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Wood Router Material Usage and Feed Rates

TOOL DESCRIPTION	Soft Woods	Hard Woods	Soft Plywood	Hard Plywood	Particle Board	Laminated Particle Board	Laminated Plywood	Soft Ductile Plastics	Hard Brittle Plastics	Fiber Reinforced Plastics	Solid Surface Materials	Plastic Laminated Materials	Aluminum
1 FLUTE ROUTERS													
1 Flute Straight "V" Flute	100-300	100-250	100-250	100-250	100-250	~	~	~	~	~	~	~	~
1 Flute Straight "O" Flute	100-300	~	~	~	~	~	~	350	300	~	~	~	~
1 Flute Straight "O" Flute (Soft Or Hard Plastics)	~	~	~	~	~	~	~	350	300	~	~	~	~
1 Flute Upcut Spiral	150-300	150-300	~	~	150-300	~	~	~	~	~	~	~	~
1 Flute "O" Flute Upcut Spiral (Soft Plastics)	~	~	~	~	~	~	~	~	200	~	100-180	~	~
1 Flute Upcut Spiral (Hard Plastics & Aluminum)	~	~	~	~	~	~	~	~	~	100	~	~	150
1 Flute "O" Flute Upcut Spiral (Hard Plastics)	~	~	~	~	~	~	~	150	150	~	150-180	~	~
1 Flute Downcut Spiral	150-300	150-300	~	~	150-300	~	~	~	~	~	~	~	~
1 Flute "O" Flute Downcut Spiral (Hard Plastics)	150-300	150-300	~	~	150-300	~	~	~	~	~	~	~	~
1 Flute Downcut Spiral (Hard Plastics & Aluminum)	~	~	~	~	~	~	~	~	~	150	~	~	100
1 Flute "O" Flute Downcut Spiral (Soft Plastics)	~	~	~	~	~	~	~	150	150	~	100-180	~	~
1 Flute Compression Spiral	100-600	100-600	100-600	100-600	100-500	100-600	100-600	~	~	~	~	~	~
1 Flute Mortise Compression Spiral	100-600	100-600	100-600	100-600	100-500	100-600	100-600	~	~	~	~	~	~

2 FLUTE ROUTERS													
2 Flute Straight Cut (Natural Wood & Hard Plastics)	200-400	200-400	200-400	200-400	200-400	~	~	~	~	~	~	~	~
2 Flute Straight Cut (Hard Plastics)	~	~	~	~	~	~	~	~	250	150	~	~	~
2 Flute "O" Flute Straight Cut (Soft Plastics)	~	~	~	~	~	~	~	~	250	150	150-200	~	~
2 Flute "O" Flute Straight Cut (Hard Plastics)	~	~	~	~	~	~	~	~	250	150	150-200	~	~
2 Flute Upcut Spiral	200-450	200-400	~	~	200-450	~	~	200	~	~	150-200	~	~
2 Flute Upcut Spiral (Hard Plastics & Aluminum)	~	~	~	~	~	~	~	~	~	150	150-200	~	150
2 Flute Upcut Spiral (High Impact)	200-450	200-400	~	~	200-450	~	~	~	~	~	~	~	~
2 Flute "O" Flute Upcut Slow Spiral (Soft & Hard Plastics)	~	~	~	~	~	~	~	275	250	~	150	~	~
2 Flute Upcut Spiral Chipbreaker Finisher	400-1500	400-1200	400-1400	400-1200	400-1000	~	~	~	~	~	~	~	~
2 Flute Upcut Spiral Chipbreaker Finisher (High Impact)	400-1500	400-1200	400-1400	400-1200	400-1000	~	~	~	~	~	~	~	~
2 Flute Downcut Spiral	200-450	200-400	~	~	200-450	~	~	~	~	~	150-200	~	~
2 Flute Downcut Spiral (Hard Plastics & Aluminum)	~	~	~	~	~	~	~	~	~	150	150-200	~	15
2 Flute Downcut Slow Spiral (Hard Plastics & Aluminum)	~	~	~	~	~	~	~	300	275	~	150	~	~
2 Flute Downcut Spiral (High Impact)	200-450	200-400	~	~	200-450	~	~	~	~	~	~	~	~
2 Flute Downcut Spiral Chipbreaker Finisher	400-1500	400-1200	400-1400	400-1200	400-1000	~	~	~	~	~	~	~	~
2 Flute Downcut Spiral Chipbreaker Finisher (High Impact)	400-1500	400-1200	400-1400	400-1200	400-1000	~	~	~	~	~	~	~	~
2 Flute Compression	400-1200	400-1000	400-1200	400-1000	400-800	400-1200	400-1000	~	~	~	~	~	~
2 Flute Chipbreaker Finisher Compression	400-1500	400-1200	400-1400	400-1200	400-1000	400-1400	400-1200	~	~	~	~	~	~
2 Flute Compression (High Wear)	400-1200	400-1000	400-1200	400-1000	400-800	400-1200	400-1000	~	~	~	~	~	~
2 Flute Mortise Compression	400-1200	400-1000	400-1200	400-1000	400-800	400-1200	400-1000	~	~	~	~	~	~

TOOL DESCRIPTION	Soft Woods	Hard Woods	Soft Plywood	Hard Plywood	Particle Board	Laminated Particle Board	Laminated Plywood	Soft Ductile Plastics	Hard Brittle Plastics	Fiber Reinforced Plastics	Solid Surface Materials	Plastic Laminated Materials	Aluminum
3 FLUTE ROUTERS													
3 Flute Upcut Slow Spiral Finisher	200-600	200-500	~	~	200-500	~	~	~	300	~	100-300	~	~
3 Flute Downcut Slow Spiral Finisher	200-600	200-500	~	~	200-500	~	~	~	300	~	100-300	~	~
3 Flute Upcut Spiral Chipbreaker Finisher	500-1600	500-1500	700-1800	700-1600	600-1200	~	~	~	~	~	~	~	~
3 Flute Downcut Spiral Chipbreaker Finisher	500-1600	500-1500	700-1800	700-1600	600-1201	~	~	~	~	~	~	~	~
3 Flute Upcut Spiral (Hard Plastics)	~	~	~	~	~	~	~	~	~	150	~	~	~
3 Flute Upcut Slow Helix Ripper	700-1200	700-1200	700-1500	700-1500	600-1500	~	~	~	~	~	~	~	~
3 Flute Upcut Spiral High Helix Ripper	700-1200	700-1200	700-1500	700-1500	600-1500	~	~	~	~	~	~	~	~
3 Flute Upcut Spiral Hogger (High Impact)	700-1200	700-1200	700-1500	700-1500	600-1500	~	~	~	~	~	~	~	~
3 Flute Downcut Spiral (Hard Plastics)	~	~	~	~	~	~	~	~	~	150	~	~	~
3 Flute Downcut Slow Helix Ripper	700-1200	700-1200	700-1500	700-1500	600-1500	~	~	~	~	~	~	~	~
3 Flute Downcut Spiral High Helix Ripper	700-1200	700-1200	700-1500	700-1500	600-1500	~	~	~	~	~	~	~	~
3 Flute Downcut Spiral Hogger (High Impact)	700-1200	700-1200	700-1500	700-1500	600-1500	~	~	~	~	~	~	~	~
3 Flute Compression	400-1200	400-1000	400-1200	400-1000	400-800	400-1200	400-1000	~	~	~	~	~	~
3 Flute Compression (High Wear)	400-1200	400-1000	400-1200	400-1000	400-800	400-1200	400-1000	~	~	~	~	~	~
3 Flute Mortise Compression	400-1200	400-1000	400-1200	400-1000	400-800	400-1200	400-1000	~	~	~	~	~	~

4 FLUTE ROUTERS													
4 Flute Upcut Spiral (Hard Plastics)	~	~	~	~	~	~	~	~	~	100-300	~	~	~
4 Flute Upcut Combination Spiral (High Speed)	1000-1800	1000-1800	1200-3000	1200-2800	1000-2000	~	~	~	~	~	~	~	~
4 Flute Downcut Spiral (Hard Plastics)	~	~	~	~	~	~	~	~	~	150	~	~	~
4 Flute Downcut Combination Spiral (High Speed)	1000-1800	1000-1800	1200-3000	700-2200	1200-2800	~	~	~	~	~	~	~	~
4 Flute Compression	500-1600	500-1500	700-2400	700-2200	600-1600	700-2400	700-2200	~	~	~	~	~	~
4 Flute Combination Compression	1000-1800	1000-1800	1200-3000	1200-2800	1000-2000	1200-3000	1200-2800	~	~	~	~	~	~
4 Flute Mortise Compression	500-1600	500-1500	700-2400	700-2200	600-1600	700-2400	700-2200	~	~	~	~	~	~

SPECIALTY TOOLS													
Diamond Burr Fiberglass Finisher (Hard Plastics)	~	~	~	~	~	~	~	~	~	125	~	~	~
2 Flute Diamond Burr Fiberglass Finisher (Hard Plastics)	~	~	~	~	~	~	~	~	~	125	~	~	~
Flush Trim Laminate Bit (Plastic Laminates)	~	~	~	~	~	~	~	~	~	Hand Feed	~	~	~
7 Degree Bevel Laminate Bit (Plastic Laminate)	~	~	~	~	~	~	~	~	~	Hand Feed	~	~	~

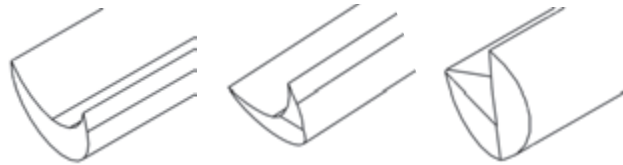
Wood Router Technical Information

Straight Flute vs. Spiral Routers

Straight flute router bits are generally used for routing plastics, and other soft materials. They are a great choice for hand feed operations.

