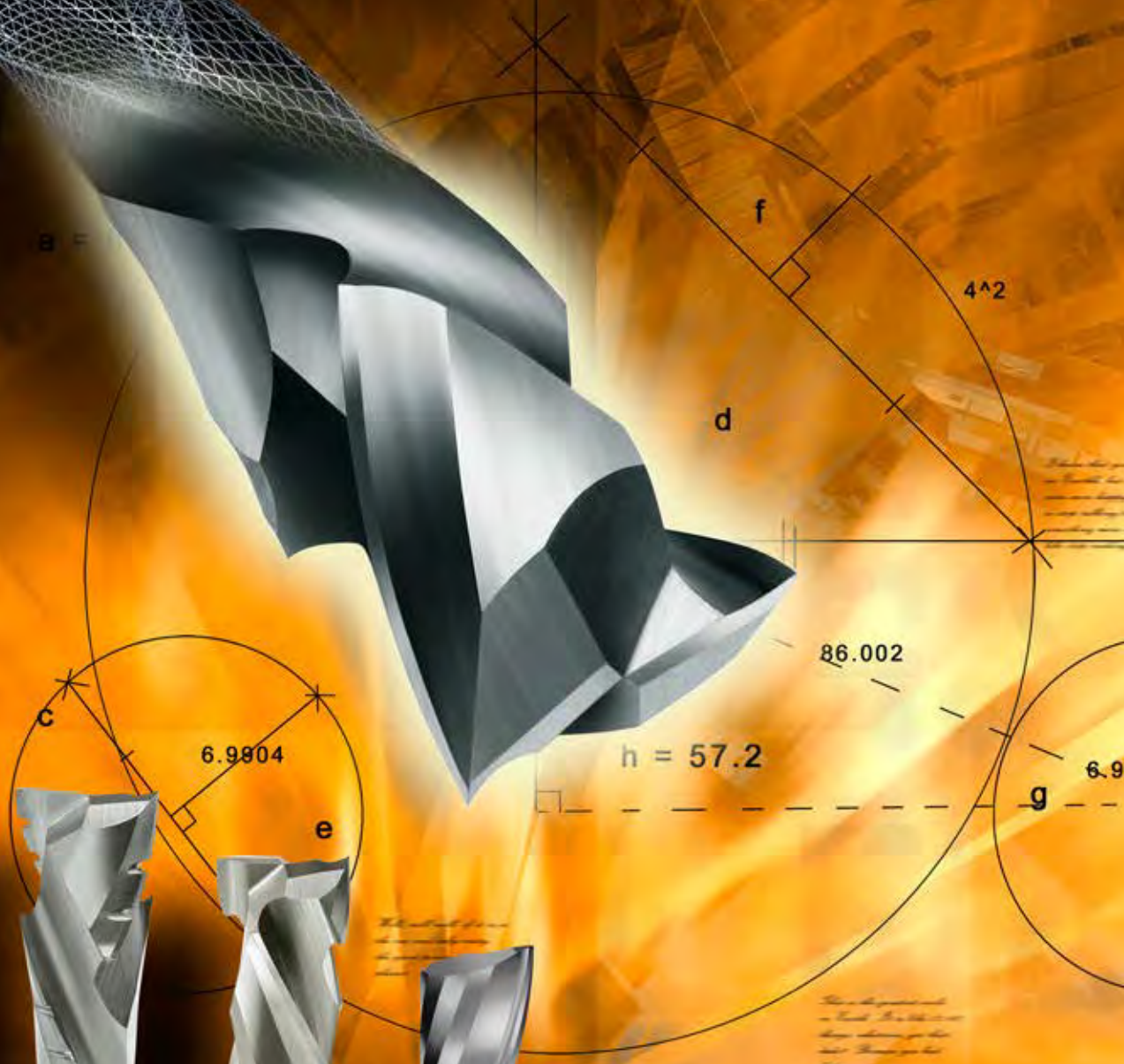
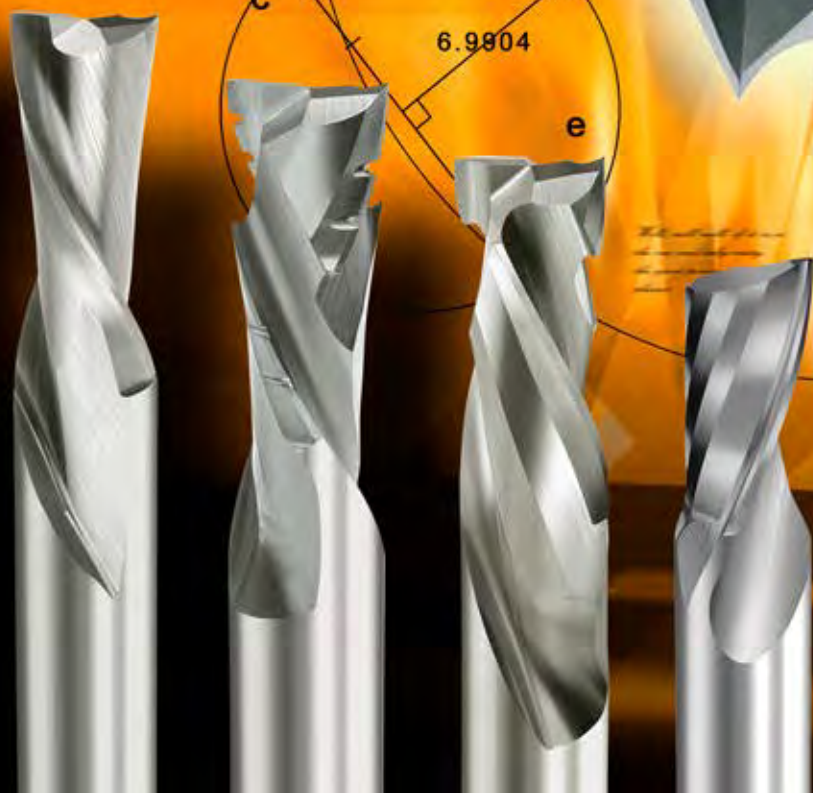




www.carbideprocessors.com
Phone: 800-346-8274
Email: sales@carbideprocessors.com



MADE IN THE
U S A

Dear Friends,

When we opened our doors in 1992, we realized our success would be based on our ability to provide the best products and service possible to our customers. Since that time, we have worked very hard to meet and exceed the needs of our customers. After 21 years in operation, we are proud to say that Vortex Tool is the largest ***“American Owned and Operated”*** producer of solid carbide router bits in the U.S.A.

As our business grew, we listened to our customers, and spent time and resources in developing new products and services. In 2004, Vortex Tool reached a milestone. We were awarded our industry’s highest honor, The Challengers Award.

This prestigious award, known throughout the world as the woodworking industry’s highest honor, recognizes companies who have distinguished themselves by developing innovative technology in products, services, or manufacturing techniques.

To us, it represents the acknowledgement of hard working, dedicated employees, who have a steadfast commitment to customer service.

Now that we have ventured beyond the norm, you may be rest assured that we haven’t lost sight of our most important goal, and that is to provide our customers with the best products and services possible.

We hope you enjoy working with the new Vortex catalog, and we look forward to hearing from you soon.

The Serwa’s



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Over the past two decades, Vortex Tool has built a reputation as an innovator, manufacturing high performance router and insert cutting tools for the woodworking and plastics industries. From our facility in Schofield, Wisconsin, Vortex produces tools with cutting edges in various grades of carbide, stellite, high-speed steel, and polycrystalline diamond.



Vortex stands alone as an industry leader with many industry firsts. Our high quality tools, which provide higher operating speeds, significantly longer life than others and long-term value, have built our customer base of over 5,000 companies.

Our newest development has been our line of “XP” - Xtreme Performance cutting tools. These tools were extensively tested on our in-house router and by many woodworking customers. Users have experienced 3-5 times more tool life with our XP Series as compared to standard tool geometry. These tools were originally designed for cutting high pressure laminates or melamine. Our customers have found that this series of tools also provides excellent results in particle board and MDF materials. They are available in two and three flute compression style geometries, as well as downcut geometry.

Custom Tooling

Many customers do not realize that Vortex Tool is more than solid carbide router bits; MUCH MORE!! A large part of our business is the design and manufacturing of insert tooling. Manufactured by Vortex Tool at our facility in Schofield, Wisconsin, both tool bodies and replacement inserts are produced on CNC machinery. Each tool is custom designed using AutoCAD allowing for easy exchange of information between customers and Vortex.



*We're more than solid carbide
router bits.....MUCH MORE.....*



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Custom Tooling Continued

Insert designs vary depending on application. We not only manufacture router tooling, but bore type tooling as well. We always try to provide you with tool designs and insert types that are widely available so you aren't "tied" to one source for replacement items. Inserts are profile ground on state-of-the-art CNC grinders then "lap" faced producing the sharpest edge quality possible. Bodies and inserts are fully engineered which assures future replacements to be accurate and exact.



Tool balance, is a very important and often overlooked factor of cutting tool performance. There are many factors of cutting performance which can be directly linked to tool balance. These factors are work piece finish, tool life, spindle temperature and life, horsepower consumption, and feed rates. Even overall machine wear and tear can be reduced with properly balanced cutting tools. All tools are precision balanced to G2.5 or better ensuring optimum performance.

All tools are checked for accuracy on an optical comparator against the drawing created by our engineering department to ensure all angles and profiles are accurate prior to shipping. A permanent record in the form of an "overlay" is kept ensuring repeat accuracy on all future orders. Average manufacturing time is 3 weeks for insert bodies and 1-2 weeks for replacement inserts, which will be accurately defined at time of quotation. Vortex can provide pricing based on AutoCAD drawings, wood samples, and many other forms of electronic data.

Solid Carbide Custom Tooling

In addition to our standard line of tooling, Vortex Tool also manufactures custom solid carbide tooling with special cutting edge lengths, profiles, etc. If you are unable to find a standard tool for your application, please call our sales department for a quotation. Manufacturing time on custom solid carbide tools is 7-10 working days or less and will be accurately defined at time of quotation.



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Sharpening Services

When Vortex began its business in 1992, we did not manufacture solid carbide tooling, but were a service facility for sharpening and retipping services of solid carbide and carbide tipped tooling. We had several customers tell us that their tools performed better after we had sharpened them than they did when they were new; and a few would have us sharpen their new tools with this special "Razor Edge" Technology.

Today, Vortex Tool continues to sharpen all types of solid carbide bits as well as carbide tipped tooling for the woodworking and plastics industries. We can sharpen any manufacturers brand. Our turnaround time for sharpening services is two days or less. The new tool diameter will be marked on the tool so you can easily adjust your tool comp settings. We can accommodate requests for matching tools in sets, maintaining tool diameters by cutting off and re-pointing the dull portion of the tool (popular in downcut tools), grinding to a specific diameter, etc. Tools should be sent to:

Vortex Tool Company Inc
5605 E. Jelinek Avenue
Schofield WI 54476

Tools should be packaged tightly to prevent damage during shipping! Please include a business card or paperwork indicating your company name, address and phone number.

In addition to sharpening solid carbide and carbide tipped tooling, Vortex Tool will properly service your carbide tipped saw blades. The staff at Vortex Tool have been trained to hammer and straighten saw blades, add tension to blades, and whatever is needed to bring them to a "like new" condition. Prior to sharpening, all blades are cleaned and inspected for serviceability. Proper service of your tooling/saw blades can mean the difference between making money and not making money.



