

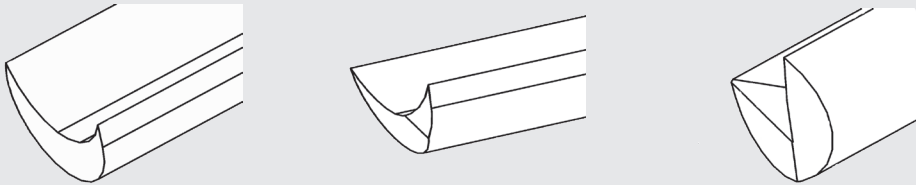


Wood Router Technical Information

Straight Flute Vs. Spiral Routers

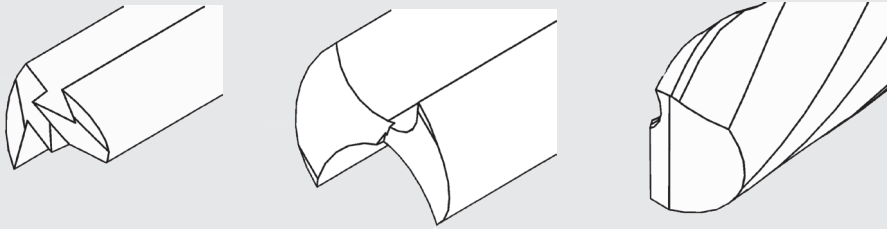
Straight flute router bits are generally used for routing plastics, and other soft materials. They are a great choice for hand feed operations. Spiral flute router bits should only be used in automatic feed operations. They are good for use on all materials.

Crescent Point



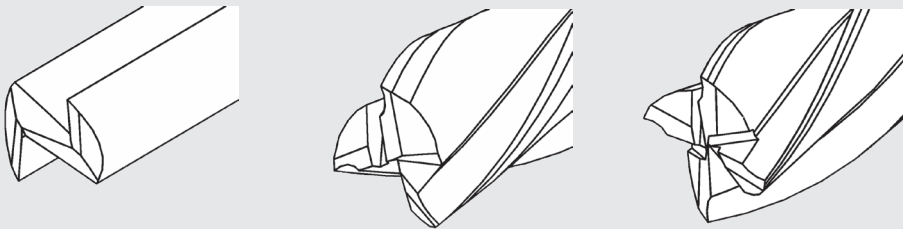
Crescent points are typically found on 1 flute router bits. They are good for both plunging, and flat bottom cutting.

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 flat bottom surface, and are commonly used in the plastic routing industry.

Flute Types

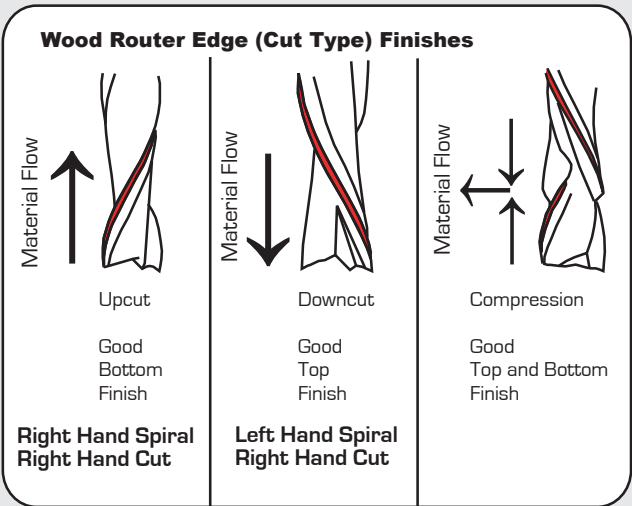
- 1 Flute routers are a good choice for soft materials. They provide a good finish, and are capable of faster feed rates.
- 2 Flute routers work well with harder materials, providing an excellent finish to the material.

Upcut, Downcut, and Compression Bits

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

Downcut routers produce the best finish to the top of the material. Chip 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. Chip flow in a sideways direction.



