

## Series 800 & 900

### SINGLE FLUTE FINISHING SPIRALS

Single-edge tools are used when slower feed rates (100-300 inches per minute) are mandated by the application. The open flute geometry is excellent for chip evacuation and helps reduce heat build-up. Designed to cut wood or wood composites.



Upcut - Series 800



Downcut - Series 900

UPCUT PART #	DOWNCUT PART #	CED	CEL	SHK DIA	OAL
830	930	1/4	7/8	1/4	2 1/2
835	935	5/16	7/8	3/8	3
840	940	3/8	1 1/4	3/8	3
850	950	1/2	1 1/4	1/2	3

## Series 1000 & 1100

### TWO FLUTE ROUGHING SPIRALS

Roughing tools are designed for high feed rates on CNC routers. These tools are used when surface finish is not important in dense materials such as hardwoods and plywoods. Roughing tools are very successful in CNC applications where this bit makes the first cut, followed by a second cut using a profile type tool. This tool will produce a “rippled” edge cut and is extremely quiet and smooth cutting, even in heavy cuts and high feed rates.



Upcut - Series 1000



Downcut - Series 1100

UPCUT PART #	DOWNCUT PART #	CED	CEL	SHK DIA	OAL
1040	1140	3/8	1 1/4	3/8	3
1040L	--	3/8	1 1/4	3/8	3
1050	1150	1/2	1 1/4	1/2	3 1/2
1050L	--	1/2	1 1/4	1/2	3 1/2
1055	1155	1/2	1 1/2	1/2	3 1/2
1055L	--	1/2	1 1/2	1/2	3 1/2
1060	1160	1/2	1 3/4	1/2	3 1/2
--	1160L	1/2	1 3/4	1/2	3 1/2
1065	1165	1/2	2 1/8	1/2	4
1065L	--	1/2	2 1/8	1/2	4
1070	1170	5/8	2 1/8	5/8	4
1070L	--	5/8	2 1/8	5/8	4
1080	1180	3/4	2 1/2	3/4	5

L=Left Hand Rotation

## Series 1200

### TWO FLUTE UPCUT FINISHING SPIRALS



Two flute finishing tools are used when a smooth edge cut is required and is a popular tool design for most routing applications. The helical cutting edge reduces material contact while in the cut. These tools are used for cutting materials where no special considerations are needed. The upcut spiral will provide a smooth bottom finish, while “augering” the chips upward.

RIGHT HAND PART #	LEFT HAND PART #	CED	CEL	SHK DIA	OAL
1204	--	1/16	1/4	1/8	1 1/2
1203	--	3mm	12mm	6mm	64mm
1205	--	4mm	16mm	6mm	64mm
1206	--	5mm	20mm	6mm	64mm
1207	--	3/32	3/8	1/4	2
1208	--	6mm	25mm	6mm	64mm
1210	1210L	1/8	1/2	1/4	2
1212*	--	1/8	7/8	1/4	2 1/2
1215	--	5/32	9/16	1/4	2
1220	1220L	3/16	5/8	1/4	2
1225*	--	3/16	7/8	1/4	2 1/2
1222	--	8mm	25mm	8mm	64mm
1228	--	7/32	3/4	1/4	2 1/2
1230	1230L	1/4	7/8	1/4	2 1/2
1232*	1232L*	1/4	1 1/4	1/4	3
1234	--	9/32	1	5/16	2 1/2
1235	--	5/16	1 1/8	5/16	3
1238	--	3/8	1	3/8	3
1240	1240L	3/8	1 1/4	3/8	3
1245	1245L	3/8	1 1/4	1/2	3 1/2
1246	--	10mm	30mm	10mm	76mm
1249	1249L	7/16	1	1/2	3
1250	1250L	1/2	1 1/4	1/2	3 1/2
1251	--	1/2	7/8	1/2	3
1253	--	12mm	35mm	12mm	88mm
1255	--	1/2	1 1/2	1/2	3 1/2
1255B	--	1/2	1 1/2	1/2	3 1/2
1260	--	1/2	1 3/4	1/2	3 1/2
1260B	--	1/2	1 3/4	1/2	4
1265	1265L	1/2	2 1/8	1/2	4
1270	1270L	5/8	2 1/8	5/8	4
1275	--	16mm	50mm	16mm	127mm
1280	--	3/4	2 1/2	3/4	5
1282	--	3/4	1 5/8	3/4	4
1285*	1285L	3/4	3 1/2	3/4	6
1290	--	20mm	60mm	20mm	127mm