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Left Hand Tools

All tools listed in this catalog are available in left hand (counterclockwise) rotation. To order left hand rotation tooling, signify by placing an "L" behind the part number. More popular tools are currently listed in this catalog.

To calculate pricing on left hand tools, simply divide the standard right hand tool cost by .75. Minimum order on non-stock left hand tools is \$250.



Flush Trim Bits with Bearings

Most standard tools, 1/2" diameter and larger can be manufactured with bearing guides on the cutting end of the tool. When ordering, add a "B" behind the part number and add \$75 to the tool cost. Vortex does have stock on a few flush trim bearing bits (Series 1200), and others would need to be manufactured with a 7-10 working day delivery.

General Policy for Returns/Exchanges

If you have items you need to return for credit, please contact our sales department for an RGA (Return Goods Authorization) form. This form must be included inside the box when returning tools to ensure proper credit.

When returning product, we strongly recommend the use of a carrier that can track packages. You are responsible for insuring the package for any possible shipping loss or damage. All items must be returned in their original condition and packaging and include any accessories that accompanied the original purchase. The shipping fee is non-refundable. Buyer is responsible for return shipping costs and insurance. Please allow 2-7 days for processing of your return. Please note that not all items are covered under our return policy.

We cannot accept returns of certain items for a refund, including:

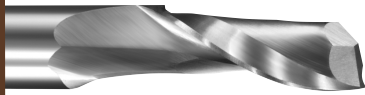
- ▼ Any item that is returned more than 90 days after receipt.
- ▼ Any perishable tooling that has been used for production or test cutting.
- ▼ Any perishable tooling that has been chucked or mounted in a machine.
- ▼ Any item that is not in its original condition, is physically damaged, or modified from its original manufactured specs.
- ▼ Any perishable tooling that has been reconditioned or serviced in any way.
- ▼ Any custom made perishable tooling manufactured to customers specs.



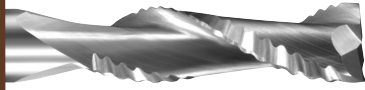
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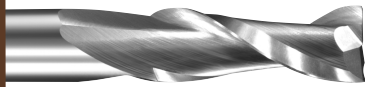
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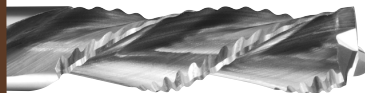
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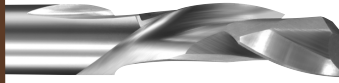


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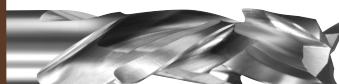
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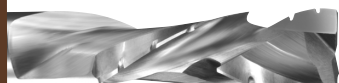
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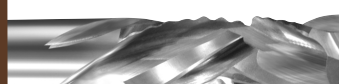
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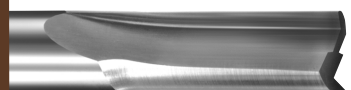
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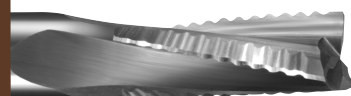
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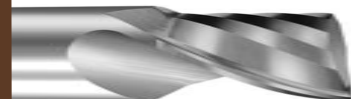
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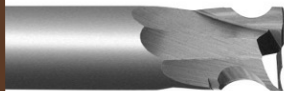
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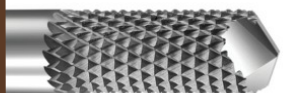
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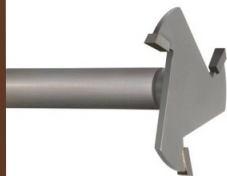
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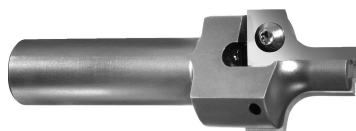
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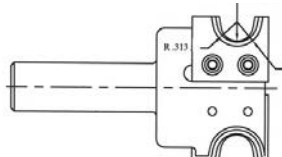
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Why Use Solid Carbide Spiral Tooling?

Because of some unique cutting tool properties, solid carbide spiral tools produce the best edge qualities of any cutting tool design available. Additionally, solid carbide router bits are able to produce these cuts at the fastest feed rates possible as compared to any other type of routing tool.



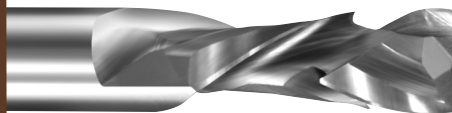
Upcut Spirals

- ▼ The upcut spiral is a right hand spiral with a right hand rotation of cut. An upcut spiral will cause the chips to be “augered” upwards during cutting. This can be particularly useful in slotting cuts or where chip removal is a problem. Upcut spiral bits have a tendency to “lift” the part in some cases. Additional holding power or stepped cutting may be required.
- ▼ Upcut spiral bits will leave a smooth cut on the bottom of a thru cut and tend to leave some fuzzing on the top edge in certain materials.
- ▼ Upcut spirals straight plunge/drill and have good end cutting geometry.



Downcut Spirals

- ▼ A downcut spiral (right hand cut, left hand spiral) causes the chip flow to be directed downward. It also helps hold down the part being cut. The edge quality on the part is smooth on the top and tends to be fuzzy on the bottom in certain materials.
- ▼ The downward chip flow can sometimes cause clogging problems particularly in a blind slotting situation. Downcut bits tend to preload the routing system and can substantially improve part hold down in a marginal routing setup.
- ▼ Downcut tools CAN NOT be used to plunge straight into wood and should be ramped into the part.



Compression Spirals

- ▼ A compression spiral is designed with both upcut and downcut flutes. The upcut and downcut flutes compress the material being cut preventing chipping or fuzzing on the top and bottom of the cut.
- ▼ Compression spirals are used extensively for cutting double sided laminates, and can be used on natural woods where edge fuzzing is a problem.

The information given should only be used as a guideline or starting point for feed rate selection. Your actual feeds and speeds will vary widely as a result of “contributing factors” such as machine rigidity, horsepower, collet condition, spindle integrity, part clamping, hold down and many other factors. Generally speaking, solid carbide tooling will perform better (i.e. longer life, less tool breakage) at faster feed rates. We recommend a “starting point” feed rate and increasing that feed rate until part finish becomes undesirable or other limiting factors become evident.

Chip Load

The chip load is a measurement of the thickness of material removed by each cutting edge during a cut. This is a valuable piece of information which can then be used to calculate new set ups.

Calculations are as follows: Chip Load = Feed Rate (inches per minute) / (RPM x number of flutes)
Example: Chip Load = 500 inches per minute / (15,000 RPM x 2 flutes) Chip Load = .017”

Chip loads are based on material thickness of average size for cutting edge length of tool. These recommendations do not apply to thicker materials or tools with long cutting edge lengths. These chiploads are only a recommended starting point and may not accommodate all circumstances. Therefore, tooling damage may still occur and use of this chart does not warranty against tool breakage.

We would strongly encourage you to consult us directly on new tool applications. Our staff would be more than happy to discuss any technical questions by phone or email.

Chip Load Chart

Tool Diameter	Hard Wood	Softwood/ Plywood	MDF/Particle Board	High Pressure Laminate	Phenolic/ Paperstone
1/8”	.003”-.005”	.004” - .006”	.004” - .007”	.003” - .005”	
1/4”	.009” - .011”	.009” - .013”	.013” - .016”	.009” - .012”	.004” - .006”
3/8”	.015” - .018”	.017” - .020”	.020” - .023”	.015” - .018”	.006” - .008”
1/2” & up	.019” - .021”	.021” - .023”	.025” - .027”	.023” - .025”	.010” - .012”

Tool Diameter	Hard Plastic	Soft Plastic	Solid Surface	Acrylic	Aluminum
1/8”	.002” - .004”	.003” - .006”	.002” - .004”	.003” - .005”	.003” - .004”
1/4”	.006” - .009”	.007” - .010”	.006” - .009”	.008” - .010”	.005” - .007”
3/8”	.008” - .010”	.010” - .012”	.008” - .010”	.010” - .012”	.006” - .008”
1/2” & up	.010” - .012”	.012” - .016”	.010” - .012”	.012” - .015”	.008” - .010”

Other Valuable Formulas:

Feed Rate = RPM x number of flutes x chip load

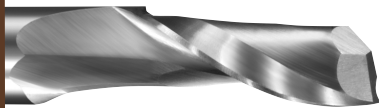
RPM = Feed Rate / (number of flutes x chipload)

Metric Conversion: Divide inches per minute by 39.374 (ex. 300 inches per minute divided by 39.374 = 7.62 meters per minute)

RPM Selection The general operating rpm for tooling contained in this catalog is between 10,000 and 20,000 revolutions per minute. Usually the higher the RPM, the better surface finish becomes. However, the higher the RPM, the more friction is generated between the tool and the work piece. This friction is what creates the mechanical wear on the cutting edge. Your goal is to select the lowest RPM possible for each application.



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Upcut - Series 800



Downcut - Series 900

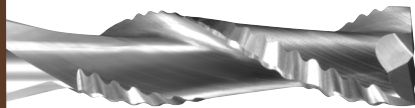
Series 800 & 900 Single Flute Finishing Spirals

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 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

SHOP NOW

SHOP NOW



Upcut - Series 1000



Downcut - Series 1100

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. Avoid using this tool at lower feed rates which generate chip loads under .005”.

SHOP NOW

SHOP NOW

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



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Series 1200

Two Flute Upcut Finishing Spirals

SHOP NOW

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
1206	--	5mm	20mm	6mm	64mm
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
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
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
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

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



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Series 1300 SHOP NOW

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
1306	--	5mm	20mm	6mm	64mm
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
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
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
1370	1370L	5/8	2 1/8	5/8	4
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

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



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**Series 1300XP -
Downcut
“Xtreme Performance”**

Series 1300XP

Two Flute “Xtreme Performance” Downcut Finishing Spirals

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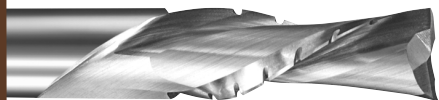
These tools have been specifically designed for difficult to cut materials where tool life is a problem. These tools will produce a clean top edge of a dado type or groove type cut or simply a thru cut where the bottom edge cut quality is not important.

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



Upcut - Series 1400



Downcut - Series 1500

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 in some situations. Chipbreaker tools are recommended for hardwoods, plywoods, and dense materials where higher feed rates are required.

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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

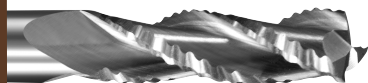


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Series 1600 & 1700 Three Flute Roughing Spirals



Upcut - Series 1600



Downcut - Series 1700

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 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

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Series 1800 & 1900 Three Flute Finishing Spirals



Upcut - Series 1800

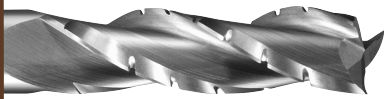
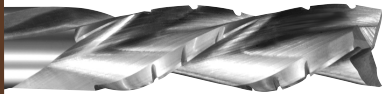


Downcut - Series 1900

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 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

[SHOP NOW](#)[SHOP NOW](#)**Upcut - Series 2000****Downcut - Series 2100**

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 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

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These bits have been geometrically designed to cut cleaner than 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
2204	--	1/16	1/4	1/8	1 1/2
2210	--	1/8	1/2	1/8	1 1/2
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
2250	2250L	1/2	1 1/4	1/2	3 1/2
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



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Series 2200 Tapered Ballnose Spirals

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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 the ability to still produce fine detailed carving.