Wood Router Material Usage and Feed Rates

Based on 18,000 RPM Feed Rate in "Inches" per minute

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

2 FLUTE ROUTERS

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



Material Usage and Feed Rates Continued

Based on 18,000 RPM Feed Rate in “Inches” per minute

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

4 FLUTE ROUTERS													
Upcut Spiral (Hard Plastics)										100-300			
Upcut Combination Spiral (High Speed)	1000-1800	1000-1800	1200-3000	1200-2800	1000-2000								
Downcut Spiral (Hard Plastics)										150			
Downcut Combination Spiral (High Speed)	1000-1800	1000-1800	1200-3000	700-2200	1200-2800								
Compression	500-1600	500-1500	700-2400	700-2200	600-1800	700-2400	700-2200						
Combination Compression	1000-1800	1000-1800	1200-3000	1200-2800	1000-2000	1200-3000	1200-2800						
Mortise Compression	800-1600	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 Laminate)										hand feed			
7° Bevel Laminate Bit (Plastic Laminate)										hand feed			

HP+ Compression Spirals

Product



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Tungsten Carbide (HM)

MAN / MECH

Machine / Application

| CNC Routers
 | sizing, jointing, grooving and dividing
 in raw and laminated panel materials
 | for cutting of openings and contours
 | traveling plunge cut using Z and
 X or Y axis

Design

| n max 30,000 min-1
 | solid carbide
 | helix angle: 30°
 | end point type: endmill
 | multiple shear configurations
 available to best suit the
 application

Advantages

| maximum edgelifetime thanks
 to superior ultra hard
 carbide
 | high rates of feed and best
 quality thanks to helical
 geometry

Notes

| improve performance by
 using precision clamping
 systems like: Heatshrink,
 PS-System and Sino.
 | also suited for use in
 mechanical draw-in collet
 chucks



Compression Spirals (mm)

OD	CEL (total)	CEL (up-cut)	SHK OD	OAL	Z	Rotation	Type	Ident-No.
5mm	25mm	8mm	6mm	80mm	2+2	RH	Compression	80506045
6mm	25mm	8mm	6mm	80mm	2+2	RH	Compression	80506046
8mm	25mm	8mm	8mm	80mm	2+2	RH	Compression	80506047
9.525mm	22mm	9.525mm	9.525mm	75mm	3+3	RH	Compression	80499333
10mm	22mm	10mm	10mm	75mm	3+3	RH	Compression	80499332
10mm	22mm	10mm	10mm	80mm	2+2	RH	Compression	80504455
10mm	22mm	10mm	10mm	80mm	3+3	RH	Compression	80504456
10mm	28mm	10mm	10mm	80mm	3+3	RH	Compression	80504457
10mm	32mm	10mm	10mm	90mm	2+2	RH	Compression	80504458
12mm	28mm	10mm	12mm	90mm	2+2	RH	Compression	80506696

Compression Spirals (inch)

OD	CEL (total)	CEL (up-cut)	SHK OD	OAL	Z	Rotation	Type	Ident-No.
1/4"	7/8"	.250"	1/4"	2 - 1/2"	2+2	RH	Compression	80507805
3/8"	1 - 1/8"	.240"	3/8"	3"	2+2	RH	Compression w/chip-breaker	80504596
3/8"	1 - 1/8"	.375"	3/8"	3"	2+2	RH	Compression	80498760
1/2"	1 - 1/4"	.375"	1/2"	3 - 1/2"	3+3	RH	Compression	80507806
1/2"	1 - 1/8"	.375"	1/2"	3 - 1/2"	2+2	RH	Compression	80507807
1/2"	1 - 3/8"	.640"	1/2"	3 - 1/2"	2+2	RH	Compression	80498762
1/2"	1 - 3/8"	11mm	1/2"	3 - 1/2"	2+2	RH	Compression	80507808
1/2"	45mm	.640"	1/2"	4"	2+2	RH	Compression	80504608

HP+ Mortise Compression Spirals

Product



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Tungsten Carbide (HM)

MAN / MECH

Machine / Application

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 | sizing, jointing, grooving and dividing
 | in raw and laminated panel materials
 | for cutting of openings and contours
 | traveling plunge cut using Z and
 | X or Y axis

Design

| n max 30,000 min-1
 | solid carbide
 | helix angle: 30°
 | end point type: endmill
 | multiple shear configurations
 | available to best suit the
 | application

