-4	3/8	0.625	1/4	420-SM4-**
	SM-5	1/2	0.875	1/4	420-SM5-**
	SM-13	1/2	0.750	1/4	420-SM13-**
	SM-6	5/8	1.000	1/4	420-SM6-**
	SM-7	3/4	1.000	1/4	420-SM7-**
	SM-14	3/4	1.250	1/4	420-SM14-**
	SM-15	3/4	1.500	1/4	420-SM15-**

When ordering, specify the cut style by adding it to the end of the part #.
For example: a Cylindrical SA-3 Bur with a Double Cut would be: 420-SA3-D

** S = Standard Cut D = Double Cut

1/8" Shank, Spiral Flute

	Tool #	ead Dia.	Included Angle	OAL	LOC	Part #
in	SA-41	1/16	-	2.0	0.250	420-SA41-**
	SA-42	3/32	-	2.0	0.438	420-SA42-**
	SA-43	1/8	-	2.0	0.563	420-SA43-**
	SC-41	3/32	-	2.0	0.281	420-SC41-**
	SC-42	1/8	-	2.0	0.563	420-SC42-**
	SD-41	3/32	-	2.0	0.094	420-SD41-**
	SD-42	1/8	-	2.0	0.125	420-SD42-**
	SE-41	1/8	-	2.0	0.219	420-SE41-**
	SF-42	1/8	-	2.0	0.500	420-SF42-**
	SG-43	1/8	-	2.0	0.375	420-SG43-**
	SH-41	1/8	-	2.0	0.250	420-SH41-**
	SJ-42	1/8	60°	2.0	0.094	420-SJ42-**
	SK-42	1/8	90°	2.0	0.063	420-SK42-**
	SL-41	1/8	14°	2.0	0.375	420-SL41-**
	SL-42	1/8	8°	2.0	0.500	420-SL42-**
	SM-41	1/8	12°	2.0	0.344	420-SM41-**
	SM-43	1/8	7°	2.0	0.625	420-SM43-**
	SN-42	1/8	10°	2.0	0.188	420-SN42-**

Rotary Burs

When ordering, specify the cut style by adding it to the end of the part #.
For example: a Cylindrical SA-3 Bur with a Double Cut would be: 420-SA3-D

** S = Standard Cut D = Double Cut

3/16" Shank, Spiral Flute

	Tool #	Head Dia.	Included Angle	OAL	LOC	Part #
in	SA-81	3/16	-	2.0	0.500	420-SA81-**
	SC-81	3/16	-	2.0	0.500	420-SC81-**
	SD-81	3/16	-	2.0	0.188	420-SD81-**
	SE-81	3/16	-	2.0	0.281	420-SE81-**
	SF-81	3/16	-	2.0	0.500	420-SF81-**
	SG-81	3/16	-	2.0	0.500	420-SG81-**
	SJ-81	3/16	60°	2.0	0.000	420-SJ81-**
	SK-81	3/16	90°	2.0	0.000	420-SK81-**
	SL-81	3/16	14°	2.0	0.438	420-SL81-**
	SM-81	3/16	12°	2.0	0.625	420-SM81-**
	SN-81	3/16	10°	2.0	0.250	420-SN81-**

1/8" Shank, Spiral Flute

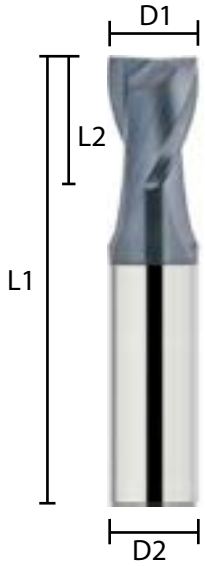
	Tool #	Head Dia.	Included Angle	LOC	Part #
in	SA-51	1/4	-	0.500	420-SA51-**
	SB-51	1/4	-	0.188	420-SB51-**
	SC-51	1/4	-	0.500	420-SC51-**
	SD-51	1/4	-	0.250	420-SD51-**
	SE-51	1/4	-	0.375	420-SE51-**
	SF-51	1/4	-	0.500	420-SF51-**
	SG-51	1/4	-	0.500	420-SG51-**
	SM-51	1/4	22°	0.500	420-SM51-**
	SN-51	1/4	10°	0.250	420-SN51-**

Metric - 2 Flute Stub

Stub Length Series End Mills have a shorter length of cut to minimize vibration. They are made from high quality micrograin carbide with standard geometry for multi-purpose machining. They have a 30° helix, right-hand cut, and are centre cutting.

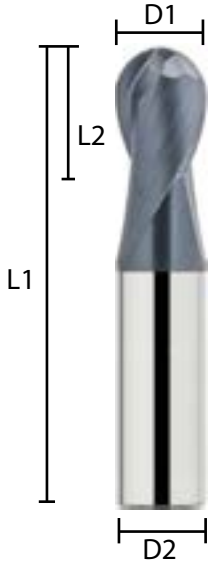
Square Corner

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
mm	1.0	3.0	39.0	1.5	100-010-201	100-010-201A
	1.5	3.0	39.0	2.3	100-015-201	100-015-201A
	2.0	3.0	39.0	3.0	100-020-201	100-020-201A
	2.5	3.0	39.0	4.0	100-025-201	100-025-201A
	3.0	3.0	39.0	6.0	100-030-201	100-030-201A
	4.0	4.0	51.0	8.0	100-040-201	100-040-201A
	5.0	5.0	51.0	9.0	100-050-201	100-050-201A
	6.0	6.0	51.0	10.0	100-060-201	100-060-201A
	8.0	8.0	50.0	12.0	100-080-201	100-080-201A
	10.0	10.0	50.0	16.0	100-100-201	100-100-201A
	12.0	12.0	63.0	18.0	100-120-201	100-120-201A
	16.0	16.0	83.0	22.0	100-160-201	100-160-201A



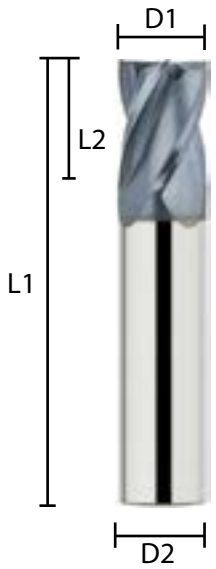
Ball Nose

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
mm	1.0	3.0	39.0	1.5	100-010-202	100-010-202A
	1.5	3.0	39.0	2.3	100-015-202	100-015-202A
	2.0	3.0	39.0	3.0	100-020-202	100-020-202A
	2.5	3.0	39.0	4.0	100-025-202	100-025-202A
	3.0	3.0	39.0	6.0	100-030-202	100-030-202A
	4.0	4.0	51.0	8.0	100-040-202	100-040-202A
	5.0	5.0	51.0	9.0	100-050-202	100-050-202A
	6.0	6.0	51.0	10.0	100-060-202	100-060-202A
	8.0	8.0	50.0	12.0	100-080-202	100-080-202A
	10.0	10.0	50.0	16.0	100-100-202	100-100-202A
	12.0	12.0	63.0	18.0	100-120-202	100-120-202A
	16.0	16.0	83.0	22.0	100-160-202	100-160-202A



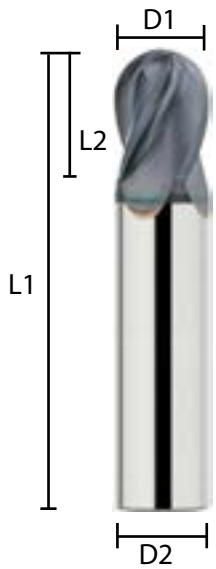
Metric - 4 Flute Stub

Stub Length Series End Mills have a shorter length of cut to minimize vibration. They are made from high quality micrograin carbide with standard geometry for multi-purpose machining. They have a 30° helix, right-hand cut, and are centre cutting.



Square Corner

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
mm	1.0	3.0	39.0	1.5	100-010-401	100-010-401A
	1.5	3.0	39.0	2.3	100-015-401	100-015-401A
	2.0	3.0	39.0	3.0	100-020-401	100-020-401A
	2.5	3.0	39.0	4.0	100-025-401	100-025-401A
	3.0	3.0	39.0	6.0	100-030-401	100-030-401A
	4.0	4.0	51.0	8.0	100-040-401	100-040-401A
	5.0	5.0	51.0	9.0	100-050-401	100-050-401A
	6.0	6.0	51.0	10.0	100-060-401	100-060-401A
	8.0	8.0	50.0	12.0	100-080-401	100-080-401A
	10.0	10.0	50.0	16.0	100-100-401	100-100-401A
	12.0	12.0	63.0	18.0	100-120-401	100-120-401A
	16.0	16.0	83.0	22.0	100-160-401	100-160-401A



Ball Nose

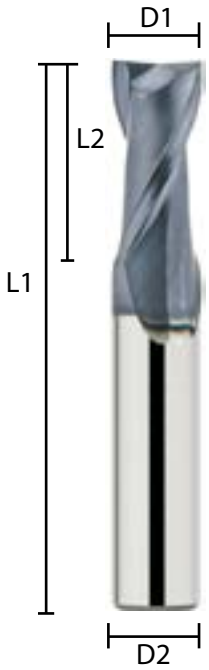
	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
mm	1.0	3.0	39.0	1.5	100-010-402	100-010-402A
	1.5	3.0	39.0	2.3	100-015-402	100-015-402A
	2.0	3.0	39.0	3.0	100-020-402	100-020-402A
	2.5	3.0	39.0	4.0	100-025-402	100-025-402A
	3.0	3.0	39.0	6.0	100-030-402	100-030-402A
	4.0	4.0	51.0	8.0	100-040-402	100-040-402A
	5.0	5.0	51.0	9.0	100-050-402	100-050-402A
	6.0	6.0	51.0	10.0	100-060-402	100-060-402A
	8.0	8.0	50.0	12.0	100-080-402	100-080-402A
	10.0	10.0	50.0	16.0	100-100-402	100-100-402A
	12.0	12.0	63.0	18.0	100-120-402	100-120-402A
	16.0	16.0	83.0	22.0	100-160-402	100-160-402A

Metric - 2 Flute Standard

Standard Series End Mills incorporate standard geometry for an excellent general-purpose end mill. They are suited for a variety of milling applications. They have a 30° helix, right-hand cut, and are centre cutting.

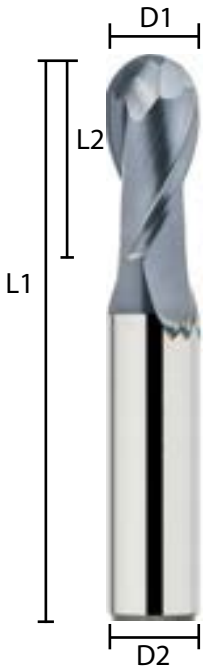
Square Corner

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
mm	0.5	3.0	39.0	1.5	101-005-201	101-005-201A
	1.0	3.0	39.0	3.0	101-010-201	101-010-201A
	1.5	3.0	39.0	4.5	101-015-201	101-015-201A
	2.0	3.0	39.0	6.0	101-020-201	101-020-201A
	2.5	3.0	39.0	8.0	101-025-201	101-025-201A
	3.0	3.0	39.0	10.0	101-030-201	101-030-201A
	4.0	4.0	51.0	12.0	101-040-201	101-040-201A
	5.0	5.0	64.0	14.0	101-050-201	101-050-201A
	6.0	6.0	64.0	16.0	101-060-201	101-060-201A
	8.0	8.0	64.0	20.0	101-080-201	101-080-201A
	10.0	10.0	67.0	24.0	101-100-201	101-100-201A
	12.0	12.0	74.0	26.0	101-120-201	101-120-201A
	16.0	16.0	89.0	32.0	101-160-201	101-160-201A
	18.0	18.0	93.0	36.0	101-180-201	101-180-201A
	20.0	20.0	100.0	38.0	101-200-201	101-200-201A
	25.0	25.0	100.0	40.0	101-250-201	101-250-201A



Ball Nose

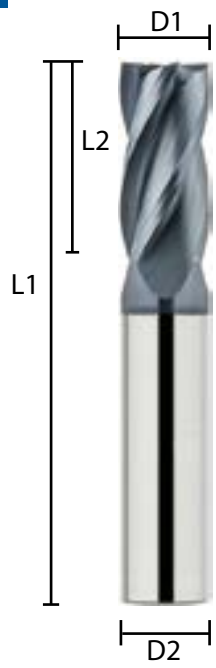
	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
mm	0.5	3.0	39.0	1.5	101-005-202	101-005-202A
	1.0	3.0	39.0	3.0	101-010-202	101-010-202A
	1.5	3.0	39.0	4.5	101-015-202	101-015-202A
	2.0	3.0	39.0	6.0	101-020-202	101-020-202A
	2.5	3.0	39.0	8.0	101-025-202	101-025-202A
	3.0	3.0	39.0	10.0	101-030-202	101-030-202A
	4.0	4.0	51.0	12.0	101-040-202	101-040-202A
	5.0	5.0	64.0	14.0	101-050-202	101-050-202A
	6.0	6.0	64.0	16.0	101-060-202	101-060-202A
	8.0	8.0	64.0	20.0	101-080-202	101-080-202A
	10.0	10.0	67.0	24.0	101-100-202	101-100-202A
	12.0	12.0	74.0	26.0	101-120-202	101-120-202A
	16.0	16.0	89.0	32.0	101-160-202	101-160-202A
	18.0	18.0	93.0	36.0	101-180-202	101-180-202A
	20.0	20.0	100.0	38.0	101-200-202	101-200-202A
	25.0	25.0	100.0	40.0	101-250-202	101-250-202A



Metric - 4 Flute Standard

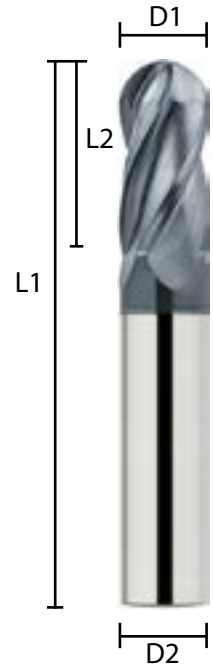
Standard Series End Mills incorporate standard geometry for an excellent general-purpose End mill. They are suited for a variety of milling applications. They have a 30° helix, right-hand cut, and are centre cutting.

Square Corner



	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
mm	0.5	3.0	39.0	1.5	101-005-401	101-005-401A
	1.0	3.0	39.0	3.0	101-010-401	101-010-401A
	1.5	3.0	39.0	4.5	101-015-401	101-015-401A
	2.0	3.0	39.0	6.0	101-020-401	101-020-401A
	2.5	3.0	39.0	8.0	101-025-401	101-025-401A
	3.0	3.0	39.0	10.0	101-030-401	101-030-401A
	4.0	4.0	51.0	12.0	101-040-401	101-040-401A
	5.0	5.0	64.0	14.0	101-050-401	101-050-401A
	6.0	6.0	64.0	16.0	101-060-401	101-060-401A
	8.0	8.0	64.0	20.0	101-080-401	101-080-401A
	10.0	10.0	67.0	24.0	101-100-401	101-100-401A
	12.0	12.0	74.0	26.0	101-120-401	101-120-401A
	16.0	16.0	89.0	32.0	101-160-401	101-160-401A
	18.0	18.0	93.0	36.0	101-180-401	101-180-401A
	20.0	20.0	100.0	38.0	101-200-401	101-200-401A
	25.0	25.0	100.0	40.0	101-250-401	101-250-401A

Ball Nose



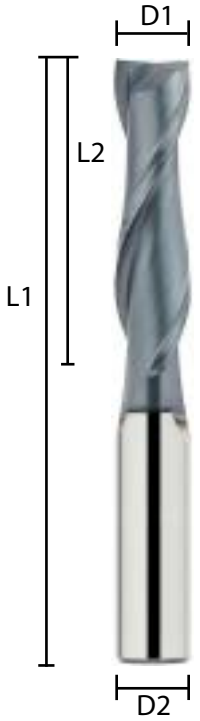
	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
mm	0.5	3.0	39.0	1.5	101-005-402A	101-005-402A
	1.0	3.0	39.0	3.0	101-010-402	101-010-402A
	1.5	3.0	39.0	4.5	101-015-402	101-015-402A
	2.0	3.0	39.0	6.0	101-020-402	101-020-402A
	2.5	3.0	39.0	8.0	101-025-402	101-025-402A
	3.0	3.0	39.0	10.0	101-030-402	101-030-402A
	4.0	4.0	51.0	12.0	101-040-402	101-040-402A
	5.0	5.0	64.0	14.0	101-050-402	101-050-402A
	6.0	6.0	64.0	16.0	101-060-402	101-060-402A
	8.0	8.0	64.0	20.0	101-080-402	101-080-402A
	10.0	10.0	67.0	24.0	101-100-402	101-100-402A
	12.0	12.0	74.0	26.0	101-120-402	101-120-402A
	16.0	16.0	89.0	32.0	101-160-402	101-160-402A
	18.0	18.0	93.0	36.0	101-180-402	101-180-402A
	20.0	20.0	100.0	38.0	101-200-402	101-200-402A
	25.0	25.0	100.0	40.0	101-250-402	101-250-402A

Metric - 2 Flute Long

Long Series End Mills have a larger core diameter and a longer length of cut for long reach milling applications. They provide increased strength and reduced chatter. They have a 30° helix, right-hand cut, and are centre cutting.

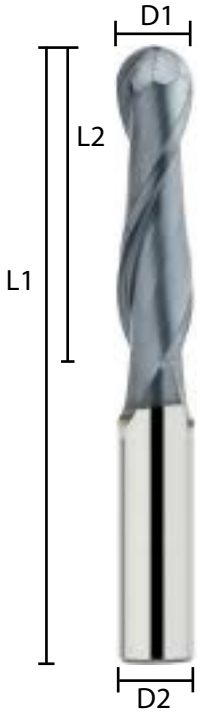
Square Corner

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
mm	1.0	3.0	39.0	4.0	102-010-201	102-010-201A
	1.5	3.0	39.0	6.0	102-015-201	102-015-201A
	2.0	3.0	39.0	8.0	102-020-201	102-020-201A
	2.5	3.0	51.0	10.0	102-025-201	102-025-201A
	3.0	3.0	51.0	13.0	102-030-201	102-030-201A
	4.0	4.0	64.0	16.0	102-040-201	102-040-201A
	5.0	5.0	76.0	20.0	102-050-201	102-050-201A
	6.0	6.0	76.0	24.0	102-060-201	102-060-201A
	8.0	8.0	76.0	26.0	102-080-201	102-080-201A
	10.0	10.0	76.0	30.0	102-100-201	102-100-201A
	12.0	12.0	100.0	38.0	102-120-201	102-120-201A
	16.0	16.0	125.0	40.0	102-160-201	102-160-201A
	18.0	18.0	125.0	46.0	102-180-201	102-180-201A
	20.0	20.0	125.0	52.0	102-200-201	102-200-201A
	25.0	25.0	125.0	52.0	102-250-201	102-250-201A



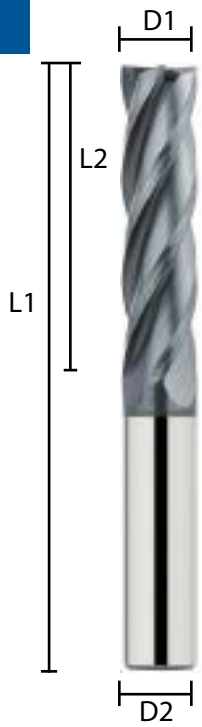
Ball Nose

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
mm	1.0	3.0	39.0	4.0	102-010-202	102-010-202A
	1.5	3.0	39.0	6.0	102-015-202	102-015-202A
	2.0	3.0	39.0	8.0	102-020-202	102-020-202A
	2.5	3.0	51.0	10.0	102-025-202	102-025-202A
	3.0	3.0	51.0	13.0	102-030-202	102-030-202A
	4.0	4.0	64.0	16.0	102-040-202	102-040-202A
	5.0	5.0	76.0	20.0	102-050-202	102-050-202A
	6.0	6.0	76.0	24.0	102-060-202	102-060-202A
	8.0	8.0	76.0	26.0	102-080-202	102-080-202A
	10.0	10.0	76.0	30.0	102-100-202	102-100-202A
	12.0	12.0	100.0	38.0	102-120-202	102-120-202A
	16.0	16.0	125.0	40.0	102-160-202	102-160-202A
	18.0	18.0	125.0	46.0	102-180-202	102-180-202A
	20.0	20.0	125.0	52.0	102-200-202	102-200-202A
	25.0	25.0	125.0	52.0	102-250-202	102-250-202A



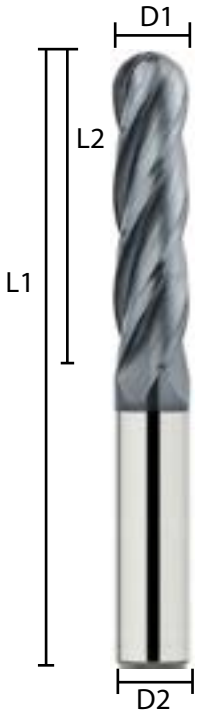
Metric - 4 Flute Long

Long Series End Mills have a larger core diameter and a longer length of cut for long reach milling applications. They provide increased strength and reduced chatter. They have a 30° helix, right-hand cut, and are centre cutting.



Square Corner

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
mm	1.0	3.0	39.0	4.0	102-010-401	102-010-401A
	1.5	3.0	39.0	6.0	102-015-401	102-015-401A
	2.0	3.0	39.0	8.0	102-020-401	102-020-401A
	2.5	3.0	51.0	10.0	102-025-401	102-025-401A
	3.0	3.0	51.0	13.0	102-030-401	102-030-401A
	4.0	4.0	64.0	16.0	102-040-401	102-040-401A
	5.0	5.0	76.0	20.0	102-050-401	102-050-401A
	6.0	6.0	76.0	24.0	102-060-401	102-060-401A
	8.0	8.0	76.0	26.0	102-080-401	102-080-401A
	10.0	10.0	76.0	30.0	102-100-401	102-100-401A
	12.0	12.0	100.0	38.0	102-120-401	102-120-401A
	16.0	16.0	125.0	40.0	102-160-401	102-160-401A
	18.0	18.0	125.0	46.0	102-180-401	-
	20.0	20.0	125.0	52.0	102-200-401	102-200-401A
	25.0	25.0	125.0	52.0	102-250-401	102-250-401A



Ball Nose

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
mm	1.0	3.0	39.0	4.0	102-010-402	102-010-402A
	1.5	3.0	39.0	6.0	102-015-402	102-015-402A
	2.0	3.0	39.0	8.0	102-020-402	102-020-402A
	2.5	3.0	51.0	10.0	102-025-402	102-025-402A
	3.0	3.0	51.0	13.0	102-030-402	102-030-402A
	4.0	4.0	64.0	16.0	102-040-402	102-040-402A
	5.0	5.0	76.0	20.0	102-050-402	102-050-402A
	6.0	6.0	76.0	24.0	102-060-402	102-060-402A
	8.0	8.0	76.0	26.0	102-080-402	102-080-402A
	10.0	10.0	76.0	30.0	102-100-402	102-100-402A
	12.0	12.0	100.0	38.0	102-120-402	102-120-402A
	16.0	16.0	125.0	40.0	102-160-402	102-160-402A
	18.0	18.0	125.0	46.0	102-180-402	-
	20.0	20.0	125.0	52.0	102-200-402	102-200-402A
	25.0	25.0	125.0	52.0	102-250-402	102-250-402A

Metric - 2 Flute X-Long

X-Long Series End Mills have a larger core diameter and a longer length of cut for long reach milling applications. They provide increased strength and reduced chatter. They have a 30° helix, right-hand cut, and are centre cutting.