L=Left Hand Rotation, \* = Not guaranteed against breakage due to extreme cutting edge length, B = Flush Trim Bearing Bit  
 CED = Cutting Edge Diameter, CEL = Cutting Edge Length, SHK DIA = Shank Diameter, OAL = Overall Length

## Series 1300

### TWO FLUTE DOWNCUT FINISHING SPIRALS



Downcut tools are used when the down shearing effect of the tool is preferred. This tool will produce a clean top edge of a dado type or groove type cut or simply a thru cut where the bottom edge quality is not important. These tools will direct chip flow downward while helping hold parts onto the table or pod. When nest cutting the tool path remains packed with chips which helps preserve maximum vacuum. Never plunge straight down with downcut tooling as this may cause fire or breakage.

RIGHT HAND PART #	LEFT HAND PART #	CED	CEL	SHK DIA	OAL
1303	--	3mm	12mm	6mm	64mm
1305	--	4mm	16mm	6mm	64mm
1306	--	5mm	20mm	6mm	64mm
1307	--	3/32	3/8	1/4	2
1308	--	6mm	25mm	6mm	64mm
1310	1310L	1/8	1/2	1/4	2
1312*	--	1/8	7/8	1/4	2 1/2
1315	--	5/32	9/16	1/4	2
1320	1320L	3/16	5/8	1/4	2
1325*	--	3/16	7/8	1/4	2 1/2
1322	--	8mm	25mm	8mm	64mm
1328	--	7/32	3/4	1/4	2 1/2
1330	1330L	1/4	7/8	1/4	2 1/2
1332*	--	1/4	1 1/4	1/4	3
1334	--	9/32 (7.1mm)	1	5/16	2 1/2
1335	--	5/16	1 1/8	5/16	3
1338	--	3/8	1	3/8	3
1340	1340L	3/8	1 1/4	3/8	3
1345	1345L	3/8	1 1/4	1/2	3 1/2
1346	--	10mm	30mm	10mm	76mm
1349	--	7/16	1	1/2	3
1350	1350L	1/2	1 1/4	1/2	3 1/2
1351	--	1/2	7/8	1/2	3
1353	--	12mm	35mm	12mm	88mm
1355	1355L	1/2	1 1/2	1/2	3 1/2
1360	1360L	1/2	1 3/4	1/2	3 1/2
1365	1365L	1/2	2 1/8	1/2	4
1368	--	9/16	1	1/2	3
1370	1370L	5/8	2 1/8	5/8	4
1375	--	16mm	50mm	16mm	127mm
1380	1380L	3/4	2 1/2	3/4	5
1382	--	3/4	1 5/8	3/4	4
1385*	--	3/4	3 1/2	3/4	6
1390	--	20mm	60mm	20mm	127mm

L= Left Hand Rotation

\* = Not guaranteed against breakage due to extreme cutting edge length

CED = Cutting Edge Diameter, CEL = Cutting Edge Length, SHK DIA = Shank Diameter, OAL = Overall Length

## Series 1300XP

### TWO FLUTE "XTREME PERFORMANCE" DOWNCUT FINISHING SPIRALS

These tools have been specifically designed for difficult to cut materials where tool life is a problem. These tools will produce a clean top edge of a dado type or groove type cut or simply a thru cut where the bottom edge cut quality is not important.