Advantages

| maximum edgelife thanks
 | to superior ultra hard
 | carbide
 | high rates of feed and best
 | quality thanks to helical
 | geometry

Notes

| improve performance by
 | using precision clamping
 | systems like: Heatshrink,
 | PS-System and Sino.
 | also suited for use in
 | mechanical draw-in collet
 | chucks

OD	CEL (total)	CEL (up-cut)	SHK OD	OAL	Z	Rotation	Type	Ident-No.	
3/8"	1 - 1/8"	.200"	3/8"	3"	2+2	RH	Mortise Compression	80498759	S
3/8"	1 - 1/8"	.200"	3/8"	3 - 1/2"	2+2	RH	Mortise Compression	80487924	S
3/8"	1 - 1/8"	.200"	3/8"	3 - 1/2"	3+3	RH	Mortise Compression	80497158	
3/8"	1 - 1/8"	.188"	3/8"	3"	2+2	RH	Mortise Compression	80497015	
3/8"	1 - 1/8"	.185"	3/8"	3"	2+2	RH	Mortise Compression	80497014	
1/2"	1 - 3/8"	.200"	1/2"	3 - 1/2"	2+2	RH	Mortise Compression	80493378	S
1/2"	1 - 3/8"	.200"	1/2"	3 - 1/2"	3+3	RH	Mortise Compression	80497159	S
1/2"	1 - 5/8"	.200"	1/2"	3 - 1/2"	2+2	RH	Mortise Compression	80508520	
1/2"	45mm	.200"	1/2"	4"	2+2	RH	Mortise Compression	80504609	

HP+ Downcut Spirals

Product



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Tungsten Carbide (HM)

MAN / MECH

Machine / Application - CNC Routers - sizing, jointing, grooving and dividing in raw and laminated panel materials - for cutting of openings and contours - traveling plunge cut using Z and X or Y axis	Design - n max 30,000 min-1 - solid carbide - helix angle: 30° - end point type: endmill - multiple shear configurations available to best suit the application	Advantages - maximum edgelife thanks to superior ultra hard carbide - high rates of feed and best quality thanks to helical geometry	Notes - improve performance by using precision clamping systems like: Heatshrink, PS-System and Sino. - also suited for use in mechanical draw-in collet chucks
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OD	CEL (total)	CEL (up-cut)	SHK OD	OAL	Z	Rotation	Type	Ident-No.	
1/4"	7/8"	N/A	1/4"	2 - 1/2"	2"	RH	Downcut	80499369	S
3/8"	1"	N/A	3/8"	3"	2"	RH	Downcut	80498761	S
1/2"	1 - 1/2"	N/A	1/2"	3 - 1/2"	2"	RH	Downcut	80498763	S



Industrial Grade Spirals

Product



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Tungsten Carbide (HM)

MAN / MECH

Machine / Application

| CNC Routers
 | sizing, jointing, grooving and dividing
 | in raw and laminated panel materials
 | for cutting of openings and contours
 | traveling plunge cut using Z and
 | X or Y axis

Design

| n max 30,000 min-1
 | solid carbide
 | helix angle: 30°
 | end point type: endmill
 | multiple shear configurations
 | available to best suit the
 | application

Advantages

| extended edge life and
 | dependable performance
 | for demanding production
 | environments.
 | optimized geometry
 | delivers excellent feed
 | rates, clean finishes, and
 | reliable everyday durability.

Notes

| improve performance by
 | using precision clamping
 | systems like: Heatshrink,
 | PS-System and Sino.
 | also suited for use in
 | mechanical draw-in collet
 | chucks



Compression

OD	CEL (total)	CEL (up-cut)	SHK OD	OAL	Z	Rotation	Type	Ident-No.
1/4"	7/8"	.250"	1/4"	2 1/2"	2+2	RH	Compression	
3/8"	1 - 1/8"	.375"	3/8"	3 1/2"	2+2	RH	Compression	80483846
3/8"	1 - 1/8"	.200"	3/8"	3 1/2"	3+3	RH	Compression	
1/2"	1 - 3/8"	.640"	1/2"	3 1/2"	2+2	RH	Compression	80483850