Square Corner

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
mm	1.0	3.0	51.0	5.0	103-010-201	103-010-201A
	1.5	3.0	51.0	7.5	103-015-201	103-015-201A
	2.0	3.0	51.0	10.0	103-020-201	103-020-201A
	2.5	3.0	51.0	14.0	103-025-201	103-025-201A
	3.0	3.0	64.0	20.0	103-030-201	103-030-201A
	4.0	4.0	76.0	22.0	103-040-201	103-040-201A
	5.0	5.0	100.0	28.0	103-050-201	103-050-201A
	6.0	6.0	100.0	32.0	103-060-201	103-060-201A
	8.0	8.0	100.0	35.0	103-080-201	103-080-201A
	10.0	10.0	100.0	45.0	103-100-201	103-100-201A
	12.0	12.0	150.0	60.0	103-120-201	103-120-201A
	16.0	16.0	150.0	70.0	103-160-201	103-160-201A
	18.0	18.0	150.0	70.0	103-180-201	103-180-201A
	20.0	20.0	150.0	75.0	103-200-201	103-200-201A
	25.0	25.0	150.0	75.0	103-250-201	103-250-201A

Ball Nose

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
mm	1.0	3.0	51.0	5.0	103-010-202	103-010-202A
	1.5	3.0	51.0	7.5	103-015-202	103-015-202A
	2.0	3.0	51.0	10.0	103-020-202	103-020-202A
	2.5	3.0	51.0	14.0	103-025-202	103-025-202A
	3.0	3.0	64.0	20.0	103-030-202	103-030-202A
	4.0	4.0	76.0	22.0	103-040-202	103-040-202A
	5.0	5.0	100.0	28.0	103-050-202	103-050-202A
	6.0	6.0	100.0	32.0	103-060-202	103-060-202A
	8.0	8.0	100.0	35.0	103-080-202	103-080-202A
	10.0	10.0	100.0	45.0	103-100-202	103-100-202A
	12.0	12.0	150.0	60.0	103-120-202	103-120-202A
	16.0	16.0	150.0	70.0	103-160-202	103-160-202A
	18.0	18.0	150.0	70.0	103-180-202	103-180-202A
	20.0	20.0	150.0	75.0	103-200-202	103-200-202A
	25.0	25.0	150.0	75.0	103-250-202	103-250-202A

Metric - 4 Flute X-Long

X-Long Series End Mills have a larger core diameter and a longer length of cut for long reach milling applications. They provide increased strength and reduced chatter. They have a 30° helix, right-hand cut, and are centre cutting.

Square Corner

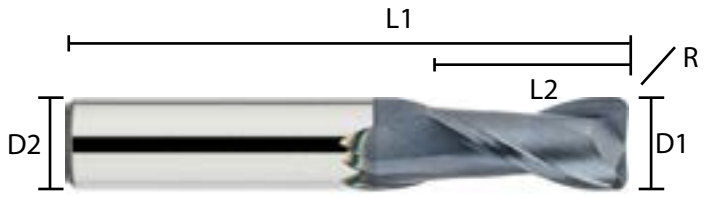
	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
mm	1.0	3.0	51.0	5.0	103-010-401	103-010-401A
	1.5	3.0	51.0	7.5	103-015-401	103-015-401A
	2.0	3.0	51.0	10.0	103-020-401	103-020-401A
	2.5	3.0	51.0	14.0	103-025-401	103-025-401A
	3.0	3.0	64.0	20.0	103-030-401	103-030-401A
	4.0	4.0	76.0	22.0	103-040-401	103-040-401A
	5.0	5.0	100.0	28.0	103-050-401	103-050-401A
	6.0	6.0	100.0	32.0	103-060-401	103-060-401A
	8.0	8.0	100.0	35.0	103-080-401	103-080-401A
	10.0	10.0	100.0	45.0	103-100-401	103-100-401A
	12.0	12.0	150.0	60.0	103-120-401	103-120-401A
	16.0	16.0	150.0	70.0	103-160-401	103-160-401A
	18.0	18.0	150.0	70.0	103-180-401	103-180-401A
	20.0	20.0	150.0	75.0	103-200-401	103-200-401A
	25.0	25.0	150.0	75.0	103-250-401	103-250-401A

Ball Nose

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	Part #	Coated Part #
mm	1.0	3.0	51.0	5.0	103-010-402	103-010-402A
	1.5	3.0	51.0	7.5	103-015-402	103-015-402A
	2.0	3.0	51.0	10.0	103-020-402	103-020-402A
	2.5	3.0	51.0	14.0	103-025-402	103-025-402A
	3.0	3.0	64.0	20.0	103-030-402	103-030-402A
	4.0	4.0	76.0	22.0	103-040-402	103-040-402A
	5.0	5.0	100.0	28.0	103-050-402	103-050-402A
	6.0	6.0	100.0	32.0	103-060-402	103-060-402A
	8.0	8.0	100.0	35.0	103-080-402	103-080-402A
	10.0	10.0	100.0	45.0	103-100-402	103-100-402A
	12.0	12.0	150.0	60.0	103-120-402	103-120-402A
	16.0	16.0	150.0	70.0	103-160-402	103-160-402A
	18.0	18.0	150.0	70.0	103-180-402	103-180-402A
	20.0	20.0	150.0	75.0	103-200-402	103-200-402A
	25.0	25.0	150.0	75.0	103-250-402	103-250-402A

Metric - 2 Flute Corner Radius

Corner Radius Series End Mills incorporate standard geometry for an excellent general-purpose end mill. They are suited for a variety of milling applications. They have a 30° helix, right-hand cut, and are centre cutting.

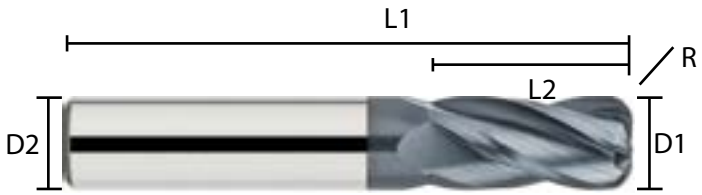


2 Flute

	D1 Dia.	D2 Shank Dia.	R Radius	L1 OAL	L2 LOC	Part #	Coated Part #
mm	1.0	3.0	0.2	51.0	3.0	101-010-2R.2	101-010-2R.2A
	1.5	3.0	0.2	51.0	4.5	101-015-2R.2	101-015-2R.2A
	2.0	3.0	0.2	51.0	6.0	101-020-2R.2	101-020-2R.2A
	2.5	3.0	0.2	51.0	8.0	101-025-2R.2	101-025-2R.2A
	2.5	3.0	0.5	51.0	8.0	101-025-2R.5	101-025-2R.5A
	3.0	3.0	0.5	51.0	10.0	101-030-2R.5	101-030-2R.5A
	3.0	3.0	1.0	51.0	10.0	101-030-2R1	101-030-2R1A
	4.0	4.0	0.5	51.0	12.0	101-040-2R.5	101-040-2R.5A
	4.0	4.0	1.0	51.0	12.0	101-040-2R1	101-040-2R1A
	5.0	5.0	0.5	64.0	14.0	101-050-2R.5	101-050-2R.5A
	5.0	5.0	1.0	64.0	14.0	101-050-2R1	101-050-2R1A
	6.0	6.0	0.5	64.0	16.0	101-060-2R.5	101-060-2R.5A
	6.0	6.0	1.0	64.0	16.0	101-060-2R1	101-060-2R1A
	6.0	6.0	1.5	64.0	16.0	101-060-2R1.5	101-060-2R1.5A
	8.0	8.0	0.5	64.0	20.0	101-080-2R.5	101-080-2R.5A
	8.0	8.0	1.0	64.0	20.0	101-080-2R1	101-080-2R1A
	8.0	8.0	1.5	64.0	20.0	101-080-2R1.5	101-080-2R1.5A
	8.0	8.0	2.0	64.0	20.0	101-080-2R2	101-080-2R2A
	10.0	10.0	0.5	67.0	24.0	101-100-2R.5	101-100-2R.5A
	10.0	10.0	1.0	67.0	24.0	101-100-2R1	101-100-2R1A
	10.0	10.0	1.5	67.0	24.0	101-100-2R1.5	101-100-2R1.5A
	10.0	10.0	2.0	67.0	24.0	101-100-2R2	101-100-2R2A
	12.0	12.0	0.5	74.0	26.0	101-120-2R.5	101-120-2R.5A
	12.0	12.0	1.0	74.0	26.0	101-120-2R1	101-120-2R1A
	12.0	12.0	1.5	74.0	26.0	101-120-2R1.5	101-120-2R1.5A
	12.0	12.0	2.0	74.0	26.0	101-120-2R2	101-120-2R2A
	12.0	12.0	3.0	74.0	26.0	101-120-2R3	101-120-2R3A

Metric - 4 Flute Corner Radius

Corner Radius Series End Mills incorporate standard geometry for an excellent general-purpose end mill. They are suited for a variety of milling applications. They have a 30° helix, right-hand cut, and are centre cutting.



4 Flute

	D1 Dia.	D2 Shank Dia.	R Radius	L1 OAL	L2 LOC	Part #	Coated Part #
mm	1.0	3.0	0.2	51.0	3.0	101-010-4R.2	101-010-4R.2A
	1.5	3.0	0.2	51.0	4.5	101-015-4R.2	101-015-4R.2A
	2.0	3.0	0.2	51.0	6.0	101-020-4R.2	101-020-4R.2A
	2.5	3.0	0.2	51.0	8.0	101-025-4R.2	101-025-4R.2A
	2.5	3.0	0.5	51.0	8.0	101-025-4R.5	101-025-4R.5A
	3.0	3.0	0.5	51.0	10.0	101-030-4R.5	101-030-4R.5A
	3.0	3.0	1.0	51.0	10.0	101-030-4R1	101-030-4R1A
	4.0	4.0	0.5	51.0	12.0	101-040-4R.5	101-040-4R.5A
	4.0	4.0	1.0	51.0	12.0	101-040-4R1	101-040-4R1A
	5.0	5.0	0.5	64.0	14.0	101-050-4R.5	101-050-4R.5A
	5.0	5.0	1.0	64.0	14.0	101-050-4R1	101-050-4R1A
	6.0	6.0	0.5	64.0	16.0	101-060-4R.5	101-060-4R.5A
	6.0	6.0	1.0	64.0	16.0	101-060-4R1	101-060-4R1A
	6.0	6.0	1.5	64.0	16.0	101-060-4R1.5	101-060-4R1.5A
	8.0	8.0	0.5	64.0	20.0	101-080-4R.5	101-080-4R.5A
	8.0	8.0	1.0	64.0	20.0	101-080-4R1	101-080-4R1A
	8.0	8.0	1.5	64.0	20.0	101-080-4R1.5	101-080-4R1.5A
	8.0	8.0	2.0	64.0	20.0	101-080-4R2	101-080-4R2A
	10.0	10.0	0.5	67.0	24.0	101-100-4R.5	101-100-4R.5A
	10.0	10.0	1.0	67.0	24.0	101-100-4R1	101-100-4R1A
	10.0	10.0	1.5	67.0	24.0	101-100-4R1.5	101-100-4R1.5A
	10.0	10.0	2.0	67.0	24.0	101-100-4R2	101-100-4R2A
	12.0	12.0	0.5	74.0	26.0	101-120-4R.5	101-120-4R.5A
	12.0	12.0	1.0	74.0	26.0	101-120-4R1	101-120-4R1A
	12.0	12.0	1.5	74.0	26.0	101-120-4R1.5	101-120-4R1.5A
	12.0	12.0	2.0	74.0	26.0	101-120-4R2	101-120-4R2A
	12.0	12.0	3.0	74.0	26.0	101-120-4R3	101-120-4R3A

X-MILL
VARIABLE HELIX

Traditional tools are frequently not effective in many high performance materials. De Boer Tool has developed a new breed of tools to meet the challenge of machining advanced super alloys and tools steels. The X-Mill is made with premium-grade carbide complimented with a variable helix which quiets the tool to improve cutting capability.

Suitable for:
- Titanium
- Stainless Steel
- Cast Iron
- Tool & Mold Steels

• Primarily designed for roughing, the asymmetry of the variable helix in the X-Mill interrupts harmonics normal in high feed machining. This interruption of harmonics, also known as chatter, quiets the cut which enables extraordinary feeds while also overcoming rapid edge decay.

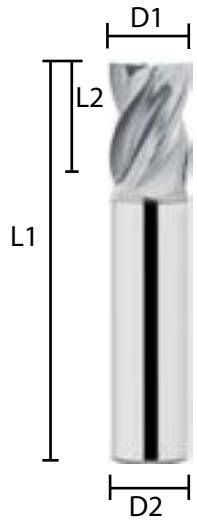
• De Boer Tool's high-performance All-4 coating is an excellent fit for this tool's application. All-4 has been engineered for ultra-aggressive milling.

• The combination of high performance carbide, variable helix and All-4 coating allows up to 2x higher feed rates in tough materials while maintaining tool integrity through resistance to micro-fracture caused by chatter and heat from high feed machining.

• X-Mills are also fully regrindable which improves your bottom line.

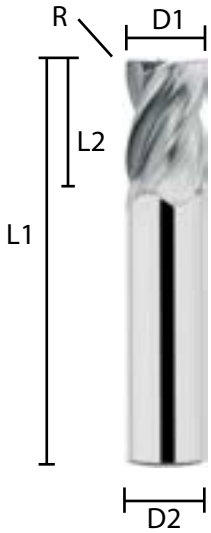
X-Mill Variable Helix Stub

The X-Mill is a tool suitable for high feed rates with higher chip loads for aggressive metal removal rates, increasing tool life and decreasing machining time. X-Mills are primarily suited for roughing, but can give an acceptable surface finish as well. Their coating is specifically designed for ultra aggressive milling. The X-Mill is also fully regrindable.



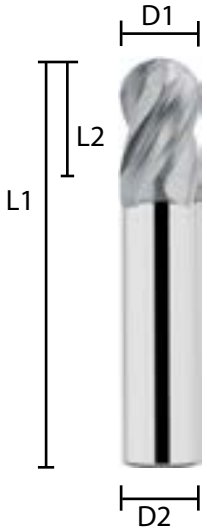
Square Corner

	D1 & D2 Dia.	L1 OAL	L2 LOC	No. of Flutes	Coated Part #
in	1/8	1.5	0.170	4	600-0125-401X
	3/16	2.0	0.240	4	600-0187-401X
	1/4	2.0	0.320	4	600-0250-401X
	5/16	2.0	0.400	4	600-0312-401X
	3/8	2.0	0.440	4	600-0375-401X
	1/2	2.5	0.600	4	600-0500-401X
	5/8	3.0	0.720	4	600-0625-401X
	3/4	4.0	0.900	4	600-0750-401X



Radius

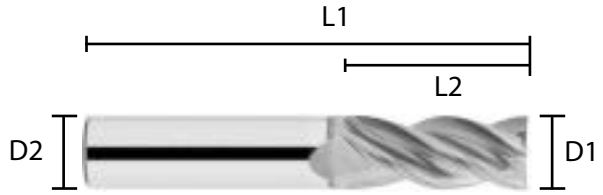
	D1 & D2 Dia.	L1 OAL	L2 LOC	R Radius	No. of Flutes	Coated Part #
in	1/8	1.5	0.170	0.008	4	600-0125-4R08X
	3/16	2.0	0.240	0.010	4	600-0187-4R10X
	1/4	2.0	0.320	0.010	4	600-0250-4R10X
	5/16	2.0	0.400	0.015	4	600-0312-4R15X
	3/8	2.0	0.440	0.020	4	600-0375-4R20X
	1/2	2.5	0.600	0.020	4	600-0500-4R20X
	5/8	3.0	0.720	0.025	4	600-0625-4R25X
	3/4	4.0	0.900	0.030	4	600-0750-4R30X



Ball Nose

	D1 & D2 Dia.	L1 OAL	L2 LOC	No. of Flutes	Coated Part #
in	1/8	1.5	0.170	4	600-0125-402X
	3/16	2.0	0.240	4	600-0187-402X
	1/4	2.0	0.320	4	600-0250-402X
	5/16	2.0	0.400	4	600-0312-402X
	3/8	2.0	0.440	4	600-0375-402X
	1/2	2.5	0.600	4	600-0500-402X
	5/8	3.0	0.720	4	600-0625-402X
	3/4	4.0	0.900	4	600-0750-402X

X-Mill Variable Helix Standard

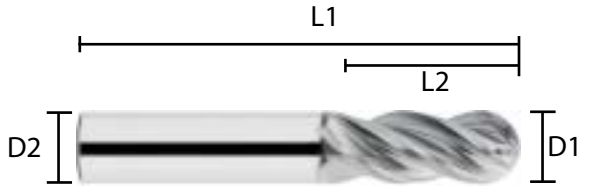


Square Corner

	D1 & D2 Dia.	L1 OAL	L2 LOC	No. of Flutes	Coated Part #
in	1/8	1.5	0.300	4	601-0125-401X
	3/16	2.0	0.420	4	601-0187-401X
	1/4	2.5	0.570	4	601-0250-401X
	5/16	2.5	0.700	4	601-0312-401X
	3/8	2.5	0.830	4	601-0375-401X
	1/2	3.0	1.100	4	601-0500-401X
	5/8	3.5	1.360	4	601-0625-401X
	3/4	4.0	1.650	4	601-0750-401X
	1	4.0	1.600	4	601-1000-401X

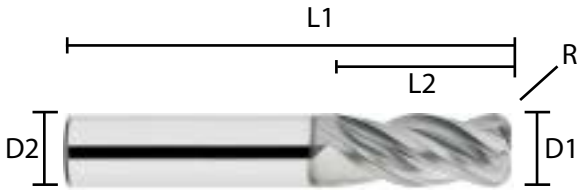
Square Corner - Met-

	D1 & D2 Dia.	L1 OAL	L2 LOC	No. of Flutes	Coated Part #
mm	3.0	51.0	8.0	4	601-030-401X
	6.0	64.0	15.0	4	601-060-401X
	8.0	65.0	18.0	4	601-080-401X
	10.0	65.0	22.0	4	601-100-401X
	12.0	80.0	25.0	4	601-120-401X



Ball Nose

	D1 & D2 Dia.	L1 OAL	L2 LOC	No. of Flutes	Coated Part #
in	1/8	1.5	0.300	4	601-0125-402X
	3/16	2.0	0.420	4	601-0187-402X
	1/4	2.5	0.570	4	601-0250-402X
	5/16	2.5	0.700	4	601-0312-402X
	3/8	2.5	0.830	4	601-0375-402X
	1/2	3.0	1.100	4	601-0500-402X
	5/8	3.5	1.360	4	601-0625-402X
	3/4	4.0	1.650	4	601-0750-402X
	1	4.0	1.600	4	601-1000-402X



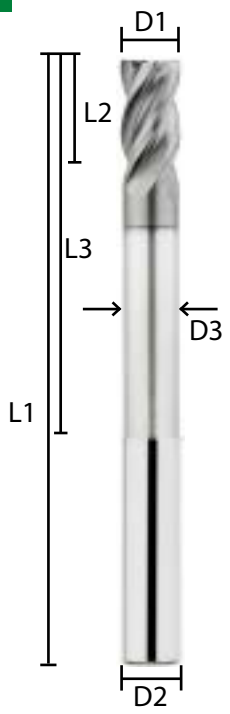
Radius

	D1 & D2 Dia.	L1 OAL	L2 LOC	R Radius	No. of Flutes	Coated Part #
in	1/8	1.5	0.300	0.008	4	601-0125-4R08X
	1/8	1.5	0.300	0.010	4	601-0125-4R10X
	1/8	1.5	0.300	0.030	4	601-0125-4R30X
	3/16	2.0	0.420	0.010	4	601-0187-4R10X
	3/16	2.0	0.420	0.030	4	601-0187-4R30X
	1/4	2.5	0.570	0.010	4	601-0250-4R10X
	1/4	2.5	0.570	0.030	4	601-0250-4R30X
	1/4	2.5	0.570	0.060	4	601-0250-4R60X
	5/16	2.5	0.700	0.015	4	601-0312-4R15X
	3/8	2.5	0.830	0.010	4	601-0375-4R10X
	3/8	2.5	0.830	0.020	4	601-0375-4R20X
	3/8	2.5	0.830	0.030	4	601-0375-4R30X
	1/2	3.0	1.100	0.010	4	601-0500-4R10X
	1/2	3.0	1.100	0.020	4	601-0500-4R20X
	1/2	3.0	1.100	0.030	4	601-0500-4R30X
	1/2	3.0	1.100	0.060	4	601-0500-4R60X
	1/2	3.0	1.100	0.125	4	601-0500-4R125X
	5/8	3.5	1.360	0.025	4	601-0625-4R25X
	3/4	4.0	1.650	0.030	4	601-0750-4R30X
	1	4.0	1.650	0.030	4	601-1000-4R30X
	1/2	4.0	1.360	0.010	4	602-0500-4R10X
	1/2	4.0	1.360	0.020	4	602-0500-4R20X
	1/2	4.0	1.360	0.030	4	602-0500-4R30X
	1/2	4.0	1.360	0.060	4	602-0500-4R60X

X-Mill Variable Helix Long Reach

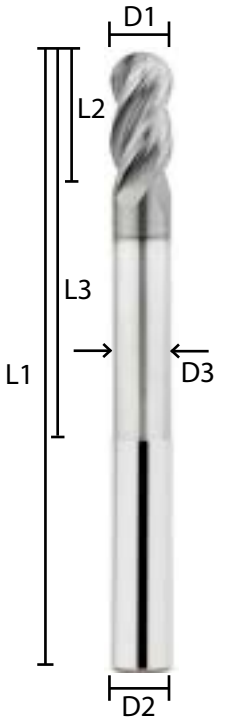
The X-Mill is a tool suitable for high feed rates with higher chip loads for aggressive metal removal rates, increasing tool life and decreasing machining time. X-Mills are primarily suited for roughing, but can give an acceptable surface finish as well. Their coating is specifically designed for ultra aggressive milling. The X-Mill is also fully regrindable.

Radius



	D1 & D2 Dia.	L1 OAL	L2 LOC	D3 Dia. of	L3 LOR	R Radius	No. of Flutes	Coated Part #
in	1/8	1.5	0.170	0.118	0.55	0.008	4	607-0125-4R08X
	3/16	2.5	0.240	0.180	0.82	0.010	4	607-0187-4R10X
	1/4	3.0	0.350	0.240	0.83	0.010	4	606-0250-4R10X
	1/4	3.0	0.350	0.240	1.35	0.010	4	607-0250-4R10X
	5/16	3.0	0.430	0.300	1.10	0.015	4	606-0312-4R15X
	5/16	4.0	0.430	0.300	1.60	0.015	4	607-0312-4R15X
	3/8	3.0	0.550	0.360	1.60	0.020	4	606-0375-4R20X
	3/8	4.0	0.550	0.360	2.10	0.020	4	607-0375-4R20X
	1/2	4.0	0.850	0.480	2.10	0.010	4	607-0500-4R10X
	1/2	4.0	0.850	0.480	2.10	0.020	4	607-0500-4R20X
	1/2	4.0	0.850	0.480	2.10	0.030	4	607-0500-4R30X
	1/2	4.0	0.850	0.480	2.10	0.060	4	607-0500-4R60X
	1/2	5.0	0.850	0.480	3.10	0.020	4	608-0500-4R20X
	5/8	4.0	0.900	0.600	2.15	0.025	4	606-0625-4R25X
	5/8	6.0	0.900	0.600	3.10	0.025	4	607-0625-4R25X
	3/4	5.0	1.150	0.720	2.15	0.030	4	607-0750-4R30X
	3/4	6.0	1.150	0.720	3.15	0.030	4	608-0750-4R30X
	1	5.0	1.300	0.960	3.10	0.030	4	607-1000-4R30X
	1	6.0	1.300	0.960	4.10	0.030	4	608-1000-4R30X

Ball Nose



	D1 & D2 Dia.	L1 OAL	L2 LOC	D3 Dia. of Neck	L3 LOR	No. of Flutes	Coated Part #
in	1/8	1.5	0.170	0.118	0.55	4	607-0125-402X
	3/16	2.5	0.240	0.180	0.82	4	607-0187-402X
	1/4	3.0	0.350	0.240	0.83	4	606-0250-402X
	1/4	3.0	0.350	0.240	1.35	4	607-0250-402X
	5/16	3.0	0.430	0.300	1.10	4	606-0312-402X
	5/16	4.0	0.430	0.300	1.60	4	607-0312-402X
	3/8	3.0	0.550	0.360	1.60	4	606-0375-402X
	3/8	4.0	0.550	0.360	2.10	4	607-0375-402X
	1/2	4.0	0.850	0.480	2.10	4	607-0500-402X
	1/2	5.0	0.850	0.480	3.10	4	608-0500-402X
	5/8	4.0	0.900	0.600	2.15	4	606-0625-402X
	5/8	6.0	0.900	0.600	3.10	4	607-0625-402X
	3/4	5.0	1.150	0.720	2.15	4	607-0750-402X
	3/4	6.0	1.150	0.720	3.15	4	608-0750-402X
	1	5.0	1.300	0.960	3.10	4	607-1000-402X
	1	6.0	1.300	0.960	4.10	4	608-1000-402X

T-MILL

The T-Mill is a revolutionary new tool designed for hard-to-cut shearable materials It features a custom carbide substrate, specifically developed tool geometry, and a premium coating to offer increased metal removal in both roughing and finishing operations.