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



Two Flute Finishing Pass-by



Three Flute Finishing Pass-by



Three Flute Roughing Pass-by

Series 2300

SHOP NOW

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.

PART #	CED	CEL	SHK DIA	OAL	DEPTH OF CUT	#/FLUTES GEOMETRY
2305	1/8	1/2	1/4	3	1	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

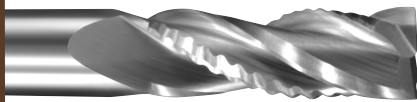
SHK DIA = Shank Diameter

OAL = Overall Length



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[SHOP NOW](#)[SHOP NOW](#)**Upcut - Series 2400****Downcut - Series 2500**

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 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 Rotation

[SHOP NOW](#)**Upcut - Series 2600****Eccentric Spindles #2680**

Series 2600

Solid Carbide Spiral Omec Dovetail Bits

Designed for Omec 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 Omec machines with Eccentric spindles.

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*	--	14mm	.394" (10mm)	12mm	60mm

L= Left Hand Rotation

* = Designed for Machines with Eccentric Spindles



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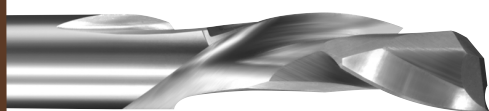
Series 2900 SHOP NOW

Two Flute Roughing Compression Spiral

This style of compression bit is manufactured exclusively for hard to cut materials. This tool is used in hogging applications where the compression geometry of the bit helps break up the cut and neutralizes the force of the bit with both upshear and downshear rotation. Can be used in solid woods, wood composites and any difficult to cut materials. This tool will produce a rippled edge cut.

PART #	CED	CEL	SHK DIA	OAL
2930	3/8	1 1/8	3/8	3
2985 (m)	3/8	7/8	3/8	3
2935	1/2	1	1/2	3
2989 (m)	1/2	1	1/2	3
2952	1/2	1 3/8	1/2	3 1/2
2960	1/2	1 3/4	1/2	3 1/2
2980	3/4	2	3/4	4
2980L	3/4	2	3/4	4

L= Left Hand Rotation (m) = 1/4" upcut for mortise cuts or thin materials



Series 3000 SHOP NOW

Single Edge Compression Spiral

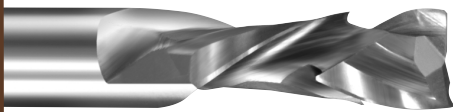
Compression spirals are used extensively for cutting double sided laminates. These tools can also be used on natural woods where edge fuzzing is a problem with standard spiral tools. The single edge design allows for feed rates up to 450 inches per minute. This tool will leave a clean top and bottom edge cut.

PART #	CED	CEL	SHK DIA	OAL
3010	1/4	7/8	1/4	2 1/2
3010L	1/4	7/8	1/4	2 1/2
3030	3/8	1 1/8	3/8	3
3030L	3/8	1 1/8	3/8	3
3035	1/2	1	1/2	3
3052	1/2	1 3/8	1/2	3 1/2
3052L	1/2	1 3/8	1/2	3 1/2
3060	1/2	1 3/4	1/2	3 1/2
3070	5/8	2	5/8	4
3080	3/4	2	3/4	4

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



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The "Viper"

Series 3100 Two Flute Compression Spiral

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Compression means the upcut and downcut spiral flutes compress the material being cut preventing chipping or fuzzing on the top and bottom of the cut. Our unique flute geometry allows the "Viper" to cut faster and longer than other compression spirals on the market today. It also allows for extended sharpening life with excellent performance throughout the tool's useful life. Compression spirals are used extensively for cutting double sided laminates (melamine, vinyl, high pressure laminates, painted board, etc.). This series of compression spirals is not recommended for cutting materials thinner than 5/8".

RIGHT HAND PART #	LEFT HAND PART #	CED	CEL	SHK DIA	OAL
3108	--	6mm	25mm	6mm	64mm
3122	--	8mm	28mm	8mm	64mm
3145	--	10mm	35mm	10mm	76mm
3155	--	12mm	35mm	12mm	76mm
3110	3110L	1/4	7/8	1/4	3
3130	3130L	3/8	1 1/8	3/8	3
3135	3135L	1/2	1	1/2	3
3152	3152L	1/2	1 3/8	1/2	3 1/2
3160	3160L	1/2	1 3/4	1/2	3 1/2
3162	3162L	1/2	2	1/2	4
3170	3170L	5/8	2	5/8	4
3179	--	3/4	1 5/8	3/4	4
3180	3180L	3/4	2	3/4	4
3183	3183L	3/4	2 1/2	3/4	5



The "Viper"

Series 3100M Two Flute Mortise Compression Spiral

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This series of compression spirals is designed for doing mortise cuts or cutting material 5/8" thick or less. Designed with a 1/4" upcut or less preventing chipping and fuzzing on top and bottom of the material being cut. "Mortise cuts" are grooves cut in the material usually at a depth equal to or slightly less than the diameter of the tool.

* - Indicates 3/16" upcut for 1/4" groove cuts or 1/4" material thicknesses.

RIGHT HAND PART #	LEFT HAND PART #	CED	CEL	SHK DIA	OAL
3112*	--	1/4	7/8	1/4	3
3115*	3115L*	1/4	5/8	1/4	2 1/2
3120	--	8mm	25mm	8mm	64mm
3184*	--	3/8	7/8	3/8	3
3185	3185L	3/8	7/8	3/8	3
3187*	--	1/2	1	1/2	3
3189	3189L	1/2	1	1/2	3
3188	--	1/2	1 1/4	1/2	3 1/2
3190	3190L	1/2	1 5/8	1/2	3 1/2
3168	3168L	9/16	1	1/2	3
3193	--	5/8	2	5/8	4
3198	--	3/4	1 1/2	3/4	4



Standard Upcut Length



Mortise Upcut Length (m)

Series 3100XP

Two Flute “Xtreme Performance” Compression Spirals

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“XP” - which stands for Xtreme Performance - are specifically manufactured to provide maximum tool life in melamine, high pressure laminated particle board and MDF materials. Users can expect 3-5 times more tool life as compared to standard compression spiral geometry. The compression geometry will provide a chip free edge on both sides of the material being cut.

RIGHT HAND PART #	LEFT HAND PART #	CED	CEL	SHK DIA	OAL
3130XP	3130LXP	3/8	1 1/8	3/8	3
3184XP (m*)	- -	3/8	7/8	3/8	3
3185XP (m)	3185LXP (m)	3/8	7/8	3/8	3
3135XP	- -	1/2	1	1/2	3
3187XP (m*)	- -	1/2	1	1/2	3
3189XP (m)	- -	1/2	1	1/2	3
3150XP (m)	- -	1/2	1 3/8	1/2	3 1/2
3152XP	- -	1/2	1 3/8	1/2	3 1/2
3158XP	3158LXP	1/2	1 5/8	1/2	3 1/2
3179XP	- -	3/4	1 5/8	3/4	4
3180XP	- -	3/4	2	3/4	4

(m*) = 3/16” upcut length for 1/4” material or dado cuts

(m) = 1/4” upcut for mortise cuts or thin materials



Mortise Upcut Length (m)

Series 3200XP

Three Flute “Xtreme Performance” Compression Spirals

SHOP NOW

Our three flute “Xtreme Performance” series will provide the same tool life as our two flute XP series, however, the three flute design allows for faster feed rates. This series of tools will provide a chip free edge on both sides of the material being cut. Designed for today’s high speed routers.

PART #	CED	CEL	SHK DIA	OAL
3284XP (m*)	3/8	7/8	3/8	3
3285XP (m)	3/8	7/8	3/8	3
3289XP (m)	1/2	1	1/2	3
3252XP	1/2	1 3/8	1/2	3 1/2

(m*) = 3/16” upcut length for 1/4” material or dado cuts

(m) = 1/4” upcut for mortise cuts or thin materials



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Series 3200

Three Flute Compression Spirals

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Standard Upcut Length

One of our more popular tool designs. The three flute compression spiral allows for faster feed rates and excellent finishes on both sides of the material being cut. Designed for today's high speed routers.

RIGHT HAND PART #	LEFT HAND PART #	CED	CEL	SHK DIA	OAL
3230	--	3/8	1 1/8	3/8	3
3284(m*)	--	3/8	7/8	3/8	3
3285(m)	3285L(m)	3/8	7/8	3/8	3
3235	3235L	1/2	1	1/2	3
3287(m*)	--	1/2	1	1/2	3
3289(m)	3289L(m)	1/2	1	1/2	3
3252	3252L	1/2	1 3/8	1/2	3 1/2
3290(m)	--	1/2	1 5/8	1/2	3 1/2
3260	--	1/2	1 3/4	1/2	3 1/2
3270	--	5/8	2	5/8	4
3280	3280L	3/4	2	3/4	4

(m*) = 3/16" upcut for 1/4" material or dado cuts

(m) = 1/4" upcut for mortise cuts or thin materials



Series 3200C

Three Flute Compression Spiral with Chipbreakers

[SHOP NOW](#)

Standard Upcut Length

Three flute compression design with the addition of chipbreakers which reduce fuzzing and scaling on plywoods and hardwoods while allowing for higher feed rates.

PART #	CED	CEL	SHK DIA	OAL
3230C	3/8	1 1/8	3/8	3
3285C (m)	3/8	7/8	3/8	3
3235C	1/2	1	1/2	3
3289C (m)	1/2	1	1/2	3
3252C	1/2	1 3/8	1/2	3 1/2
3280C	3/4	2	3/4	4

(m) = 1/4" upcut for mortise cuts or thin materials

Please note: Tools with an (m) have chipbreakers ground in downcut flutes only

CED = Cutting Edge Diameter

CEL = Cutting Edge Length

SHK DIA = Shank Diameter

OAL = Overall Length



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Series 3300

Four Flute Compression Spiral

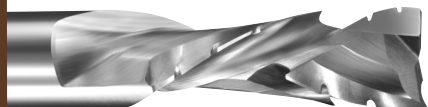
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Standard Upcut Length

Four flutes up and four flutes down! These tools were manufactured for users who want to run at extremely high feed rates. Compression spirals are used extensively for cutting double sided laminates (melamine, vinyl, high pressure laminate, painted board, etc).

PART #	CED	CEL	SHK DIA	OAL
3335	1/2	1	1/2	3
3389 (m)	1/2	1	1/2	3
3352	1/2	1 3/8	1/2	3 1/2
3390 (m)	1/2	1 5/8	1/2	3 1/2
3360	1/2	1 3/4	1/2	3 1/2
3380	3/4	2	3/4	4

(m) = 1/4" upcut for mortise cuts or thin materials



Series 3400

Two Flute Compression Spiral with Chipbreakers

SHOP NOW

Standard Upcut Length

The "Viper Plus" incorporates the compression spiral design with chipbreakers ground in the cutting edge. The chipbreakers are staggered to produce a clean edge cut. Recommended for hardwoods and plywoods (such as baltic birch) where edge fuzzing or scaling is a problem.