Spiral flute router bits should only be used in automatic feed operations. They are good for use on all materials.

Crescent Point



Crescent points are typically found on 1 flute router bits. They are good for both plunging, and flat bottom cutting.

Fishtail Point



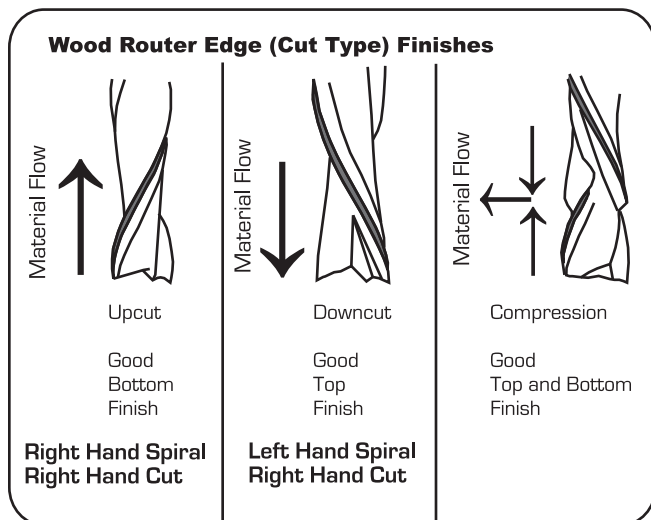
Fishtail points are the most commonly seen end points in the wood router industry. They are perfect when a rigid plunge point is required.

Endmill Point



Endmill points are most often found on 3 and 4 flute routers. They are good for achieving smooth finish on a flat bottom surface, and are commonly used in the plastic routing industry.

Flute Types



1 Flute routers are a good choice for soft materials. They provide a good finish, and are capable of faster feed rates.

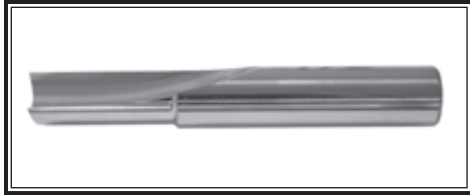
2 Flute routers work well with harder materials, providing an excellent finish to the material.

Upcut, Downcut, and Compression Bits

Upcut routers are used when a good bottom finish is desired on the material. Chips flow in an upward direction.

Downcut routers produce the best finish to the top of the material. Chips flow in a downward direction.

Compression routers are best used when both top, and bottom finish are important. They are best used with material that has laminate on both the top, and bottom. Chips flow in a sideways direction.

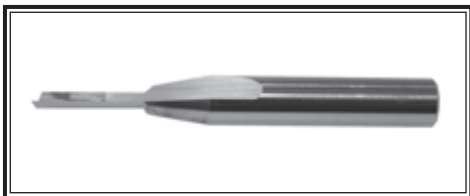


Material Finish - Top: Good
 Material Finish - Bottom: Good
 End Point Type: Crescent

1 Flute “O” Flute Straight Cut (Soft or Hard Plastics)

Part #	D1	L1	D2	L2
R61-01001	1/8	5/16	1/4	2
R61-01002	1/8	1/2	1/4	2
R61-01003 LH	1/8	1/2	1/4	2
R61-01004	1/8	5/8	1/4	4
R61-01005	1/8	1/2	1/8	2
R61-01006	1/8	5/8	1/8	3
R61-01009	5/32	9/16	1/4	2
R61-01014	7/32	5/8	1/4	2-1/2
R61-01010	3/16	3/8	1/4	2
R61-01011	3/16	5/8	1/4	2
R61-01012 LH	3/16	5/8	1/4	2
R61-01013	3/16	1	1/4	4
R61-01007	3/16	5/8	3/16	2-1/2
R61-01015	1/4	3/8	1/4	2-1/2
R61-01016	1/4	3/4	1/4	2-1/2
R61-01017 LH	1/4	3/4	1/4	2-1/2
R61-01018	1/4	3/4	1/4	3-1/2
R61-01019 LH	1/4	3/4	1/4	3-1/2
R61-01020	1/4	1	1/4	3-1/4
R61-01008	1/4	1-1/4	1/4	4
R61-11022	3/8	5/8	3/8	2-1/2
R61-11023	3/8	7/8	3/8	2-1/3
R61-11024	3/8	1-5/8	3/8	6
R61-11025	1/2	1	1/2	3
R61-11026	1/2	1-5/8	1/2	4
R61-11027	1/2	2-1/8	1/2	6

LH = Left Hand Rotation



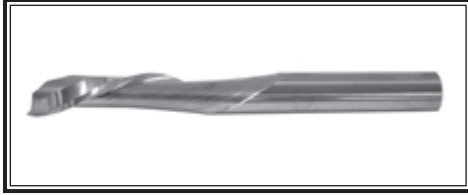
Material Finish-Top: Good
 Material Finish-Bottom: Good
 End Point Type: Crescent

1 Flute “V” Flute Straight Cut

Part #	D1	L1	D2	L2
R61-21001	1/8	1/2	1/4	2
R61-21002	3/16	3/4	1/4	2
R61-21003	1/4	7/8	1/4	2-1/2
R61-21004	1/4	1	1/4	2-1/2
R61-31005	5/16	1-1/8	5/16	3
R61-31006	3/8	1-1/8	3/8	3
R61-31007	1/2	1-1/8	1/2	3

Cutting Edge Tolerance: **±.000 -.003**
 Shank Tolerance: **H6**

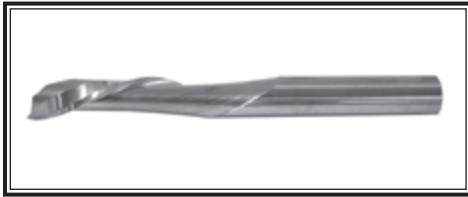
D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length



Material Finish-Top: Poor
 Material Finish-Bottom: Excellent
 End Point Type: Endmill
 Helix Angle: 30°

1 Flute Upcut Spiral (Soft Plastics)

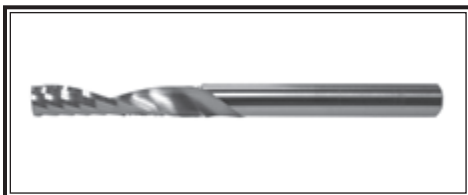
Part #	D1	L1	D2	L2
R63-22101	1/8	1/2	1/4	2
R63-22102	3/16	3/4	1/4	2
R63-22103	1/4	7/8	1/4	2-1/2
R63-22104	1/4	1	1/4	2-1/2
R63-32105	5/16	1-1/8	5/16	3
R63-32106	3/8	1-1/8	3/8	3
R63-32107	1/2	1-1/8	1/2	3



Material Finish-Top: Poor
 Material Finish-Bottom: Excellent
 End Point Type: Endmill
 Helix Angle: 30°

1 Flute Upcut Spiral (Hard Plastics and Aluminum)

Part #	D1	L1	D2	L2
R63-02001	1/8	1/2	1/4	2
R63-02002	5/32	9/16	1/4	2
R63-02003	3/16	5/8	1/4	2
R63-02004	7/32	5/8	1/4	2-1/2
R63-02005	1/4	3/4	1/4	2-1/2
R63-02006	9/32	3/4	3/8	2-1/2
R63-12007	5/16	1-3/16	3/8	2-1/2
R63-12008	3/8	7/8	3/8	2-1/2
R63-12009	7/16	1	1/2	3
R63-12010	1/2	1	1/2	3



Material Finish-Top: Poor
 Material Finish-Bottom: Excellent
 End Point Type: Crescent
 Helix Angle: 21°

1 Flute "0" Flute Upcut Spiral (Soft Plastics)

Part #	D1	L1	D2	L2
R63-71701	1/16	1/4	1/8	2
R63-71702	1/16	1/4	1/4	2
R63-71703	1/8	1/4	1/8	2
R63-71704	1/8	1/4	1/4	2
R63-71705	1/8	1/2	1/8	2
R63-71706	1/8	1/2	1/4	2
R63-71707	5/32	9/16	1/4	2
R63-71708	3/16	3/8	3/16	2
R63-71709	3/16	3/8	1/4	2
R63-71710	3/16	5/8	1/4	2
R63-71711	7/32	3/4	1/4	2-1/2
R63-71715	1/4	3/8	1/4	2
R63-71712	1/4	3/4	1/4	2-1/2
R63-71713	1/4	1-1/4	1/4	3
R63-71714	3/8	1-1/8	3/8	3