Mortise Compression

OD	CEL (total)	CEL (up-cut)	SHK OD	OAL	Z	Rotation	Type	Ident-No.
3/8"	1 - 1/8"	.200"	3/8"	3"	2+2	RH	Mortise Compression	
3/8"	1 - 1/8"	.200"	3/8"	3 1/2"	2+2	RH	Mortise Compression	80483845
1/2"	1 - 3/8"	.200"	1/2"	3 1/2"	2+2	RH	Mortise Compression	80483849

Downcut

OD	CEL (total)	CEL (up-cut)	SHK OD	OAL	Z	Rotation	Type	Ident-No.
1/4"	7/8"		1/4"	2 1/2"	2	RH	Downcut	
3/8"	1"	.375	3/8"	3"	2	RH	Downcut	80501003
1/2"	1 - 1/8"		1/2"	3 1/2"	2	RH	Downcut	80483851

129460
Standard Compression Spiral

Product



Drawing

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Tungsten Carbide (HM)

MAN / MECH

Machine / Application	Design	Advantages	Notes
- CNC Routers - sizing, jointing and dividing in raw and laminated panel materials - for cutting of openings and contours - traveling plunge cut using Z and X or Y axis	- n max 30,000 min-1 - solid carbide - helix angle: 30° - end point type: crescent	- excellent finish on top and bottom of the material - high rates of feed and best quality thanks to helical geometry	- improve performance by using precision clamping systems like: PS-System and Sino. - also suited for use in mechanical draw-in collet chucks

O D	CEL	SHK	OAL	Z	Ident-No Left Hand	Ident-No.
1/8	3/8	1/4	2-1/2	1+1		1724906
3/16	5/8	1/4	2-1/2	1+1		1721269
1/4	7/8	1/4	2-1/2	1+1		500034
3/8	1-1/8	3/8	3	1+1		500028
1/2	1	1/2	3	1+1		500031
1/2	1-1/8	1/2	3	1+1		1720712
1/2	1-3/8	1/2	3-1/2	1+1		1721372
1/2	1-5/8	1/2	3-1/2	1+1	500037	500029
5/8	2-1/4	5/8	4	1+1		500038
3/4	2	3/4	4	1+1		500030

129460
Standard Compression Hard Surface Spiral

Product



Drawing

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Tungsten Carbide (HM)

MAN / MECH

Machine / Application	Design	Advantages	Notes
- CNC Routers - sizing, jointing and dividing in raw and laminated panel materials - for cutting of openings and contours - traveling plunge cut using Z and X or Y axis	- n max 30,000 min-1 - solid carbide - helix angle: 30° - end point type: crescent	- excellent finish on top and bottom of the material - high rates of feed and best quality thanks to helical geometry	- improve performance by using precision clamping systems like: PS-System and Sino. - also suited for use in mechanical draw-in collet chucks

OD	CEL	SHK	OAL	Z	Ident-No.
1/2	1	1/2	3	1+1	1731169

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Standard Mortise Compression Spiral

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Tungsten Carbide (HM)

MAN / MECH

Machine / Application

- CNC Routers
- sizing, jointing, grooving and dividing in raw and laminated panel materials
- for cutting of openings and contours
- traveling plunge cut using Z and X or Y axis

Design

- short upshear for grooving applications
- n max 30,000 min-1
- solid carbide
- helix angle: 30°
- end point type: cresent

Advantages

- excellent finish on top and bottom of the material
- high rates of feed and best quality thanks to helical geometry

Notes

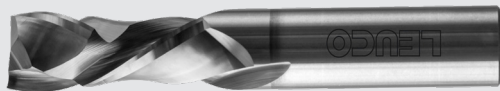
- improve performance by using precision clamping systems like: PS-System and Sino.
- also suited for use in mechanical draw-in collet chucks

O D	CEL	Mortise	SHK	OAL	Z	Ident-No.
1/4	7/8	.175	1/4	2-1/2	1+1	1738630
3/8	7/8	.188	3/8	3	1+1	1721270
1/2	7/8	.200	1/2	3	1+1	1721287
1/2	1-5/8	.200	1/2	3-1/2	1+1	1722167