RIGHT HAND PART #	LEFT HAND PART #	CED	CEL	SHK DIA	OAL
3422	- -	8mm	27mm	8mm	64mm
3430	- -	3/8	1 1/8	3/8	3
3485 (m)	- -	3/8	7/8	3/8	3
3445	- -	10mm	30mm	10mm	76mm
3455	- -	12mm	35mm	12mm	88mm
3435	- -	1/2	1	1/2	3
3489 (m)	- -	1/2	1	1/2	3
3452	- -	1/2	1 3/8	1/2	3 1/2
3460	- -	1/2	1 3/4	1/2	3 1/2
3470	- -	5/8	2	5/8	4
3480	3480L	3/4	2	3/4	4
3483	3483L	3/4	2 1/2	3/4	5

(m) = 1/4" upcut for mortise cuts or thin materials

Please note: Tools with an (m) have chipbreakers ground in downcut flutes only

CED = Cutting Edge Diameter

CEL = Cutting Edge Length

SHK DIA = Shank Diameter

OAL = Overall Length



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Series 3400XP

Two Flute “Xtreme Performance” Compression Spiral w/chipbreakers

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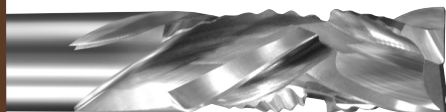
“XP” - which stands for Xtreme Performance - are specifically designed to provide as much as 3-5 times more tool life than standard compression geometry. The chipbreaker design allows for free cutting action in solid wood and plywood materials.

PART #	CED	CEL	SHK DIA	OAL
3430XP	3/8	1 1/8	3/8	3
3485XP (m)	3/8	7/8	3/8	3
3435XP	1/2	1	1/2	3
3487XP (m*)	1/2	1	1/2	3
3489XP (m)	1/2	1	1/2	3
3452XP	1/2	1 3/8	1/2	3 1/2

(m*) = 3/16” upcut for 1/4” material or dado cuts

(m) = 1/4” upcut for mortise cuts or thin materials

Please note: Tools with an (m) or (m*) have chipbreakers ground in downcut flutes only



Series 3500

Four Flute “Tornado” Compression

SHOP NOW

Another Industry First!! The Vortex “Tornado” roughing/finishing tool is the fastest cutting router bit in the world. If you have the machine to do it, we’ve got the tool. With increased feed speeds (as much as 3500 IPM), this tool will provide a clean cut on double sided materials such as melamine and formica laminated particle board.

RIGHT HAND PART #	LEFT HAND PART #	CED	CEL	SHK DIA	OAL
3535	--	1/2	1	1/2	3
3589 (m)	--	1/2	1	1/2	3
3552	3552L	1/2	1 3/8	1/2	3 1/2
3560	--	1/2	1 3/4	1/2	3 1/2
3570	--	5/8	2	5/8	4
3580	3580L	3/4	2	3/4	4
3583	--	3/4	2 1/2	3/4	5

(m) = 1/4” upcut for mortise cuts or thin materials

CED = Cutting Edge Diameter

CEL = Cutting Edge Length

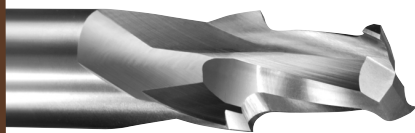
SHK DIA = Shank Diameter

OAL = Overall Length



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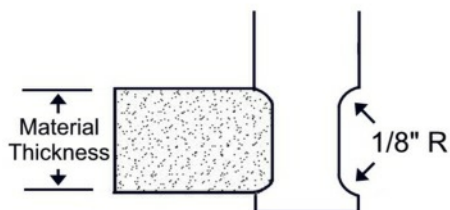
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Series 3600

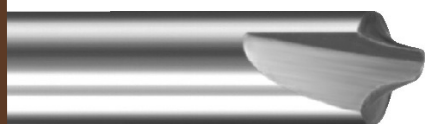
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Two Flute Eased Edge Profile Spiral



This solid carbide two flute upcut double eased edge profile bit will provide extremely clean finishes in shallow profiles with a maximum depth of 1/8". Specially manufactured and designed for the furniture industry. Can be used in all types of wood materials.

PART #	SM DIA	SHK DIA	OAL	RADIUS	OPENING	MATERIAL THICKNESS
3640	1/2	3/4	4	1/8	0.531	1/2
3650	1/2	3/4	4	1/8	0.656	5/8
3660	1/2	3/4	4	1/8	0.781	3/4
3670	1/2	3/4	4	1/8	1.045	1
3680	1/2	3/4	4	1/8	1.156	1 1/8



Series 3700

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Solid Carbide Veining Bits

Solid Carbide Veining Bits
3710 - 3730

Solid carbide veining bits are designed to make decorative cuts in a wide variety of materials. Tools are end cutting so they can plunge and be used to groove material while rounding the top edges of the slot.

PART #	SMALL DIA	RADIUS	SHK DIA	OAL
3710	.094	.125	1/4	2
3720	.094	.187	1/4	2
3730	.125	.250	3/8	3



New

Solid Carbide Engraving Bits

Solid Carbide Engraving Bits
3731 - 3745

These half round engraving tools offer a wide range of tip sizes and angles to accommodate many engraving styles.

PART #	TIP DIAMETER	ANGLE	SHK DIA	OAL
3731	.020	30°	1/4	2
3733	.040	30°	1/4	2
3735	.060	30°	1/4	2
3740	.020	60°	1/4	2
3743	.040	60°	1/4	2
3745	.060	60°	1/4	2



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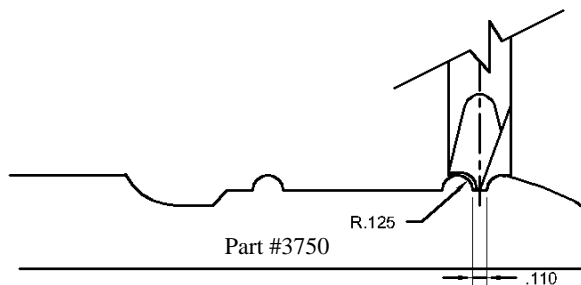


Series 3700 Solid Carbide Beading Bits

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Beading bits are designed to cut decorative beads in a wide variety of materials.

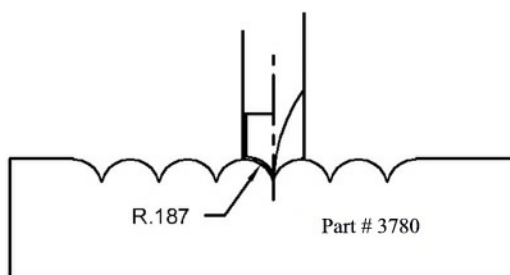
PART #	SMALL DIA	RADIUS	SHK DIA	OAL
3750	.110	.125	1/2	3
3760	.110	.187	1/2	3
3770	.110	.250	1/2	3



Solid Carbide Point Cutting Round Overs

Point cutting round over bits are used for decorative trimming and lettering.

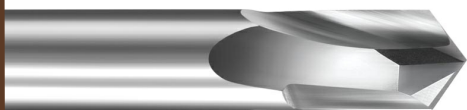
PART #	RADIUS	SHANK DIA	OAL
3775	.125	3/8	3
3780	.187	3/8	3
3785	.250	1/2	3




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Series 3800 Solid Carbide V-Point Bits

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90° Angle Shown

These tools are designed for v-grooving or beveling of natural wood, wood composites, laminated and veneered materials, plastics or solid surface. They are available in 60 and 90 degree angles and are manufactured with slight shear angle for chip removal.

PART #	DIAMETER	ANGLE	CEL	SHK DIA	OAL
3830	1/4	60°	1/2	1/4	3
3835	1/4	90°	1/2	1/4	3
3840	3/8	60°	5/8	3/8	3
3845	3/8	90°	5/8	3/8	3
3850	1/2	60°	5/8	1/2	3
3855	1/2	90°	5/8	1/2	3
3860	6mm	60°	12mm	6mm	64mm
3865	6mm	90°	12mm	6mm	64mm
3870	12mm	60°	16mm	12mm	76mm
3875	12mm	90°	16mm	12mm	76mm



New Solid Carbide V-Point Bits with flat

Designed for cutting aluminum/plastic sandwich materials like Alucobond, Dibond, etc. with a 90 degree angle and flat bottom.

PART #	LARGE DIAMETER	SMALL DIAMETER	ANGLE	DEPTH OF CUT	SHK DIA	OAL
3880	1/2	.090	90°	13/64	1/2	3



Series 3900 Solid Carbide Compression Door Bit

SHOP NOW

This door bit is favored by customers cutting lock set and light openings on wood veneered and wood core doors using a CNC, point to point, or KVAL machine. This tool is designed to cleanly cut the top and bottom edge on all common wood door cores; from particle core, stave core, LVL core and even mineral core doors. Not for use in Steel Doors.

PART #	CED	CEL	SHK DIA	OAL
3950	1/2	2 1/2	1/2	5 1/2

Upcut length 1.250"



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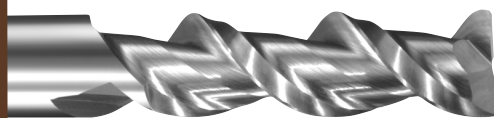
Series 4000

Double Edge Straight Flute Wood Rout

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Straight flute tools combine the rigidity of solid carbide tooling with traditional straight flute geometry. A popular tool design for general purpose routing. Used when you don't want the axial force or thrust of an upcut or downcut spiral.

RIGHT HAND PART #	LEFT HAND PART #	CED	CEL	SHK DIA	OAL
4010	- -	1/8	1/2	1/4	2
4020	4020L	3/16	3/4	1/4	2
4030	- -	1/4	7/8	1/4	2 1/2
4033	4033L	1/4	1 1/8	1/4	3
4037	- -	3/8	1	3/8	3
4040	4040L	3/8	1 1/4	3/8	3
4047	- -	1/2	1	1/2	3
4050	- -	1/2	1 1/4	1/2	3
4070	- -	5/8	2 1/8	5/8	4
4080	- -	3/4	2 1/8	3/4	4



Series 4100

Solid Carbide High Helix Foam Bits

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These tools have been specifically designed for cutting low density foam materials at high feed rates. This series of tools is recommended for "closed cell" foam applications. These tools have an open flute geometry and high helix angle that "augers out" material. Other sizes available upon request.

PART #	CED	CEL	SHK DIA	OAL
4135*	1/4	2	1/4	4
4140	3/8	1 1/2	3/8	3
4160	1/2	1 3/4	1/2	3 1/2
4165	1/2	2 1/4	1/2	4
4185*	3/4	3 1/4	3/4	6

* = 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



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Series 4200 & 4300 Two Flute Low Helix Finishers



Upcut - Series 4200



Downcut - Series 4300

Our double edge low helix spirals are recommended for cutting hard plastics, such as acrylics and phenolics. The lower helix angle produces less “lifting” and “fluttering” on plastic materials. Tools are extremely sharp, producing very clean edges that require little secondary work. These bits also provide great finishes in hardwoods and is recommended for “open cell” foam applications.