Cutting Edge Tolerance: **+.000 -.003**
 Shank Tolerance: **H6**

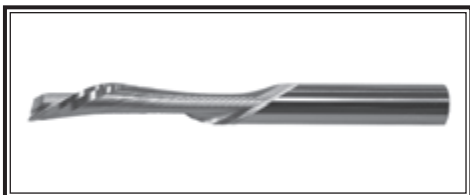
D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length



Material Finish-Top: Poor
 Material Finish-Bottom: Excellent
 End Point Type: Crescent
 Helix Angle: 21°

1 Flute "O" Flute Upcut Spiral (Hard Plastics)

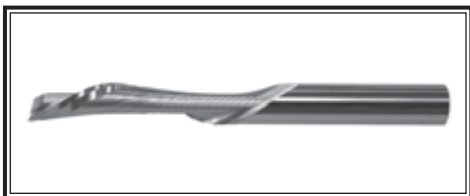
Part #	D1	L1	D2	L2
R63-71609	1/16	1/4	1/8	2
R63-71601	1/16	1/4	1/4	2
R63-71610	1/8	1/4	1/8	2
R63-71611	1/8	1/2	1/8	2
R63-71602	1/8	1/4	1/4	2
R63-71603	1/8	1/2	1/4	2
R63-71612	3/16	3/8	3/16	2
R63-71613	3/16	5/8	3/16	2
R63-71604	3/16	3/8	1/4	2
R63-71605	3/16	5/8	1/4	2
R63-71614	1/4	3/8	1/4	2
R63-71606	1/4	3/4	1/4	2-1/2
R63-71607	1/4	1-1/4	1/4	3
R63-71608	3/8	1-1/8	3/8	3



Material Finish-Top: Excellent
 Material Finish-Bottom: Poor
 End Point Type: Endmill
 Helix Angle: 30°

1 Flute Downcut Spiral

Part #	D1	L1	D2	L2
R62-21901	1/8	1/2	1/4	2
R62-21902	3/16	3/4	1/4	2
R62-21903	1/4	7/8	1/4	2-1/2
R62-21904	1/4	1	1/4	2-1/2
R62-31905	5/16	1-1/8	5/16	3
R62-31906	3/8	1-1/8	3/8	3
R62-31907	1/2	1-1/8	1/2	3



Material Finish-Top: Excellent
 Material Finish-Bottom: Poor
 End Point Type: Endmill
 Helix Angle: 30°

1 Flute Downcut Spiral (Hard Plastics and Aluminum)

Part #	D1	L1	D2	L2
R62-01801	1/8	1/2	1/4	2
R62-01802	1/4	3/4	1/4	2-1/2
R62-11803	5/16	13/16	3/8	2-1/2
R62-11804	3/8	7/8	3/8	2-1/2

Cutting Edge Tolerance: **±.000 -.003**
 Shank Tolerance: **H6**

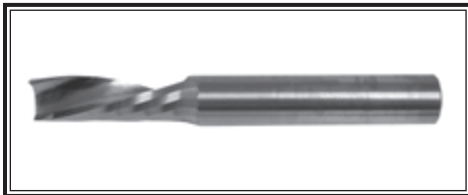
D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length



Material Finish-Top: Excellent
 Material Finish-Bottom: Poor
 End Point Type: Crescent
 Helix Angle: 21°

1 Flute "0" Flute Downcut Spiral (Soft Plastics)

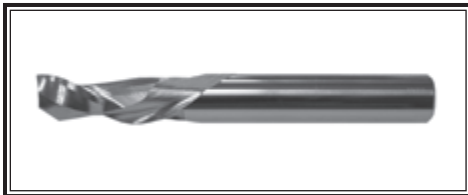
Part #	D1	L1	D2	L2
R62-71501	1/8	1/2	1/8	2
R62-71502	1/8	1/2	1/4	2
R62-71503	3/16	5/8	3/16	2
R62-71504	3/16	5/8	1/4	2
R62-71505	1/4	3/4	1/4	2-1/2
R62-71506	1/4	1-1/4	1/4	3
R62-71507	3/8	1-1/8	3/8	3



Material Finish-Top: Excellent
 Material Finish-Bottom: Poor
 End Point Type: Crescent
 Helix Angle: 22°

1 Flute "0" Flute Downcut Spiral (Hard Plastics)

Part #	D1	L1	D2	L2
R62-71408	1/8	1/2	1/8	2
R62-71401	1/8	1/2	1/4	2
R62-71402	5/32	9/16	1/4	2
R62-71409	3/16	5/8	3/16	2
R62-71403	3/16	5/8	1/4	2
R62-71404	7/32	3/4	1/4	2-1/2
R62-71405	1/4	3/4	1/4	2-1/2
R62-71406	1/4	1-1/4	1/4	3
R62-71407	3/8	1-1/8	3/8	3



Material Finish-Top: Excellent
 Material Finish-Bottom: Excellent
 End Point Type: Crescent
 Helix Angle: 30°

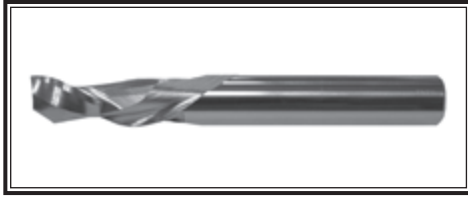
1 Flute Compression Spiral

Part #	D1	L1	D2	L2
R60-11201	1/8	3/8	1/4	2-1/2
R60-11202	3/16	5/8	1/4	2-1/2
R60-11203	1/4	7/8	1/4	2-1/2
R60-11204	3/8	1-1/8	3/8	3
R60-11207	1/2	1	1/2	3
R60-11209	1/2	1-1/8	1/2	3
R60-11211	1/2	1-3/8	1/2	3-1/2
R60-11212	1/2	1-5/8	1/2	3-1/2
R60-11213 LH	1/2	1-5/8	1/2	3-1/2
R60-11214	5/8	2-1/4	5/8	4
R60-11215	3/4	2	3/4	4

LH = Left Hand Rotation

Cutting Edge Tolerance: **+.000 -.003**
 Shank Tolerance: **H6**

D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length



Material Finish-Top: Excellent
 Material Finish-Bottom: Excellent
 End Point Type: Crescent
 Helix Angle: 30°

1 Flute Compression Hard Surface

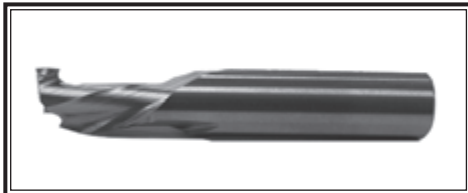
Part #	D1	L1	D2	L2
R60-11208	1/2	1	1/2	3



Material Finish-Top: Excellent
 Material Finish-Bottom: Excellent
 End Point Type: Crescent
 Helix Angle: 30°

1 Flute Compression Hard Wood

Part #	D1	L1	D2	L2
R60-11210	1/2	1-1/8	1/2	3



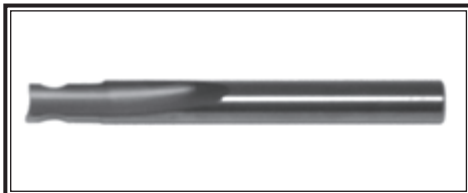
Material Finish-Top: Excellent
 Material Finish-Bottom: Excellent
 End Point Type: Crescent
 Helix Angle: 30°

1 Flute Mortise Compression Spiral

Part #	D1	L1	Mortise	D2	L2
R60-11901	1/4	7/8	.175	1/4	2-1/2
R60-11902	3/8	7/8	.188	3/8	3
R60-11903	1/2	7/8	.200	1/2	3
R60-11904	1/2	7/8	.200	1/2	3
R60-11905	1/2	1-5/8	.200	1/2	3-1/2

1 Flute Compression Ballnose Wood Router

Part #	D1	L1	D2	L2
R60-11203B	1/4	7/8	1/4	2-1/2
R60-11209B	1/2	1-1/8	1/2	3



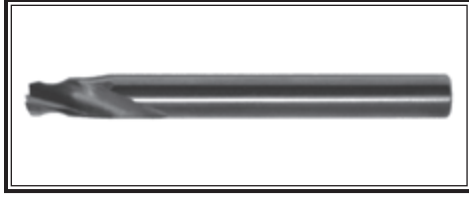
Material Finish-Top: Excellent
 Material Finish-Bottom: Excellent
 End Point Type: Crescent
 Helix Angle: 30°

1 Flute Straight "O" Flute Edge Rounding

Part #	D1	L1	D2	L2	Opening	Radius	Small Dia.	Tip to Radius
R66-02001	1/4	3/8	1/4	2-1/2	5/32	1/8	.195	1/16
R66-02002	1/4	3/8	1/4	2-1/2	7/32	3/16	.180	1/16
R66-02003	1/4	3/8	1/4	2-1/2	9/32	1/4	.163	1/16

Cutting Edge Tolerance: **±.000 -.003**
 Shank Tolerance: **H6**

D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length



Material Finish-Top: Excellent
 Material Finish-Bottom: Excellent
 End Point Type: Crescent
 Helix Angle: 30°