Series 1300XP - Downcut  
"Xtreme Performance"

PART #	CED	CEL	SHK DIA	OAL
1330XP	1/4	7/8	1/4	2 1/2
1340XP	3/8	7/8	3/8	3
1340LXP	3/8	7/8	3/8	3
1350XP	1/2	7/8	1/2	3

L= Left Hand Rotation

## Series 1400 & 1500

### TWO FLUTE CHIPBREAKER SPIRALS

Chipbreaker cutting edges "break" the chips into even smaller pieces reducing power consumption and vibration. Chipbreakers are staggered on each flute to produce a smooth cut, but may leave visual lines when used with router spindles in poor condition. Chipbreaker tools are recommended for hardwoods, plywoods, and dense materials where higher feed rates are required.



Upcut - Series 1400



Downcut - Series 1500

UPCUT PART #	DOWNCUT PART #	CED	CEL	SHK DIA	OAL
1440	1540	3/8	1 1/4	3/8	3
--	1540L	3/8	1 1/4	3/8	3
1450	1550	1/2	1 1/4	1/2	3 1/2
1455	1555	1/2	1 1/2	1/2	3 1/2
1460	1560	1/2	1 3/4	1/2	3 1/2
1465	1565	1/2	2 1/8	1/2	4
1470	1570	5/8	2 1/8	5/8	4
1470L	--	5/8	2 1/8	5/8	4
1480	1580	3/4	2 1/2	3/4	5

L= Left Hand Rotation  
CED = Cutting Edge Diameter  
CEL = Cutting Edge Length  
SHK DIA = Shank Diameter  
OAL = Overall Length

## Series 1600 & 1700

### THREE FLUTE ROUGHING SPIRALS

These three flute tools are designed for high feed rates on CNC routers and are used when surface finish is not important in dense materials such as hardwoods and plywoods. These tools are very successful in CNC applications where this bit makes the first cut, followed by a second cut using a profile type tool. This tool will produce a “rippled” edge cut and is extremely quiet and smooth cutting, even in heavy cuts and high feed rates.



Upcut - Series 1600



Downcut - Series 1700

UPCUT PART #	DOWNCUT PART #	CED	CEL	SHK DIA	OAL
1638	--	3/8	1	3/8	2 1/2
1640	1740	3/8	1 1/4	3/8	3
1650	1750	1/2	1 1/4	1/2	3 1/2
--	1750L	1/2	1 1/4	1/2	3 1/2
1660	1760	1/2	1 3/4	1/2	3 1/2
1670	1770	5/8	2 1/8	5/8	4
1680	1780	3/4	2 1/2	3/4	5
1680L	--	3/4	2 1/2	3/4	5
1685*	1785*	3/4	3 1/2	3/4	6

Castle “Face Frame Pocket Bit” - #1638

## Series 1800 & 1900

### THREE FLUTE FINISHING SPIRALS

Finishing tools are used when an extremely smooth edge cut is required. The three flute design provides a better finish than a two flute tool at the same feed rate. Three flute tools are used for cutting natural woods and man-made wood composites. Some users experience greater tool life with a three flute tool as compared to a two flute tool.



Upcut - Series 1800



Downcut - Series 1900

UPCUT PART #	DOWNCUT PART #	CED	CEL	SHK DIA	OAL
1830	1930	1/4	7/8	1/4	2 1/2
--	1930L	1/4	7/8	1/4	2 1/2
1840	1940	3/8	1 1/4	3/8	3
1840L	1940L	3/8	1 1/4	3/8	3
1850	1950	1/2	1 1/4	1/2	3 1/2
--	1950L	1/2	1 1/4	1/2	3 1/2
1860	1960	1/2	1 3/4	1/2	3 1/2
1860L	1960L	1/2	1 3/4	1/2	3 1/2
1865	1965	1/2	2 1/8	1/2	4
1870	1970	5/8	2 1/8	5/8	4
--	1970L	5/8	2 1/8	5/8	4
1880	1980	3/4	2 1/2	3/4	5
1880L	1980L	3/4	2 1/2	3/4	5
1882	1982	3/4	1 5/8	3/4	4
1885*	1985*	3/4	3 1/2	3/4	6
--	1985L*	3/4	3 1/2	3/4	6