UPCUT PART #	DOWNCUT PART #	CED	CEL	SHK DIA	OAL
4220	4320	3/16	5/8	1/4	2 1/2
4230	4330	1/4	3/8	1/4	3
4230L	- -	1/4	3/8	1/4	3
4233	4333	1/4	3/4	1/4	3
4235	4335	5/16	1	5/16	3
4240	4340	3/8	1	3/8	3
4245	4345	1/2	1	1/2	3 & 3 1/2
4250	4350	1/2	1 1/4	1/2	3 1/2
- -	4350L	1/2	1 1/4	1/2	3 1/2
4260	4360	1/2	1 3/4	1/2	4
4260L	- -	1/2	1 3/4	1/2	4
4280	4380	3/4	2 1/2	3/4	5 & 6

L= Left Hand Rotation

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Series 4400 & 4500 Three Flute Low Helix Finishers



Upcut - Series 4400



Downcut - Series 4500

The combination of the low helix angle and flute geometry make these tools razor sharp. They are recommended as a super finishing tool for acrylic, phenolic, UHMW, solid surface and dense hardwoods. The three flute geometry provides faster feed rate capabilities, while producing ultra smooth finishes.

UPCUT PART #	DOWNCUT PART #	CED	CEL	SHK DIA	OAL
4430	4530	1/4	3/8	1/4	3
4433	4533	1/4	3/4	1/4	3
4435	4535	5/16	1	5/16	3
4438	4538	3/8	5/8	3/8	3
4440	4540	3/8	1	3/8	3
4445	4545	1/2	1	1/2	3 & 3 1/2
4450	4550	1/2	1 1/4	1/2	3 1/2
4460	4560	1/2	1 3/4	1/2	4
4460L	4560L	1/2	1 3/4	1/2	4
4480	4580	3/4	2 1/2	3/4	5 & 6

L= Left Hand Rotation

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Upcut - Series 4600



Downcut - Series 4700

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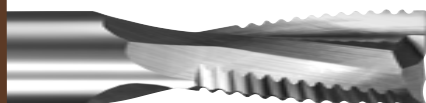
Series 4600 & 4700 Single Edge Low Helix Spirals

The single edge low helix spiral is well suited for cutting softer grades of plastic. This tool combines the aggressive action of single flute geometry with the advantages of low helix geometry to provide a fast, clean cutting tool. Use where chip re-welding is a problem.

UPCUT PART #	DOWNCUT PART #	CED	CEL	SHK DIA	OAL
4630	4730	1/4	3/8	1/4	3
4633	4733	1/4	3/4	1/4	3
4640	4740	3/8	1	3/8	3

SHOP NOW

SHOP NOW



Upcut - Series 5000

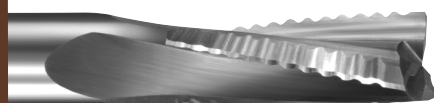
Series 5000 & 5100 Two Flute "Low Helix" Roughers

Roughing 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, particle board, and plywood. The low helix design of these tools is a less aggressive version of Series 1000/1100 and 1600/1700. They will produce less "lifting and fluttering" of the material. These tools will produce a rippled edge cut and are extremely quiet and smooth cutting even in heavy cuts and high feed rates.

UPCUT PART #	DOWNCUT PART #	CED	CEL	SHK DIA	OAL
5050	5150	1/2	1 1/4	1/2	3 1/2
5060	5160	1/2	1 3/4	1/2	3 1/2 & 4
5080	5180	3/4	2 1/2	3/4	5 & 6

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Upcut - Series 5200

Series 5200 & 5300 Three Flute "Low Helix" Roughers

UPCUT PART #	DOWNCUT PART #	CED	CEL	SHK DIA	OAL
5240	5340	3/8	1	3/8	3
5250	5350	1/2	1 1/4	1/2	3 1/2
5260	5360	1/2	1 3/4	1/2	3 1/2 & 4
5280	5380	3/4	2 1/2	3/4	5 & 6

CED = Cutting Edge Diameter

CEL = Cutting Edge Length

SHK DIA = Shank Diameter

OAL = Overall Length



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Series 5400

Single Edge "O" Flute Straight

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"O" flute tools create the perfect curled chip that allows softer plastic to be cut without chip re-welding. Ideally suited for plastic materials that form curled chips as opposed to fractured chips. The straight flute design does not import "up" or "down" forces into the part being routed. Therefore, ideally suited for irregularly shaped parts not capable of being thoroughly held in place by vacuum or fixturing.

RIGHT HAND PART #	LEFT HAND PART #	CED	CEL	SHK DIA	OAL
5404	--	1/16	1/4	1/8	1 1/2
5409	--	1/8	1/4	1/4	2
5410	5410L	1/8	1/2	1/4	2
5412*	--	1/8	5/8	1/4	4
5415	5415L	5/32	5/8	1/4	2
5418	--	3/16	3/8	1/4	2
5420	5420L	3/16	5/8	1/4	2
5422*	5422L*	3/16	1	1/4	4
5430	--	1/4	3/8	1/4	2 1/2
5433	5433L	1/4	3/4	1/4	2 1/2
5434	--	1/4	1	1/4	2 1/2
5435	--	1/4	3/4	1/4	3 1/4
5437	--	1/4	1 1/4	1/4	3 1/4
5440	--	1/4	1	1/4	4
5443	--	3/8	1 1/4	3/8	3
5453	5453L	1/2	1 1/4	1/2	3
5454	5454L	1/2	1 3/4	1/2	4
5460	5460L	3mm	8mm	6mm	64mm
5470	5470L	4mm	16mm	6mm	64mm
5475	5475L	5mm	20mm	6mm	64mm
5480	5480L	6mm	25mm	6mm	64mm
5485	--	8mm	25mm	8mm	64mm
5490	--	10mm	30mm	10mm	76mm

L= Left Hand Rotation

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

CED = Cutting Edge Diameter

CEL = Cutting Edge Length

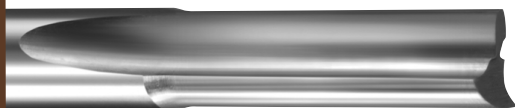
SHK DIA = Shank Diameter

OAL = Overall Length



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Series 5500

Double Edge "O" Flute Straight

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The double edge "O" flute offers the same cutting characteristics as the single edge "O" flute design, but can provide additional tool life in some materials. Two cutting edges reduce chip loads and produce a stronger cross section. Generally performs better in slightly harder plastics.

RIGHT HAND PART #	LEFT HAND PART #	CED	CEL	SHK DIA	OAL
5509	--	1/8	1/4	1/4	2
5510	5510L	1/8	1/2	1/4	2
5512*	--	1/8	5/8	1/4	4
5518	--	3/16	3/8	1/4	2
5520	--	3/16	5/8	1/4	2
5522*	--	3/16	1	1/4	4
5530	--	1/4	3/8	1/4	2 1/2
5533	5533L	1/4	3/4	1/4	2 1/2
5534	5534L	1/4	1	1/4	2 1/2
5535	--	1/4	3/4	1/4	3 1/4
5537	5537L	1/4	1 1/4	1/4	3 1/4
5540	5540L	1/4	1	1/4	4
5543	--	3/8	1 1/4	3/8	3
5553	--	1/2	1 1/4	1/2	3
5554	5554L	1/2	1 3/4	1/2	4
5570	--	4mm	16mm	6mm	64mm
5575	--	5mm	20mm	6mm	64mm
5580	--	6mm	25mm	6mm	64mm
5585	--	8mm	25mm	8mm	64mm
5590	--	10mm	30mm	10mm	76mm

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



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Series 5600

Single Edge "O" Flute Upcut Spiral

SHOP NOW

These tools provide clean cuts in hard plastics while allowing the choice of upward chip removal; which can enhance surface finish. These tools have been manufactured with a polished flute which allows the chips to curl/form better, reduces heat, and adds lubricity without the use of coatings. Tools that have an "S" behind the part number have been manufactured with specific geometry for softer plastics.

RIGHT HAND PART #	LEFT HAND PART #	CED	CEL	SHK DIA	OAL
5609	--	1/8	1/4	1/4	2
5610	5610L	1/8	1/2	1/4	2
5618	--	3/16	3/8	1/4	2
5620	--	3/16	5/8	1/4	2
5621	--	7/32	3/4	1/4	2 1/2
5625H	--	1/4	3/8	1/4	2 1/2
5630H	--	1/4	3/4	1/4	2 1/2
5630S	--	1/4	3/4	1/4	2 1/2
5632H	5632HL	1/4	1 1/4	1/4	3 1/4
5632S	--	1/4	1 1/4	1/4	3 1/4
5640	5640L	3/8	1 1/4	3/8	3
5650	--	1/2	1 1/4	1/2	3 1/2
5660	--	3mm	8mm	6mm	64mm
5663	--	3mm	12mm	6mm	64mm
5668	--	4mm	8mm	6mm	64mm
5670	--	4mm	16mm	6mm	64mm
5672	--	5mm	8mm	6mm	64mm
5675	--	5mm	16mm	6mm	64mm
5680	--	6mm	25mm	6mm	64mm
5685	--	8mm	25mm	8mm	64mm
5690	--	10mm	30mm	10mm	76mm

L= Left Hand Rotation

S = Specifically manufactured for cutting softer plastics

H = Specifically manufactured for cutting harder plastics

CED = Cutting Edge Diameter

CEL = Cutting Edge Length

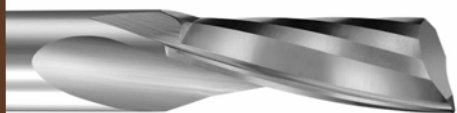
SHK DIA = Shank Diameter

OAL = Overall Length



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Series 5600A - Aluminum Single Edge "O" Flute Upcut Spiral

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This series of tools have specific geometry for optimal finish and chip evacuation for machining most sheet, block and extrusion grades of aluminum. These tools are designed to give you maximum feed rates in all CNC applications that involve cutting aluminum.

PART #	CED	CEL	SHK DIA	OAL
5609A	1/8	1/4	1/4	2
5610A	1/8	1/2	1/4	2
5618A	3/16	3/8	1/4	2
5620A	3/16	5/8	1/4	2
5625A	1/4	3/8	1/4	2 1/2
5630A	1/4	3/4	1/4	2 1/2
5640A	3/8	7/8	3/8	3
5650A	1/2	1	1/2	3
5660A	3mm	8mm	6mm	64mm
5668A	4mm	8mm	6mm	64mm
5675A	5mm	16mm	6mm	64mm
5680A	6mm	16mm	6mm	64mm
5685A	8mm	20mm	8mm	64mm
5690A	10mm	22mm	10mm	76mm



Series 5800TSA Double Edge Design for Aerospace Aluminum Sheet Material

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This series of aluminum cutting bits are designed specifically for Aerospace aluminum sheet material. A wide variety of grades in various states of hardness were provided by an internationally renowned aircraft manufacturer. After extensive testing on our in-house CNC, we developed the specific TSA geometry to perform well in all grades and hardnesses of Aerospace grade aluminum.

PART #	CED	CEL	SHK DIA	OAL
5825TSA	1/4	1/4	1/4	2 1/2
5830TSA	1/4	3/8	1/4	2 1/2
5840TSA	3/8	3/8	3/8	2 1/2



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Series 5700

Single Edge "O" Flute Downcut Spiral

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These tools provide clean cuts in hard plastics while allowing the choice of downward chip removal; which can enhance part hold down. These tools are manufactured with a polished flute which allows the chip to curl/form better, reduces heat, and adds lubricity without the use of coatings. Tools which have an "S" behind the part number were manufactured with specific geometry for softer plastic.