Suitable for:

- Titanium
- Inconel
- Stainless Steel
- Nickel-based alloys in aerospace, medical, and die & mould applications

There are three types of T-Mill:

4 FLUTE ROUGHER

- Ideal when maximum metal removal is key
- Can cut deeper slots with larger chip-loads

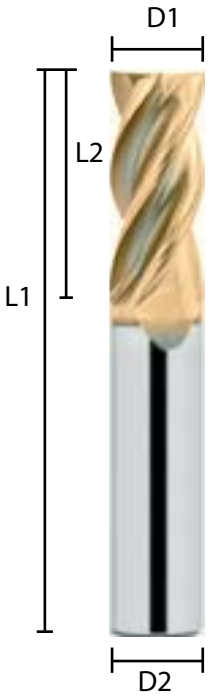
5 FLUTE SEMI-FINISHER

- Features multiple flute depths
- Recommended to slot at 1xD, and finish at full depth for best results

6 FLUTE FINISHER

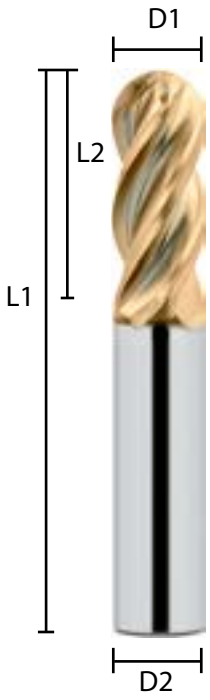
- Ideal when surface finish is a primary consideration
- Maintains high speeds and feeds, while providing excellent surface finishes

T-Mill 4 Flute



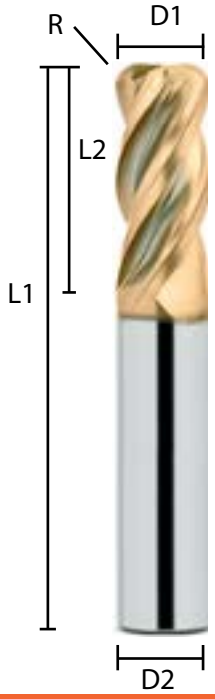
Square Corner

	D1 & D2 Dia.	L1 OAL	L2 LOC	Part #
in	1/8	2.0	0.300	611-0125-401
	3/16	2.0	0.420	611-0187-401
	1/4	2.5	0.570	611-0250-401
	5/16	2.5	0.700	611-0312-401
	3/8	2.5	0.830	611-0375-401
	1/2	3.0	1.100	611-0500-401
	5/8	3.5	1.360	611-0625-401
	3/4	4.0	1.650	611-0750-401
	1	4.0	1.650	611-1000-401



Ball Nose

	D1 & D2 Dia.	L1 OAL	L2 LOC	Part #
in	1/8	2.0	0.300	611-0125-402
	3/16	2.0	0.420	611-0187-402
	1/4	2.5	0.570	611-0250-402
	5/16	2.5	0.700	611-0312-402
	3/8	2.5	0.830	611-0375-402
	1/2	3.0	1.100	611-0500-402
	5/8	3.5	1.360	611-0625-402
	3/4	4.0	1.650	611-0750-402
	1	4.0	1.650	611-1000-402

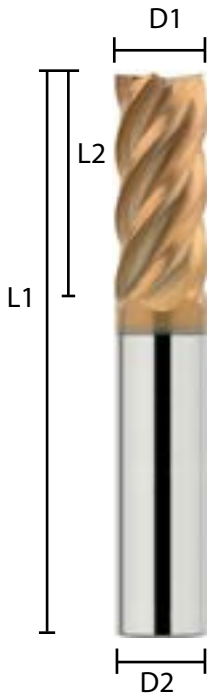


Radius

	D1 & D2 Dia.	L1 OAL	L2 LOC	R Radius	Part #
in	1/8	2.0	0.300	0.008	611-0125-4R08
	3/16	2.0	0.420	0.008	611-0187-4R08
	1/4	2.5	0.570	0.010	611-0250-4R10
	5/16	2.5	0.700	0.015	611-0312-4R15
	3/8	2.5	0.830	0.020	611-0375-4R20
	1/2	3.0	1.100	0.020	611-0500-4R20
	5/8	3.5	1.360	0.025	611-0625-4R25
	3/4	4.0	1.650	0.030	611-0750-4R30
	1	4.0	1.650	0.030	611-1000-4R30

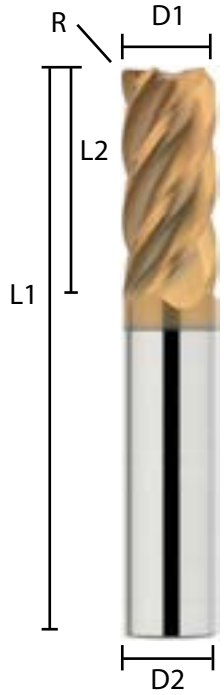
Square Corner

	D1 & D2 Dia.	L1 OAL	L2 LOC	Part #
in	1/8	2.0	0.300	611-0125-501
	3/16	2.0	0.420	611-0187-501
	1/4	2.5	0.570	611-0250-501
	5/16	2.5	0.700	611-0312-501
	3/8	2.5	0.830	611-0375-501
	1/2	3.0	1.100	611-0500-501
	5/8	3.5	1.360	611-0625-501
	3/4	4.0	1.650	611-0750-501
	1	4.0	1.650	611-1000-501

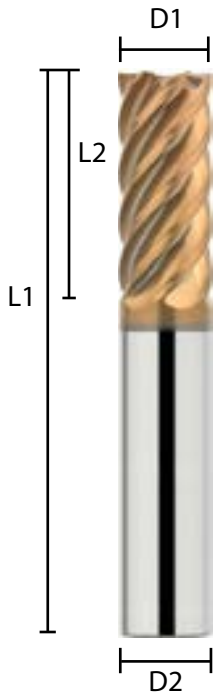


Radius

	D1 & D2 Dia.	L1 OAL	L2 LOC	R Radius	Part #
in	1/8	2.0	0.30	0.010	611-0125-5R10
	3/16	2.0	0.42	0.010	611-0187-5R10
	1/4	2.5	0.57	0.020	611-0250-5R20
	5/16	2.5	0.70	0.020	611-0312-5R20
	3/8	2.5	0.83	0.030	611-0375-5R30
	1/2	3.0	0.10	0.030	611-0500-5R20
	1/2	3.0	0.10	0.030	611-0500-5R30
	5/8	3.5	1.36	0.030	611-0625-5R30
	3/4	4.0	1.65	0.030	611-0750-5R30
	1	4.0	1.65	0.030	611-1000-5R30

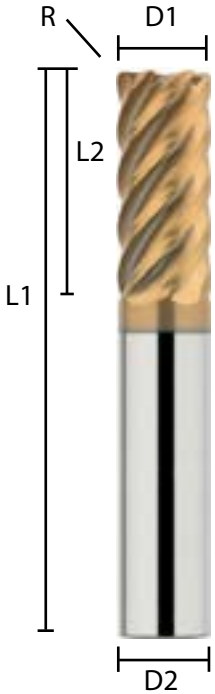


T-Mill 6 Flute



Square Corner

	D1 Dia.	L1 OAL	L2 LOC	Part #
in	1/8	2.0	0.550	611-0125-601
	3/16	2.0	0.650	611-0187-601
	1/4	2.5	0.800	611-0250-601
	5/16	2.5	0.820	611-0312-601
	3/8	2.5	0.830	611-0375-601
	1/2	3.0	1.100	611-0500-601
	5/8	3.5	1.360	611-0625-601
	3/4	4.0	1.650	611-0750-601
	1	4.0	1.650	611-1000-601



Radius

	D1 Dia.	L1 OAL	L2 LOC	R Radius	Part #
in	1/8	2.0	0.550	0.010	611-0125-6R10
	3/16	2.0	0.650	0.010	611-0187-6R10
	1/4	2.5	0.800	0.020	611-0250-6R20
	5/16	2.5	0.820	0.020	611-0312-6R20
	3/8	2.5	0.830	0.030	611-0375-6R30
	1/2	3.0	1.100	0.030	611-0500-6R30
	5/8	3.5	1.360	0.030	611-0625-6R30
	3/4	4.0	1.650	0.030	611-0750-6R30
	1	4.0	1.650	0.030	611-1000-6R30

Thread-mill

De Boer Tool thread mills are made from high grade solid carbide, with advanced geometry and coated with the latest Quad Coatings ensuring surface finish and tool life.

Quickly cut a full left or right hand threads in ID or OD applications to machine threads fully to shoulders or the bottom of holes up to 2xD. In the rare case of a broken cutter, it can be easily extracted and the thread picked up with a new cutter. They can also be used to cut external threads with the same cutter.

De Boer Tool Thread Mills are available in all UN, ISO and NPT thread forms.

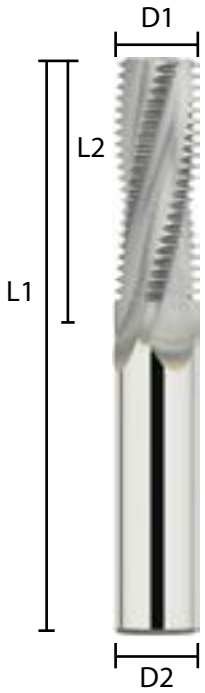
Part of our service is to work with our customers to add horsepower to overcome any threading challenge quickly and cost effectively. Got a tricky thread to cut? Call or email us and we will work with you to provide an exact fit.

Why choose thread milling?

- A secure machining operation
  Minimal risk to machine part. Unlike a tap, it will never get stuck
- Threading in difficult to machine materials
  Unlike taps, you can optimize SFM and chip load to material being cut
- Higher quality thread
  Cutting conditions can be optimized for ideal surface finish
- Flexible tool
  Same cutter can be used for right hand and left hand thread. Threads with different diameters can be made with the same tool as long as the pitch is the same
- Threading in blind holes
  You wil get a complete thread profile to the bottom of the hole
- Less wear on the machine spindle
  Spindle does not have sudden stops and starts
- Energy-saving production
  Low energy consumption as the machine spindle doesn't need to be stopped and started after each thread
- Thread milling in a lathe with live tools
  Reduced machining time compared with thread turning
- Threading without burrs
  Thread entrance will be burr free when using the Anti Burr ProStart feature
- DeBoer Tool has some of the tightest tolerances on their thread mill diameters and distance from the tip of the tool, to centre of first pitch. This makes on-size first threads possible, and picking up and chasing existing threads possible.

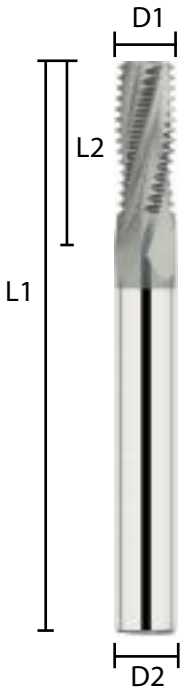
UN Thread Mill

	Thread Form	D1 Dia. (IN)	D2 Dia. (mm)	L1 OAL (mm)	L2 LOC (IN)	No. of Flutes	Coated Part #
mm	10-24	0.142	4	45	0.396	3	705-.142-10-24P8
	10-32	0.142	4	45	0.359	3	705-.142-10-32P10
	1/4-20	0.180	6	65	0.475	3	705-.180-1/4-20P8
	1/4-28	0.180	6	65	0.482	3	TMUG-1/4-28P12M
	5/16-24	0.235	6	65	0.646	3	TMUG-5/16-24P14M
	5/16-18	0.240	8	65	0.583	3	705-.240-5/16-18P9
	3/8-16	0.285	8	65	0.719	3	705-.285-3/8-16P10
	3/8-24	0.285	8	65	0.730	3	TMUG-3/8-24P16M
	7/16-14	0.305	8	65	0.821	3	705-.305-7/16-14P10
	1/2-13	0.370	10	80	0.962	4	705-.370-1/2-13P11
	1/2-20	0.370	10	80	0.925	4	705-.370-1/2-20P17
	5/8-11	0.470	12	80	1.227	4	705-.470-5/8-11P12
	3/4-10	0.470	12	80	1.450	4	705-.470-3/4-10P13
	3/4-16	0.470	12	80	1.406	4	705-.470-3/4-16P21
	1-8	0.620	16	110	1.938	5	705-.620-1-8P14



Metric Thread Mill

	Thread Form	D1 Dia. (mm)	D2 Dia. (mm)	L1 OAL (mm)	L2 LOC (mm)	No. of Flutes	Coated Part #
mm	M4x0.7	3.00	4.0	50.0	8.05	3	710-3.00-M4.0-0.70P10
	M5x0.8	3.95	4.0	55.0	9.20	3	TMMG-5.0X.8P10
	M6x0.75	4.50	6.0	65.0	11.63	3	TMMG-6X.75P14
	M6x1	4.60	6.0	65.0	11.50	3	710-4.60-M6.0-1.0P10
	M8x1	5.30	6.0	65.0	15.50	3	TMMG-8X1P14
	M8x1.25	5.95	6.0	65.0	15.63	3	710-5.95-M8.0-1.25P11
	M10x1.5	7.50	8.0	80.0	20.25	3	710-7.50-M10-1.5P12
	10X1.25	7.50	8.0	80.0	19.38	3	TMMG-10X1.25P14
	M12x1.75	8.50	10.0	80.0	23.63	4	710-8.50-M12-1.75P12
	M14x1.5	9.95	10.0	80.0	29.25	4	TMMG-14x1.5P18
	M14x2	9.95	10.0	109.0	27.00	4	710-9.95-M14-2.0P12
	M16x2	11.95	12.0	109.0	31.00	4	710-11.95-M16-2.0P14
	M18x2.5	11.95	12.0	109.0	33.75	4	710-11.95-M18-2.5P12
	M20x2.5	15.95	16.0	109.0	38.75	5	710-15.95-M20-2.5P14

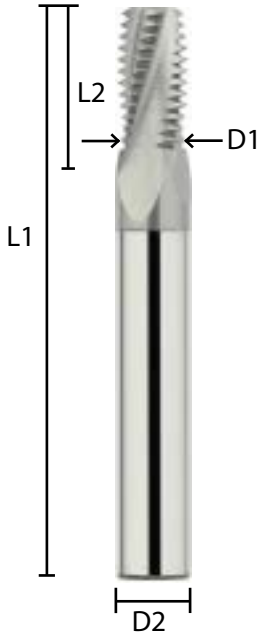


NPT Thread Mill

	Thread Form	D1 Dia. (IN)	D2 Dia. (mm)	L1 OAL (mm)	L2 LOC (IN)	No. of Flutes	Coated Part #
mm	1/16-27	0.232	6.0	60.0	0.463	3	725-.232-1/16-27P12
	1/8-27	0.299	8.0	60.0	0.463	3	725-.299-1/8-27P12
	1/4 & 3/8-18	0.394	10.0	80.0	0.695	4	725-.394-1/4&3/8-18P12
	1/2 & 3/4-14	0.468	12.0	90.0	0.893	4	725-.468-1/2&3/4-14P12
	1-11.5	0.620	16.0	109.0	1.108	4	725-.620-1-11.5P12

NPT Thread Mill - Central Through Coolant

	Thread Form	D1 Dia. (IN)	D2 Dia. (mm)	L1 OAL (mm)	L2 LOC (IN)	No. of Flutes	Coated Part #
mm	1/2&3/4-14	0.468	12.0	90.0	0.893	4	726-.419-1/2&3/4-14P12



High Velocity

De Boer Tool's High Velocity Series of specialty End Mills combines custom geometry with an ultra-tough nanograin carbide to provide longer tool life at high speeds.

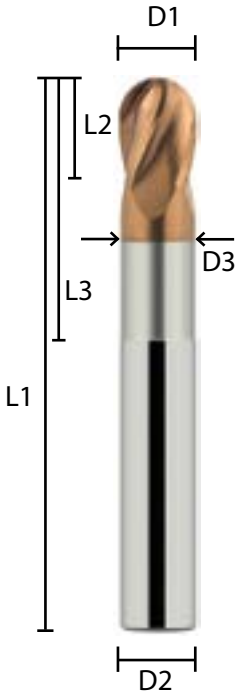
Other unique characteristics include:

- Specialty edge grinding for durable tool life in hardened steels
- Rigid core and flute construction
- Coated with an especially hard and heat-resistent coating for dry cutting, and extended tool life
- The variety of styles available are Radius and Ball Nose

53-58	Ball Nose/Radius Relieved	
59-60	Ball Nose Tapered Shank	
61-66	Metric Ball Nose/Radius Relieved	
67-68	Metric Ball Nose Tapered Shank	

HV Ball Nose 1/32 - 3/32

High Velocity Series End Mills are specially engineered for high speed machining. They are made from premium nanograin carbide and have specially ground cutting edges for applications in hardened steels. They are coated with an especially hard and heat resistant coating for extended life. They have a 40° helix, right-hand cut, and are centre cutting.



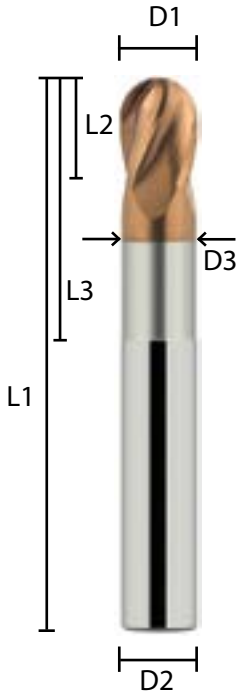
in

D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LON	No. of Flutes	Part #
1/32	3/16	2.0	0.032	0.029	0.100	2	900-0031-2N.10
1/32	3/16	2.0	0.032	0.029	0.130	2	900-0031-2N.13
1/32	3/16	2.0	0.032	0.029	0.160	2	900-0031-2N.16
1/32	3/16	2.0	0.032	0.029	0.190	2	900-0031-2N.19
1/32	3/16	2.0	0.032	0.029	0.225	2	900-0031-2N.23
1/32	3/16	2.0	0.032	0.029	0.255	2	900-0031-2N.25
1/32	3/16	2.0	0.032	0.029	0.288	2	900-0031-2N.29
1/32	3/16	2.0	0.032	0.029	0.320	2	900-0031-2N.32
1/16	3/16	2.0	0.062	0.059	0.200	2	900-0062-2N.20
1/16	3/16	2.0	0.062	0.059	0.260	2	900-0062-2N.26
1/16	3/16	2.0	0.062	0.059	0.320	2	900-0062-2N.32
1/16	3/16	2.0	0.062	0.059	0.380	2	900-0062-2N.38
1/16	3/16	2.0	0.062	0.059	0.440	2	900-0062-2N.44
1/16	3/16	2.25	0.062	0.059	0.510	2	900-0062-2N.51
1/16	3/16	2.38	0.062	0.059	0.630	2	900-0062-2N.63
3/32	3/16	2.0	0.093	0.089	0.300	2	900-0093-2N.30
3/32	3/16	2.0	0.093	0.089	0.300	4	900-0093-4N.30
3/32	3/16	2.0	0.093	0.089	0.390	2	900-0093-2N.39
3/32	3/16	2.0	0.093	0.089	0.390	4	900-0093-4N.39
3/32	3/16	2.0	0.093	0.089	0.480	2	900-0093-2N.48
3/32	3/16	2.25	0.093	0.089	0.570	4	900-0093-4N.57
3/32	3/16	2.38	0.093	0.089	0.670	2	900-0093-2N.67
3/32	3/16	2.38	0.093	0.089	0.760	2	900-0093-2N.76
3/32	3/16	2.38	0.093	0.089	0.860	2	900-0093-2N.86
3/32	3/16	2.38	0.093	0.089	0.950	2	900-0093-2N.95
3/32	3/16	2.38	0.093	0.089	0.950	4	900-0093-4N.95

HV Ball Nose 1/8 - 3/16

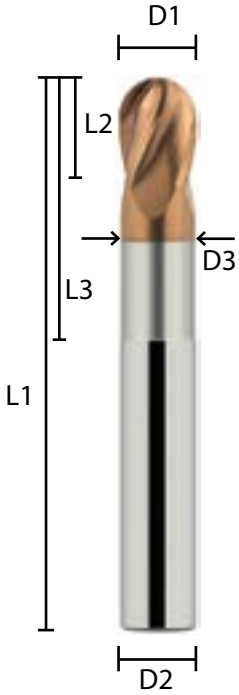
High Velocity Series End Mills are specially engineered for high speed machining. They are made from premium nanograin carbide and have specially ground cutting edges for applications in hardened steels. They are coated with an especially hard and heat resistant coating for extended life. They have a 40° helix, right-hand cut, and are centre cutting.

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LON	No. of Flutes	Part #
in	1/8	1/4	2.0	0.125	0.121	0.270	2	900-0125-2N.27
	1/8	1/4	2.0	0.125	0.121	0.270	4	900-0125-4N.27
	1/8	1/4	2.25	0.125	0.121	0.400	2	900-0125-2N.40
	1/8	1/4	2.25	0.125	0.121	0.400	4	900-0125-4N.40
	1/8	1/4	2.25	0.125	0.121	0.520	2	900-0125-2N.52
	1/8	1/4	2.25	0.125	0.121	0.520	4	900-0125-4N.52
	1/8	1/4	2.5	0.125	0.121	0.650	2	900-0125-2N.65
	1/8	1/4	2.5	0.125	0.121	0.650	4	900-0125-4N.65
	1/8	1/4	2.5	0.125	0.121	0.770	2	900-0125-2N.77
	1/8	1/4	2.75	0.125	0.121	1.020	2	900-0125-2N1.02
	1/8	1/4	3.0	0.125	0.121	1.270	2	900-0125-2N1.27
	1/8	1/4	3.0	0.125	0.121	1.270	4	900-0125-4N1.27
	3/16	1/4	2.0	0.187	0.184	0.420	2	900-0187-2N.42
	3/16	1/4	2.0	0.187	0.184	0.420	4	900-0187-4N.42
	3/16	1/4	2.25	0.187	0.184	0.610	2	900-0187-2N.61
	3/16	1/4	2.5	0.187	0.184	0.780	2	900-0187-2N.78
	3/16	1/4	2.75	0.187	0.184	0.970	2	900-0187-2N.97
	3/16	1/4	3.0	0.187	0.184	1.150	2	900-0187-2N1.15
	3/16	1/4	3.50	0.187	0.184	1.530	2	900-0187-2N1.53
	3/16	1/4	4.0	0.187	0.184	1.900	2	900-0187-20N1.90



HV Ball Nose 1/4 - 1/2

High Velocity Series End Mills are specially engineered for high speed machining. They are made from premium nanograin carbide and have specially ground cutting edges for applications in hardened steels. They are coated with an especially hard and heat resistant coating for extended life. They have a 40° helix, right-hand cut, and are centre cutting.