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Standard Compression Spiral



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Tungsten Carbide (HM)

MAN / MECH

Machine / Application

- l CNC Routers
- l sizing, jointing and dividing in raw and laminated panel materials
- l for cutting of openings and contours
- l traveling plunge cut using Z and X or Y axis

Design

- l n max 30,000 min-1
- l solid carbide
- l helix angle: 30°
- l end point type: endmill

Advantages

- l excellent finish on top and bottom of material
- l high rates of feed and best quality thanks to helical geometry

Notes

- l improve performance by using precision clamping systems like: PS-System and Sino.
- l also suited for use in mechanical draw-in collet chucks

O D	CEL	SHK	OAL	Z	Ident-No. Left Hand	Ident-No.
1/4	7/8	1/4	2-1/2	2+2		1721351
3/8	1-1/8	3/8	3	2+2		80385992
1/2	1	1/2	3	2+2		500039
1/2	1-1/8	1/2	3	2+2		1725980
1/2	1-5/16	1/2	3	2+2		1727268
1/2	1-3/8	1/2	3-1/2	2+2		500059
1/2	1-5/8	1/2	4	2+2		1720542
5/8	2-1/4	5/8	5	2+2	80340354	80385996
3/4	1-7/8	3/4	4	2+2		1720404
3/4	2-1/2	3/4	5	2+2		80401327
3/4	3-1/4	3/4	6	2+2		80364788

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Standard Mortise Compression Spiral

Product

Drawing



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Tungsten Carbide (HM)

MAN / MECH

Machine / Application

| CNC Routers
 | sizing, jointing, grooving and
 dividing in raw and laminated
 panel materials
 | for cutting of openings and
 contours
 | traveling plunge cut using Z
 and X or Y axis

Design

| short upshear for grooving
 applications
 | n max 30,000 min-1
 | solid carbide
 | helix angle: 30°
 | end point type: endmill

Advantages

| excellent finish on top and
 bottom of material
 | high rates of feed and best
 quality thanks to helical
 geometry

Notes

| improve performance by
 using precision clamping
 systems like: PS-System and
 Sino.
 | also suited for use in
 mechanical draw-in collet
 chucks

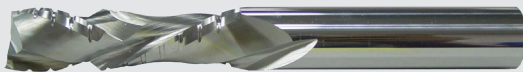
O D	CEL	Mortise	SHK	OAL	Z	Ident-No (LH)	Ident-No.(RH)
1/4	7/8	.188	1/4	2-1/2	2+2		80378789
3/8	7/8	.188	3/8	3	2+2		1727198
3/8	1-1/8	.188	3/8	3	2+2	1741175	1728997
1/2	7/8	.200	1/2	3	2+2		1722001
1/2	1-3/8	.200	1/2	3-1/2	2+2		80375417

Standard Chipbreaker Finisher Compression Spiral

129460

Product

Drawing



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DUR

Tungsten Carbide (HM)

MAN / MECH

Machine / Application

| CNC Routers
 | sizing, jointing and dividing
 in raw and laminated panel
 materials
 | for cutting of openings and
 contours
 | traveling plunge cut using Z
 and X or Y axis

Design

| n max 30,000 min-1
 | solid carbide
 | helix angle: 30°
 | end point type: endmill

Advantages

| excellent finish on top and
 bottom of material
 | high rates of feed and best
 quality thanks to helical
 geometry

Notes

| improve performance by
 using precision clamping
 systems like: PS-System and
 Sino.
 | also suited for use in
 mechanical draw-in collet
 chucks

O D	CEL	SHK	OAL	Z	Ident-No.
3/8	7/8	3/8	3	2+2	1731188
3/8	1-1/8	3/8	3	2+2	1723614
1/2	1	1/2	3	2+2	1739164
1/2	1-1/8	1/2	3	2+2	1723554
1/2	1-3/8	1/2	3-1/2	2+2	1721299
1/2	1-5/8	1/2	4	2+2	1723221
5/8	2-1/4	5/8	5	2+2	1731190

129460

Standard Straight Cut (Natural Wood and Hard Plastics)