PART #	CED	CEL	SHK DIA	OAL
5709	1/8	1/4	1/4	2
5710	1/8	1/2	1/4	2
5710L	1/8	1/2	1/4	2
5718	3/16	3/8	1/4	2
5720	3/16	5/8	1/4	2
5721	7/32	3/4	1/4	2 1/2
5725H	1/4	3/8	1/4	2 1/2
5730H	1/4	3/4	1/4	2 1/2
5730S	1/4	3/4	1/4	2 1/2
5732H	1/4	1 1/4	1/4	3 1/4
5732S	1/4	1 1/4	1/4	3 1/4
5740	3/8	1 1/4	3/8	3
5750	1/2	1 1/4	1/2	3 1/2
5760	3mm	8mm	6mm	64mm
5763	3mm	12mm	6mm	64mm
5768	4mm	8mm	6mm	64mm
5770	4mm	16mm	6mm	64mm
5772	5mm	8mm	6mm	64mm
5775	5mm	16mm	6mm	64mm
5780	6mm	25mm	6mm	64mm
5785	8mm	25mm	8mm	64mm
5790	10mm	30mm	10mm	76mm

L= Left Hand Rotation

H = Specific geometry for cutting harder plastics

S = Specific geometry for cutting softer plastics

CED = Cutting Edge Diameter

CEL = Cutting Edge Length

SHK DIA = Shank Diameter

OAL = Overall Length



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Series 5800 & 5900

Double Edge "O" Flute Spirals



Upcut - Series 5800

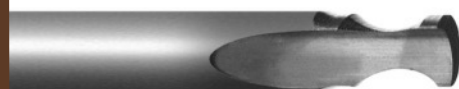


Downcut - Series 5900

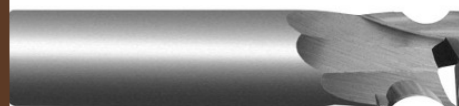
Developed for cutting harder plastics, such as acrylic and phenolics, at faster feed rates with a smooth finish. Ideal for CNC applications. Now manufactured with a polished flute to reduce friction inside the cutting edge, run cooler and adding lubricity without the use of coatings. Choose upcut for upward chip removal or downcut for better part hold down.

UPCUT PART #	DOWNCUT PART #	CED	CEL	SHK DIA	OAL
5830	5930	1/4	3/8	1/4	2 1/2
5833	5933	1/4	3/4	1/4	2 1/2
- -	5933L	1/4	3/4	1/4	2 1/2
5835	- -	5/16	1/2	3/8	3
5840	5940	3/8	3/4	3/8	3
5843	5943	3/8	1 1/4	3/8	3
5853	5953	1/2	1 1/4	1/2	3 1/2
5880	5980	6mm	25mm	6mm	64mm
5885	5985	8mm	25mm	8mm	64mm

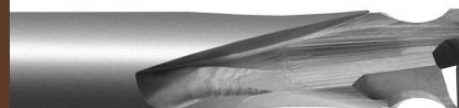
L= Left Hand Rotation



Single Edge 6010 - 6020



Upcut - 6030-6045



Downcut - 6050 - 6065

Series 6000

Edge Rounding Bits for Plastic

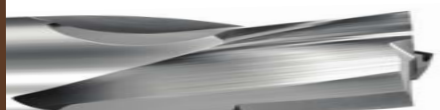
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These solid carbide tools were designed for rounding the edge of plastic sheets or parts. The double edge low helix design provides ultra smooth cuts while allowing for upward or downward chip removal.

PART #	SM DIA	SHANK DIA	OAL	OPENING	RADIUS	# FLUTES	TYPE	PLASTIC SIZE
6010	.194	1/4	2 1/2	5/32	1/8	1	STRAIGHT	1/8
6015	.162	1/4	2 1/2	7/32	3/16	1	STRAIGHT	3/16
6020	.163	1/4	2 1/2	9/32	1/4	1	STRAIGHT	1/4
6030	.320	3/8	2 1/2	5/32	1/8	2	UPCUT	1/8
6035	.305	3/8	2 1/2	7/32	3/16	2	UPCUT	3/16
6040	.288	3/8	2 1/2	9/32	1/4	2	UPCUT	1/4
6045	.379	1/2	3	13/32	3/8	2	UPCUT	3/8
6050	.320	3/8	2 1/2	5/32	1/8	2	DOWNCUT	1/8
6055	.305	3/8	2 1/2	7/32	3/16	2	DOWNCUT	3/16
6060	.288	3/8	2 1/2	9/32	1/4	2	DOWNCUT	1/4
6065	.379	1/2	3	13/32	3/8	2	DOWNCUT	3/8



Upcut - Series 6100



Downcut - Series 6200

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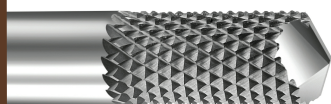
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Series 6100 & 6200

Three Flute Phenolic/Composite Spirals

Three Flute "O" flute geometry provides excellent finishes and extra life when cutting phenolic and composite materials at high feed rates. The free cutting action of these tools provide for better finishes and significantly lower noise levels.

UPCUT PART #	DOWNCUT PART #	CED	CEL	SHK DIA	OAL
6140	6240	3/8	7/8	3/8	3
6150	6250	1/2	7/8	1/2	3
6155	6255	1/2	1 1/4	1/2	3 1/2
6165	6265	1/2	2 1/8	1/2	4



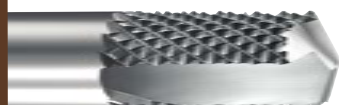
Series 6300

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Medium Burr w/Plunge Point - No Flutes

Vortex has developed several new series of tools specifically designed for cutting fiberglass materials as well as composites. Choose between no flute burr design, straight flute or compression flute where top and bottom surface quality is a concern. Material must be made of all one type and not contain wood, plastic or aluminum components.

PART #	CED	CEL	SHK DIA	OAL
6330	1/4	3/4	1/4	2 1/2
6340	3/8	7/8	3/8	2 1/2
6350	1/2	1	1/2	3



Series 6400

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Medium Burr w/Plunge Point - Two Flutes

PART #	CED	CEL	SHK DIA	OAL
6430	1/4	3/4	1/4	2 1/2
6440	3/8	7/8	3/8	2 1/2
6450	1/2	1	1/2	3



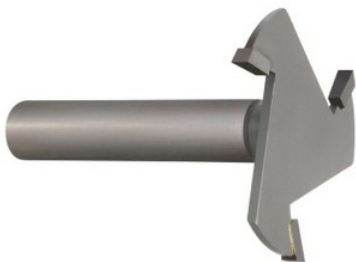
Series 6500

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Medium Burr Compression - Two Flutes

PART #	CED	CEL	SHK DIA	OAL
6530	1/4	3/4	1/4	2 1/2
6540	3/8	1	3/8	3
6550	1/2	1	1/2	3

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Series 6600 3 Wing Slotting Cutters

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Three wing slotting cutters are constructed from a precision machined one piece alloy steel body and brazed carbide tipped. Suitable for flush trimming and horizontal slots in materials up to 3/4" deep. Designed to cut wood and wood composites.

PART #	DIAMETER	KERF	SHK DIA	DEPTH OF CUT
6600	2	.075	1/2	3/4
6605	2	.093	1/2	3/4
6610	2	.125	1/2	3/4
6615	2	.187	1/2	3/4
6620	2	.250	1/2	3/4



Series 6700 Polycrystalline Diamond Router Bits 2+2 Straight Geometry

This series of PCD (polycrystalline diamond) router bits have been designed with a solid carbide body which provides more strength and rigidity in the cut. Used for cutting abrasive, difficult to cut materials such as carbon fiber, phenolics or composite materials where tool life is an issue.

PART #	CED	CEL	SHK DIA	OAL
6725	1/4	1/4	3/8	3
6730	1/4	1/2	3/8	3
6735	3/8	1/2	1/2	3
6740	3/8	7/8	1/2	3

CED = Cutting Edge Diameter

CEL = Cutting Edge Length

SHK DIA = Shank Diameter

OAL = Overall Length



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Start Up Packages for new CNC Router Owners



Nested Base Tooling Package Kit #5000

- | | |
|--|---|
| 1 - 7040 - 4" Spoilboard Cutter | 5 - DDB05070RB - 5mm x 70mm RH Brad Point Drill |
| 1 - 13273 - 10 pack Replacement Inserts
for Spoilboard Cutter | 5 - DDB05070LO - 5mm x 70mm LH Brad Point Drill |
| 3 - 1330 - 1/4" Downcut Spirals | 1 - DDS0370RB - 3mm x 70mm RH Brad Point Drill |
| 2 - 1340 - 3/8" Downcut Spirals | 1 - DDS0370LO - 3mm x 70mm LH Brad Point Drill |
| 2 - 3185XP - 3/8" Mortise Compression Spirals | 1 - DHB35070RB - 35mm x 70mm RH Hinge Bit |
| 2 - 3189XP - 1/2" Mortise Compression Spirals | 1 - DHB35070LO - 35mm x 70mm LH Hinge Bit |
| 1 - 3435XP - 1/2" Compression Spiral for Plywoods | |

Plastic/Sign Making Tooling Package Kit #6000

- | | |
|--|--|
| 1 - 7025 - 2 1/2" Spoilboard Cutter | 2 - 1/8" O'Flute Upcut Spiral* (5610/5710) |
| 1 - 13273 - 10 pack Replacement Inserts
for Spoilboard Cutter | 2 - 3/16" O'Flute Upcut Spiral* (5620/5720) |
| 2 - 2230 - 1/4" Ballnose Spiral | 2 - 1/4" O'Flute Upcut Spiral* (5630H/5730H) |
| 1 - 2240 - 3/8" Ballnose Spiral | 2 - 5510 - 1/8" Double Edge O'Flute Straight |
| 2 - 2215 - 1/8" Tapered Ballnose Spiral | |
| 2 - 3731 - .020" Engraving Bit | |

*Your choice between upcut (Series 5600)
and downcut (Series 5700) rotation



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Toolholder Packages for CNC Router Users

Toolholder Package - Kit #3000



10 - HSK63F ER40 or SYOZ 25
Style Toolholders

2 - 1/4" Collets

3 - 3/8" Collets

3 - 1/2" Collets

2 - 3/4" Collets

1 - 200TH Torque Wrench

1 - Collet Key

Use Part #3000 for ER40 style holders and
3000-25 for SYOZ25 holders

Albrecht Milling Chuck - Toolholder Package Kit #4000



10 - Albrecht Milling Chucks

2 - 1/4" Collets

3 - 3/8" Collets

3 - 1/2" Collets

2 - 3/4" Collets

1 - Tightening Wrench

Brad Point Dowel Drills

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Carbide Tipped and Solid Carbide

Brad point dowel drills are used for drilling blind holes in solid wood, wood composites, or plastic laminated materials. Brad point drills will provide a clean entrance cut, but may cause some blow-out on the backside of the material on thru cuts. These bits have a 10mm shank and are designed to run in your drill bank, but can also be used in your CNC spindle.