L= Left Hand Rotation \* = Not guaranteed against breakage due to extreme cutting edge length

## Series 2000 & 2100

### THREE FLUTE CHIPBREAKER SPIRALS

Chipbreaker cutting edges “break” the chips into smaller pieces reducing power consumption and vibration. Chipbreakers are staggered on each flute to produce a smooth edge cut, but may leave visual lines when used with router spindles in poor condition. Chipbreaker tools are recommended for hardwoods, plywoods and dense materials.



Upcut - Series 2000



Downcut - Series 2100

UPCUT PART #	DOWNCUT PART #	CED	CEL	SHK DIA	OAL
2040	2140	3/8	1 1/4	3/8	3
--	2140L	3/8	1 1/4	3/8	3
2050	2150	1/2	1 1/4	1/2	3 1/2
2060	2160	1/2	1 3/4	1/2	3 1/2
2060L	--	1/2	1 3/4	1/2	3 1/2
2065	2165	1/2	2 1/8	1/2	4
2070	2170	5/8	2 1/8	5/8	4
2070L	--	5/8	2 1/8	5/8	4
2080	2180	3/4	2 1/2	3/4	5

L= Left Hand Rotation

## Series 2200

### TWO FLUTE UPCUT BALLNOSE SPIRALS

These bits have been geometrically designed to cut cleaner than other ballnose end mills and have point geometry specifically designed to cut wood or plastics. A series of tapered ballnose spirals have been designed for carving machines like Legacy. Used for 3D modeling and carving, fluting, or for routing slots with rounded bottoms or rounded inside corners.



RIGHT HAND PART #	LEFT HAND PART #	CED	CEL	SHK DIA	OAL
2203	--	3mm	12mm	6mm	64mm
2204	--	1/16	1/4	1/8	1 1/2
2208	--	6mm	22mm	6mm	64mm
2210	--	1/8	1/2	1/8	1 1/2
2222	--	8mm	25mm	8mm	64mm
2230	2230L	1/4	7/8	1/4	2 1/2
2235*	--	1/4	1 1/2	1/4	4
2240	--	3/8	1 1/4	3/8	3
2243*	--	3/8	1 1/2	3/8	4
2246	--	10mm	29mm	10mm	76mm
2250	2250L	1/2	1 1/4	1/2	3 1/2
2253	--	12mm	29mm	12mm	76mm
2255	--	1/2	1 1/2	1/2	3 1/2
2258	--	1/2	1 1/2	1/2	5
2265	--	1/2	2 1/8	1/2	4
2270	--	5/8	2 1/8	5/8	4
2280	--	3/4	2 1/2	3/4	5
2282	--	3/4	1 1/2	3/4	4
2285*	--	3/4	3 1/2	3/4	6

L= Left Hand Rotation \* = Not guaranteed against breakage due to extreme cutting edge length

## Series 2200

### TAPERED BALLNOSE SPIRALS

A series of tapered ballnose spirals have been designed for carving machines like Legacy. Used for 3D modeling and carving, fluting, or for routing slots with rounded bottoms or rounded inside corners. These tools offer added strength with the ability to still produce fine detailed carving.



PART #	CED	CEL	SHK DIA	OAL
2205	1/4 to 1/16	1 1/2	1/4	3
2215	1/4 to 1/8	1 1/2	1/4	3
2245	1/2 to 1/4	1 1/2	1/2	3 1/2
2260	1/2 to 3/8	1 1/2	1/2	3 1/2

## Series 2300

### PASS-BY/DEEP POCKET MORTISE UPCUT

Pass-by router bits have a long overall length and a reduced diameter between the end of the cutting edge and the shank of the bit. This bit design is well suited for deep pocket mortise cuts and step cutting through thick materials. Available in two or three flutes in roughing or finishing geometries.