1 Flute Spiral "O" Flute Edge Rounding

Part #	D1	L1	D2	L2	Opening	Radius	Small Dia.	Tip to Radius
R66-02101	1/4	3/8	1/4	2-1/2	5/32	1/8	.195	1/16
R66-02102	1/4	3/8	1/4	2-1/2	7/32	3/16	.180	1/16
R66-02103	1/4	3/8	1/4	2-1/2	9/32	1/4	.163	1/16



Material Finish-Top: Poor
 Material Finish-Bottom: Excellent
 End Point Type: Endmill
 Helix Angle: 30°

1 Flute Veining Bit

Part #	D1	L1	D2	L2
R16-52710	1/16	1/4	1/4	1-1/2
R16-52711	3/32	1/4	1/4	1-1/2
R16-52712	1/8	1/4	1/4	1-1/2



Material Finish-Top: Excellent
 Material Finish-Bottom: Excellent
 End Point Type: Endmill

2 Flute Straight Cut

Part #	D1	L1	D2	L2
R56-01801	1/8	1/4	1/4	2
R56-01802	3/16	3/8	1/4	2
R56-01803	3/16	5/8	1/4	2
R56-01804 LH	3/16	5/8	1/4	2
R56-01805	3/16	5/8	1/4	4
R56-01806	1/4	3/8	1/4	2-1/2
R56-01807	1/4	3/4	1/4	2-1/2
R56-01808 LH	1/4	3/4	1/4	2-1/2
R56-01809	1/4	1-1/4	1/4	4
R56-11810	3/8	5/8	3/8	2-1/2
R56-11811	3/8	7/8	3/8	2-1/2
R56-11812 LH	3/8	7/8	3/8	2-1/2
R56-11813	3/8	1-5/8	3/8	6
R56-11814	1/2	1	1/2	3
R56-11815 LH	1/2	1	1/2	3
R56-11816	1/2	2-1/8	1/2	6

LH = Left Hand Rotation

Cutting Edge Tolerance: **+.000 -.003**
 Shank Tolerance: **H6**

D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length



Material Finish-Top: Excellent
 Material Finish-Bottom: Excellent
 End Point Type: Fishtail

2 Flute Straight Cut (Natural Wood and Hard Plastics)

Part #	D1	L1	D2	L2
R56-21101	1/8	1/2	1/4	2
R56-21102	5/32	5/8	1/4	2
R56-21103	3/16	3/4	1/4	2
R56-21104	7/32	3/4	1/4	2-1/2
R56-21105	1/4	7/8	1/4	2-1/2
R56-21106*	1/4	7/8	1/4	2-1/2
R56-21107	1/4	1	1/4	2-1/2
R56-21108	1/4	1-1/8	1/4	3
R56-21109	9/32	1	5/16	2-1/2
R56-31110	5/16	1-1/8	5/16	3
R56-31111	5/16	1-1/8	1/2	3
R56-31112	3/8	1-1/8	3/8	3
R56-31114	3/8	1-1/4	3/8	3
R56-31115	3/8	1-1/4	1/2	3
R56-31116	7/16	1	1/2	3
R56-31117	1/2	1-1/8	1/2	3
R56-31119	1/2	1-1/4	1/2	3-1/2
R56-31120	1/2	1-5/8	1/2	3-1/2
R56-31122	17/32	1-1/8	1/2	3
R56-31123	5/8	2-1/8	5/8	4
R56-31124	3/4	1-5/8	3/4	4

*Soft Plastics



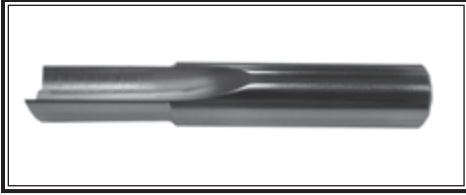
Material Finish-Top: Excellent
 Material Finish-Bottom: Excellent
 End Point Type: Fishtail

2 Flute Straight Flute "V" Bottom

Part #	D1	L1	D2	L2
R37-51301	3/16	5/8	1/4	2
R37-51302	1/4	3/4	1/4	2
R37-51303	3/8	3/4	3/8	2-1/2

Cutting Edge Tolerance: **±.000 -.003**
 Shank Tolerance: **H6**

D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length



Material Finish-Top: Excellent
 Material Finish-Bottom: Excellent
 End Point Type: Endmill

2 Flute "0" Flute Straight Cut ((Soft Plastics))

Part #	D1	L1	D2	L2
R56-61401	1/8	5/16	1/4	2
R56-61402	1/8	1/2	1/4	2
R56-61403	1/8	5/8	1/4	4
R56-61404	3/16	3/8	1/4	2
R56-61405	3/16	5/8	1/4	2
R56-61406	3/16	1	1/4	4
R56-61407	1/4	3/8	1/4	2-1/2
R56-61408	1/4	1	1/4	2-1/2
R56-61409 LH	1/4	1	1/4	2-1/2
R56-61410	1/4	1	1/4	3-1/4
R56-61411	1/4	1-1/4	1/4	4
R56-61412	3/8	7/8	3/8	2-1/2
R56-61413	3/8	1	3/8	4
R56-61414	1/2	1	1/2	3
R56-61415	1/2	1	1/2	4
R56-61416	1/2	1-3/4	1/2	4
R56-61417	1/2	2-1/8	1/2	6

LH = Left Hand Rotation

Cutting Edge Tolerance: **+0.000 -0.003**
 Shank Tolerance: **H6**

D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length



Material Finish-Top: Excellent
 Material Finish-Bottom: Excellent
 End Point Type: Endmill

2 Flute Straight "O" Flute Edge Rounding

Part #	D1	L1	D2	L2	Opening	Radius	Small Dia.	Tip to Radius
R66-02201	1/4	3/8	1/4	2-1/2	5/32	1/8	.195	1/16
R66-02202	1/4	3/8	1/4	2-1/2	7/32	3/16	.180	1/16
R66-02203	1/4	3/8	1/4	2-1/2	9/32	1/4	.163	1/16

2 Flute Straight "V" Flute Edge Rounding

Part #	D1	L1	D2	L2	Opening	Radius	Small Dia.	Tip to Radius
R66-12301	3/8	3/8	3/8	2-1/2	5/32	1/8	.320	1/16
R66-12302	3/8	3/8	3/8	2-1/2	7/32	3/16	.305	1/16
R66-12303	3/8	3/8	3/8	2-1/2	9/32	1/4	.288	1/16
R66-12304	3/8	1/2	3/8	2-1/2	13/32	3/8	.255	1/16
R66-12305	1/2	3/8	1/2	3	5/32	1/8	.445	1/16
R66-12306	1/2	3/8	1/2	3	7/32	3/16	.430	1/16
R66-12307	1/2	3/8	1/2	3	9/32	1/4	.413	1/16
R66-12308	1/2	5/8	1/2	3	17/32	1/2	.347	1/16

2 Flute Rout and Chamfer

Part #	D1	L1	D2	L2
R66-21101	1/4	3/16	3/8	2-1/4
R66-21102	3/8	3/16	1/2	3
R66-21103	1/4	1/4	3/8	2-1/4
R66-21104	3/8	1/4	1/2	3
R66-21105	1/4	5/16	3/8	2-1/4
R66-21106	3/8	5/16	1/2	3

Cutting Edge Tolerance: **±.000 - .003**
 Shank Tolerance: **H6**

D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length



Material Finish-Top: Poor
 Material Finish-Bottom: Excellent
 End Point Type: Fishtail
 Helix Angle: 30°

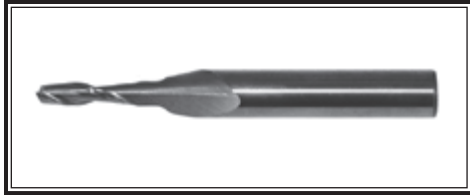
2 Flute Upcut Spiral

Part #	D1	L1	D2	L2
R52-22801	1/8	1/2	1/4	2
R52-22802 LH	1/8	1/2	1/4	2
R52-22803	5/32	1/2	1/4	2-1/2
R52-22804	5/32	5/8	1/4	2
R52-22893	3/16	3/4	3/16	2
R52-22843	3/16	3/4	1/4	2
R52-22806 LH	3/16	3/4	1/4	2
R52-22807	3/16	3/4	1/4	2-1/2
R52-22808	7/32	3/4	1/4	2-1/2
R52-22809	7/32	1	1/4	2-1/2
R52-22810	1/4	7/8	1/4	2-1/2
R52-22812	1/4	1	1/4	2-1/2
R52-22813 LH	1/4	1	1/4	2-1/2
R52-22814	1/4	1-1/8	1/4	3
R52-22815	9/32	1	5/16	2-1/2
R52-32816	5/16	1-1/8	5/16	3
R52-32817	5/16	1-1/4	5/16	3
R52-32818	5/16	1-1/8	1/2	3
R52-32819 LH	5/16	1-1/8	1/2	3
R52-32820	3/8	1	3/8	3
R52-32821	3/8	1-1/8	3/8	3
R52-32823	3/8	1-1/4	3/8	3
R52-32824 LH	3/8	1-1/4	3/8	3
R52-32825	3/8	1-1/4	1/2	3
R52-32826	7/16	1	1/2	3
R52-32827	1/2	1-1/8	1/2	3
R52-32829	1/2	1-1/4	1/2	3-1/2
R52-32830	1/2	1-5/8	1/2	3-1/2
R52-32831 LH	1/2	1-5/8	1/2	3-1/2
R52-32832	1/2	2-1/2	1/2	5
R52-32833	1/2	2-1/8	1/2	4
R52-32834	17/32	1-1/8	1/2	3
R52-32835	5/8	1-5/8	5/8	3-1/2
R52-32836	5/8	2-1/8	5/8	4
R52-32837 LH	5/8	2-1/8	5/8	4
R52-32838	3/4	1-5/8	3/4	4
R52-32839	3/4	2-1/8	3/4	4
R52-32840 LH	3/4	2-1/8	3/4	4
R52-32841	1	3	1	5