57mm Length - CT Brad Point Drill

RIGHT HAND	LEFT HAND	DIAMETER
DDB04057RB	DDB04057LO	4mm
DDB05057RB	DDB05057LO	5mm
DDB06057RB	DDB06057LO	6mm
DDB06457RB	DDB06457LO	1/4
DDB07057RB	DDB07057LO	7mm
DDB08057RB	DDB08057LO	8mm
DDB10057RB	DDB10057LO	10mm
DDB11057RB	DDB11057LO	11mm
DDB15057RB	DDB15057LO	15mm

70mm Length - CT Brad Point Drill

RIGHT HAND	LEFT HAND	DIAMETER
DDB04070RB	DDB04070LO	4mm
DDB04770RB	DDB04770LO	3/16
DDB05070RB	DDB05070LO	5mm
DDB05570RB	DDB05570LO	7/32
DDB06070RB	DDB06070LO	6mm
DDB06470RB	DDB06470LO	1/4
DDB07070RB	DDB07070LO	7mm
DDB08070RB	DDB08070LO	8mm
DDB08270RB	DDB08270LO	8.2mm
DDB09070RB	DDB09070LO	9mm
DDB09570RB	DDB09570LO	3/8
DDB10070RB	DDB10070LO	10mm
DDB11070RB	DDB11070LO	11mm
DDB11170RB	DDB11170LO	7/16
DDB12070RB	DDB12070LO	12mm
DDB12770RB	DDB12770LO	1/2
DDB15070RB	DDB15070LO	15mm
DDB16070RB	DDB16070LO	16mm

57mm Length - SC Brad Point Drill

RIGHT HAND	LEFT HAND	DIAMETER
DDS0257RB	DDS0257LO	2mm
DDS0357RB	DDS0357LO	3mm
DDS0457RB	DDS0457LO	4mm
DDS0557RB	DDS0557LO	5mm
DDS0657RB	DDS0657LO	6mm
DDS0857RB	DDS0857LO	8mm

70mm Length - SC Brad Point Drill

RIGHT HAND	LEFT HAND	DIAMETER
DDS0270RB	DDS0270LO	2mm
DDS0370RB	DDS0370LO	3mm
DDS0470RB	DDS0470LO	4mm
DDS0570RB	DDS0570LO	5mm
DDS0670RB	DDS0670LO	6mm
DDS6470RB	DDS6470LO	1/4
DDS0870RB	DDS0870LO	8mm

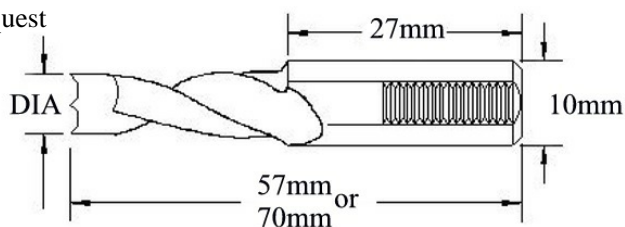
57mm Length - CT Hinge Bits

RIGHT HAND	LEFT HAND	DIAMETER
DHB15057RB	DHB15057LO	15mm
DHB20057RB	DHB20057LO	20mm
DHB25057RB	DHB25057LO	25mm
DHB35057RB	DHB35057LO	35mm

70mm Length - CT Hinge Bits

RIGHT HAND	LEFT HAND	DIAMETER
DHB15070RB	DHB15070LO	15mm
DHB20070RB	DHB20070LO	20mm
DHB25070RB	DHB25070LO	25mm
DHB35070RB	DHB35070LO	35mm

**Other sizes available upon request



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Thru-Hole Drills SHOP NOW

Carbide Tipped and Solid Carbide

Thru-hole drills are used for drilling thru-holes in solid wood, wood composites, plastic laminated and plastic materials. Thru-hole drills will leave a clean exit hole, but may cause some chipping on the entrance cut. These drills have a 10mm shank and are designed to run in your drill bank, but can also be used in your CNC spindle.

57mm Length - CT Thru-Hole Drill

RIGHT HAND	LEFT HAND	DIAMETER
DTH04057RB	DTH04057LO	4mm
DTH05057RB	DTH05057LO	5mm
DTH06057RB	DTH06057LO	6mm
DTH06457RB	DTH06457LO	1/4
DTH07057RB	DTH07057LO	7mm
DTH08057RB	DTH08057LO	8mm
DTH10057RB	DTH10057LO	10mm
DTH11057RB	DTH11057LO	11mm

70mm Length - CT Thru-Hole Drill

RIGHT HAND	LEFT HAND	DIAMETER
DTH04070RB	DTH04070LO	4mm
DTH05070RB	DTH05070LO	5mm
DTH05570RB	DTH05570LO	7/32
DTH06070RB	DTH06070LO	6mm
DTH06470RB	DTH06470LO	1/4
DTH07070RB	DTH07070LO	7mm
DTH08070RB	DTH08070LO	8mm
DTH09070RB	DTH09070LO	9mm
DTH09570RB	DTH09570LO	3/8
DTH10070RB	DTH10070LO	10mm
DTH11070RB	DTH11070LO	11mm
DTH12770RB	DTH12770LO	1/2

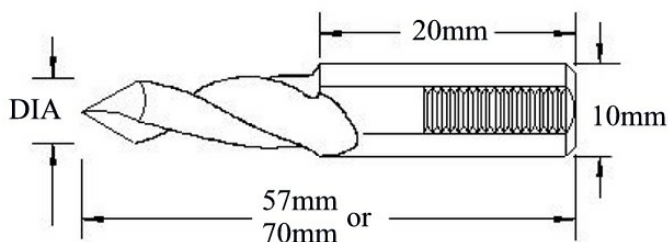
**Other sizes available upon request

57mm Length - S/Carbide Thru Hole

RIGHT HAND	LEFT HAND	DIAMETER
DTS0357RB	DTS0357LO	3mm
DTS0457RB	DTS0457LO	4mm
DTS0557RB	DTS0557LO	5mm
DTS0657RB	DTS0657LO	6mm
DTS0857RB	DTS0857LO	8mm

70mm Length - S/Carbide Thru-Hole

RIGHT HAND	LEFT HAND	DIAMETER
DTS0370RB	DTS0370LO	3mm
DTS0470RB	DTS0470LO	4mm
DTS0570RB	DTS0570LO	5mm
DTS0670RB	DTS0670LO	6mm
DTS0870RB	DTS0870LO	8mm



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Solid Carbide Twist Drills

V-Point or Brad Point Geometry

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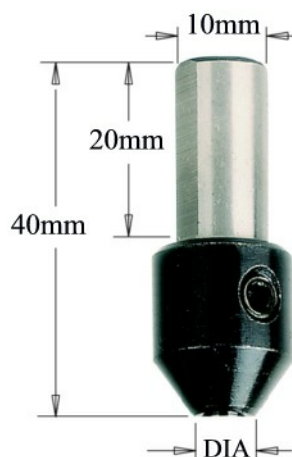
Used on boring machines alone or with adaptor bushings for drilling blind holes in solid wood, wood composites, or plastic laminated materials. Available with v-point geometry for thru cuts or for drilling into plastic or brad point geometry for clean entrance holes.

V-Point (Thru Hole) Geometry

R. HAND	L. HAND	DIA	CEL
SSP020R	SSP020L	2mm	20mm
SSP025R	SSP025L	2.5mm	35mm
SSP030R	SSP030L	3mm	35mm
SSP032R	SSP032L	3.2mm	35mm
SSP035R	SSP035L	3.5mm	35mm
SSP040R	SSP040L	4mm	35mm
SSP050R	SSP050L	5mm	35mm

Brad Point Geometry

R. HAND	L. HAND	DIA	CEL
SBP025R	SPB025L	2.5mm	30mm
SBP030R	SBP030L	3mm	30mm
SBP032R	SBP032L	3.2mm	30mm
SBP035R	SBP035L	3.5mm	30mm
SBP040R	SBP040L	4mm	30mm
SBP050R	SBP050L	5mm	30mm



Adaptors for Twist Drills

PART NUMBER	DRILL BIT DIAMETER
ADP020	2mm
ADP025	2.5mm
ADP030	3mm
ADP032	3.2mm
ADP035	3.5mm
ADP040	4mm
ADP050	5mm



3pk Boeshield Kit

Kit includes 4oz. Rust Free (rust and stain remover), 4 oz. Aerosol T-9 (rust and corrosion protection), and 4 oz. Blade & Bit (resin, gum and pitch remover)

PART NUMBER	COST
BIOSHIELD	\$26.75



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Plexi-Point Drills High Speed Steel

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Drills are specially pointed to reduce chipping when drilling through Plexiglass or other hard plastics. Available in fractional, number, metric and letter sizes.

PART #	DRILL SIZE	DEC. EQUIV	FLUTE LENGTH	OAL
14400062	1/16	.0625	7/8	1 7/8
14400078	5/64	.0781	1	2
14400093	3/32	.0938	1 1/4	2 1/4
14400109	7/64	.1094	1 1/2	2 5/8
14400125	1/8	.1250	1 5/8	2 3/4
14400156	5/32	.1562	2	3 1/8
14400187	3/16	.1875	2 5/16	3 1/2
14400218	7/32	.2188	2 1/2	3 3/4
14400250	1/4	.2500	2 3/4	4
14400281	9/32	.2812	2 15/16	4 1/4
14400312	5/16	.3125	3 3/16	4 1/2
14400375	3/8	.3750	3 5/8	5
14400437	7/16	.4375	4 1/16	5 1/2
14400500	1/2	.5000	4 1/2	6
144000787	2mm	.0787	15/16	1 15/16
144000984	2.5mm	.0984	1 3/16	2 1/4
14400118	3mm	.1181	1 5/16	2 13/32
14400137	3.5mm	.1378	1 3/4	2 7/8
144001575	4mm	.1575	1 11/16	2 15/16
14400177	4.5mm	.1772	2 3/16	3 3/8
144001968	5mm	.1968	2 1/16	3 3/8
14400216	5.5mm	.2165	2 1/4	3 21/32
14400236	6mm	.2362	2 1/4	3 21/32
14400255	6.5mm	.2559	2 7/8	4 1/8
14400275	7mm	.2756	2 23/32	4 9/32
14400315	8mm	.3150	2 15/16	4 19/32
14400354	9mm	.3543	3 3/16	4 29/32
14400374	9.5mm	.3740	3 3/16	4 29/32
14400393	10mm	.3937	3 7/16	5 1/4
14400433	11mm	.4331	3 11/16	5 19/32
14400472	12mm	.4724	3 31/32	5 15/16
14400511	13mm	.5118	3 31/32	5 15/16

**Other sizes available upon request
Letter and Number sizes also available



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Insert Tooling





Series 7000

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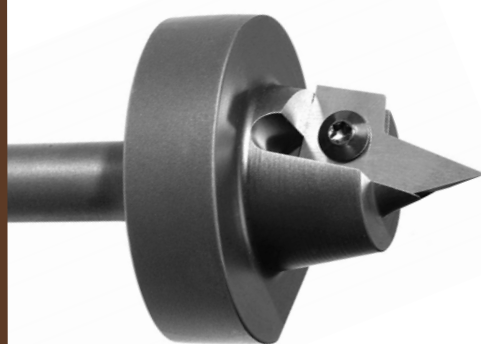
Insert V-Groove Cutters 45° Angle (90° Included Angle)

A series of insert router bits ideal for v-groove operations where the material is to be folded! The angle of the insert is constant and accurate right down to the point of the tool 45 Degree angle inserts are reversible. Tool body comes complete and ready to use with insert, screws, and wrench.