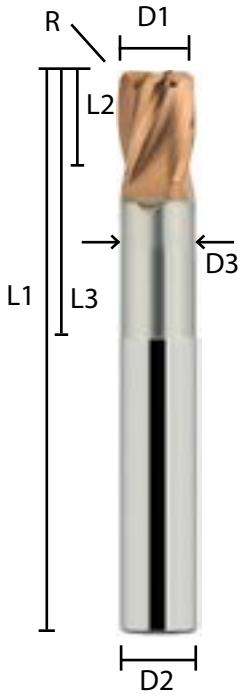


	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LON	No. of Flutes	Part #
in	1/4	1/4	2.25	0.312	0.245	0.550	2	900-0250-2N.55
	1/4	1/4	2.25	0.312	0.245	0.550	4	900-0250-4N.55
	1/4	1/4	2.75	0.312	0.245	1.030	2	900-0250-2N1.03
	1/4	1/4	2.75	0.312	0.245	1.030	4	900-0250-4N1.03
	1/4	1/4	3.25	0.312	0.245	1.550	2	900-0250-2N1.55
	1/4	1/4	3.25	0.312	0.245	1.550	4	900-0250-4N1.55
	1/4	1/4	3.75	0.312	0.245	2.030	2	900-0250-2N2.03
	1/4	1/4	3.75	0.312	0.245	2.030	4	900-0250-4N2.03
	1/4	1/4	4.0	0.312	0.245	2.350	2	900-0250-2N2.35
	1/4	1/4	4.0	0.312	0.245	2.350	4	900-0250-4N2.35
	5/16	5/16	3.0	0.4	0.305	1.100	2	900-0312-2N1.10
	5/16	5/16	3.0	0.4	0.305	1.100	4	900-0312-4N1.10
	5/16	5/16	3.5	0.4	0.305	1.600	2	900-0312-2N1.60
	5/16	5/16	3.5	0.4	0.305	1.600	4	900-0312-4N1.60
	3/8	3/8	3.25	0.45	0.367	1.550	2	900-0375-2N1.60
	3/8	3/8	3.25	0.45	0.367	1.550	4	900-0375-4N1.60
	3/8	3/8	4.0	0.45	0.367	2.100	2	900-0375-2N2.10
	3/8	3/8	4.0	0.45	0.367	2.100	4	900-0375-4N2.10
	1/2	1/2	3.5	0.625	0.490	1.600	2	900-0500-2N1.60
	1/2	1/2	3.5	0.625	0.490	1.600	4	900-0500-4N1.60
	1/2	1/2	4.25	0.625	0.490	2.100	2	900-0500-2N2.10
	1/2	1/2	4.25	0.625	0.490	2.100	4	900-0500-4N2.10
	1/2	1/2	6.0	0.625	0.490	3.100	2	900-0500-2N3.10
	1/2	1/2	6.0	0.625	0.490	3.100	4	900-0500-4N3.10

HV Corner Radius 1/32 - 1/8

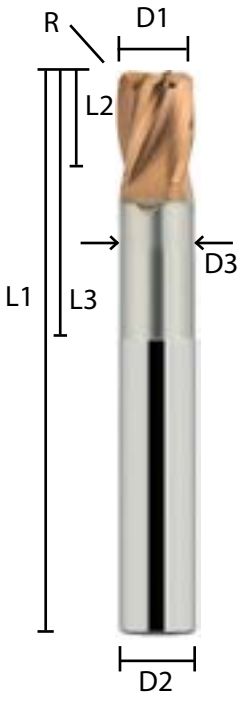
High Velocity Series End Mills are specially engineered for high speed machining. They are made from premium nanograin carbide and have specially ground cutting edges for applications in hardened steels. They are coated with an especially hard and heat resistant coating for extended life. They have a 40° helix, right-hand cut, and are centre cutting.

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LON	R Radius	No. of Flutes	Part #
in	1/32	3/16	2.0	0.032	0.029	0.130	0.005	2	9-0031-2R5N.13
	1/32	3/16	2.0	0.032	0.029	0.190	0.005	2	9-0031-2R5N.19
	1/32	3/16	2.0	0.032	0.029	0.130	0.010	2	9-0031-2R10N.13
	1/32	3/16	2.0	0.032	0.029	0.190	0.010	2	9-0031-2R10N.19
	1/16	3/16	2.0	0.062	0.059	0.250	0.005	2	9-0062-2R5N.25
	1/16	3/16	2.25	0.062	0.059	0.625	0.005	2	9-0062-2R5N.62
	1/16	3/16	2.0	0.062	0.059	0.250	0.010	2	9-0062-2R10N.25
	1/16	3/16	2.25	0.062	0.059	0.625	0.010	2	9-0062-2R10N.62
	1/16	3/16	2.0	0.062	0.059	0.250	0.020	2	9-0062-2R20N.25
	1/16	3/16	2.25	0.062	0.059	0.625	0.020	2	9-0062-2R20N.62
	3/32	3/16	2.0	0.093	0.089	0.470	0.010	4	9-0093-4R10N.47
	3/32	3/16	2.0	0.093	0.089	0.470	0.020	4	9-0093-4R20N.47
	3/32	3/16	2.25	0.093	0.089	0.700	0.010	4	9-0093-4R10N.70
	3/32	3/16	2.25	0.093	0.089	0.700	0.020	4	9-0093-4R20N.70
	3/32	3/16	2.5	0.093	0.089	0.940	0.010	4	9-0093-4R10N.94
	3/32	3/16	2.5	0.093	0.089	0.940	0.020	4	9-0093-4R20N.94
	3/32	3/16	2.75	0.093	0.089	1.170	0.010	4	9-0093-4R10N1.2
	3/32	3/16	2.75	0.093	0.089	1.170	0.020	4	9-0093-4R20N1.2
	1/8	1/4	2.25	0.125	0.121	0.375	0.010	4	9-0125-4R10N.37
	1/8	1/4	2.5	0.125	0.121	0.625	0.010	4	9-0125-4R10N.62
	1/8	1/4	3.0	0.125	0.121	1.270	0.010	4	9-0125-4R10N1.3
	1/8	1/4	2.25	0.125	0.121	0.375	0.020	4	9-0125-4R20N.37
	1/8	1/4	2.5	0.125	0.121	0.625	0.020	4	9-0125-4R20N.62
	1/8	1/4	3.0	0.125	0.121	1.270	0.020	4	9-0125-4R20N1.3
	1/8	1/4	2.25	0.125	0.121	0.375	0.030	4	9-0125-4R30N.37
	1/8	1/4	2.5	0.125	0.121	0.625	0.030	4	9-0125-4R30N.62
	1/8	1/4	3.0	0.125	0.121	1.270	0.030	4	9-0125-4R30N1.3



HV Corner Radius 3/16 - 1/4

High Velocity Series End Mills are specially engineered for high speed machining. They are made from premium nanograin carbide and have specially ground cutting edges for applications in hardened steels. They are coated with an especially hard and heat resistant coating for extended life. They have a 40° helix, right-hand cut, and are centre cutting.

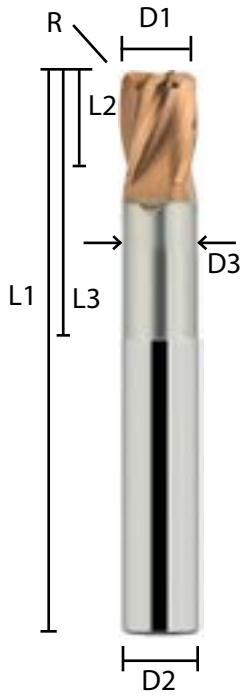


	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LON	R Radius	No. of Flutes	Part #
in	3/16	1/4	2.5	0.187	0.184	0.562	0.020	4	9-0187-4R20N.56
	3/16	1/4	2.75	0.187	0.184	0.937	0.020	4	9-0187-4R20N.94
	3/16	1/4	3.0	0.187	0.184	1.300	0.020	4	9-0187-4R20N1.3
	3/16	1/4	2.5	0.187	0.184	0.562	0.030	4	9-0187-4R30N.56
	3/16	1/4	2.75	0.187	0.184	0.937	0.030	4	9-0187-4R30N.94
	3/16	1/4	3.0	0.187	0.184	1.300	0.030	4	9-0187-4R30N1.3
	1/4	1/4	2.5	0.312	0.245	0.750	0.020	4	9-0250-4R20N.75
	1/4	1/4	2.5	0.312	0.245	0.750	0.020	6	9-0250-6R20N.75
	1/4	1/4	3.0	0.312	0.245	1.250	0.015	4	9-0250-4R15N1.2
	1/4	1/4	3.0	0.312	0.245	1.250	0.020	2	9-0250-2R20N1.2
	1/4	1/4	3.0	0.312	0.245	1.250	0.020	4	9-0250-4R20N1.2
	1/4	1/4	3.5	0.312	0.245	1.750	0.020	4	9-0250-4R20N1.7
	1/4	1/4	2.5	0.312	0.245	0.750	0.030	4	9-0250-4R30N.75
	1/4	1/4	2.5	0.312	0.245	0.750	0.030	6	9-0250-6R30N.75
	1/4	1/4	3.0	0.312	0.245	1.250	0.030	4	9-0250-4R30N1.2
	1/4	1/4	3.5	0.312	0.245	1.750	0.030	4	9-0250-4R30N1.7
	1/4	1/4	2.5	0.312	0.245	0.750	0.060	4	9-0250-4R60N.75
	1/4	1/4	2.5	0.312	0.245	0.750	0.060	6	9-0250-6R60N.75
	1/4	1/4	3.0	0.312	0.245	1.250	0.060	4	9-0250-4R60N1.2
	1/4	1/4	3.5	0.312	0.245	1.750	0.060	4	9-0250-4R60N1.7

HV Corner Radius 5/16 - 1/2

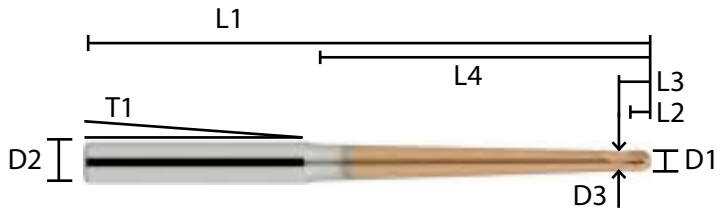
High Velocity Series End Mills are specially engineered for high speed machining. They are made from premium nanograin carbide and have specially ground cutting edges for applications in hardened steels. They are coated with an especially hard and heat resistant coating for extended life. They have a 40° helix, right-hand cut, and are centre cutting.

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LON	R Radius	No. of Flutes	Part #
in	5/16	5/16	3.0	0.400	0.305	0.937	0.030	4	9-0312-4R30N.94
	5/16	5/16	4.0	0.400	0.305	1.875	0.030	4	9-0312-4R30N1.9
	5/16	5/16	3.0	0.400	0.305	0.937	0.060	6	9-0312-6R60N.94
	5/16	5/16	4.0	0.400	0.305	1.875	0.060	4	9-0312-4R60N1.9
	3/8	3/8	3.0	0.450	0.367	1.125	0.030	4	9-0375-4R30N1.1
	3/8	3/8	3.0	0.450	0.367	1.125	0.030	6	9-0375-6R30N1.1
	3/8	3/8	4.0	0.450	0.367	1.875	0.030	4	9-0375-4R30N1.9
	3/8	3/8	3.0	0.450	0.367	1.125	0.060	4	9-0375-4R60N1.1
	3/8	3/8	3.0	0.450	0.367	1.125	0.060	6	9-0375-6R60N1.1
	3/8	3/8	4.0	0.450	0.367	1.875	0.015	4	9-0375-4R15N1.9
	3/8	3/8	4.0	0.450	0.367	1.875	0.060	4	9-0375-4R60N1.9
	3/8	3/8	3.0	0.450	0.367	1.125	0.120	4	9-0375-4R120N1
	3/8	3/8	3.0	0.450	0.367	1.125	0.120	6	9-0375-6R120N1
	3/8	3/8	4.0	0.450	0.367	1.875	0.120	4	9-0375-4R120N2
	1/2	1/2	4.0	0.625	0.490	2.100	0.015	4	9-0500-4R15N2.1
	1/2	1/2	4.0	0.625	0.490	2.100	0.030	4	9-0500-4R30N2.1
	1/2	1/2	4.0	0.625	0.490	2.100	0.030	6	9-0500-6R30N2.1
	1/2	1/2	4.0	0.625	0.490	2.100	0.060	4	9-0500-4R60N2.1
	1/2	1/2	4.0	0.625	0.490	2.100	0.060	6	9-0500-6R60N2.1
	1/2	1/2	4.0	0.625	0.490	2.100	0.120	4	9-0500-4R120N2
	1/2	1/2	4.0	0.625	0.490	2.100	0.120	6	9-0500-6R120N2
	1/2	1/2	4.0	0.625	0.490	3.100	0.030	4	9-0500-4R30N3.1
	1/2	1/2	4.0	0.625	0.490	3.100	0.030	6	9-0500-6R30N3.1
	1/2	1/2	4.0	0.625	0.490	3.100	0.060	4	9-0500-4R60N3.1
	1/2	1/2	4.0	0.625	0.490	3.100	0.060	6	9-0500-6R60N3.1
	1/2	1/2	4.0	0.625	0.490	3.100	0.120	4	9-0500-4R120N3
	1/2	1/2	4.0	0.625	0.490	3.100	0.120	6	9-0500-6R120N3



Ball Nose Tapered Shank HV

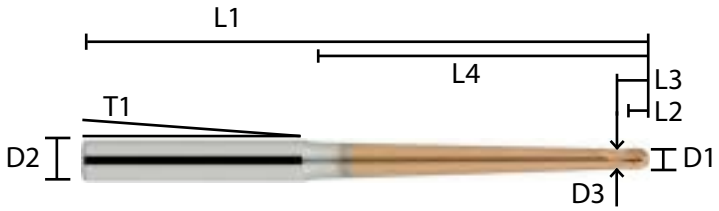
High Velocity Series End Mills are specially engineered for high speed machining. They are made from premium nanograin carbide and have specially ground cutting edges for applications in hardened steels. They are coated with an especially hard and heat resistant coating for extended life. They have a 40° helix, right-hand cut, and are centre cutting.



	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LON	T1 Taper Angle	L4 LOT	No. of Flutes	Part #
in	1/32	1/4	2.25	0.032	0.029	0.062	1.5	0.630	2	915-0031-2N.63
	1/32	1/4	2.75	0.032	0.029	0.062	1.5	1.015	2	915-0031-2N1.01
	1/32	1/4	3.0	0.032	0.029	0.062	3.0	1.550	2	930-0031-2N1.55
	1/32	1/4	2.5	0.032	0.029	0.062	5.0	1.150	2	950-0031-2N1.15
	1/16	1/4	2.25	0.062	0.059	0.125	1.5	0.630	2	915-0062-2N.63
	1/16	1/4	2.75	0.062	0.059	0.125	1.5	1.015	2	915-0062-2N1.0
	1/16	1/4	3.0	0.062	0.059	0.125	3.0	1.645	2	930-0062-2N1.64
	1/16	1/4	2.5	0.062	0.059	0.125	5.0	1.216	2	950-0062-2N1.21
	3/32	1/4	2.25	0.093	0.089	0.160	1.5	0.591	2	915-0093-2N.59
	3/32	1/4	2.75	0.093	0.089	0.160	1.5	1.180	2	915-0093-2N1.18
	3/32	1/4	3.0	0.093	0.089	0.160	3.0	1.696	2	930-0093-2N1.69
	3/32	1/4	3.0	0.093	0.089	0.160	3.0	1.696	4	930-0093-4N1.69
	3/32	1/4	2.5	0.093	0.089	0.160	5.0	1.081	2	950-0093-2N1.08
	3/32	1/4	2.5	0.093	0.089	0.160	5.0	1.081	4	950-0093-4N1.08
	1/8	1/4	2.75	0.125	0.121	0.200	1.5	1.180	2	915-0125-2N1.18
	1/8	1/4	3.0	0.125	0.121	0.200	1.5	1.575	2	915-0125-2N1.57
	1/8	1/4	3.5	0.125	0.121	0.200	1.5	2.020	2	915-0125-2N2.02
	1/8	1/4	3.0	0.125	0.121	0.200	3.0	1.425	2	930-0125-2N1.42
	1/8	1/4	3.0	0.125	0.121	0.200	3.0	1.425	4	930-0125-4N1.42
	1/8	1/4	2.5	0.125	0.121	0.200	5.0	0.937	2	950-0125-2N.93

Ball Nose Tapered Shank HV

High Velocity Series End Mills are specially engineered for high speed machining. They are made from premium nanograin carbide and have specially ground cutting edges for applications in hardened steels. They are coated with an especially hard and heat resistant coating for extended life. They have a 40° helix, right-hand cut, and are centre cutting.



	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LON	T1 Taper Angle	L4 LOT	No. of Flutes	Part #
in	3/16	5/16	3.0	0.187	0.184	0.310	1.5	1.100	2	915-0187-2N1.10
	3/16	5/16	3.5	0.187	0.184	0.310	1.5	1.600	2	915-0187-2N1.60
	3/16	5/16	4.25	0.187	0.184	0.310	1.5	2.300	2	915-0187-2N2.30
	3/16	5/16	3.5	0.187	0.184	0.310	3.0	1.536	2	930-0187-2N1.53
	3/16	5/16	2.5	0.187	0.184	0.310	5.0	1.044	2	950-0187-2N1.04
	1/4	3/8	4.0	0.312	0.245	0.437	1.5	2.047	2	915-0250-2N2.04
	1/4	3/8	4.0	0.312	0.245	0.437	1.5	2.047	4	915-0250-4N2.04
	1/4	3/8	5.0	0.312	0.245	0.437	1.5	2.550	2	915-0250-2N2.55
	1/4	3/8	3.5	0.312	0.245	0.437	3.0	1.677	2	930-0250-2N1.67
	1/4	3/8	3.0	0.312	0.245	0.437	5.0	1.186	2	950-0250-2N1.18
	5/16	7/16	4.0	0.400	0.305	0.550	3.0	1.814	2	930-0312-2N1.81
	3/8	1/2	5.0	0.450	0.367	0.625	1.5	2.965	2	915-0375-2N2.96
	3/8	1/2	5.0	0.450	0.367	0.625	1.5	2.965	4	915-0375-4N2.96
	3/8	1/2	4.5	0.450	0.367	0.625	3.0	1.894	2	930-0375-2N1.89
	1/2	5/8	6.3	0.625	0.490	0.875	1.5	3.453	4	915-0500-4N3.45

HV Ball Nose 0.5 - 2.0 mm

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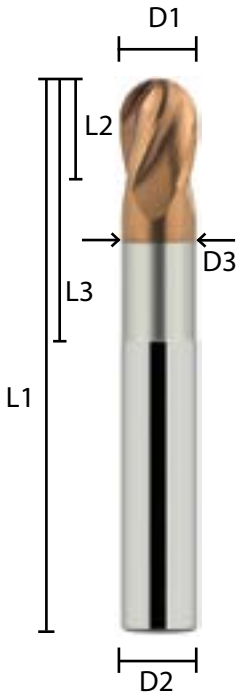

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LON	No. of Flutes	Part #
mm	0.5	4.0	50.0	0.5	0.47	2.0	2	900-005-202N2
	0.5	4.0	50.0	0.5	0.47	3.0	2	900-005-202N3
	0.5	4.0	50.0	0.5	0.47	4.0	2	900-005-202N4
	0.5	4.0	50.0	0.5	0.47	5.0	2	900-005-202N5
	0.5	4.0	50.0	0.5	0.47	6.0	2	900-005-202N6
	0.5	4.0	50.0	0.5	0.47	8.0	2	900-005-202N8
	0.8	4.0	50.0	0.8	0.95	2.0	2	900-008-202N2
	0.8	4.0	50.0	0.8	0.95	4.0	2	900-008-202N4
	1.0	4.0	50.0	1.0	0.95	3.0	2	900-010-202N3
	1.0	4.0	50.0	1.0	0.95	4.0	2	900-010-202N4
	1.0	4.0	50.0	1.0	0.95	6.0	2	900-010-202N6
	1.0	4.0	50.0	1.0	0.95	8.0	2	900-010-202N8
	1.0	4.0	50.0	1.0	0.95	10.0	2	900-010-202N10
	1.0	4.0	50.0	1.0	0.95	12.0	2	900-010-202N12
	1.0	4.0	60.0	1.0	0.95	14.0	2	900-010-202N14
	1.0	4.0	60.0	1.0	0.95	16.0	2	900-010-202N16
	1.5	4.0	50.0	1.5	1.44	4.0	2	900-015-202N4
	1.5	4.0	50.0	1.5	1.44	6.0	2	900-015-202N6
	1.5	4.0	50.0	1.5	1.44	8.0	2	900-015-202N8
	1.5	4.0	50.0	1.5	1.44	10.0	2	900-015-202N10
	1.5	4.0	55.0	1.5	1.44	12.0	2	900-015-202N12
	1.5	4.0	55.0	1.5	1.44	14.0	2	900-015-202N14
	1.5	4.0	60.0	1.5	1.44	16.0	2	900-015-202N16
	1.5	4.0	60.0	1.5	1.44	20.0	2	900-015-202N20
	2.0	4.0	50.0	2.0	1.95	6.0	2	900-020-202N6
	2.0	4.0	50.0	2.0	1.95	6.0	4	900-020-402N6
	2.0	4.0	50.0	2.0	1.95	8.0	2	900-020-202N8
	2.0	4.0	50.0	2.0	1.95	8.0	4	900-020-402N8
	2.0	4.0	50.0	2.0	1.95	10.0	2	900-020-202N10
	2.0	4.0	50.0	2.0	1.95	10.0	4	900-020-402N10
	2.0	4.0	50.0	2.0	1.95	12.0	2	900-020-202N12
	2.0	4.0	50.0	2.0	1.95	12.0	4	900-020-402N12
	2.0	4.0	55.0	2.0	1.95	14.0	2	900-020-202N14
	2.0	4.0	60.0	2.0	1.95	16.0	2	900-020-202N16
	2.0	4.0	60.0	2.0	1.95	18.0	2	900-020-202N18
	2.0	4.0	60.0	2.0	1.95	20.0	2	900-020-202N20