LH = Left Hand Rotation

Cutting Edge Tolerance: **+.000 -.003**
 Shank Tolerance: **H6**

D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length

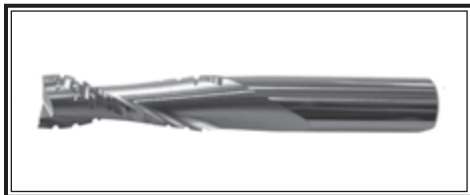


Material Finish-Top: Poor
 Material Finish-Bottom: Excellent
 End Point Type: Endmill
 Helix Angle: 30°

2 Flute Upcut Spiral (Hard Plastics and Aluminum)

Part #	D1	L1	D2	L2
R52-02401	1/8	1/2	1/4	2
R52-02402	5/32	9/16	1/4	2
R52-02403	3/16	5/8	1/4	2
R52-02404 LH	3/16	5/8	1/4	2
R52-02405	7/32	5/8	1/4	2-1/2
R52-02406	1/4	3/4	1/4	2-1/2
R52-02407 LH	1/4	3/4	1/4	2-1/2
R52-02408	9/32	3/4	3/8	2-1/2
R52-12409	5/16	13/16	3/8	2-1/2
R52-12410	3/8	7/8	3/8	2-1/2
R52-12411	7/16	1	1/2	3
R52-12412	1/2	1	1/2	3

LH = Left Hand Rotation



Material Finish-Top: Poor
 Material Finish-Bottom: Excellent
 End Point Type: Endmill
 Helix Angle: 30°

2 Flute Upcut Spiral Chipbreaker Finisher

Part #	D1	L1	D2	L2
R60-31201	3/8	1-1/8	3/8	3
R60-31202	1/2	1-1/8	1/2	3
R60-31203	1/2	1-5/8	1/2	3-1/2
R60-31204	1/2	2-1/8	1/2	4
R60-31205	1/2	1-7/8	1/2	3-1/2
R60-31206	5/8	2-1/8	5/8	4
R60-31207	3/4	2-1/8	3/4	4



Material Finish-Top: Poor
 Material Finish-Bottom: Excellent
 End Point Type: Fishtail
 Helix Angle: 30°

2 Flute Upcut Spiral (High Impact)

Part #	D1	L1	D2	L2
R52-92901	1/4	7/8	1/4	2-1/2
R52-92902	3/8	1-1/8	3/8	3
R52-92903	3/8	1-1/4	3/8	3
R52-92904	1/2	1-1/4	1/2	3

Cutting Edge Tolerance: **±.000 -.003**
 Shank Tolerance: **H6**

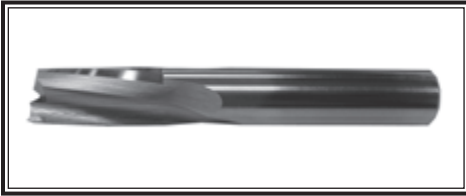
D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length



Material Finish-Top: Poor
 Material Finish-Bottom: Excellent
 End Point Type: Plunge
 Helix Angle: 30°

2 Flute Upcut Spiral Chipbreaker Finisher (High Impact)

Part #	D1	L1	D2	L2
R60-91901	3/8	1-1/8	3/8	3
R60-91902	1/2	1-1/8	1/2	3
R60-91903	1/2	1-5/8	1/2	3-1/2
R60-91904	1/2	2-1/8	1/2	4



Material Finish-Top: Poor
 Material Finish-Bottom: Excellent
 End Point Type: Endmill
 Helix Angle: 11°

2 Flute "O" Flute Upcut Slow Spiral (Soft and Hard Plastics)

Part #	D1	L1	D2	L2
R52-62601	1/4	3/8	1/4	2-1/2
R52-62602	1/4	3/4	1/4	2-1/2
R52-62603	3/8	1	3/8	3
R52-62604	1/2	1-1/8	1/2	3-1/2



Material Finish-Top: Poor
 Material Finish-Bottom: Excellent
 Helix Angle: 30°

2 Flute Upcut Ball Wood Routers

Part #	D1	L1	D2	L2
R52-23402	1/8	1/2	1/4	3
R52-23403	3/16	3/4	1/4	2
R52-23404	3/16	3/4	1/4	3
R52-23405	1/4	7/8	1/4	2-1/2
R52-23406	1/4	1	1/4	4
R52-33407	3/8	1-1/8	3/8	3
R52-33408	3/8	1-1/4	3/8	4
R52-33409	1/2	1-1/8	1/2	3
R52-33411	1/2	1-1/2	1/2	5



2 Flute Upcut Bottom Surface

Part #	D1	L1	D2	L2
R66-31401	1/8	1/4	1/8	2
R66-31402	1/8	1/4	1/4	2
R66-31403	1/4	3/8	1/4	2
R66-31404	3/8	5/8	3/8	2-1/2
R66-31405	1/2	7/8	1/2	3

Cutting Edge Tolerance: **+.000 -.003**
 Shank Tolerance: **H6**

D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length



Material Finish-Top: Excellent
 Material Finish-Bottom: Poor
 End Point Type: Fishtail
 Helix Angle: 30°

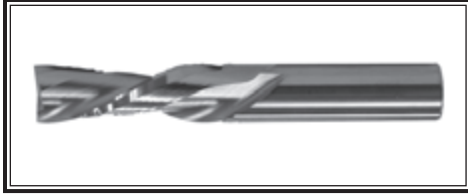
2 Flute Downcut Spiral

Part #	D1	L1	D2	L2
R57-22203	1/8	1/2	1/8	2
R57-22201	1/8	1/2	1/4	2
R57-22202 LH	1/8	1/2	1/4	2
R57-22204	5/32	1/2	1/4	2-1/2
R57-22244	5/32	5/8	1/4	2
R57-22206	3/16	3/4	3/16	2
R57-22207	3/16	3/4	1/4	2
R57-22208 LH	3/16	3/4	1/4	2
R57-22209	3/16	3/4	1/4	2-1/2
R57-22210	7/32	3/4	1/4	2-1/2
R57-22211	7/32	1	1/4	2-1/2
R57-22212	1/4	7/8	1/4	2-1/2
R57-22214	1/4	1	1/4	2-1/2
R57-22215 LH	1/4	1	1/4	2-1/2
R57-22216	1/4	1-1/8	1/4	3
R57-22217	9/32	1	5/16	2-1/2
R57-32218	5/16	1-1/8	5/16	3
R57-32219	5/16	1-1/4	5/16	3
R57-32220	5/16	1-1/8	1/2	3
R57-32221 LH	5/16	1-1/8	1/2	3
R57-32222	3/8	1	3/8	3
R57-32223	3/8	1-1/8	3/8	3
R57-32225	3/8	1-1/4	3/8	3
R57-32226 LH	3/8	1-1/4	3/8	3
R57-32227	3/8	1-1/4	1/2	3
R57-32228	7/16	1	1/2	3
R57-32229	1/2	1-1/8	1/2	3
R57-32231	1/2	1-1/4	1/2	3-1/2
R57-32232	1/2	1-5/8	1/2	3-1/2
R57-32233 LH	1/2	1-5/8	1/2	3-1/2
R57-32235	1/2	2-1/8	1/2	4
R57-32236	17/32	1-1/8	1/2	3
R57-32237	5/8	1-5/8	5/8	3-1/2
R57-32238	5/8	2-1/8	5/8	4
R57-32239 LH	5/8	2-1/8	5/8	4
R57-32240	3/4	1-5/8	3/4	4
R57-32241	3/4	2-1/8	3/4	4
R57-32242 LH	3/4	2-1/8	3/4	4
R57-32243	1	3	1	5

LH = Left Hand Rotation

Cutting Edge Tolerance: **±.000 -.003**
 Shank Tolerance: **H6**

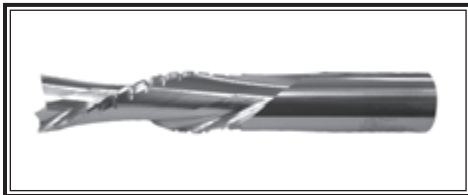
D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length