Product

Drawing



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Tungsten Carbide (HM)

MAN / MECH

Machine / Application

| CNC Routers
 | sizing, jointing, grooving and
 dividing in raw and laminated
 panel materials
 | for cutting of openings and
 contours
 | traveling plunge cut using Z
 and X or Y axis

Design

| n max 30,000 min-1
 | solid carbide
 | end point type: fishtail

Advantages

| good finish on top and bottom
of the material

Notes

| improve performance by
 using precision clamping
 systems like: PS-System and
 Sino.
 | also suited for use in
 mechanical draw-in collet
 chucks

O D	CEL	SHK	OAL	Z	Comments	Ident-No.
1/8	1/2	1/4	2	2		1720534
5/32	5/8	1/4	2	2		1723266
3/16	3/4	1/4	2	2		1721079
7/32	3/4	1/4	2-1/2	2		1723372
1/4	7/8	1/4	2-1/2	2		1722023
1/4	7/8	1/4	2-1/2	2		1731106
1/4	1	1/4	2-1/2	2		1721699
1/4	1-1/8	1/4	3	2		1720533
9/32	1	5/16	2-1/2	2		1721443
5/16	1-1/8	5/16	3	2		1721300
5/16	1-1/8	1/2	3	2		288616
3/8	1-1/8	3/8	3	2		1723267
3/8	1-1/4	3/8	3	2		1724406
3/8	1-1/4	1/2	3	2		1723686
7/16	1	1/2	3	2		1722640
1/2	1-1/8	1/2	3	2		1720634
1/2	1-1/4	1/2	3-1/2	2		1720532
1/2	1-5/8	1/2	3-1/2	2		1720635
17/32	1-1/8	1/2	3	2		1731107
5/8	2-1/8	5/8	4	2		1731108
3/4	1-5/8	3/4	4	2		1724664

129460

Standard Upcut Spiral

Product

Drawing



LEUCO

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DUR

Tungsten Carbide (HM)

MAN / MECH

Machine / Application

- CNC Routers
- sizing, jointing and dividing in raw and laminated panel materials
- for cutting of openings and contours
- traveling plunge cut using Z and X or Y axis

Design

- n max 30,000 min-1
- solid carbide
- helix angle: 30°
- end point type: fishtail

Advantages

- excellent finish on bottom of material
- poor finish on top of material
- high rates of feed and best quality thanks to helical geometry

Notes

- improve performance by using precision clamping systems like: PS-System and Sino.
- also suited for use in mechanical draw-in collet chucks

O D	CEL	SHK	OAL	Z	Comments	Ident-No (LH)	Ident-No.(RH)
1/8	1/2	1/4	2	2		1722193	1727416
5/32	1/2	1/4	2-1/2	2			1731131
5/32	5/8	1/4	2	2			500002
3/16	3/4	3/16	2	2			500003
3/16	3/4	1/4	2	2		1731134	500004
3/16	3/4	1/4	2-1/2	2			1723282
7/32	3/4	1/4	2-1/2	2			1730085
7/32	1	1/4	2-1/2	2			1731133
1/4	7/8	1/4	2-1/2	2			500006
1/4	1	1/4	2-1/2	2		1731136	500008
1/4	1-1/8	1/4	3	2			1720570
9/32	1	5/16	2-1/2	2			1730087
5/16	1-1/8	5/16	3	2			500010
5/16	1-1/4	5/16	3	2			1731137
5/16	1-1/8	1/2	3	2		1731138	500012
3/8	1	3/8	3	2			1722307
3/8	1-1/8	3/8	3	2			500014
3/8	1-1/4	3/8	3	2		1731139	1721019
3/8	1-1/4	1/2	3	2			500016
7/16	1	1/2	3	2			1721487
1/2	1-1/8	1/2	3	2			500018
1/2	1-1/4	1/2	3-1/2	2			1720572
1/2	1-5/8	1/2	3-1/2	2		1722535	500020
1/2	2-1/8	1/2	4	2			500022
17/32	1-1/8	1/2	3	2			1731140
5/8	1-5/8	5/8	3-1/2	2			1730063
5/8	2-1/8	5/8	4	2		1731141	500024
3/4	1-5/8	3/4	4	2			1720732
3/4	2-1/8	3/4	4	2		1731142	500026
1	3	1	5	2			1731143