HV Ball Nose 3.0 - 5.0 mm

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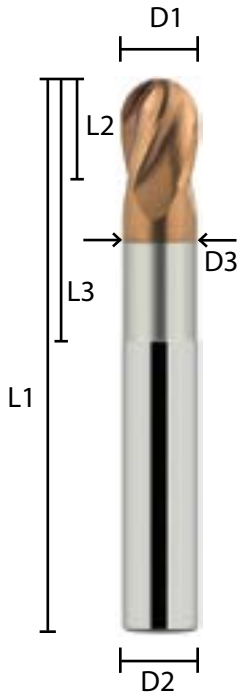
	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LON	No. of Flutes	Part #
mm	3.0	6.0	50.0	3.0	2.90	8.0	2	900-030-202N8
	3.0	6.0	50.0	3.0	2.90	8.0	4	900-030-402N8
	3.0	6.0	60.0	3.0	2.90	10.0	2	900-030-202N10
	3.0	6.0	60.0	3.0	2.90	10.0	4	900-030-402N10
	3.0	6.0	60.0	3.0	2.90	12.0	2	900-030-202N12
	3.0	6.0	60.0	3.0	2.90	12.0	4	900-030-402N12
	3.0	6.0	60.0	3.0	2.90	14.0	2	900-030-202N14
	3.0	6.0	60.0	3.0	2.90	14.0	4	900-030-402N14
	3.0	6.0	65.0	3.0	2.90	16.0	2	900-030-202N16
	3.0	6.0	65.0	3.0	2.90	18.0	2	900-030-202N18
	3.0	6.0	70.0	3.0	2.90	20.0	2	900-030-202N20
	3.0	6.0	70.0	3.0	2.90	25.0	2	900-030-202N25
	3.0	6.0	70.0	3.0	2.90	30.0	2	900-030-202N30
	4.0	6.0	50.0	4.0	3.85	10.0	2	900-040-202N10
	4.0	6.0	50.0	4.0	3.85	10.0	4	900-040-402N10
	4.0	6.0	60.0	4.0	3.85	16.0	2	900-040-202N16
	4.0	6.0	60.0	4.0	3.85	16.0	4	900-040-402N16
	4.0	6.0	65.0	4.0	3.85	20.0	2	900-040-202N20
	4.0	6.0	65.0	4.0	3.85	20.0	4	900-040-402N20
	4.0	6.0	70.0	4.0	3.85	25.0	2	900-040-202N25
	4.0	6.0	70.0	4.0	3.85	25.0	4	900-040-402N25
	4.0	6.0	70.0	4.0	3.85	30.0	2	900-040-202N30
	4.0	6.0	80.0	4.0	3.85	35.0	2	900-040-202N35
	4.0	6.0	90.0	4.0	3.85	40.0	2	900-040-202N40
	5.0	6.0	65.0	6.0	4.85	20.0	2	900-050-202N20
	5.0	6.0	65.0	6.0	4.85	20.0	4	900-050-402N20
	5.0	6.0	65.0	6.0	4.85	25.0	2	900-050-202N25
	5.0	6.0	65.0	6.0	4.85	25.0	4	900-050-402N25
	5.0	6.0	70.0	6.0	4.85	30.0	4	900-050-402N30
	5.0	6.0	80.0	6.0	4.85	35.0	2	900-050-202N35
	5.0	6.0	90.0	6.0	4.85	40.0	2	900-050-202N40
	5.0	6.0	65.0	6.0	4.85	25.0	2	900-050-2BN25L65
	5.0	6.0	70.0	6.0	4.85	30.0	2	900-050-2BN30L70
	5.0	6.0	80.0	6.0	4.85	35.0	2	900-050-2BN35L80
	5.0	6.0	90.0	6.0	4.85	40.0	2	900-050-2BN40L90
	5.0	6.0	90.0	6.0	4.85	45.0	2	900-050-2BN45L90
	5.0	6.0	100.0	6.0	4.85	50.0	2	900-050-2BN50L100



HV Ball Nose 6.0 - 12.0 mm

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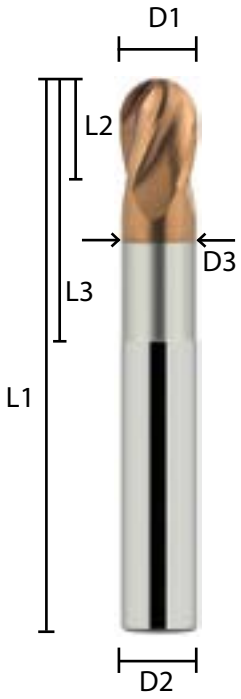
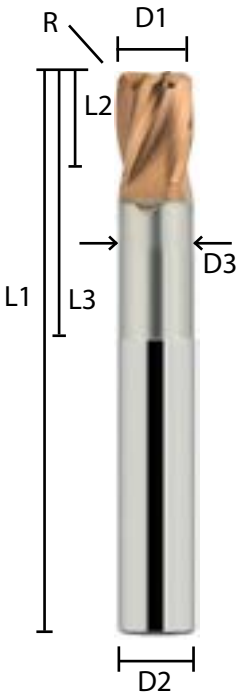


	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LON	No. of Flutes	Part #
mm	6.0	6.0	60.0	7.0	5.80	20.0	2	900-060-202N20
	6.0	6.0	60.0	7.0	5.80	20.0	4	900-060-402N20
	6.0	6.0	70.0	7.0	5.80	30.0	2	900-060-202N30
	6.0	6.0	70.0	7.0	5.80	30.0	4	900-060-402N30
	6.0	6.0	80.0	7.0	5.80	40.0	4	900-060-402N40
	6.0	6.0	90.0	7.0	5.80	50.0	2	900-060-202N50
	6.0	6.0	90.0	7.0	5.80	50.0	4	900-060-402N50
	6.0	6.0	100.0	7.0	5.80	60.0	2	900-060-202N60
	8.0	8.0	60.0	9.0	7.80	25.0	2	900-080-202N20
	8.0	8.0	60.0	9.0	7.80	25.0	4	900-080-402N20
	8.0	8.0	80.0	9.0	7.80	40.0	2	900-080-202N40
	8.0	8.0	80.0	9.0	7.80	40.0	4	900-080-402N40
	10.0	10.0	65.0	12.0	9.70	20.0	2	900-100-202N20
	10.0	10.0	80.0	12.0	9.70	25.0	2	900-100-202N25
	10.0	10.0	80.0	12.0	9.70	25.0	4	900-100-402N25
	10.0	10.0	110.0	12.0	9.70	50.0	2	900-100-202N50
	10.0	10.0	110.0	12.0	9.70	50.0	4	900-100-402N50
	12.0	12.0	80.0	14.0	11.70	30.0	2	900-120-202N30
	12.0	12.0	80.0	14.0	11.70	30.0	4	900-120-402N30
	12.0	12.0	109.0	14.0	11.70	50.0	2	900-120-202N50
	12.0	12.0	109.0	14.0	11.70	50.0	4	900-120-402N50

HV Corner Radius 1.0 - 3.0

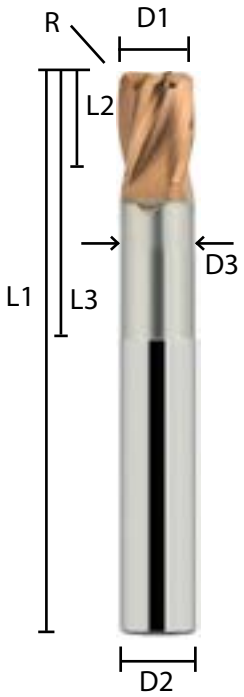
mm

D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LON	R Radius	No. of Flutes	Part #
1.0	4.0	50.0	1.0	0.95	4.0	0.1	2	900-010-2R.1N4
1.0	4.0	50.0	1.0	0.95	4.0	0.2	2	900-010-2R.2N4
1.0	4.0	50.0	1.0	0.95	4.0	0.3	2	900-010-2R.3N4
1.0	4.0	50.0	1.0	0.95	6.0	0.1	2	900-010-2R.1N6
1.0	4.0	50.0	1.0	0.95	6.0	0.2	2	900-010-2R.2N6
1.0	4.0	50.0	1.0	0.95	6.0	0.3	2	900-010-2R.3N6
1.5	4.0	50.0	1.5	1.44	6.0	0.1	2	900-015-2R.1N6
1.5	4.0	50.0	1.5	1.44	6.0	0.2	2	900-015-2R.2N6
1.5	4.0	50.0	1.5	1.44	6.0	0.3	2	900-015-2R.3N6
1.5	4.0	50.0	1.5	1.44	10.0	0.1	2	900-015-2R.1N10
1.5	4.0	50.0	1.5	1.44	10.0	0.2	2	900-015-2R.2N10
1.5	4.0	50.0	1.5	1.44	10.0	0.3	2	900-015-2R.3N10
1.5	4.0	50.0	1.5	1.44	15.0	0.1	2	900-015-2R.1N15
1.5	4.0	50.0	1.5	1.44	15.0	0.2	2	900-015-2R.2N15
1.5	4.0	50.0	1.5	1.44	15.0	0.3	2	900-015-2R.3N15
2.0	4.0	50.0	2.0	1.95	6.0	0.3	2	900-020-2R.3N6
2.0	4.0	50.0	2.0	1.95	6.0	0.5	2	900-020-2R.5N6
2.0	4.0	50.0	2.0	1.95	6.0	0.5	4	900-020-4R.5N6
2.0	4.0	50.0	2.0	1.95	8.0	0.5	2	900-020-2R.5N8
2.0	4.0	50.0	2.0	1.95	10.0	0.5	2	900-020-2R.5N10
2.0	4.0	60.0	2.0	1.95	10.0	0.5	4	900-020-4R.5N10
2.0	4.0	50.0	2.0	1.95	12.0	0.5	2	900-020-2R.5N12
2.0	4.0	50.0	2.0	1.95	15.0	0.5	2	900-020-2R.5N15
2.0	4.0	50.0	2.0	1.95	15.0	0.5	4	900-020-4R.5N15
2.0	4.0	60.0	2.0	1.95	20.0	0.5	4	900-020-4R.5N20
2.0	4.0	60.0	2.0	1.95	25.0	0.5	4	900-020-4R.5N25
3.0	6.0	50.0	3.0	2.90	10.0	0.3	4	900-030-4R.3N10
3.0	6.0	60.0	3.0	2.90	15.0	0.3	4	900-030-4R.3N15
3.0	6.0	60.0	3.0	2.90	20.0	0.3	4	900-030-4R.3N20
3.0	6.0	65.0	3.0	2.90	25.0	0.3	4	900-030-4R.3N25
3.0	6.0	70.0	3.0	2.90	30.0	0.3	4	900-030-4R.3N30
3.0	6.0	50.0	3.0	2.90	8.0	0.5	2	900-030-2R.5N8
3.0	6.0	50.0	3.0	2.90	10.0	0.5	2	900-030-2R.5N10
3.0	6.0	50.0	3.0	2.90	10.0	0.5	4	900-030-4R.5N10
3.0	6.0	60.0	3.0	2.90	15.0	0.5	4	900-030-4R.5N15
3.0	6.0	60.0	3.0	2.90	12.0	0.5	2	900-030-2R.5N12
3.0	6.0	60.0	3.0	2.90	14.0	0.5	2	900-030-2R.5N14
3.0	6.0	60.0	3.0	2.90	16.0	0.5	2	900-030-2R.5N16
3.0	6.0	60.0	3.0	2.90	20.0	0.5	4	900-030-4R.5N20
3.0	6.0	65.0	3.0	2.90	25.0	0.5	4	900-030-4R.5N25
3.0	6.0	70.0	3.0	2.90	30.0	0.5	4	900-030-4R.5N30



HV Corner Radius 4.0 - 6.0 mm

High Velocity Series End Mills are specially engineered for high speed machining. They are made from premium nanograin carbide and have specially ground cutting edges for applications in hardened steels. They are coated with an especially hard and heat resistant coating for extended life. They have a 40° helix, right-hand cut, and are centre cutting.

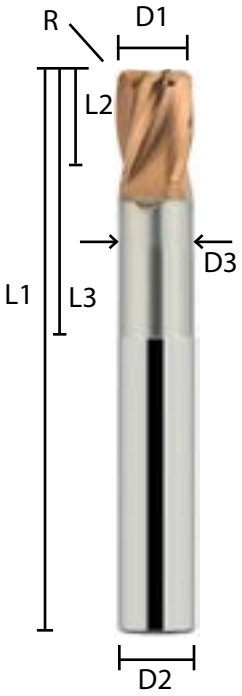


	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LON	R Radius	No. of Flutes	Part #
mm	4.0	6.0	50.0	4.0	3.85	10	0.5	2	900-040-2R.5N10
	4.0	6.0	50.0	4.0	3.85	12	0.5	2	900-040-2R.5N12
	4.0	6.0	50.0	4.0	3.85	12	0.5	4	900-040-4R.5N12
	4.0	6.0	60.0	4.0	3.85	16	0.5	2	900-040-2R.5N16
	4.0	6.0	65.0	4.0	3.85	20	0.5	2	900-040-2R.5N20
	4.0	6.0	60.0	4.0	3.85	20	0.5	4	900-040-4R.5N20
	4.0	6.0	70.0	4.0	3.85	25	0.5	2	900-040-2R.5N25
	4.0	6.0	70.0	4.0	3.85	30	0.5	4	900-040-4R.5N30
	4.0	6.0	80.0	4.0	3.85	35	0.5	2	900-040-2R.5N35
	4.0	6.0	50.0	4.0	3.85	12	1.0	4	900-040-4R1N12
	4.0	6.0	65.0	4.0	3.85	20	1.0	4	900-040-4R1N20
	4.0	6.0	70.0	4.0	3.85	30	1.0	4	900-040-4R1N30
	5.0	6.0	60.0	6.0	4.85	15	0.5	4	900-050-4R.5N15
	5.0	6.0	65.0	6.0	4.85	20	0.5	4	900-050-4R.5N20
	5.0	6.0	70.0	6.0	4.85	30	0.5	4	900-050-4R.5N30
	6.0	6.0	60.0	7.0	5.80	18	0.5	2	900-060-2R.5N18
	6.0	6.0	60.0	7.0	5.80	18	0.5	4	900-060-4R.5N18
	6.0	6.0	60.0	7.0	5.80	18	0.5	6	900-060-6R.5N18
	6.0	6.0	70.0	7.0	5.80	30	0.5	4	900-060-4R.5N30
	6.0	6.0	80.0	7.0	5.80	40	0.5	2	900-060-2R.5N40
	6.0	6.0	80.0	7.0	5.80	40	0.5	4	900-060-4R.5N40
	6.0	6.0	90.0	7.0	5.80	50	0.5	4	900-060-4R.5N50
	6.0	6.0	60.0	7.0	5.80	18	1.0	2	900-060-2R1N18
	6.0	6.0	60.0	7.0	5.80	18	1.0	4	900-060-4R1N18
	6.0	6.0	60.0	7.0	5.80	18	1.0	6	900-060-6R1N18
	6.0	6.0	70.0	7.0	5.80	30	1.0	4	900-060-4R1N30
	6.0	6.0	80.0	7.0	5.80	40	1.0	4	900-060-4R1N40
	6.0	6.0	90.0	7.0	5.80	50	1.0	4	900-060-4R1N50
	6.0	6.0	70.0	7.0	5.80	30	2.0	2	900-060-2R2N30
	6.0	6.0	70.0	7.0	5.80	30	2.0	4	900-060-4R2N30

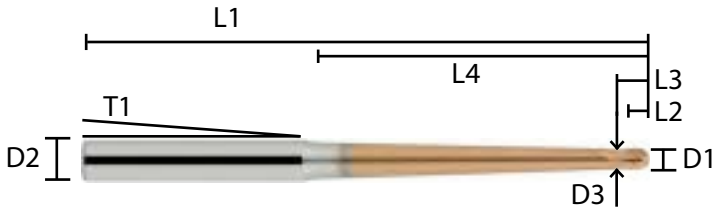
HV Corner Radius 8.0 - 12.0 mm

High Velocity Series End Mills are specially engineered for high speed machining. They are made from premium nanograin carbide and have specially ground cutting edges for applications in hardened steels. They are coated with an especially hard and heat resistant coating for extended life. They have a 40° helix, right-hand cut, and are centre cutting.

	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LON	R Radius	No. of Flutes	Part #
mm	8.0	8.0	80.0	9.0	7.80	25.0	0.5	2	900-080-2R.5N25
	8.0	8.0	80.0	9.0	7.80	25.0	0.5	4	900-080-4R.5N25
	8.0	8.0	80.0	9.0	7.80	25.0	0.5	6	900-080-6R.5N25
	8.0	8.0	100.0	9.0	7.80	50.0	0.5	4	900-080-4R.5N50
	8.0	8.0	80.0	9.0	7.80	25.0	1.0	4	900-080-4R1N25
	8.0	8.0	80.0	9.0	7.80	25.0	1.0	6	900-080-6R1N25
	8.0	8.0	100.0	9.0	7.80	50.0	1.0	4	900-080-4R1N50
	8.0	8.0	80.0	9.0	7.80	25.0	2.0	4	900-080-4R2N25
	8.0	8.0	80.0	9.0	7.80	25.0	2.0	6	900-080-6R2N25
	8.0	8.0	100.0	9.0	7.80	50.0	2.0	4	900-080-4R2N50
	10.0	10.0	80.0	12.0	9.70	30.0	0.5	4	900-100-4R.5N30
	10.0	10.0	80.0	12.0	9.70	30.0	0.5	6	900-100-6R.5N30
	10.0	10.0	110.0	12.0	9.70	50.0	0.5	2	900-100-2R.5N50
	10.0	10.0	110.0	12.0	9.70	50.0	0.5	4	900-100-4R.5N50
	10.0	10.0	80.0	12.0	9.70	30.0	1.0	4	900-100-4R1N30
	10.0	10.0	80.0	12.0	9.70	30.0	1.0	6	900-100-6R1N30
	10.0	10.0	110.0	12.0	9.70	50.0	1.0	4	900-100-4R1N50
	10.0	10.0	80.0	12.0	9.70	30.0	2.0	2	900-100-2R2N30
	10.0	10.0	80.0	12.0	9.70	30.0	2.0	4	900-100-4R2N30
	10.0	10.0	80.0	12.0	9.70	30.0	2.0	6	900-100-6R2N30
	10.0	10.0	110.0	12.0	9.70	50.0	2.0	4	900-100-4R2N50
	10.0	10.0	80.0	12.0	9.70	30.0	3.0	4	900-100-4R3N30
	10.0	10.0	80.0	12.0	9.70	30.0	3.0	6	900-100-6R3N30
	10.0	10.0	110.0	12.0	9.70	50.0	3.0	4	900-100-4R3N50
	12.0	12.0	110.0	14.0	11.70	50.0	0.5	2	900-120-2R.5N50
	12.0	12.0	110.0	14.0	11.70	50.0	0.5	4	900-120-4R.5N50
	12.0	12.0	110.0	14.0	11.70	50.0	0.5	6	900-120-6R.5N50
	12.0	12.0	110.0	26.0	-	-	1.0	2	900-120-2R1
	12.0	12.0	110.0	14.0	11.70	35.0	1.0	2	900-120-2R1N35
	12.0	12.0	110.0	14.0	11.70	50.0	1.0	2	900-120-2R1N50
	12.0	12.0	110.0	14.0	11.70	50.0	1.0	4	900-120-4R1N50
	12.0	12.0	110.0	14.0	11.70	50.0	1.0	6	900-120-6R1N50
	12.0	12.0	110.0	14.0	11.70	50.0	1.5	4	900-120-4R1.5N50
	12.0	12.0	110.0	14.0	11.70	50.0	2.0	2	900-120-2R2N50
	12.0	12.0	110.0	14.0	11.70	50.0	2.0	4	900-120-4R2N50
	12.0	12.0	110.0	14.0	11.70	50.0	2.0	6	900-120-6R2N50
	12.0	12.0	110.0	14.0	11.70	50.0	3.0	4	900-120-4R3N50
	12.0	12.0	110.0	14.0	11.70	50.0	3.0	6	900-120-6R3N50
	12.0	12.0	110.0	14.0	11.70	50.0	4.0	4	900-120-4R4N50
	12.0	12.0	110.0	14.0	11.70	50.0	4.0	6	900-120-6R4N50

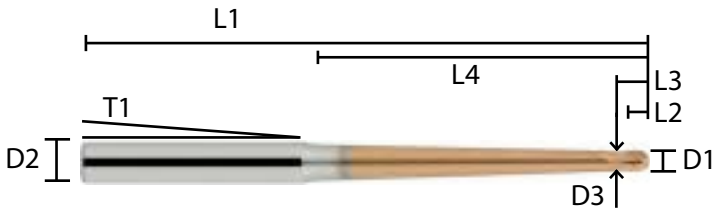


HV Tapered Reach BN 1.0 - 4.0 mm



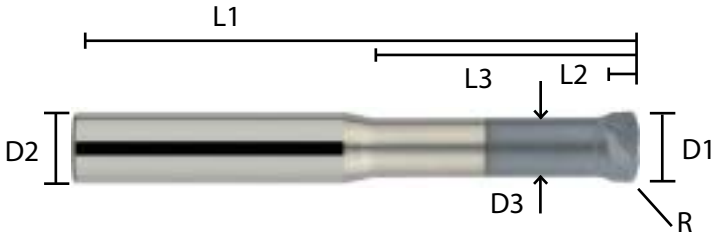
	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LON	T1 Taper Angle	L4 LOT	No. of Flutes	Part #
mm	1.0	6.0	50.0	1.0	0.95	2.0	1.5	10.0	2	915-010-202N10
	1.0	6.0	60.0	1.0	0.95	2.0	1.5	15.0	2	915-010-202N15
	1.0	6.0	65.0	1.0	0.95	2.0	1.5	20.0	2	915-010-202N20
	1.0	6.0	70.0	1.0	0.95	2.0	1.5	25.0	2	915-010-202N25
	1.0	6.0	80.0	1.0	0.95	2.0	3.0	40.0	2	930-010-202N40
	1.0	6.0	65.0	1.0	0.95	2.0	5.0	30.8	2	950-010-202N31
	1.5	6.0	60.0	1.5	1.44	3.0	1.5	10.0		915-015-202N10
	1.5	6.0	60.0	1.5	1.44	3.0	1.5	15.0	2	915-015-202N15
	1.5	6.0	65.0	1.5	1.44	3.0	1.5	20.0	2	915-015-202N20
	1.5	6.0	70.0	1.5	1.44	3.0	1.5	25.0	2	915-015-202N25
	1.5	6.0	80.0	1.5	1.44	3.0	3.0	42.0	2	930-015-202N42
	1.5	6.0	65.0	1.5	1.44	3.0	5.0	29.0	2	950-015-202N29
	2.0	6.0	60.0	2.0	1.95	4.0	1.5	15.0		915-020-202N15
	2.0	6.0	65.0	2.0	1.95	4.0	1.5	20.0	2	915-020-202N20
	2.0	6.0	70.0	2.0	1.95	4.0	1.5	30.0	2	915-020-202N30
	2.0	6.0	80.0	2.0	1.95	4.0	1.5	40.0	2	915-020-202N40
	2.0	6.0	80.0	2.0	1.95	4.0	3.0	42.6	2	930-020-202N42
	2.0	6.0	80.0	2.0	1.95	4.0	3.0	42.6	2	930-020-402N42
	2.0	6.0	60.0	2.0	1.95	4.0	5.0	27.2	4	950-020-202N27
	2.0	6.0	60.0	2.0	1.95	4.0	5.0	27.2	2	950-020-402N27
	2.0	6.0	60.0	2.0	1.95	4.0	8.0	18.5	2	980-020-202N19
	3.0	6.0	70.0	3.0	2.90	5.0	1.5	30.0	2	915-030-202N30
	3.0	6.0	80.0	3.0	2.90	5.0	1.5	40.0	2	915-030-202N40
	3.0	6.0	90.0	3.0	2.90	5.0	1.5	50.0	2	915-030-202N50
	3.0	6.0	70.0	3.0	2.90	5.0	3.0	34.5	2	930-030-202N35
	3.0	6.0	70.0	3.0	2.90	5.0	3.0	34.5	4	930-030-402N35
	3.0	6.0	60.0	3.0	2.90	5.0	5.0	22.7	2	950-030-202N23
	3.0	6.0	60.0	3.0	2.90	5.0	5.0	22.7	4	950-030-402N23
	4.0	6.0	70.0	4.0	3.85	7.0	1.5	30.0	2	915-040-202N30
	4.0	6.0	80.0	4.0	3.85	7.0	1.5	40.0	2	915-040-202N40
	4.0	6.0	90.0	4.0	3.85	7.0	1.5	48.0	2	915-040-202N48
	4.0	6.0	70.0	4.0	3.85	7.0	3.0	27.5	2	930-040-202N28
	4.0	6.0	70.0	4.0	3.85	7.0	3.0	27.5	4	930-040-402N28
	4.0	6.0	60.0	4.0	3.85	7.0	5.0	19.3	2	950-040-202N19
	4.0	6.0	60.0	4.0	3.85	7.0	5.0	19.3	4	950-040-402N19