Material Finish-Top: Good
 Material Finish-Bottom: Poor
 End Point Type: Endmill
 Helix Angle: 30°

2 Flute Downcut Spiral (Hard Plastics and Aluminum)

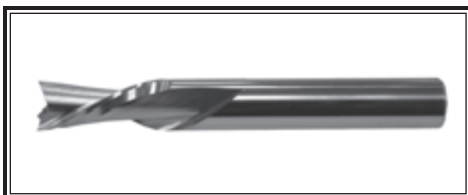
Part #	D1	L1	D2	L2
R57-02401	1/8	1/2	1/4	2
R57-02402	5/32	9/16	1/4	2
R57-02403	3/16	5/8	1/4	2
R57-02404	7/32	5/8	1/4	2-1/2
R57-02405	1/4	3/4	1/4	2-1/2
R57-02406	9/32	3/4	3/8	2-1/2
R57-12407	5/16	13/16	3/8	2-1/2
R57-12408	3/8	7/8	3/8	2-1/2
R57-12409	7/16	1	1/2	3
R57-12410	1/2	1	1/2	3



Material Finish-Top: Good
 Material Finish-Bottom: Poor
 End Point Type: Endmill
 Helix Angle: 30°

2 Flute Downcut Spiral Chipbreaker Finisher

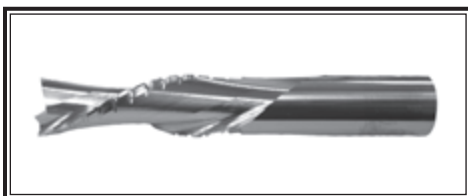
Part #	D1	L1	D2	L2
R60-31001	3/8	1-1/8	3/8	3
R60-31002	1/2	1-1/8	1/2	3
R60-31003	1/2	1-5/8	1/2	3-1/2
R60-31004	1/2	1-7/8	1/2	3-1/2
R60-31005	1/2	2-1/8	1/2	4
R60-31006	5/8	2-1/8	5/8	4
R60-31007	3/4	2-1/8	3/4	4



Material Finish-Top: Excellent
 Material Finish-Bottom: Poor
 End Point Type: Fishtail
 Helix Angle: 30°

2 Flute Downcut Spiral (High Impact)

Part #	D1	L1	D2	L2
R57-92501	1/4	7/8	1/4	2-1/2
R57-92502	3/8	7/8	3/8	3
R57-92503	3/8	1-1/8	3/8	3
R57-92504	3/8	1-1/4	3/8	3
R57-92505	1/2	1-1/4	1/2	3



Material Finish-Top: Good
 Material Finish-Bottom: Poor
 End Point Type: Endmill
 Helix Angle: 30°

2 Flute Downcut Spiral Chipbreaker Finisher (High Impact)

Part #	D1	L1	D2	L2
R60-91801	3/8	1-1/8	3/8	3
R60-91802	1/2	1-1/8	1/2	3
R60-91803	1/2	1-5/8	1/2	3-1/2
R60-91804	1/2	2-1/8	1/2	4

Cutting Edge Tolerance: **+.000 -.003**
 Shank Tolerance: **H6**

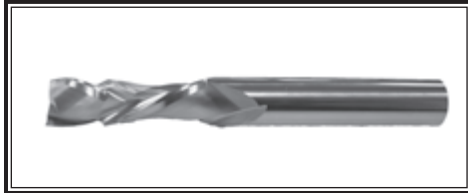
D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length



Material Finish-Top: Excellent
 Material Finish-Bottom: Poor
 End Point Type: Endmill
 Helix Angle: 11°

2 Flute "O" Flute Downcut Slow Spiral (Hard Plastics & Aluminum)

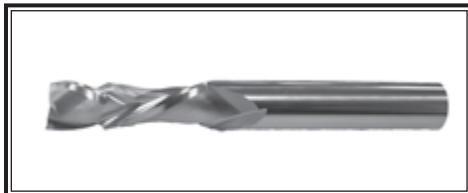
Part #	D1	L1	D2	L2
R57-62301	1/4	3/8	1/4	2-1/2
R57-62302	1/4	3/4	1/4	2-1/2
R57-62303	3/8	1	3/8	3
R57-62304	1/2	1-1/8	1/2	3-1/2



Material Finish-Top: Excellent
 Material Finish-Bottom: Excellent
 End Point: Endmill
 Helix Angle: 30°

2 Flute Compression

Part #	D1	L1	D2	L2
R60-11409	1/4	7/8	1/4	2-1/2
R60-11401	3/8	1-1/8	3/8	3
R60-11402	1/2	1	1/2	3
R60-11403	1/2	1-1/8	1/2	3
R60-11411	1/2	1-5/16	1/2	3
R60-11404	1/2	1-3/8	1/2	3-1/2
R60-11405	1/2	1-5/8	1/2	4
R60-11410	1/2	2-1/2	1/2	4-1/2
R60-11406	5/8	2-1/4	5/8	5
R60-11407	3/4	1-7/8	3/4	4
R60-11408	3/4	2-1/2	3/4	5



Material Finish-Top: Excellent
 Material Finish-Bottom: Excellent
 End Point: Endmill
 Helix Angle: 30°

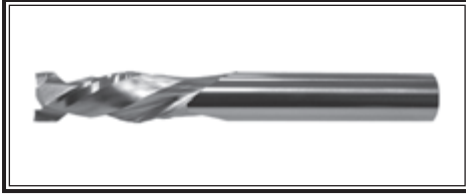
2 Flute Compression (High Wear)

Part #	D1	L1	D2	L2
R60-11301*	3/8	7/8	3/8	3
R60-11321	3/8	7/8	3/8	3
R60-11302*	1/2	7/8	1/2	3
R60-11322	1/2	7/8	1/2	3
R60-11308	1/2	1-1/8	1/2	3
R60-11303	1/2	1-1/4	1/2	3
R60-11304	1/2	1-3/8	1/2	3-1/2
R60-11305	1/2	1-5/8	1/2	3-1/2

*Indicates Mortise compression

Cutting Edge Tolerance: **±.000 -.003**
 Shank Tolerance: **H6**

D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length

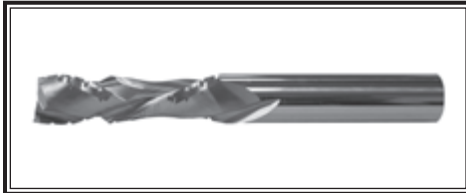


Material Finish-Top: Excellent
 Material Finish-Bottom: Excellent
 End Point: Endmill
 Helix Angle: 30°

2 Flute Mortise Compression

Part #	D1	L1	Mortise	D2	L2
R60-12001	1/4	7/8	.188	1/4	2-1/2
R60-12002	3/8	7/8	.188	3/8	3
R60-12012	3/8	1-1/8	.188	3/8	3
R60-12005 LH	3/8	1-1/8	.188	3/8	3
R60-12003	1/2	7/8	.200	1/2	3
R60-12004	1/2	1-3/8	.200	1/2	3-1/2

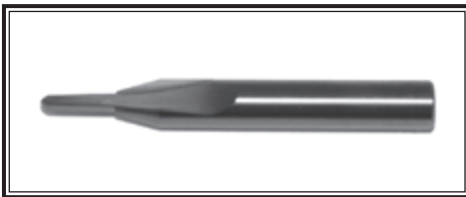
LH = Left Hand Rotation



Material Finish-Top: Excellent
 Material Finish-Bottom: Excellent
 End Point: Endmill
 Helix Angle: 30°

2 Flute Chipbreaker Finisher Compression

Part #	D1	L1	D2	L2
R60-11001	3/8	7/8	3/8	3
R60-11002	3/8	1-1/8	3/8	3
R60-11014	1/2	7/8	1/2	3
R60-11003	1/2	1	1/2	3
R60-11004	1/2	1-1/8	1/2	3
R60-11005	1/2	1-3/8	1/2	3-1/2
R60-11006	1/2	1-5/8	1/2	4
R60-11007	5/8	2-1/4	5/8	5
R60-11008	3/4	1-7/8	3/4	4



2 Flute Ball Round Bottom - Slow Helix

Part #	D1	L1	D2	L2
R38-51351	1/8	3/8	1/4	2
R38-51352	3/16	5/8	1/4	2
R38-51353	1/4	3/4	1/4	2
R38-51354	3/8	3/4	3/8	2-1/4



Material Finish-Top: Poor
 Material Finish-Bottom: Excellent
 End Point: Endmill
 Helix Angle: 30°

3 Flute Straight Flute Router

Part #	D1	L1	D2	L2
R53-01301	1/8	1/2	1/4	2
R53-01302	1/4	3/4	1/4	2-1/2

Cutting Edge Tolerance: **+.000 -.003**
 Shank Tolerance: **H6**

D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length



Material Finish-Top: Poor
 Material Finish-Bottom: Excellent
 End Point: Endmill
 Helix Angle: 30°