129460

Standard Upcut Spiral (Hard Plastics and Aluminum)

Product

Drawing



LEUCO

LEUCO
DUR

Tungsten Carbide (HM)

MAN / MECH

Machine / Application

| CNC Routers
 | sizing, jointing and dividing in
 | hard plastics and aluminum
 | for cutting of openings and
 | contours
 | traveling plunge cut using Z
 | and X or Y axis

Design

| n max 30,000 min-1
 | solid carbide
 | helix angle: 30°
 | end point type: endmill

Advantages

| excellent finish on bottom of
 | material
 | poor finish on top of material
 | high rates of feed and best
 | quality thanks to helical
 | geometry

Notes

| improve performance by
 | using precision clamping
 | systems like: PS-System and
 | Sino.
 | also suited for use in
 | mechanical draw-in collet
 | chucks

O D	CEL	SHK	OAL	Z	Ident-No (LH)	Ident-No.(RH)
1/8	1/2	1/4	2	2		1722264
5/32	9/16	1/4	2	2		1722458
3/16	5/8	1/4	2	2	1731144	1721035
7/32	5/8	1/4	2-1/2	2		1730040
1/4	3/4	1/4	2-1/2	2	1731145	1720795
9/32	3/4	3/8	2-1/2	2		1731146
5/16	13/16	3/8	2-1/2	2		1720190
3/8	7/8	3/8	2-1/2	2		1722275
7/16	1	1/2	3	2		1730042
1/2	1	1/2	3	2		1721135

129460
Standard Upcut Spiral Chipbreaker Finisher

Product

Drawing



LEUCO

LEUCO
DUR

Tungsten Carbide (HM)

MAN / MECH

Machine / Application

- | CNC Routers
- | sizing, jointing and dividing in raw and laminated panel materials
- | for cutting of openings and contours
- | traveling plunge cut using Z and X or Y axis

Design

- | n max 30,000 min-1
- | solid carbide
- | helix angle: 30°
- | end point type: endmill

Advantages

- | excellent finish on bottom of material
- | poor finish on top of material
- | high rates of feed and best quality thanks to helical geometry

Notes

- | improve performance by using precision clamping systems like: PS-System and Sino.
- | also suited for use in mechanical draw-in collet chucks

O D	CEL	SHK	OAL	Z	Ident-No.
3/8	1-1/8	3/8	3	2	1730003
1/2	1-1/8	1/2	3	2	1722300
1/2	1-5/8	1/2	3-1/2	2	1721356
1/2	2-1/8	1/2	4	2	1720803
1/2	1-7/8	1/2	3-1/2	2	1727333
5/8	2-1/8	5/8	4	2	1731147
3/4	2-1/8	3/4	4	2	1728819



129460

Standard Downcut Spiral

Product

Drawing



LEUCO

LEUCO
DUR

Tungsten Carbide (HM)

MAN / MECH

Machine / Application

- l CNC Routers
- l sizing, jointing, grooving and dividing in raw and laminated panel materials
- l for cutting of openings and contours
- l traveling plunge cut using Z and X or Y axis

Design

- l n max 30,000 min-1
- l solid carbide
- l helix angle: 30°
- l end point type: fishtail

Advantages

- l excellent finish on top of material
- l poor finish on bottom of material
- l high rates of feed and best quality thanks to helical geometry

Notes

- l improve performance by using precision clamping systems like: PS-System and Sino.
- l also suited for use in mechanical draw-in collet chucks