Two Flute Finishing Pass-by



Three Flute Finishing Pass-by



Three Flute Roughing Pass-by

PART #	CED	CEL	SHK DIA	OAL	DEPTH OF CUT	#/FLUTES GEOMETRY
2305	1/8	1/2	1/4	3	1	2 Finish
2308	1/4	3/4	1/4	3.25	2.125	2 Finish
2310	3/8	1	3/8	4	2.625	2 Finish
2320	1/2	1 1/4	1/2	5	3.5	2 Finish
2325	1/2	1 1/2	1/2	6	4.5	2 Finish
2340	5/8	1 1/2	5/8	6	4.5	2 Finish
2345	3/4	1 1/2	3/4	5	3.5	2 Finish
2350	3/4	1 1/2	3/4	6	4.5	2 Finish
2360	3/8	1	3/8	4	2.625	3 Finish
2365	1/2	1 1/4	1/2	5	3.5	3 Finish
2370	1/2	1 1/2	1/2	6	4.5	3 Finish
2375	5/8	1 1/2	5/8	6	4.5	3 Finish
2380	3/4	1 1/2	3/4	5	3.5	3 Finish
2385	3/4	1 1/2	3/4	6	4.5	3 Finish
2373R	1/2	1 1/2	1/2	6	4.5	3 Rough
2377R	5/8	2	5/8	6	4.5	3 Rough
2387R	3/4	2	3/4	6	4.5	3 Rough

CED = Cutting Edge Diameter, CEL = Cutting Edge Length, SHK DIA = Shank Diameter  
OAL = Overall Length

## Series 2400 & 2500

### FOUR FLUTE "TORNADO" SPIRALS

This award winning tool design combines a roughing and finishing tool into one tool. It achieves never before attained feed rates. The flute geometry features a larger flute preceding the roughing edges which allows it to take a bigger bite! Following close behind are finishing edges which produce a clean cut. Not recommended to operate under 600 inches per minute.



Upcut - Series 2400



Downcut - Series 2500

UPCUT PART #	DOWNCUT PART #	CED	CEL	SHK DIA	OAL
2442	2542	3/8	1 1/4	3/8	3
2442L	2542L	3/8	1 1/4	3/8	3
2450	2550	1/2	1 1/4	1/2	3
2455	2555	1/2	1 1/2	1/2	3 1/2
2460	2560	1/2	1 3/4	1/2	3 1/2
2465	2565	1/2	2 1/8	1/2	4
2480	2580	3/4	2 1/2	3/4	5
2480L	- -	3/4	2 1/2	3/4	5

L= Left Hand

## Series 2600

### SOLID CARBIDE SPIRAL OMEC DOVETAIL BITS

Designed for Omecc dovetail machines, these solid carbide dovetail bits are extremely quiet and smooth cutting. They are manufactured with upshear or downshear geometry, designed with a 10 degree cutting angle, and are available in right or left hand rotations. The newest addition to this dovetail line is a single flute upcut dovetail bit designed for Omecc machines with Eccentric spindles.



Upcut - Series 2600



Eccentric Spindles #2680

UPCUT PART #	DOWNCUT PART #	CED	DEPTH OF CUT	SHK DIA	OAL
2620	- -	14mm	.354" (9mm)	14mm w/flat	60mm
2620L	- -	14mm	.354" (9mm)	14mm w/flat	60mm
2630	2660	14mm	.394" (10mm)	14mm w/flat	60mm
2630L	2660L	14mm	.394" (10mm)	14mm w/flat	60mm
2640	2670	14mm	.622"	14mm w/flat	60mm
2640L	2670L	14mm	.622"	14mm w/flat	60mm
2680*	- -	15mm	.354" (9mm)	12mm	60mm

L= Left Hand Rotation

\* = Designed for Machines with Eccentric Spindles