3 Flute Upcut Spiral Millend (Hard Plastics)

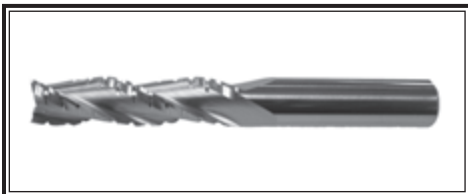
Part #	D1	L1	D2	L2
R58-01201	1/8	1/2	1/4	2
R58-01202	3/16	5/8	1/4	2
R58-01203	1/4	3/4	1/4	2-1/2
R58-01204	3/8	1-1/4	3/8	3



Material Finish-Top: Poor
 Material Finish-Bottom: Excellent
 End Point: Endmill
 Helix Angle: 10°

3 Flute Upcut Slow Spiral Finisher

Part #	D1	L1	D2	L2
R60-22501	1/4	3/8	1/4	3
R60-22502	1/4	7/8	1/4	3
R60-22503	3/8	5/8	3/8	3
R60-22504	3/8	1-1/8	3/8	3
R60-22507	1/2	1-1/8	1/2	3-1/2
R60-22509	1/2	1-5/8	1/2	4
R60-22510	1/2	2-1/8	1/2	4-1/2
R60-22511	3/4	1-5/8	3/4	4
R60-22512	3/4	2-1/8	3/4	5



Material Finish-Top: Poor
 Material Finish-Bottom: Excellent
 End Point: Endmill
 Helix Angle: 30°

3 Flute Upcut Spiral Chipbreaker Finisher

Part #	D1	L1	D2	L2
R60-32101	3/8	1-1/8	3/8	3
R60-32102	1/2	1-1/8	1/2	3
R60-32103	1/2	1-3/8	1/2	3-1/2
R60-32104	1/2	1-5/8	1/2	3-1/2
R60-32105	5/8	1-5/8	5/8	4
R60-32106	3/4	1-5/8	3/4	4
R60-32107	3/4	2-1/4	3/4	4
R60-32108	3/4	3-1/8	3/4	6



Material Finish-Top: Poor
 Material Finish-Bottom: Excellent
 End Point: Endmill
 Helix Angle: 10°

3 Flute Upcut Slow Helix Ripper

Part #	D1	L1	D2	L2
R60-01601	3/8	1-1/8	3/8	3-1/2
R60-01602	1/2	1-1/8	1/2	3-1/2
R60-01603	1/2	1-5/8	1/2	4
R60-01604	5/8	1-5/8	5/8	4
R60-01605	5/8	2-1/8	5/8	5
R60-01606	3/4	1-5/8	3/4	4
R60-01607	3/4	2-1/8	3/4	5

Cutting Edge Tolerance: **±.000 -.003**
 Shank Tolerance: **H6**

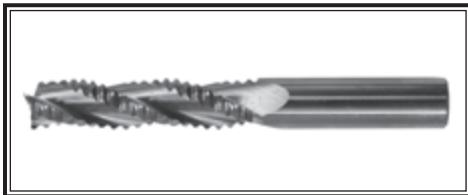
D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length



Material Finish-Top: Poor
 Material Finish-Bottom: Excellent
 End Point: Endmill
 Helix Angle: 30°

3 Flute Upcut High Helix Ripper

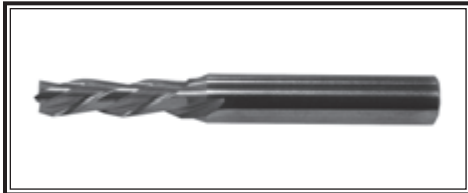
Part #	D1	L1	D2	L2
R60-01701	3/8	1-1/8	3/8	3-1/2
R60-01703	1/2	1-1/8	1/2	3-1/2
R60-01704	1/2	1-5/8	1/2	4
R60-01705	5/8	1-5/8	5/8	4
R60-01706	5/8	2-1/2	5/8	5
R60-01709	3/4	1-5/8	3/4	4
R60-01710	3/4	2-1/8	3/4	5



Material Finish-Top: Poor
 Material Finish-Bottom: Excellent
 End Point: Endmill
 Helix Angle: 30°

3 Flute Upcut Spiral Hogger (High Impact)

Part #	D1	L1	D2	L2
R60-92701	3/8	1-1/8	3/8	3
R60-92702	1/2	1-1/8	1/2	3
R60-92703	1/2	1-5/8	1/2	3-1/2
R60-92704	1/2	2-1/8	1/2	4



Material Finish-Top: Excellent
 Material Finish-Bottom: Poor
 End Point: Endmill
 Helix Angle: 30°

3 Flute Downcut Spiral

Part #	D1	L1	D2	L2
R59-01001	1/8	1/2	1/4	2
R59-01002	3/16	5/8	1/4	2
R59-01003	1/4	3/4	1/4	2-1/2



Material Finish-Top: Excellent
 Material Finish-Bottom: Poor
 End Point: Endmill
 Helix Angle: 10°

3 Flute Downcut Slow Spiral Finisher

Part #	D1	L1	D2	L2
R60-22301	1/4	3/8	1/4	3
R60-22302	1/4	7/8	1/4	3
R60-22303	3/8	5/8	3/8	3
R60-22310	3/8	1-1/8	3/8	3
R60-22311	1/2	1-1/8	1/2	3-1/2
R60-22312	1/2	1-5/8	1/2	4
R60-22307	1/2	2-1/8	1/2	4-1/2
R60-22313	3/4	1-5/8	3/4	4
R60-22309	3/4	2-1/8	3/4	5

Cutting Edge Tolerance: **+.000 -.003**
 Shank Tolerance: **H6**

D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length



Material Finish-Top: Excellent
 Material Finish-Bottom: Poor
 End Point: Endmill
 Helix Angle: 30°

3 Flute Downcut Spiral Chipbreaker Finisher

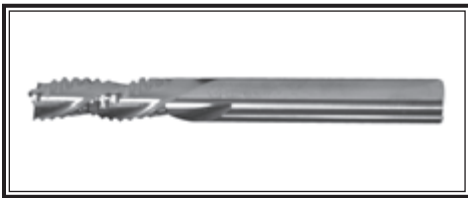
Part #	D1	L1	D2	L2
R60-32001	3/8	1-1/8	3/8	3
R60-32002	1/2	1-1/8	1/2	3
R60-32003	1/2	1-3/8	1/2	3-1/2
R60-32004	1/2	1-5/8	1/2	3-1/2
R60-32005	5/8	1-5/8	5/8	4
R60-32006	3/4	1-5/8	3/4	4
R60-32007	3/4	2-1/4	3/4	5
R60-32008	3/4	3-1/8	3/4	6



Material Finish-Top: Excellent
 Material Finish-Bottom: Poor
 End Point: Endmill
 Helix Angle: 10°

3 Flute Downcut Slow Helix Ripper

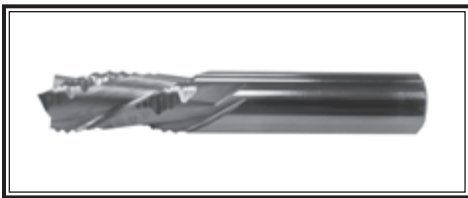
Part #	D1	L1	D2	L2
R60-01401	3/8	1-1/8	3/8	3-1/2
R60-01402	1/2	1-1/8	1/2	3-1/2
R60-01404	1/2	1-5/8	1/2	4
R60-01405	5/8	1-5/8	5/8	4
R60-01406	5/8	2-1/8	5/8	5
R60-01407	3/4	1-5/8	3/4	4
R60-01408	3/4	2-1/8	3/4	5



Material Finish-Top: Excellent
 Material Finish-Bottom: Poor
 End Point: Endmill
 Helix Angle: 30°

3 Flute Downcut Spiral High Helix Ripper

Part #	D1	L1	D2	L2
R60-01501	3/8	1-1/8	3/8	3-1/2
R60-01503	1/2	1-1/8	1/2	3-1/2
R60-01504	1/2	1-5/8	1/2	4
R60-01505	5/8	1-5/8	5/8	4
R60-01506	5/8	2-1/8	5/8	5
R60-01509	3/4	1-5/8	3/4	4
R60-01510	3/4	2-1/8	3/4	5



Material Finish-Top: Good
 Material Finish-Bottom: Poor
 End Point: Endmill
 Helix Angle: 30°

3 Flute Downcut Spiral Hogger (High Impact)

Part #	D1	L1	D2	L2
R60-92201	3/8	1-1/8	3/8	3
R60-92202	1/2	1-1/8	1/2	3
R60-92203	1/2	1-5/8	1/2	3-1/2
R60-92204	1/2	2-1/8	1/2	4

Cutting Edge Tolerance: **±.000 -.003**
 Shank Tolerance: **H6**

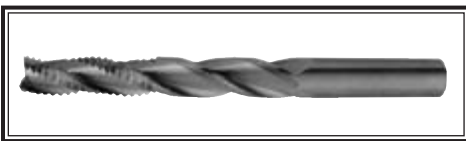
D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length



Material Finish-Top: Excellent
Material Finish-Bottom: Excellent
Helix Angle: 30°