O D	CEL	SHK	OAL	Z	Ident-No. Left Hand	Ident-No.
1/8	1/2	1/8	2	2		1722686
1/8	1/2	1/4	2	2	1731166	500001
5/32	1/2	1/4	2-1/2	2		1723585
5/32	5/8	1/4	2	2		500003
3/16	3/4	3/16	2	2		1730072
3/16	3/4	1/4	2	2		500005
3/16	3/4	1/4	2	2		1731167
3/16	3/4	1/4	2-1/2	2		1723290
7/32	3/4	1/4	2-1/2	2		1727726
7/32	1	1/4	2-1/2	2		1721281
1/4	7/8	1/4	2-1/2	2		80375424
1/4	1	1/4	2-1/2	2	1722064	80375423
1/4	1-1/8	1/4	3	2		80385957
9/32	1	5/16	2-1/2	2		1720845
5/16	1-1/8	5/16	3	2		500011
5/16	1-1/4	5/16	3	2		1731168
5/16	1-1/8	1/2	3	2	1731171	500013
3/8	1	3/8	3	2		1723257
3/8	1-1/8	3/8	3	2		500015
3/8	1-1/4	3/8	3	2	1731172	1721018
3/8	1-1/4	1/2	3	2		500017
7/16	1	1/2	3	2		1721301
1/2	1-1/8	1/2	3	2		80375418
1/2	1-1/4	1/2	3-1/2	2	80375419	1720573
1/2	1-5/8	1/2	3-1/2	2		80375419
1/2	2-1/8	1/2	4	2		500023
17/32	1-1/8	1/2	3	2		1729016
5/8	1-5/8	5/8	3-1/2	2		500025
5/8	2-1/8	5/8	4	2	1731174	1731173
3/4	1-5/8	3/4	4	2		1720807
3/4	2-1/8	3/4	4	2	1731175	500027
1	3	1	5	2		1728578

129460

Standard Downcut Spiral (Hard Plastics and Aluminum)

Product

Drawing



LEUCO

LEUCO
DUR

Tungsten Carbide (HM)

MAN / MECH

Machine / Application

- l CNC Routers
- l sizing, jointing, grooving and dividing in hard plastics and aluminum materials
- l for cutting of openings and contours
- l traveling plunge cut using Z and X or Y axis

Design

- l n max 30,000 min-1
- l solid carbide
- l helix angle: 30°
- l end point type: endmill

Advantages

- l excellent finish on top of material
- l poor finish on bottom of material
- l high rates of feed and best quality thanks to helical geometry

Notes

- l improve performance by using precision clamping systems like: PS-System and Sino.
- l also suited for use in mechanical draw-in collet chucks

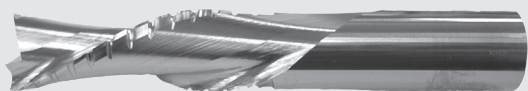
O D	CEL	SHK	OAL	Z	Ident-No.
1/8	1/2	1/4	2	2	1720577
5/32	9/16	1/4	2	2	1721277
3/16	5/8	1/4	2	2	1721683
7/32	3/4	1/4	2-1/2	2	1720837
1/4	3/4	1/4	2-1/2	2	1720578
9/32	3/4	3/8	2-1/2	2	1725587
5/16	13/16	3/8	2-1/2	2	1720191
3/8	7/8	3/8	2-1/2	2	1722253
7/16	1	1/2	3	2	1721922

129460

Standard Downcut Spiral Chipbreaker Finish

Product

Drawing



LEUCO

LEUCO
DUR

Tungsten Carbide (HM)

MAN / MECH

Machine / Application

- l CNC Routers
- l sizing, jointing, grooving and dividing in raw and laminated panel materials
- l for cutting of openings and contours
- l traveling plunge cut using Z and X or Y axis

Design

- l n max 30,000 min-1
- l solid carbide
- l helix angle: 30°
- l end point type: endmill

Advantages

- l excellent finish on top of material
- l poor finish on bottom of material
- l high rates of feed and best quality thanks to helical geometry

Notes

- l improve performance by using precision clamping systems like: PS-System and Sino.
- l also suited for use in mechanical draw-in collet chucks

O D	CEL	SHK	OAL	Z	Ident-No.
3/8	1-1/8	3/8	3	2	1720494
1/2	1-1/8	1/2	3	2	1730265
1/2	1-5/8	1/2	3-1/2	2	1721357
1/2	1-7/8	1/2	3-1/2	2	1723655
1/2	2-1/8	1/2	4	2	1721588
5/8	2-1/8	5/8	4	2	1730610
3/4	2-1/8	3/4	4	2	1724997