HV Tapered Reach BN 5.0 - 12.0 mm



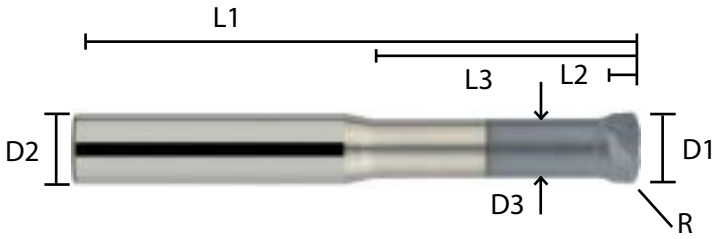
	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LON	T1 Taper Angle	L4 LOT	No. of Flutes	Part #
mm	5.0	8.0	90.0	6.0	4.85	9.0	1.5	40.0	2	915-050-202N40
	5.0	8.0	110.0	6.0	4.85	9.0	1.5	60.0	2	915-050-202N60
	5.0	8.0	90.0	6.0	4.85	9.0	3.0	39.0	2	930-050-202N39
	5.0	8.0	90.0	6.0	4.85	9.0	3.0	39.0	4	930-050-402N39
	5.0	8.0	70.0	6.0	4.85	9.0	5.0	27.0	2	950-050-202N27
	5.0	8.0	70.0	6.0	4.85	9.0	5.0	27.0	4	950-050-402N27
	6.0	8.0	100.0	7.0	5.80	11.0	1.5	53.0	2	915-060-202N53
	6.0	8.0	100.0	7.0	5.80	11.0	1.5	53.0	4	915-060-402N53
	6.0	8.0	130.0	7.0	5.80	11.0	1.5	53.0	2	915-06A-202N53
	6.0	8.0	100.0	7.0	5.80	11.0	1.5	53.0	2	915-B60-202N53
	6.0	8.0	100.0	7.0	5.80	11.0	1.5	53.0	4	915-B60-402N53
	6.0	8.0	90.0	7.0	5.80	11.0	3.0	32.0	2	930-060-202N32
	6.0	8.0	90.0	7.0	5.80	11.0	3.0	32.0	4	930-060-402N32
	6.0	8.0	70.0	7.0	5.80	11.0	5.0	23.5	2	950-060-202N23
	6.0	8.0	70.0	7.0	5.80	11.0	5.0	23.5	4	950-060-402N23
	8.0	10.0	120.0	9.0	7.80	14.0	1.5	56.0	2	915-080-202N56
	8.0	10.0	120.0	9.0	7.80	14.0	1.5	56.0	4	915-080-402N56
	8.0	10.0	100.0	9.0	7.80	14.0	3.0	35.0	2	930-080-202N35
	8.0	10.0	100.0	9.0	7.80	14.0	3.0	35.0	4	930-080-402N35
	10.0	12.0	130.0	12.0	9.70	18.0	1.5	62.0	2	915-100-202N62
	10.0	12.0	130.0	12.0	9.70	18.0	1.5	62.0	4	915-100-402N62
	10.0	12.0	110.0	12.0	9.70	18.0	3.0	40.0	2	930-100-202N40
	10.0	12.0	110.0	12.0	9.70	18.0	3.0	40.0	4	930-100-402N40
	12.0	16.0	160.0	14.0	11.70	22.0	1.5	99.9	2	915-120-202N99
	12.0	16.0	160.0	14.0	11.70	22.0	1.5	99.9	4	915-120-402N99
	12.0	16.0	140.0	14.0	11.70	22.0	3.0	63.0	2	930-120-202N63
	12.0	16.0	140.0	14.0	11.70	22.0	3.0	63.0	4	930-120-402N63

Imperial HV Feed Mill



	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	D3 Dia. of Neck	L3 LOR	MAX DOC	R Radius	Coated Part #
in	1/8	1/4	2.0	0.042	0.10	0.55	0.006	0.012	656-0125-2R12
	1/8	1/4	2.5	0.042	0.10	0.85	0.006	0.012	657-0125-2R12
	3/16	1/4	2.0	0.075	0.16	0.66	0.009	0.019	655-0187-2R19
	3/16	1/4	2.5	0.075	0.16	1.10	0.009	0.019	656-0187-2R19
	3/16	1/4	3.0	0.075	0.16	1.50	0.009	0.019	657-0187-2R19
	1/4	1/4	2.5	0.104	0.21	0.77	0.013	0.025	655-0250-2R25
	1/4	1/4	3.0	0.104	0.21	1.30	0.013	0.025	656-0250-2R25
	1/4	1/4	3.5	0.104	0.21	1.75	0.013	0.025	657-0250-2R25
	5/16	5/16	2.5	0.12	0.26	0.85	0.016	0.031	655-0312-2R31
	5/16	5/16	3.0	0.12	0.26	1.60	0.016	0.031	656-0312-2R31
	5/16	5/16	3.5	0.12	0.26	2.10	0.016	0.031	657-0312-2R31
	3/8	3/8	3.0	0.135	0.31	1.10	0.019	0.038	655-0375-2R38
	3/8	3/8	3.5	0.135	0.31	1.85	0.019	0.038	656-0375-2R38
	3/8	3/8	4.0	0.135	0.31	2.35	0.019	0.038	657-0375-2R38
	1/2	1/2	3.5	0.167	0.42	1.30	0.025	0.050	655-0500-2R50
	1/2	1/2	4.0	0.167	0.42	1.85	0.025	0.050	656-0500-2R50
	1/2	1/2	4.5	0.167	0.42	2.60	0.025	0.050	657-0500-2R50
	5/8	5/8	3.5	0.216	0.53	1.60	0.031	0.063	655-0625-2R63
	5/8	5/8	4.0	0.216	0.53	2.35	0.031	0.063	656-0625-2R63
	5/8	5/8	5.0	0.216	0.53	2.85	0.031	0.063	657-0625-2R63

Metric HV Feed Mill



	D1 Dia.	D2 Shank Dia.	L1 OAL	L2 LOC	D3 Dia. of Neck	L3 LOR	MAX DOC	R Radius	Coated Part #
mm	3.0	6.0	50.0	1.0	2.5	6.0	0.15	0.3	655-030-2R.3N6
	3.0	6.0	60.0	1.0	2.5	12.0	0.15	0.3	656-030-2R.3N12
	4.0	6.0	60.0	1.5	3.4	15.0	0.20	0.4	656-040-2R.4N15
	4.0	6.0	70.0	1.5	3.4	24.0	0.20	0.4	657-040-2R.4N24
	4.0	6.0	80.0	1.5	3.4	34.0	0.20	0.4	658-040-2R.4N34
	6.0	6.0	80.0	2.5	5.0	19.0	0.30	0.6	656-060-2R.6N19
	6.0	6.0	80.0	2.5	5.0	35.0	0.30	0.6	657-060-2R.6N35
	6.0	6.0	80.0	2.5	5.0	42.0	0.30	0.6	658-060-2R.6N42
	8.0	8.0	65.0	3.0	6.7	24.0	0.40	0.8	656-080-2R.8N24
	8.0	8.0	80.0	3.0	6.7	40.0	0.40	0.8	657-080-2R.8N40
	8.0	8.0	90.0	3.0	6.7	51.0	0.40	0.8	658-080-2R.8N51
	10.0	10.0	70.0	3.5	8.5	28.5	0.50	1.0	656-100-2R1N28
	10.0	10.0	90.0	3.5	8.5	45.0	0.50	1.0	657-100-2R1N45
	10.0	10.0	100.0	3.5	8.5	56.5	0.50	1.0	658-100-2R1N56
	12.0	12.0	80.0	4.0	10.0	34.0	0.60	1.2	656-120-2R12N34
	12.0	12.0	100.0	4.0	10.0	50.0	0.60	1.2	657-120-2R12N50
	12.0	12.0	110.0	4.0	10.0	61.0	0.60	1.2	658-120-2R12N61
	16.0	16.0	90.0	5.5	13.5	39.0	0.80	1.6	656-160-2R1.6N39
	16.0	16.0	110.0	5.5	13.5	58.0	0.80	1.6	657-160-2R1.6N58
	16.0	16.0	140.0	5.5	13.5	77.0	0.80	1.6	658-160-2R1.6N77

A-Mill Rougher

The A-Mill features De Boer Tool's industry leading technology, designed with mostly shorter flutes to provide a more rigid tool, and allow for highly efficient pocket step down milling. Fine Edge grinding technique is applied in the A-Mill series.

Other unique characteristics include:

- Vibration dampening technology
- Primarily suited for roughing when removal rates is the main goal, but can also leave a satisfactory surface finish
- Suitable for excessive feed rates with higher chip loads for aggressive aluminum removal rates
- Specialty primary OD grind to minimize chatter and harmonics
- Blasted finish shank to reduce cutter pull down
- Polished double flute face for chip ejection
- Reaches for pocket step down milling
- Square Corner and radius geometry
- Flat finish shank to reduce cutter pull down
- The A-Mill rougher is fully regrindable

A-Mill Rougher

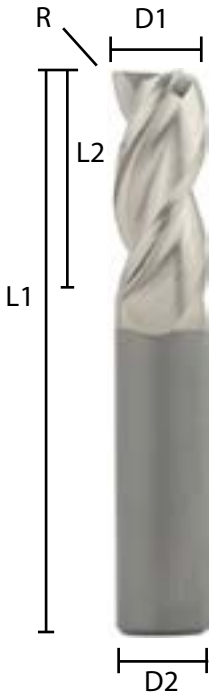
The A-Mill Rougher is suitable for high feed rates with higher chip loads for aggressive aluminum removal rates, increasing tool life, and decreasing machinery time. Primarily suited for roughing with vibration dampening geometry. Coating is specially designed to decrease edge build up and galling in softer aluminums but is also suitable for high silicone content aluminum for increased tool life. The A-Mill Rougher is also fully regrindable.

Square Corner

	D1 & D2 Dia.	L1 OAL	L2 LOC	No. of Flutes	Part #
in	1/4	2.5	0.580	3	511-0250-301
	3/8	2.5	0.830	3	511-0375-301
	1/2	3.0	1.120	3	511-0500-301
	5/8	3.5	1.360	3	511-0625-301
	3/4	4.0	1.650	3	511-0750-301

Radius

	D1 & D2 Dia.	L1 OAL	L1 OAL	R Radius	No. of Flutes	Part #
in	1/4	2.5	0.580	0.010	3	511-0250-3R10
	3/8	2.5	0.830	0.020	3	511-0375-3R20
	1/2	3.0	1.100	0.020	3	511-0500-3R20
	5/8	3.5	1.300	0.030	3	511-0625-3R30
	3/4	4.0	1.650	0.030	3	511-0750-3R30

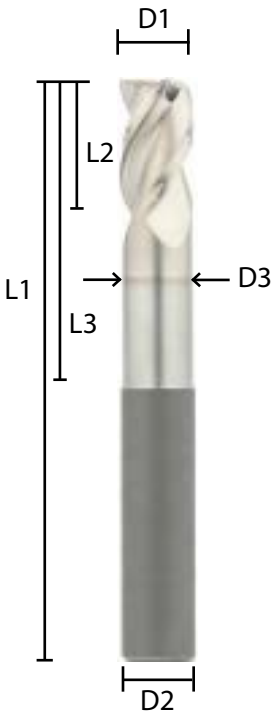


Square Corner Long Reach

	D1 & D2 Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LOR	No. of Flutes	Part #
in	1/4	3.0	0.35	0.240	1.350	2	517-0250-201
	3/8	4.0	0.55	0.360	2.100	2	517-0375-201
	1/2	5.0	0.85	0.480	2.850	2	518-0500-201
	5/8	6.0	0.90	0.600	3.150	2	518-0625-201
	3/4	6.0	1.15	0.720	3.150	2	518-0750-201

Radius Long Reach

	D1 & D2 Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LOR	R Radius	No. of Flutes	Part #
in	1/4	3.0	0.35	0.240	1.350	0.010	2	517-0250-2R10
	3/8	4.0	0.55	0.360	2.100	0.020	2	517-0375-2R20
	1/2	5.0	0.85	0.480	2.850	0.020	2	518-0500-2R20
	5/8	6.0	0.90	0.600	3.150	0.030	2	518-0625-2R30
	3/4	6.0	1.15	0.720	3.150	0.030	2	518-0750-2R30



A-Mill Semi-Finisher

The A-Mill features De Boer Tool's industry leading technology, designed with mostly shorter flutes to provide a more rigid tool and allow for highly efficient pocket step down milling. Fine Edge grinding technique is applied in the A-Mill series.

Other unique characteristics include:

- Directed to combination roughing and finishing
- Polished cylindrical margin for chatter and vibration reduction
- Double polished flute face for efficient and rapid chip ejection
- Primarily for use in applications where surface finish is a minimal concern but removal rates are a close second
- Reaches for pocket step down milling, the profile has a radius exit grind from transition of length of cut to neck (length of reach)
- Square Corner, Radius and Ball Nose geometry
- Semi-Finisher regrind leads to a rougher surface finish and decreased vibration dampening.
- Recommended regrind procedure is turning it into a Rougher

A-Mill Semi-Finisher

The A-Mill Semi-Finisher is suitable for high feed rates with higher chip loads for aggressive aluminum removal rates, increasing tool life, and decreasing machinery time. Primarily suited for roughing with vibration dampening geometry. Coating is specially designed to decrease edge build up and galling in softer aluminums but is also suitable for high silicone content aluminum for increased tool life. The A-Mill Semi-Finisher is also fully regrindable.

Square Corner

	D1 & D2 Dia.	L1 OAL	L2 LOC	No. of Flutes	Part #
in	1/8	2.0	0.300	3	521-0125-301
	3/16	2.0	0.420	3	521-0187-301
	1/4	2.5	0.580	3	521-0250-301
	3/8	2.5	0.830	3	521-0375-301
	1/2	3.0	1.120	3	521-0500-301
	5/8	3.5	1.360	3	521-0625-301
	3/4	4.0	1.650	3	521-0750-301
	1	4.0	1.650	3	521-1000-301

Square Corner Long

	D1 & D2 Dia.	L1 OAL	L2 LOC	No. of Flutes	Part #
in	1/8	2.0	0.550	3	522-0125-301
	3/16	2.5	0.860	3	522-0187-301
	1/4	3.0	0.900	3	522-0250-301
	3/8	3.0	1.600	3	522-0375-301
	1/2	4.0	2.100	3	522-0500-301
	5/8	4.0	2.100	3	522-0625-301
	3/4	5.0	2.100	3	522-0750-301
	1	5.0	2.100	3	522-1000-301

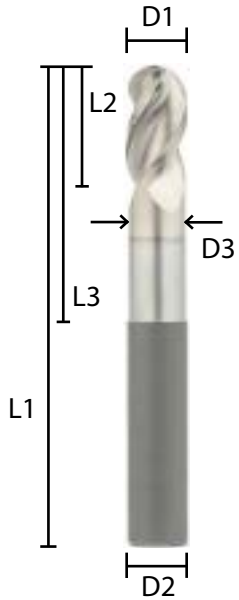
Square Corner X-Long

	D1 & D2 Dia.	L1 OAL	L2 LOC	No. of Flutes	Part #
in	1/8	2.0	0.750	3	523-0125-301
	3/16	3.0	1.100	3	523-0187-301
	1/4	3.0	1.600	3	523-0250-301
	3/8	4.0	2.100	3	523-0375-301
	1/2	6.0	3.100	3	523-0500-301
	5/8	6.0	3.100	3	523-0625-301
	3/4	6.0	3.100	3	523-0750-301
	1	6.0	3.100	3	523-1000-301

A-Mill Semi-Finisher

Ball Nose

	D1 & D2 Dia.	L1 OAL	L2 LOC	No. of Flutes	Part #
in	1/8	2.0	0.300	3	521-0125-302
	3/16	2.0	0.420	3	521-0187-302
	1/4	2.5	0.580	3	521-0250-302
	3/8	2.5	0.830	3	521-0375-302
	1/2	3.0	1.100	3	521-0500-302
	5/8	3.5	1.300	3	521-0625-302
	3/4	4.0	1.600	3	521-0750-302
	1	4.0	2.100	3	521-1000-302



Ball Nose Long Reach

	D1 & D2 Dia.	L1 OAL.	L2 LOC	D3 Neck Dia.	L3 LOR	No. of Flutes	Part #
in	1/4	3.0	0.350	0.240	0.830	3	526-0250-302
	3/8	3.0	0.550	0.360	1.600	3	526-0375-302
	1/2	4.0	0.850	0.480	2.100	3	527-0500-302
	5/8	5.0	0.900	0.600	2.150	3	527-0625-302
	3/4	5.0	1.150	0.720	2.150	3	527-0750-302
	1	6.0	1.650	0.960	3.150	3	528-1000-302

Ball Nose X-Long Reach

	D1 & D2 Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LOR	No. of Flutes	Part #
in	1/4	3.0	0.350	0.240	1.350	2	527-0250-202
	3/8	4.0	0.550	0.360	2.100	2	527-0375-202
	1/2	5.0	0.850	0.480	2.850	2	528-0500-202
	3/4	6.0	1.150	0.720	3.150	2	528-0750-202

Corner Radius

	D1 & D2 Dia.	L1 OAL	L2 LOC	R Radius	No. of Flutes	Part #
in	1/8	2.0	0.300	0.010	3	521-0125-3R10
	3/16	2.0	0.420	0.010	3	521-0187-3R10
	1/4	2.5	0.580	0.010	3	521-0250-3R10
	3/8	2.5	0.830	0.020	3	521-0375-3R20
	1/2	3.0	1.120	0.020	3	521-0500-3R20
	5/8	3.5	1.360	0.030	3	521-0625-3R30
	3/4	4.0	1.650	0.030	3	521-0750-3R30
	1	4.0	1.650	0.030	3	521-1000-3R30

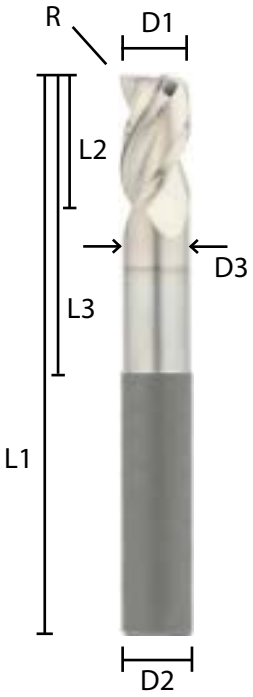
Corner Radius Long

	D1 & D2 Dia.	L1 OAL	L2 LOC	R Radius	No. of Flutes	Part #
in	1/8	2.0	0.550	0.010	3	522-0125-3R10
	1/4	3.0	0.900	0.010	3	522-0250-3R10
	3/8	3.0	1.600	0.015	3	522-0375-3R20
	1/2	4.0	2.100	0.020	3	522-0500-3R20
	5/8	4.0	2.100	0.020	3	522-0625-3R30
	3/4	5.0	2.100	0.020	3	522-0750-3R30
	1	5.0	2.100	0.020	3	522-1000-3R30

Corner Radius X-Long

	D1 & D2 Dia.	L1 OAL	L2 LOC	R Radius	No. of Flutes	Part #
in	1/8	2.0	0.750	0.010	3	523-0125-3R10
	3/16	3.0	1.100	0.010	3	523-0187-3R10
	1/4	4.0	1.600	0.010	3	523-0250-3R10
	3/8	4.0	2.100	0.015	3	523-0375-3R20
	1/2	6.0	3.100	0.020	3	523-0500-3R20
	5/8	6.0	3.100	0.020	3	523-0625-3R30
	3/4	6.0	3.100	0.020	3	523-0750-3R30

A-Mill Semi-Finisher



Corner Radius Long Reach

	D1 & D2 Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LOR	R Radius	No. of Flutes	Part #
in	1/4	3.0	0.350	0.240	.830	0.010	3	526-0250-3R10
	1/2	4.0	0.850	0.480	2.10	0.020	3	527-0500-3R20
	5/8	5.0	0.900	0.600	2.15	0.030	3	527-0625-3R30
	3/4	5.0	1.150	0.720	2.15	0.030	3	527-0750-3R30

A-Mill Finisher (Chatterless)

The A-Mill Finisher line offers unmatched performance. They are coated with De Boer Tool's new TiB2 coating for better tool life and surface finish.

The A-Mill finisher elimiates roping and chattering in corners, enabling milling straight in and out of corners without interpolation.

Other unique characteristics include:

- Increased cylindrical margin for excellent surface finish
- Suited for applications where surface finish is main concern
- Long length of cut so walls can be finished in one pass
- Polished margin and flute face reduces built up-edge issues
- Increased core strength for tool stability
- Square Corner and radius geometry
- Variable helix to stabilize cutting
- TiB2 Coating ensures trouble free machining

A-Mill Chatterless Finisher

The A-Mill Finisher is a patent pending tool suitable for high feed rates with lower chip loads for aggressive aluminum removal rates, increasing tool life, and decreasing machinery time. Coating is specially designed to decrease edge build up and galling in softer aluminums but is also suitable for high silicone content aluminum for increased tool life. The A-Mill Finisher is also fully regrindable.