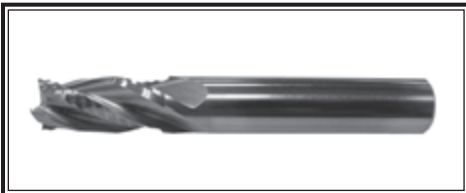
Material Finish-Top: Excellent
Material Finish-Bottom: Excellent
Helix Angle: 30°



Material Finish-Top: Excellent
Material Finish-Bottom: Excellent
Helix Angle: 30°



Material Finish-Top: Poor
Material Finish-Bottom: Excellent
End Point: Endmill
Helix Angle: 30°



Material Finish-Top: Poor
Material Finish-Bottom: Excellent
End Point: Endmill
Helix Angle: 30°

3 Flute Compression

Part #	D1	L1	D2	L2
R60-11501	3/8	1-1/8	3/8	3
R60-11502	1/2	1-1/8	1/2	3
R60-11503	1/2	1-5/8	1/2	3-1/2
R60-11504	3/4	2	3/4	4

3 Flute Compression (High Wear)

Part #	D1	L1	D2	L2
R60-01611*	3/8	7/8	3/8	3
R60-01621	3/8	7/8	3/8	3

*Mortise compression

3 Flute Mortise Compression

Part #	D1	Mortise	L1	D2	L2
R60-12101	3/8	7/8	.200	3/8	3
R60-12102	1/2	7/8	.200	1/2	3
R60-12103	1/2	1-3/8	.200	1/2	3-1/2
R60-12104	3/4	2	.200	3/4	4

3 Flute Upcut Lock Mortise

Part #	D1	L1	Depth of Cut	D2	L2
R60-01751	5/8	2	4-1/2	5/8	6-1/2

4 Flute Upcut Spiral (Hard Plastics)

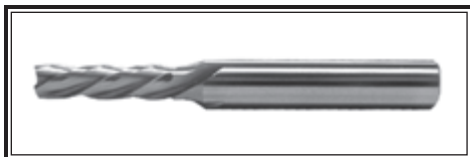
Part #	D1	L1	D2	L2
R55-01301	1/8	1/2	1/4	2
R55-01302	5/32	9/16	1/4	2
R55-01303	3/16	5/8	1/4	2
R55-01304	1/4	3/4	1/4	2-1/2

4 Flute Upcut Combination Spiral (High Velocity)

Part #	D1	L1	D2	L2
R60-71001	1/2	1-1/8	1/2	3-1/2
R60-71002	1/2	1-5/8	1/2	4
R60-71003	1/2	2-1/8	1/2	4-1/2
R60-71004	5/8	2-1/8	5/8	5
R60-71005	3/4	2-1/8	3/4	5

Cutting Edge Tolerance: **+.000 -.003**
Shank Tolerance: **H6**

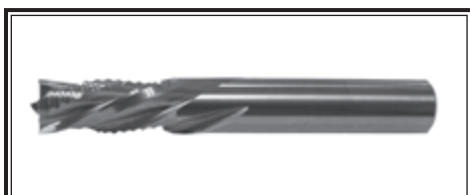
D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length



Material Finish-Top: Excellent
 Material Finish-Bottom: Poor
 End Point: Endmill
 Helix Angle: 30°

4 Flute Downcut Spiral (Hard Plastics)

Part #	D1	L1	D2	L2
R54-01101	1/8	1/2	1/4	2
R54-01102	5/32	9/16	1/4	2
R54-01103	3/16	5/8	1/4	2
R54-01104	1/4	3/4	1/4	2-1/2



Material Finish-Top: Excellent
 Material Finish-Bottom: Poor
 End Point: Endmill
 Helix Angle: 30°

4 Flute Downcut Combination Spiral (High Velocity)

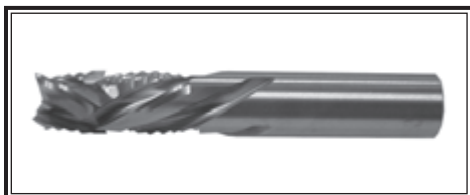
Part #	D1	L1	D2	L2
R60-71101	1/2	1-1/8	1/2	3-1/2
R60-71102	1/2	1-5/8	1/2	4
R60-71103	1/2	2-1/8	1/2	4
R60-71104	5/8	2-1/8	5/8	5
R60-71105	3/4	2-1/8	3/4	5



Material Finish-Top: Excellent
 Material Finish-Bottom: Excellent
 End Point: Endmill
 Helix Angle: 30°

4 Flute Compression

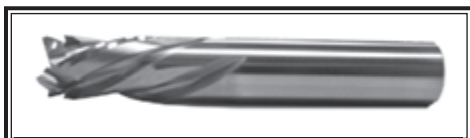
Part #	D1	L1	D2	L2
R60-51701	1/2	1	1/2	3
R60-51702	1/2	1-1/8	1/2	3
R60-51703	1/2	1-3/8	1/2	3-1/2
R60-51704	1/2	1-5/8	1/2	4
R60-51705	5/8	2-1/4	5/8	5
R60-51706	3/4	1-7/8	3/4	4
R60-51707	3/4	2-1/2	3/4	5



Material Finish-Top: Excellent
 Material Finish-Bottom: Excellent
 End Point: Endmill
 Helix Angle: 30°

4 Flute Combination Compression

Part #	D1	L1	D2	L2
R60-61801	1/2	1	1/2	3
R60-61802	1/2	1-1/8	1/2	3
R60-61803	1/2	1-3/8	1/2	3-1/2
R60-61804	1/2	1-5/8	1/2	4
R60-61805	5/8	2-1/4	5/8	5
R60-61806	3/4	1-7/8	3/4	4
R60-61807	3/4	2-1/2	3/4	5



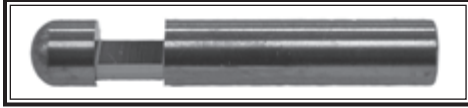
Material Finish-Top: Excellent
 Material Finish-Bottom: Excellent
 End Point: Endmill - Helix Angle: 30°

4 Flute Mortise Compression

Part #	D1	L1	D2	L2
R60-52201	1/2	7/8	1/2	3
R60-52202	1/2	1-3/8	1/2	3-1/2

Cutting Edge Tolerance: **±.000 -.003**
 Shank Tolerance: **H6**

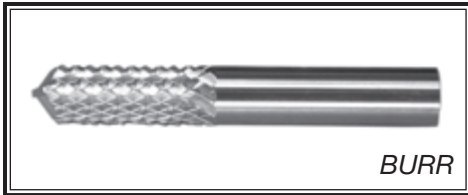
D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length



Material Finish-Top: Excellent

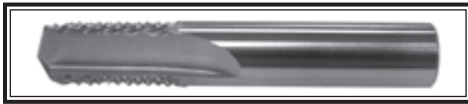


Material Finish-Top: Excellent



BURR

Material Finish-Top: Good
Material Finish-Bottom: Good
End Point: Drill



Material Finish-Top: Good
Material Finish-Bottom: Good
End Point: Drill



Material Finish-Top: Poor
Material Finish-Bottom: Excellent
End Point: Endmill
Helix Angle: 30°



Material Finish-Top: Excellent
Material Finish-Bottom: Poor
End Point: Endmill
Helix Angle: 30°

Flush Trim Laminate Trimmer (Plastic Laminates)

Part #	D1	L1	D2	L2
LR94000	1/4	1/4	1/4	1-1/2
LR94002	1/4	3/8	1/4	1-1/2

7° Bevel Laminate Trimmer (Plastic Laminates)

Part #	D1	L1	D2	L2
LR94004	1/4	1/4	1/4	1-1/2

Diamond Burr Fiberglass Finishers (Hard Plastics)

Part #	D1	L1	D2	L2
R67-02601B	1/4	3/4	1/4	2-1/2
R67-02603A	1/4	3/4	1/4	2-1/2
R67-02604B	1/4	1	1/4	3
R67-12605B	3/8	7/8	3/8	2-1/2
R67-12607A	3/8	7/8	3/8	2-1/2
R67-12608B	1/2	1	1/2	3
R67-12610A	1/2	1	1/2	3

B = Burr Style, A = Arimid Style

2 Flute Diamond Burr Fiberglass Finishers (Hard Plastics)

Part #	D1	L1	D2	L2
R67-02602	1/4	3/4	1/4	2-1/2
R67-12606	3/8	7/8	3/8	2-1/2
R67-12609	1/2	1	1/2	3

4 Flute Upcut Fiberglass Router

Part #	D1	L1	D2	L2
R55-31351	3/8	5/8	3/8	3
R55-31352	3/8	1-1/8	3/8	3
R55-31353	1/2	5/8	1/2	3-1/2
R55-31354	1/2	1-1/8	1/2	3-1/2

4 Flute Downcut Fiberglass Router

Part #	D1	L1	D2	L2
R54-31151	3/8	5/8	3/8	3
R54-31152	3/8	1-1/8	3/8	3
R54-31153	1/2	5/8	1/2	3-1/2
R54-31154	1/2	1-1/8	1/2	3-1/2

Cutting Edge Tolerance: **+.000 -.003**
Shank Tolerance: **H6**

D1 - Cutting Diameter • L1 - Cutting Length • D2 - Shank Diameter • L2 - Overall Length