Square Corner

	D1 & D2 Dia.	L1 OAL	L2 LOC	No. of Flutes	Part #
in	1/8	2.0	0.420	3	551-0125-301
	3/16	2.0	0.560	3	551-0187-301
	1/4	2.5	0.580	3	551-0250-301
	3/8	2.5	0.830	3	551-0375-301
	1/2	3.0	1.100	3	551-0500-301
	5/8	3.5	1.360	3	551-0625-301
	3/4	4.0	1.650	3	551-0750-301
	1	4.0	1.650	3	551-1000-301

Square Corner

	D1 & D2 Dia.	L1 OAL	L2 LOC	No. of Flutes	Part #
in	1/8	2.0	0.550	3	552-0125-301
	3/16	2.5	0.860	3	552-0187-301
	1/4	3.0	1.100	3	552-0250-301
	3/8	4.0	1.600	3	552-0375-301
	1/2	4.0	2.100	3	552-0500-301
	5/8	5.0	2.100	3	552-0625-301
	3/4	5.0	2.100	3	552-0750-301
	1	5.0	2.100	3	552-1000-301

Square Corner X-Long

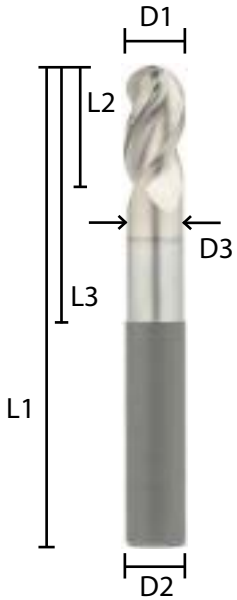
	D1 & D2 Dia.	L1 OAL	L2 LOC	No. of Flutes	Part #
in	1/8	2.0	0.750	3	553-0125-301
	3/16	3.0	1.100	3	553-0187-301
	1/4	4.0	1.600	3	553-0250-301
	3/8	4.0	2.100	3	553-0375-301
	1/2	6.0	3.100	3	553-0500-301
	5/8	6.0	3.100	3	553-0625-301
	3/4	6.0	3.100	3	553-0750-301
	1	6.0	3.100	3	553-1000-301

Ball Nose

	D1 & D2 Dia.	L1 OAL	L2 LOC	No. of Flutes	Part #
in	1/8	2.0	0.420	3	551-0125-302
	3/16	2.0	0.560	3	551-0187-302
	1/4	2.5	0.580	3	551-0250-302
	3/8	2.5	0.830	3	551-0375-302
	1/2	3.0	1.100	3	551-0500-302
	5/8	3.5	1.360	3	551-0625-302
	3/4	4.0	1.650	3	551-0750-302
	1	4.0	1.650	3	551-1000-302

Ball Nose Long Reach

	D1 & D2 Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	D3 LOR	No. of Flutes	Part #
in	1/8	2.0	0.420	0.118	0.85	3	557-0125-302
	3/16	2.5	0.560	0.180	0.82	3	557-0187-302
	1/4	3.0	0.580	0.240	1.35	3	557-0250-302
	3/8	4.0	0.830	0.360	2.10	3	557-0375-302
	1/2	4.0	1.120	0.480	2.10	3	557-0500-302



A-Mill Chatterless Finisher

Corner Radius

	D1 & D2 Dia.	L1 OAL	L2 LOC	R Radius	No. of Flutes	Part #
in	1/8	2.0	0.420	0.015	3	551-0125-3R15
	1/8	2.0	0.420	0.030	3	551-0125-3R30
	3/16	2.0	0.560	0.010	3	551-0187-3R15
	1/4	2.5	0.580	0.015	3	551-0250-3R15
	1/4	2.5	0.580	0.030	3	551-0250-3R30
	1/4	2.5	0.580	0.060	3	551-0250-3R60
	5/16	3.0	0.750	0.060	3	551-0312-3R15
	3/8	2.5	0.830	0.015	3	551-0375-3R15
	3/8	2.5	0.830	0.030	3	551-0375-3R30
	3/8	2.5	0.830	0.060	3	551-0375-3R60
	1/2	3.0	1.100	0.015	3	551-0500-3R15
	1/2	3.0	1.100	0.020	3	551-0500-3R20
	1/2	3.0	1.100	0.030	3	551-0500-3R30
	1/2	3.0	1.100	0.060	3	551-0500-3R60
	1/2	3.0	1.100	0.120	3	551-0500-3R120
	3/4	4.0	1.650	0.015	3	551-0750-3R15
	3/4	4.0	1.650	0.030	3	551-0750-3R30
	3/4	4.0	1.650	0.060	3	551-0750-3R60
	3/4	4.0	1.650	0.120	3	551-0750-3R120
	1	4.0	1.650	0.030	3	551-1000-3R30
	1	4.0	1.650	0.060	3	551-1000-3R60

Corner Radius Long

	D1 & D2 Dia.	L1 OAL	L2 LOC	R Radius	No. of Flutes	Part #
in	1/8	2.0	0.420	0.015	3	552-0125-3R15
	1/8	2.0	0.420	0.030	3	552-0125-3R30
	3/16	2.5	0.560	0.010	3	552-0187-3R15
	3/16	2.5	0.560	0.030	3	552-0187-3R30
	1/4	3.0	0.580	0.015	3	552-0250-3R15
	1/4	3.0	0.580	0.030	3	552-0250-3R30
	1/4	3.0	0.580	0.060	3	552-0250-3R60
	3/8	4.0	0.830	0.015	3	552-0375-3R15
	3/8	4.0	0.830	0.030	3	552-0375-3R30
	3/8	4.0	0.830	0.060	3	552-0375-3R60
	1/2	4.0	1.100	0.015	3	552-0500-3R15
	1/2	4.0	1.100	0.030	3	552-0500-3R30
	1/2	4.0	1.100	0.060	3	552-0500-3R60
	1/2	4.0	1.100	0.120	3	552-0500-3R120
	5/8	5.0	1.360	0.015	3	552-0625-3R15
	5/8	5.0	1.360	0.030	3	552-0625-3R30
	5/8	5.0	1.360	0.060	3	552-0625-3R60
	5/8	5.0	1.360	0.120	3	552-0625-3R120
	5/8	5.0	1.360	0.190	3	552-0625-3R190
	3/4	5.0	1.650	0.015	3	552-0750-3R15
	3/4	5.0	1.650	0.030	3	552-0750-3R30
	3/4	5.0	1.650	0.060	3	552-0750-3R60
	3/4	5.0	1.650	0.120	3	552-0750-3R120
	3/4	5.0	1.650	0.190	3	552-0750-3R190
	1	5.0	1.650	0.030	3	552-1000-3R30
	1	5.0	1.650	0.060	3	552-1000-3R60

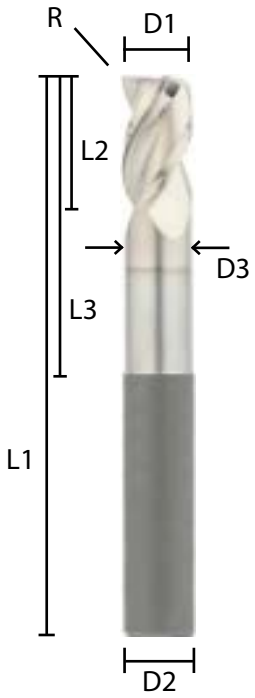
A-Mill Chatterless Finisher

Corner Radius X-Long

	D1 & D2 Dia.	L1 OAL	L2 LOC	R Radius	No. of Flutes	Part #
in	1/8	2.0	0.750	0.015	3	553-0125-3R15
	1/8	2.0	0.750	0.030	3	553-0125-3R30
	3/16	3.0	1.100	0.010	3	553-0187-3R15
	3/16	3.0	1.100	0.030	3	553-0187-3R30
	1/4	4.0	1.600	0.015	3	553-0250-3R15
	1/4	4.0	1.600	0.030	3	553-0250-3R30
	1/4	4.0	1.600	0.060	3	553-0250-3R60
	3/8	4.0	2.100	0.015	3	553-0375-3R15
	3/8	4.0	2.100	0.030	3	553-0375-3R30
	3/8	4.0	2.100	0.060	3	553-0375-3R60
	1/2	6.0	3.100	0.015	3	553-0500-3R15
	1/2	6.0	3.100	0.030	3	553-0500-3R30
	1/2	6.0	3.100	0.060	3	553-0500-3R60
	1/2	6.0	3.100	0.120	3	553-0500-3R120
	5/8	6.0	3.100	0.015	3	553-0625-3R15
	5/8	6.0	3.100	0.030	3	553-0625-3R30
	5/8	6.0	3.100	0.060	3	553-0625-3R60
	5/8	6.0	3.100	0.120	3	553-0625-3R120
	3/4	6.0	3.100	0.015	3	553-0750-3R15
	3/4	6.0	3.100	0.030	3	553-0750-3R30
	3/4	6.0	3.100	0.060	3	553-0750-3R60
	3/4	6.0	3.100	0.120	3	553-0750-3R120
	1	6.0	3.100	0.030	3	553-1000-3R30
	1	6.0	3.100	0.060	3	553-1000-3R60

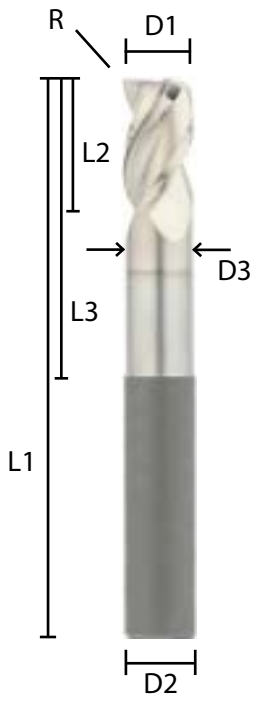
Corner Radius Long Reach

	D1 & D2 Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LOR	R Radius	No. of Flutes	Part #
in	1/8	2.0	0.420	0.118	0.85	0.010	3	557-0125-3R10
	1/8	2.0	0.420	0.118	0.85	0.020	3	557-0125-3R20
	1/8	2.0	0.420	0.118	0.85	0.030	3	557-0125-3R30
	3/16	2.5	0.560	0.180	0.82	0.010	3	557-0187-3R10
	3/16	2.5	0.560	0.180	0.82	0.020	3	557-0187-3R20
	3/16	2.5	0.560	0.180	0.82	0.030	3	557-0187-3R30
	1/4	3.0	0.580	0.240	0.83	0.020	3	556-0250-3R20
	1/4	3.0	0.580	0.240	0.83	0.030	3	556-0250-3R30
	1/4	3.0	0.580	0.240	0.83	0.060	3	556-0250-3R60
	1/4	3.0	0.580	0.240	1.35	0.020	3	557-0250-3R20
	1/4	3.0	0.580	0.240	1.35	0.030	3	557-0250-3R30
	1/4	3.0	0.580	0.240	1.35	0.060	3	557-0250-3R60
	5/16	3.0	0.700	0.300	1.10	0.020	3	556-0312-3R20
	5/16	3.0	0.700	0.300	1.10	0.030	3	556-0312-3R30
	5/16	3.0	0.700	0.300	1.10	0.060	3	556-0312-3R60
	5/16	4.0	0.700	0.300	1.60	0.020	3	557-0312-3R20
	5/16	4.0	0.700	0.300	1.60	0.030	3	557-0312-3R30
	5/16	4.0	0.700	0.300	1.60	0.060	3	557-0312-3R60
	3/8	3.0	0.830	0.360	1.60	0.020	3	556-0375-3R20
	3/8	3.0	0.830	0.360	1.60	0.030	3	556-0375-3R30
	3/8	3.0	0.830	0.360	1.60	0.060	3	556-0375-3R60
	3/8	4.0	0.830	0.360	2.10	0.020	3	557-0375-3R20
	3/8	4.0	0.830	0.360	2.10	0.030	3	557-0375-3R30
	3/8	4.0	0.830	0.360	2.10	0.060	3	557-0375-3R60



A-Mill Chatterless Finisher

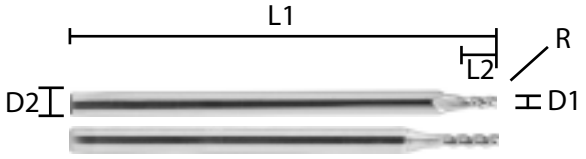
Corner Radius Long Reach



	D1 & D2 Dia.	L1 OAL	L2 LOC	D3 Neck Dia.	L3 LOR	R Radius	No. of Flutes	Part #
in	1/2	4.0	1.120	0.480	2.10	0.030	3	557-0500-3R30
	1/2	4.0	1.120	0.480	2.10	0.060	3	557-0500-3R60
	1/2	4.0	1.120	0.480	2.10	0.120	3	557-0500-3R120
	1/2	5.0	1.120	0.480	2.85	0.030	3	558-0500-3R30
	1/2	5.0	1.120	0.480	2.85	0.060	3	558-0500-3R60
	1/2	5.0	1.120	0.480	2.85	0.120	3	558-0500-3R120
	5/8	5.0	1.360	0.600	2.15	0.030	3	557-0625-3R30
	5/8	5.0	1.360	0.600	2.15	0.060	3	557-0625-3R60
	5/8	5.0	1.360	0.600	2.15	0.120	3	557-0625-3R120
	5/8	6.0	1.360	0.600	3.15	0.030	3	558-0625-3R30
	5/8	6.0	1.360	0.600	3.15	0.060	3	558-0625-3R60
	5/8	6.0	1.360	0.600	3.15	0.120	3	558-0625-3R120
	3/4	5.0	1.650	0.720	2.15	0.030	3	557-0750-3R30
	3/4	5.0	1.650	0.720	2.15	0.060	3	557-0750-3R60
	3/4	5.0	1.650	0.720	2.15	0.120	3	557-0750-3R120
	3/4	6.0	1.650	0.720	3.15	0.030	3	558-0750-3R30
	3/4	6.0	1.650	0.720	3.15	0.060	3	558-0750-3R60
	3/4	6.0	1.650	0.720	3.15	0.120	3	558-0750-3R120
	1	6.0	2.200	0.960	3.15	0.030	3	557-1000-3R30
	1	6.0	2.200	0.960	3.15	0.060	3	557-1000-3R60
	1	6.0	2.200	0.960	3.15	0.120	3	557-1000-3R120

AluMini 1/32 - 3/32

in	D1 Dia.	D2 Shank Dia.	R Radius	No. Flutes	L1 OAL	L2 LOC 1xD **591-***	L2 LOC 2xD **592-***	L2 LOC 3xD **593-***	L2 LOC 4xD **594-***	L1 OAL	L2 LOC 6xD **596-***	Uncoated Part #
	1/32	1/8	-	3	2.0	-	0.062	0.093	0.125	3.0	0.187	*-0031-301
	3/64	1/8	-	3	2.0	-	0.093	0.14	0.187	3.0	0.281	*-0046-301
	1/16	1/8	-	3	2.0	0.062	0.125	0.187	0.25	3.0	0.375	*-0062-301
	5/64	1/8	-	3	2.0	0.078	0.156	0.234	0.312	3.0	0.468	*-0078-301
	3/32	1/8	-	3	2.0	0.093	0.187	0.281	0.375	3.0	0.562	*-0093-301
	1/32	1/8	0.004	3	2.0	-	0.062	0.093	0.125	3.0	0.187	*-0031-3R004
	3/64	1/8	0.004	3	2.0	-	0.093	0.14	0.187	3.0	0.281	*-0046-3R004
	1/16	1/8	0.004	3	2.0	0.062	0.125	0.187	0.25	3.0	0.375	*-0062-3R004
	5/64	1/8	0.004	3	2.0	0.078	0.156	0.234	0.312	3.0	0.468	*-0078-3R004
	3/32	1/8	0.004	3	2.0	0.093	0.187	0.281	0.375	3.0	0.562	*-0093-3R004
	3/64	1/8	0.010	3	2.0	-	0.093	-	0.187	3.0	0.281	*-0046-3R010
	1/16	1/8	0.010	3	2.0	0.062	0.125	-	0.25	3.0	0.375	*-0062-3R010
	5/64	1/8	0.010	3	2.0	0.078	0.156	-	0.312	3.0	0.468	*-0078-3R010
	3/32	1/8	0.010	3	2.0	0.093	0.187	-	0.375	3.0	0.562	*-0093-3R010
	1/16	1/8	0.015	3	2.0	0.062	0.125	-	0.25	3.0	0.375	*-0062-3R015
	5/64	1/8	0.015	3	2.0	0.078	0.156	-	0.312	3.0	0.468	*-0078-3R015
	3/32	1/8	0.015	3	2.0	0.093	0.187	-	0.375	3.0	0.562	*-0093-3R015
	3/32	1/8	0.03	3	2.0	-	0.187	-	0.375	3.0	0.562	*-0093-3R030



Standard (Blue Line)

in

	Cutting Speed (SFM)		Feed per tooth (IPT). For slotting reduce by 20%									
	Min	Max	1/8 0.125	3/16 0.1875	1/4 0.250	5/16 0.3125	3/8 0.375	7/16 0.4375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
Aluminum Alloys	600	800	0.0011	0.0017	0.0022	0.0027	0.0032	0.0038	0.0042	0.0060	0.0085	0.0092
Soft Steels (>35Rc)	500	600	0.0006	0.0008	0.0010	0.0012	0.0016	0.0024	0.0030	0.0034	0.0036	0.004
Alloy Steels < 35Rc (4140-4340)	350	400	0.0006	0.0010	0.0016	0.0020	0.0025	0.0031	0.0036	0.0037	0.0039	0.0045
Alloy Steels > 35Rc (4140-4340)	250	350	0.0004	0.0009	0.0014	0.0019	0.0020	0.0028	0.0031	0.0032	0.0036	0.0042
Tool Steels < 36Rc (A2, D2, S7)	100	200	0.0004	0.0007	0.0014	0.0020	0.0020	0.0025	0.0033	0.0031	0.0035	0.0042
Tool Steels > 36Rc (A2, D2, S7)	250	350	0.0003	0.0009	0.0017	0.0020	0.0025	0.0029	0.0031	0.0037	0.004	0.005
Die Steels (P20, H13)	200	300	0.0005	0.0010	0.0017	0.0020	0.0023	0.0032	0.0033	0.0037	0.0037	0.004
Easy to cut Stainless Steels (303)	250	350	0.0006	0.0006	0.0008	0.0008	0.0014	0.0021	0.0026	0.0031	0.0038	0.0042
Mod. Difficult to cut Stainless Steels	225	275	0.0005	0.0005	0.0005	0.0007	0.0012	0.0020	0.0024	0.0028	0.0034	0.0041
Difficult to cut Stainless Steels (316L)	200	250	0.0003	0.0004	0.0006	0.0007	0.0013	0.0019	0.0023	0.0028	0.0031	0.0038
Gray Cast Iron	450	550	0.0006	0.0008	0.0010	0.0012	0.0016	0.0025	0.0030	0.0035	0.0045	0.0055
High Temperature Alloys	50	100	0.0003	0.0004	0.0005	0.0007	0.0008	0.0014	0.0016	0.0020	0.0023	0.0028

X-Mill

in

	Cutting Speed (SFM)		Feed per tooth (IPT)								
	Min	Max	1/8 0.125	3/16 0.1875	1/4 0.250	5/16 0.3125	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
Soft Steels (>35Rc)	550	550	0.0006	0.0008	0.0010	0.0012	0.0016	0.0024	0.0024	0.0034	0.0029
Alloy Steels < 35Rc (4140-4340)	375	375	0.0006	0.0010	0.0016	0.0020	0.0025	0.0031	0.0036	0.0037	0.0039
Alloy Steels > 35Rc (4140-4340)	300	300	0.0004	0.0009	0.0014	0.0019	0.0020	0.0028	0.0031	0.0032	0.0036
Tool Steels < 36Rc (A2, D2, S7)	300	300	0.0004	0.0007	0.0014	0.0020	0.0020	0.0025	0.0033	0.0031	0.0035
Tool Steels > 36Rc (A2, D2, S7)	150	150	0.0003	0.0009	0.0017	0.0020	0.0025	0.0029	0.0031	0.0037	0.0040
Die Steels (P20, H13)	250	250	0.0005	0.0010	0.0017	0.0020	0.0023	0.0032	0.0033	0.0037	0.0037
Easy to cut stainless steels (303)	300	300	0.0006	0.0006	0.0008	0.0008	0.0014	0.0021	0.0026	0.0031	0.0038
Mod. Difficult to cut stainless Steels	255	255	0.0005	0.0005	0.0005	0.0007	0.0012	0.0020	0.0024	0.0028	0.0034
Difficult to cut Stainless Steels (316L)	220	220	0.0003	0.0004	0.0006	0.0007	0.0013	0.0019	0.0023	0.0028	0.0031
Gray Cast Iron	500	500	0.0006	0.0008	0.0010	0.0012	0.0016	0.0025	0.0029	0.0034	0.0045
High Temperature alloys	80	80	0.0003	0.0004	0.0005	0.0007	0.0008	0.0014	0.0016	0.0020	0.0023
Titanium	140	140	0.0004	0.0005	0.0007	0.0008	0.0013	0.0019	0.0024	0.0026	0.0037

NOTE:
Side milling applications - for longest reach (L3 LON) tools, reduce max step over by 30%
Slot milling applications - for longest reach (L3 LON) tools, reduce max slotting depth by 30%
Lower value of cutting speed (SFM) is used for high-stock removal applications or for higher hardness (machinability) within group
Higher value of cutting speed (SFM) is used for finishing applications or for lower hardness (machinability) within group
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly

RPM	(3.82 x SFM) / Dia.
IPR	IPM / RPM
SFM	(RPM x Dia.) / 3.82
IPM	IPT (Chip Load) x No. of Teeth x RPM
IPT (Chip Load)	(Chip Load) = IPM / (No. of Teeth x RPM)

T-Mill

in

	Cutting Speed (SFM)		Feed per tooth (IPT)						
	Min	Max	1/8 0.125	3/16 0.1875	1/4 0.250	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750
Ferric, martensitic, and 15-5 PH stainless steels <35 Rc	235	270	0.0007	0.0010	0.0014	0.0021	0.0026	0.0030	0.0035
Ferric, martensitic, and 15-5 PH stainless steels >35 Rc	195	230	0.0007	0.0010	0.0014	0.0021	0.0026	0.0030	0.0035
Austenitic stainless steel (302, 303, 304)	300	375	0.0008	0.0011	0.0018	0.0023	0.0029	0.0031	0.0034
Austenitic stainless steel (316)	195	270	0.0006	0.0009	0.0013	0.0018	0.0024	0.0025	0.0029
Nickel based heat-resistant alloys	90	140	0.0003	0.0004	0.0007	0.0011	0.0016	0.0020	0.0023
Titanium Alloys (Ti6Al4V)	170	220	0.0005	0.0008	0.0008	0.0015	0.0021	0.0028	0.0036

NOTE:
Side milling applications - for longest reach (L3 LON) tools, reduce max step over by 30%
Slot milling applications - for longest reach (L3 LON) tools, reduce max slotting depth by 30%
Lower value of cutting speed (SFM) is used for high-stock removal applications or for higher hardness (machinability) within group
Higher value of cutting speed (SFM) is used for finishing applications or for lower hardness (machinability) within group
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly

Thread Mill

in

	Cutting Speed (SFM)		Feed per tooth (IPT)for nominal thread size							
	Min	Max	< 1/8 0.125	1/8 - 3/16 0.1875	3/16 - 1/4 0.250	1/4 - 5/16 0.3125	5/16 - 3/8 0.375	3/8 - 1/2 0.500	1/2 - 5/8 0.625	5/8 - 3/4 0.750
Copper / Brass / Bronze	490	660	0.0004	0.0007	0.0010	0.0015	0.0018	0.0022	0.0030	0.0037
Aluminum Alloys	460	620	0.0004	0.0008	0.0012	0.0017	0.0021	0.0025	0.0035	0.0040
Soft Steels (<35Rc)	390	520	0.0003	0.0006	0.0010	0.0013	0.0017	0.0020	0.0027	0.0035
Alloy Steels < 35Rc (4140-4340)	460	620	0.0003	0.0006	0.0010	0.0012	0.0015	0.0018	0.0025	0.0032
Alloy Steels > 35Rc (4140-4340)	390	520	0.0002	0.0004	0.0007	0.0009	0.0012	0.0015	0.0020	0.0028
Tool Steels < 36Rc (A2, D2, S7)	300	490	0.0001	0.0003	0.0005	0.0007	0.0010	0.0012	0.0015	0.0018
Tool Steels > 36Rc (A2, D2, S7)	200	330	0.0001	0.0002	0.0004	0.0005	0.0007	0.0009	0.0012	0.0015
Die Steels (P20, H13)	160	250	0.0001	0.0003	0.0005	0.0007	0.0010	0.0012	0.0015	0.0018
Difficult to cut Stainless Steels (316L)	200	260	0.0003	0.0004	0.0006	0.0008	0.0011	0.0015	0.0020	0.0025
Gray Cast Iron	390	520	0.0005	0.0007	0.0010	0.0013	0.0017	0.0025	0.0032	0.0040
High Temperature Alloys	160	300	0.0003	0.0005	0.0007	0.0009	0.0012	0.0015	0.0021	0.0028
Titanium	260	460	0.0003	0.0005	0.0007	0.0009	0.0012	0.0015	0.0021	0.0028

**Due to the nature of thread milling, the thread mill will range from 140° tooth engagement for internal threads, to 60° engagement for external threads. Because of this, once you have calculated feed rate you must adjust it by the factors below

NOTE:
For internal thread - programmed Feed Rate = Feed Rate X (hole diameter - cutter diameter) / hole diameter
For external thread - programmed Feed Rate = Feed Rate X (hole diameter + cutter diameter) / hole diameter
Lower value of cutting speed (SFM) is used for high-stock removal applications or for higher hardness (machinability) within group
Higher value of cutting speed (SFM) is used for finishing applications or for lower hardness (machinability) within group
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly

RPM	(3.82 x SFM) / Dia.
IPR	IPM / RPM
SFM	(RPM x Dia.) / 3.82
IPM	IPT (Chip Load) x No. of Teeth x RPM
IPT (Chip Load)	(Chip Load) = IPM / (No. of Teeth x RPM)

High Velocity

in

	Cutting Speed (SFM)		Feed per tooth (IPT). For slotting reduce by 20%									
	Min	Max	1/32 0.03125	1/16 0.0625	3/32 0.9375	1/8 0.125	3/16 0.1875	1/4 0.250	5/16 0.3125	3/8 0.375	7/16 0.4375	1/2 0.500
Soft Steels (<35Rc)	490	660	0.0004	0.0005	0.0006	0.0008	0.0010	0.0012	0.0016	0.0024	0.0027	0.0033
Alloy Steels < 35Rc (4140-4340)	460	620	0.00035	0.0005	0.0006	0.0010	0.0016	0.0020	0.0025	0.0031	0.0032	0.0035
Alloy Steels > 35Rc (4140-4340)	390	520	0.0003	0.0004	0.0005	0.0009	0.0014	0.0019	0.0020	0.0028	0.0030	0.0033
Tool Steels < 36Rc (A2, D2, S7)	300	490	0.00025	0.0003	0.0004	0.0006	0.0009	0.0013	0.0016	0.0025	0.0027	0.0030
Tool Steels > 36Rc (A2, D2, S7)	200	330	0.0002	0.00025	0.0003	0.0009	0.0017	0.0020	0.0025	0.0029	0.0030	0.0033
Die Steels (P20, H13)	160	250	0.00025	0.0003	0.0005	0.0010	0.0017	0.0020	0.0023	0.0032	0.0035	0.0037
Easy to cut Stainless Steels (303)	260	330	0.0003	0.0004	0.0006	0.0006	0.0008	0.0008	0.0014	0.0021	0.0028	0.0033
Mod. Difficult to cut Stainless Steels	200	260	0.00025	0.00035	0.0005	0.0005	0.0005	0.0007	0.0012	0.0020	0.0025	0.0030
Difficult to cut Stainless Steels (316L)	200	260	0.00015	0.0002	0.0003	0.0004	0.0006	0.0007	0.0013	0.0019	0.0023	0.0025
Gray Cast Iron	390	520	0.0003	0.0004	0.0006	0.0008	0.0010	0.0012	0.0016	0.0025	0.0027	0.0035
High Temperature Alloys	160	300	0.00015	0.0025	0.0003	0.0004	0.0005	0.0007	0.0008	0.0014	0.0023	0.0029
Titanium	260	460	0.0002	0.0003	0.0004	0.0005	0.0007	0.0008	0.0013	0.0019	0.0020	0.0026

HV Feed Mill

in

	Cutting Speed (SFM)		Feed per tooth (IPT)						
	Min	Max	1/8 0.125	3/16 0.1875	1/4 0.250	5/16 0.3125	3/8 0.375	1/2 0.500	5/8 0.625
Alloy Steels < 35Rc (4140-4340)	800	1000	0.0082	0.0113	0.0125	0.0156	0.0187	0.0197	0.0235
Alloy Steels > 35Rc (4140-4340)	800	990	0.0082	0.0113	0.0124	0.0153	0.0184	0.0193	0.0231
Tool Steels < 36Rc (A2, D2, S7)	720	790	0.0060	0.0076	0.0082	0.0097	0.0119	0.0126	0.0156
Tool Steels > 36Rc (A2, D2, S7)	590	720	0.0052	0.0062	0.0066	0.0078	0.0096	0.0102	0.0129
Die Steels (P20, H13)	490	590	0.0039	0.0039	0.0039	0.0038	0.0054	0.0059	0.0078
Easy to cut Stainless Steels (303)	700	800	0.0061	0.0077	0.0082	0.0097	0.0122	0.0130	0.0156
Gray Cast Iron	750	820	0.0064	0.0080	0.0087	0.0105	0.0130	0.0138	0.0164

A-Mill

in

	Cutting Speed (SFM)		Feed per tooth (IPT)					
	Min	Max	1/4 0.250	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
Rougher Series (510)								
Aluminum Alloys	1200	1600	0.0036	0.0057	0.008	0.0098	0.0119	0.016
Aluminum Alloys 440, 356, 380, C61300	600	1000	0.0027	0.0043	0.006	0.0074	0.0089	0.012
Semi-Finisher Series (520)								
Aluminum Alloys	1200	1600	0.0054	0.00855	0.012	0.0147	0.01785	0.024
Aluminum Alloys 440, 356, 380, C61300	600	1000	0.00405	0.00645	0.009	0.0111	0.01335	0.018
Finisher Series (550)								
Aluminum Alloys	1200	1600	0.00342	0.005415	0.0076	0.00931	0.011305	0.0152
Aluminum Alloys 440, 356, 380, C61300	600	1000	0.002565	0.004085	0.0057	0.00703	0.008455	0.0114

NOTE:
Side milling applications - for longest reach (L3 LON) tools, reduce max step over by 30%
Slot milling applications - for longest reach (L3 LON) tools, reduce max slotting depth by 30%
Lower value of cutting speed (SFM) is used for high-stock removal applications or for higher hardness (machinability) within group
Higher value of cutting speed (SFM) is used for finishing applications or for lower hardness (machinability) within group
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly

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HAM 30-1781

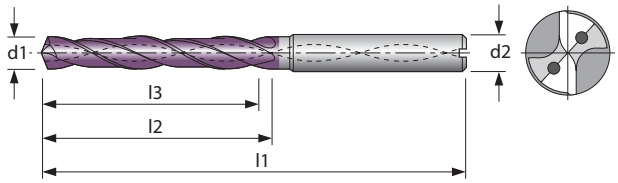
solid carbide coolant through twist drill **5 x D**

(HAM 286 Superdrill)

VHM | Z 2 | 30° Helix | DIN 6537 | 5 x D | Typ Werk | 140° | DIN 6535 HAK | HPC | SHRINK FIT | DIN 6535 HBK | DIN 6535 HEK

Engineering Data

- *special point ground*
- *special chip flute geometry*
- *reinforced web thickness*
- *30° RH helix*



Material	Alu	Alu > 9% Silicon	Steel < 23 Rockwell	Steel < 38 Rockwell	Steel < 48 Rockwell	Steel < 55 Rockwell	Steel < 60 Rockwell	Steel < 66 Rockwell	Stain ST < 23 Rockwell	Stain ST > 23 Rockwell	Cast Iron	Nodular Ductile Cast Iron	Super Alloy Metals	Titanium	Copper & Nonferrous Materials	Graphite & Fiber Composites	MMS	Max.	None.	AIR
30-1781	○	○	●	●	●	●			○	○	●	●	○	○			●	●		

● very suitable ○ suitable

Ø d1 (m7) mm	30-1781 TA-C Inch	Dec. Equiv.	l3 mm	l2 mm	l1 mm	Ø d2 (h6) mm
3.0		0.1181	23	28	66	6
3.1		0.1220	23	28	66	6
3.17	1/8″	0.1250	23	28	66	6
3.2		0.1260	23	28	66	6
3.25		0.1280	23	28	66	6
3.3		0.1299	23	28	66	6
3.4		0.1339	23	28	66	6
3.5		0.1378	23	28	66	6
3.57	9/64″	0.1406	23	28	66	6
3.6		0.1417	23	28	66	6
3.65		0.1437	23	28	66	6
3.7		0.1457	23	28	66	6
3.8		0.1496	29	36	74	6
3.9		0.1535	29	36	74	6
3.96	5/32″	0.1563	29	36	74	6
4.0		0.1575	29	36	74	6
4.1		0.1614	29	36	74	6
4.2		0.1654	29	36	74	6
4.3		0.1693	29	36	74	6
4.37	11/64″	0.1719	29	36	74	6
4.4		0.1732	29	36	74	6
4.5		0.1772	29	36	74	6
4.6		0.1811	29	36	74	6
4.65		0.1831	29	36	74	6
4.7		0.1850	29	36	74	6
4.76	3/16″	0.1875	35	44	82	6
4.8		0.1890	35	44	82	6
4.9		0.1929	35	44	82	6
5.0		0.1969	35	44	82	6
5.1		0.2008	35	44	82	6
5.16	13/64″	0.2031	35	44	82	6
5.2		0.2047	35	44	82	6
5.3		0.2087	35	44	82	6
5.4		0.2126	35	44	82	6
5.5		0.2165	35	44	82	6
5.55	7/32″	0.2185	35	44	82	6
5.6		0.2205	35	44	82	6
5.7		0.2244	35	44	82	6
5.8		0.2283	35	44	82	6
5.9		0.2323	35	44	82	6
5.95	15/64″	0.2344	35	44	82	6
6.0		0.2362	35	44	82	6
6.1		0.2402	43	53	91	8
6.2		0.2441	43	53	91	8
6.3		0.2480	43	53	91	8
6.35	1/4″	0.2500	43	53	91	8

Ø d1 (m7) mm	30-1781 TA-C Inch	Dec. Equiv.	l3 mm	l2 mm	l1 mm	Ø d2 (h6) mm
6.4		0.2520	43	53	91	8
6.5		0.2559	43	53	91	8
6.6		0.2598	43	53	91	8
6.7		0.2638	43	53	91	8
6.75	17/64″	0.2656	43	53	91	8
6.8		0.2677	43	53	91	8
6.9		0.2717	43	53	91	8
7.0		0.2756	43	53	91	8
7.1		0.2795	43	53	91	8
7.14	9/32″	0.2812	43	53	91	8
7.2		0.2835	43	53	91	8
7.3		0.2874	43	53	91	8
7.4		0.2913	43	53	91	8
7.5		0.2953	43	53	91	8
7.54	19/64″	0.2969	43	53	91	8
7.55		0.2972	43	53	91	8
7.6		0.2992	43	53	91	8
7.7		0.3031	43	53	91	8
7.8		0.3071	43	53	91	8
7.9		0.3110	43	53	91	8
7.94	5/16″	0.3125	43	53	91	8
8.0		0.3150	43	53	91	8
8.1		0.3189	49	61	103	10
8.2		0.3228	49	61	103	10
8.3		0.3268	49	61	103	10
8.33	21/64″	0.3281	49	61	103	10
8.4		0.3307	49	61	103	10
8.5		0.3346	49	61	103	10
8.6		0.3386	49	61	103	10
8.7		0.3425	49	61	103	10
8.73	11/32″	0.3437	49	61	103	10
8.8		0.3465	49	61	103	10
8.9		0.3504	49	61	103	10
9.0		0.3543	49	61	103	10
9.1		0.3593	49	61	103	10
9.13	23/64″	0.3594	49	61	103	10
9.2		0.3622	49	61	103	10
9.3		0.3661	49	61	103	10
9.4		0.3701	49	61	103	10
9.5		0.3740	49	61	103	10
9.52	3/8″	0.3750	49	61	103	10
9.55		0.3760	49	61	103	10
9.6		0.3780	49	61	103	10
9.7		0.3819	49	61	103	10
9.8		0.3858	49	61	103	10
9.9		0.3898	49	61	103	10

order example: 30-1781-0800

Ø d1 (m7) mm	30-1781 TA-C Inch	Dec. Equiv.	l3 mm	l2 mm	l1 mm	Ø d2 (h6) mm
9.92	25/64″	0.3906	49	61	103	10
10.0		0.3937	49	61	103	10
10.1		0.3976	56	71	118	12
10.2		0.4016	56	71	118	12
10.3		0.4055	56	71	118	12
10.32	13/32″	0.4062	56	71	118	12
10.4		0.4094	56	71	118	12
10.5		0.4134	56	71	118	12
10.6		0.4173	56	71	118	12
10.7		0.4213	56	71	118	12
10.72	27/64″	0.4219	56	71	118	12
10.8		0.4252	56	71	118	12
10.9		0.4291	56	71	118	12
11.0		0.4331	56	71	118	12
11.1		0.4370	56	71	118	12
11.11	7/16″	0.4375	56	71	118	12
11.2		0.4409	56	71	118	12
11.3		0.4449	56	71	118	12
11.4		0.4488	56	71	118	12
11.5		0.4528	56	71	118	12
11.51	29/64″	0.4531	56	71	118	12
11.6		0.4567	56	71	118	12
11.7		0.4606	56	71	118	12
11.8		0.4645	56	71	118	12
11.9		0.4685	56	71	118	12
11.91	15/32″	0.4687	56	71	118	12
12.0		0.4724	56	71	118	12
12.1		0.4764	60	77	124	14
12.2		0.4803	60	77	124	14
12.25		0.4823	60	77	124	14
12.3		0.4843	60	77	124	14
12.4		0.4882	60	77	124	14
12.5		0.4921	60	77	124	14
12.6		0.4961	60	77	124	14
12.7	1/2″	0.5000	60	77	124	14
12.8		0.5039	60	77	124	14
12.9		0.5079	60	77	124	14
13.0		0.5118	60	77	124	14
13.1		0.5157	60	77	124	14
13.2		0.5197	60	77	124	14

Ø d1 (m7) mm	30-1781 TA-C Inch	Dec. Equiv.	l3 mm	l2 mm	l1 mm	Ø d2 (h6) mm
13.3		0.5236	60	77	124	14
13.4		0.5276	60	77	124	14
13.5	17/32″	0.5315	60	77	124	14
13.6		0.5354	60	77	124	14
13.7		0.5394	60	77	124	14
13.8		0.5433	60	77	124	14
13.9		0.5472	60	77	124	14
14.0		0.5512	60	77	124	14
14.1		0.5551	63	83	133	16
14.2		0.5591	63	83	133	16
14.29	9/16″	0.5625	63	83	133	16
14.3		0.5630	63	83	133	16
14.4		0.5669	63	83	133	16
14.5		0.5709	63	83	133	16
14.6		0.5748	63	83	133	16
14.7		0.5787	63	83	133	16
14.8		0.5827	63	83	133	16
14.9		0.5866	63	83	133	16
15.0		0.5906	63	83	133	16
15.1		0.5945	63	83	133	16
15.2		0.5984	63	83	133	16
15.3		0.6024	63	83	133	16
15.4		0.6063	63	83	133	16
15.5		0.6102	63	83	133	16
15.6		0.6142	63	83	133	16
15.7		0.6181	63	83	133	16
15.8		0.6220	63	83	133	16
15.88	5/8″	0.6252	63	83	133	16
15.9		0.6260	63	83	133	16
16.0		0.6299	63	83	133	16
16.5		0.6496	71	93	143	18
17.0		0.6693	71	93	143	18
17.5		0.6890	71	93	143	18
18.0		0.7087	71	93	143	18
18.5		0.7283	77	101	153	20
19.0		0.7480	77	101	153	20
19.05	3/4″	0.7500	77	101	153	20
19.5		0.7677	77	101	153	20
20.0		0.7874	77	101	153	20

order example: 30-1781-0800

HAM 30-1821

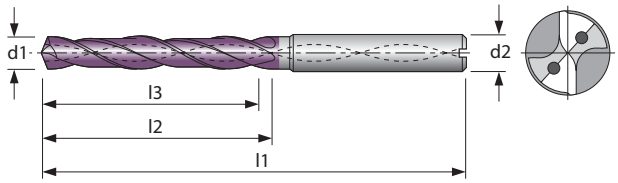
solid carbide coolant through twist drill **8 x D**

(HAM 292 Superdrill)

VHM | Z 2 | 30° Helix | DIN 6537 | 8 x D | Typ Werk | 140° | DIN 6535 HAK | HPC | SHRINK FIT | DIN 6535 HBK | DIN 6535 HEK

Engineering Data

- *special point ground*
- *special chip flute geometry*
- *reinforced web thickness*
- *30° RH helix*



Material	Alu	Alu > 9% Silicon	Steel < 23 Rockwell	Steel < 38 Rockwell	Steel < 48 Rockwell	Steel < 55 Rockwell	Steel < 60 Rockwell	Steel < 66 Rockwell	Stain ST < 23 Rockwell	Stain ST > 23 Rockwell	Cast Iron	Nodular Ductile Cast Iron	Super Alloy Metals	Titanium	Copper & Nonferrous Materials	Graphite & Fiber Composites	MMS	Max.	None.	AIR
30-1821	○	○	●	●	●	●			○	○	●	●	○	○			●	●		

● very suitable ○ suitable

Ø d1 (m7) mm	30-1821 TA-C Inch	Dec. Equiv.	l3 mm	l2 mm	l1 mm	Ø d2 (h6) mm
3.0		0.1181	29	34	72	6
3.1		0.1220	29	34	72	6
3.17	1/8″	0.1250	29	34	72	6
3.2		0.1260	29	34	72	6
3.25		0.1280	29	34	72	6
3.3		0.1299	29	34	72	6
3.4		0.1339	29	34	72	6
3.5		0.1378	29	34	72	6
3.57	9/64″	0.1406	29	34	72	6
3.6		0.1417	29	34	72	6
3.65		0.1437	29	34	72	6
3.7		0.1457	29	34	72	6
3.8		0.1496	36	43	81	6
3.9		0.1535	36	43	81	6
3.96	5/32″	0.1563	36	43	81	6
4.0		0.1575	36	43	81	6
4.1		0.1614	36	43	81	6
4.2		0.1654	36	43	81	6
4.3		0.1693	36	43	81	6
4.37	11/64″	0.1719	36	43	81	6
4.4		0.1732	36	43	81	6
4.5		0.1772	36	43	81	6
4.6		0.1811	36	43	81	6
4.65		0.1831	36	43	81	6
4.7		0.1850	36	43	81	6
4.76	3/16″	0.1875	48	57	95	6
4.8		0.1890	48	57	95	6
4.9		0.1929	48	57	95	6
5.0		0.1969	48	57	95	6
5.1		0.2008	48	57	95	6
5.16	13/64″	0.2031	48	57	95	6
5.2		0.2047	48	57	95	6
5.3		0.2087	48	57	95	6
5.4		0.2126	48	57	95	6
5.5		0.2165	48	57	95	6
5.55	7/32″	0.2185	48	57	95	6
5.6		0.2205	48	57	95	6
5.7		0.2244	48	57	95	6
5.8		0.2283	48	57	95	6
5.9		0.2323	48	57	95	6
5.95	15/64″	0.2344	48	57	95	6
6.0		0.2362	48	57	95	6
6.1		0.2402	64	76	114	8
6.2		0.2441	64	76	114	8
6.3		0.2480	64	76	114	8
6.35	1/4″	0.2500	64	76	114	8

Ø d1 (m7) mm	30-1821 TA-C Inch	Dec. Equiv.	l3 mm	l2 mm	l1 mm	Ø d2 (h6) mm
6.4		0.2520	64	76	114	8
6.5		0.2559	64	76	114	8
6.6		0.2598	64	76	114	8
6.7		0.2638	64	76	114	8
6.75	17/64″	0.2656	64	76	114	8
6.8		0.2677	64	76	114	8
6.9		0.2717	64	76	114	8
7.0		0.2756	66	76	116	8
7.1		0.2795	66	76	116	8
7.14	9/32″	0.2812	66	76	116	8
7.2		0.2835	66	76	116	8
7.3		0.2874	66	76	116	8
7.4		0.2913	66	76	116	8
7.5		0.2953	66	76	116	8
7.54	19/64″	0.2969	66	76	116	8
7.55		0.2972	66	76	116	8
7.6		0.2992	66	76	116	8
7.7		0.3031	66	76	116	8
7.8		0.3071	66	76	116	8
7.9		0.3110	66	76	116	8
7.94	5/16″	0.3125	66	76	116	8
8.0		0.3150	66	76	116	8
8.1		0.3189	80	95	142	10
8.2		0.3228	80	95	142	10
8.3		0.3268	80	95	142	10
8.33	21/64″	0.3281	80	95	142	10
8.4		0.3307	80	95	142	10
8.5		0.3346	80	95	142	10
8.6		0.3386	80	95	142	10
8.7		0.3425	80	95	142	10
8.73	11/32″	0.3437	80	95	142	10
8.8		0.3465	80	95	142	10
8.9		0.3504	80	95	142	10
9.0		0.3543	80	95	142	10
9.1		0.3593	80	95	142	10
9.13	23/64″	0.3594	80	95	142	10
9.2		0.3622	80	95	142	10
9.3		0.3661	80	95	142	10
9.4		0.3701	80	95	142	10
9.5		0.3740	80	95	142	10
9.52	3/8″	0.3750	80	95	142	10
9.55		0.3760	80	95	142	10
9.6		0.3780	80	95	142	10
9.7		0.3819	80	95	142	10
9.8		0.3858	80	95	142	10
9.9		0.3898	80	95	142	10

order example: 30-1821-0800

Ø d1 (m7) mm	30-1821 TA-C Inch	Dec. Equiv.	l3 mm	l2 mm	l1 mm	Ø d2 (h6) mm
9.92	25/64"	0.3906	80	95	142	10
10.0		0.3937	80	95	142	10
10.1		0.3976	96	114	162	12
10.2		0.4016	96	114	162	12
10.3		0.4055	96	114	162	12
10.32	13/32"	0.4062	96	114	162	12
10.4		0.4094	96	114	162	12
10.5		0.4134	96	114	162	12
10.6		0.4173	96	114	162	12
10.7		0.4213	96	114	162	12
10.72	27/64"	0.4219	96	114	162	12
10.8		0.4252	96	114	162	12
10.9		0.4291	96	114	162	12
11.0		0.4331	96	114	162	12
11.1		0.4370	96	114	162	12
11.11	7/16"	0.4375	96	114	162	12
11.2		0.4409	96	114	162	12
11.3		0.4449	96	114	162	12
11.4		0.4488	96	114	162	12
11.5		0.4528	96	114	162	12
11.51	29/64"	0.4531	96	114	162	12
11.6		0.4567	96	114	162	12
11.7		0.4606	96	114	162	12
11.8		0.4645	96	114	162	12
11.9		0.4685	96	114	162	12
11.91	15/32"	0.4687	96	114	162	12
12.0		0.4724	96	114	162	12
12.1		0.4764	112	131	178	14
12.2		0.4803	112	131	178	14
12.25		0.4823	112	131	178	14
12.3		0.4843	112	131	178	14
12.4		0.4882	112	131	178	14
12.5		0.4921	112	131	178	14
12.6		0.4961	112	131	178	14
12.7	1/2"	0.5000	112	131	178	14
12.8		0.5039	112	131	178	14
12.9		0.5079	112	131	178	14
13.0		0.5118	112	131	178	14
13.1		0.5157	112	131	178	14
13.2		0.5197	112	131	178	14

Ø d1 (m7) mm	30-1821 TA-C Inch	Dec. Equiv.	l3 mm	l2 mm	l1 mm	Ø d2 (h6) mm
13.3		0.5236	112	131	178	14
13.4		0.5276	112	131	178	14
13.5	17/32"	0.5315	112	131	178	14
13.6		0.5354	112	131	178	14
13.7		0.5394	112	131	178	14
13.8		0.5433	112	131	178	14
13.9		0.5472	112	131	178	14
14.0		0.5512	112	131	178	14
14.1		0.5551	128	152	203	16
14.2		0.5591	128	152	203	16
14.29	9/16"	0.5625	128	152	203	16
14.3		0.5630	128	152	203	16
14.4		0.5669	128	152	203	16
14.5		0.5709	128	152	203	16
14.6		0.5748	128	152	203	16
14.7		0.5787	128	152	203	16
14.8		0.5827	128	152	203	16
14.9		0.5866	128	152	203	16
15.0		0.5906	128	152	203	16
15.1		0.5945	128	152	203	16
15.2		0.5984	128	152	203	16
15.3		0.6024	128	152	203	16
15.4		0.6063	128	152	203	16
15.5		0.6102	128	152	203	16
15.6		0.6142	128	152	203	16
15.7		0.6181	128	152	203	16
15.8		0.6220	128	152	203	16
15.88	5/8"	0.6252	128	152	203	16
15.9		0.6260	128	152	203	16
16.0		0.6299	128	152	203	16
16.5		0.6496	144	171	222	18
17.0		0.6693	144	171	222	18
17.5		0.6890	144	171	222	18
18.0		0.7087	144	171	222	18
18.5*		0.7283	160	190	243	20
19.0*		0.7480	160	190	243	20
19.05*	3/4"	0.7500	160	190	243	20
19.5*		0.7677	160	190	243	20
20.0*		0.7874	160	190	243	20

order example: 30-1821-0800

NOTES

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