PART #	DIAMETER	DEPTH OF CUT	SHK DIA	INSERT #
7050	1.50	.730	1/2	IVB-30
7055	2.25	1.00	1/2	IVB-40
7060	2.25	1.00	3/4	IVB-40
7065	3.00	1.25	3/4	IVB-50

REPLACEMENT PARTS

67115 - Screws
7000W - Wrench



22.5° Angle (45° Included Angle) 30° Angle (60° Included Angle) 60° Angle (120° Included Angle)

PART NUMBER	DIAMETER	DEPTH OF CUT	SHK DIA	ANGLE	INSERT #
7075	2.00	.625	1/2	22.5°	IVB-10
7080	2.00	1.00	1/2	22.5°	IVB-20
7085	2.00	.966	1/2	30°	IVB-20
7090	3.437	.911	3/4	60°	IVB-50

REPLACEMENT PARTS

67115 - Screws
7000W - Wrench



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Series 7000 Insert Spoilboard Cutters

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Used for surfacing MDF, particle board and balsa core. The straight face design provides a fast and clean cut. The body has been designed so that the insert remains in place and does not “pivot” on the cutter. Available in 2 or 3 wing geometries and 1/2” or 3/4” shank diameters.

PART #	DIAMETER	DEPTH OF CUT	SHK DIA	# WINGS
7025	2 1/2	1/2	1/2	2
7030	3	1/2	3/4	3
7040	4	1/2	3/4	3

REPLACEMENT PARTS

67116 - Screws

13273 - Inserts (sold in boxes of 10)

7001W - Wrench



Series 8000 HSK63F Integrated Spoilboard Cutters

SHOP NOW

Vortex is now offering our spoilboard cutters with our newly developed “integrated” tool design. This series is a solid, one piece unit with the HSK63F taper “built in” to the tool. The one piece design affords superior performance and years of worry free use which will greatly reduce wear and tear on your machine spindle over time.

PART #	DIAMETER	DEPTH OF CUT	TAPER	FLANGE LENGTH	# WINGS
8030	3	1/2	HSK63F	85mm	3
8040	4	1/2	HSK63F	85mm	3
8045	4	1/2	HSK63F	115mm	3

REPLACEMENT PARTS

67116 - Screws

13273 - Inserts (sold in boxes of 10)

7001W - Wrench

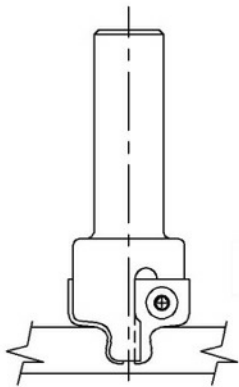


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Flat Table Dovetail Drawer System

Now you have the ability to use your flat table router to make Dovetail Drawer Boxes. This “tooling system” will allow users to quickly and easily make dovetail drawer components with a nested base format. Available in two dovetail designs; the traditional square edge and the new rounded edge. The body is manufactured to accept both styles of insert and has a 3/4” shank diameter. Sold separately or as a kit.



KIT #7500 - Round Edge

[SHOP NOW](#)

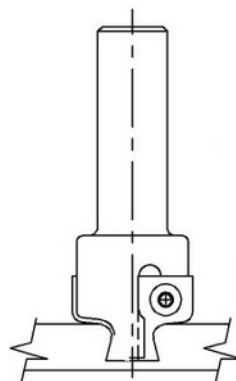
Includes:

Insert Body 9101

4 - INS-9101 Inserts

2 - 3115 (1/4” compression spirals)

**Also available in 5/8”
and 1/2” shank diameters
upon request



KIT #7600 - Square Edge

Includes:

Insert Body 9101

4 - INS-9282 Inserts

2 - 3115 (1/4” compression spirals)

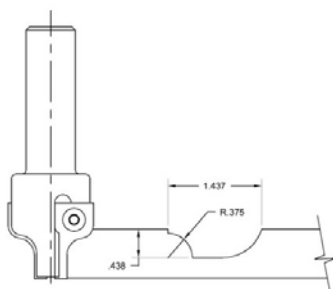
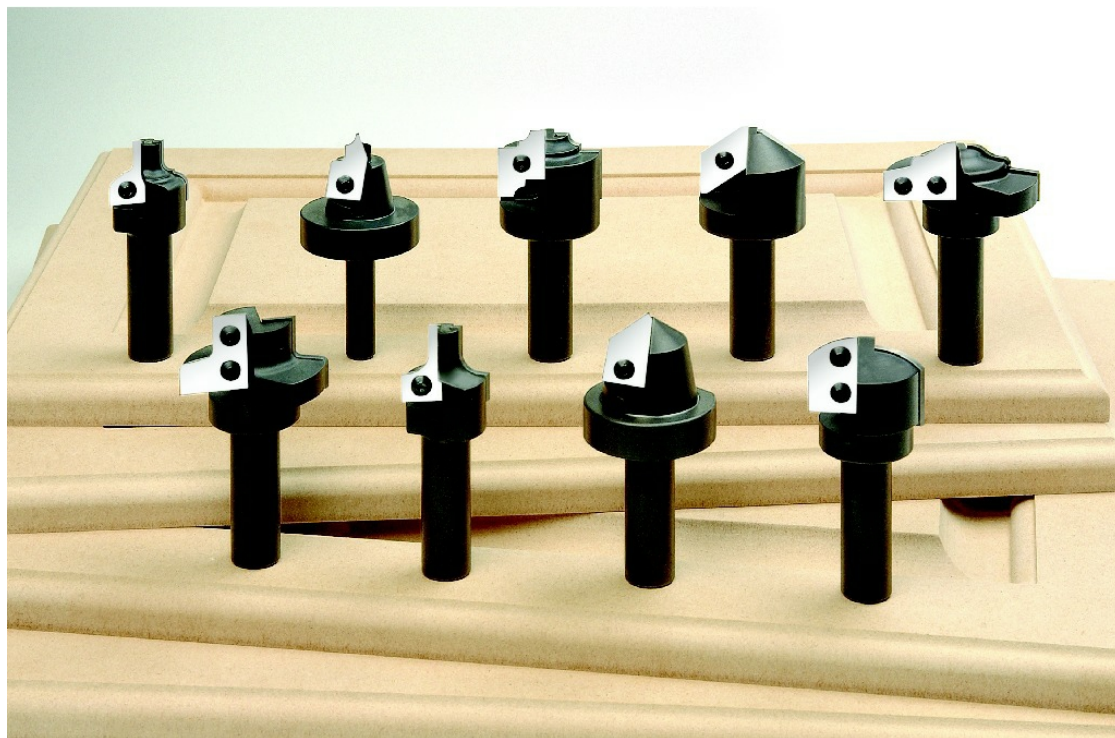
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Series 7900

Four Piece Insert MDF Door Set

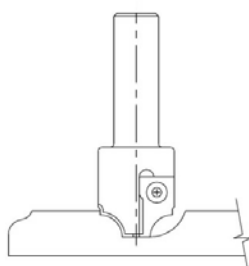
SHOP NOW

By using tools in combination you can create solid doors with the appearance of five piece construction. By selecting a few different patterns, you can mix and match profiles to make hundreds of different door designs. This set comes complete with four insert bodies and the inserts shown below. All tools have a 3/4" shank diameter. Also sold separately, see pages 42-45.



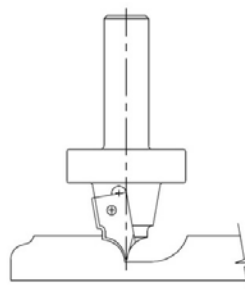
**MDF Raise
Outside Door Edge**

Body #7962
Insert Part #INS-7962
(5 other Outside Door
Edge profiles available
see page 42)



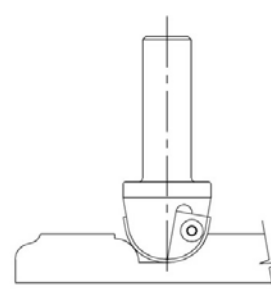
**MDF Raise
Inside Rough**

Body Part #7964
Insert Part #INS-7964
(1/4" radius Inside
Rough profile also
available, see page 43)



**MDF Raise
Inside Corner Cleaner**

Body Part #7965
Insert Part #INS-7965
(1/4" radius Corner
Cleaner Profile also
available, see page 43)

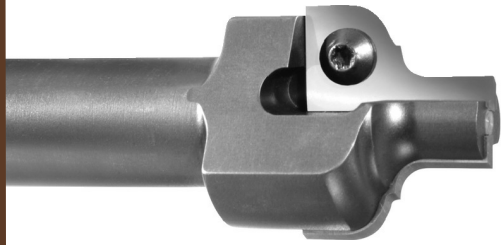


**MDF Raise
Raised Panel**

Body #7963
Insert #INS-7963



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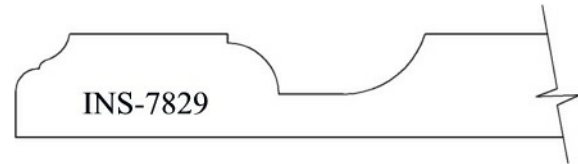
MDF Outside Door Edges

Body Part #7962

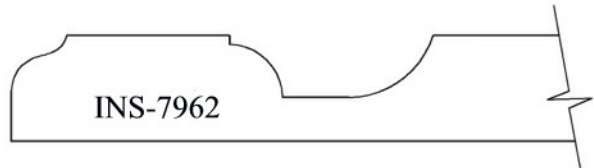
[SHOP NOW](#)

Designed so that one body accepts all outside door edge profiles! Our outside edge router bit separates and profiles at the same time. We've utilized our unique capture groove system to maintain a small cutting diameter while providing two cutting edges. This tool has a 3/4" shank diameter with a 1/2" small diameter and is designed to cut through .010" on 3/4" thick material.

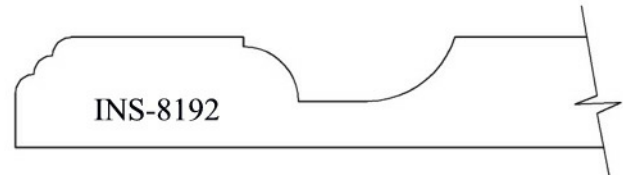
INSERT PART #
INS-7829



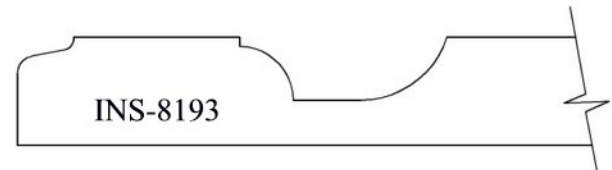
INSERT PART #
INS-7962



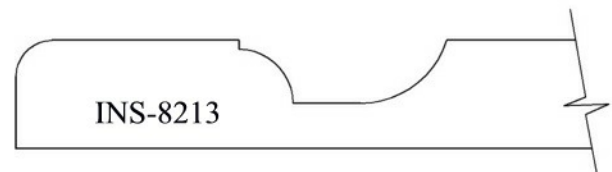
INSERT PART #
INS-8192



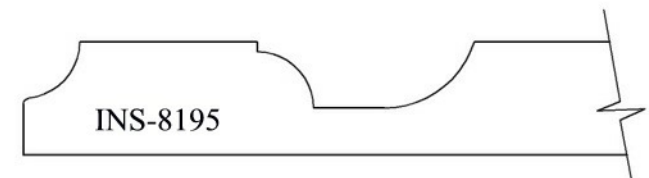
INSERT PART #
INS-8193



INSERT PART #
INS-8213



INSERT PART #
INS-8195



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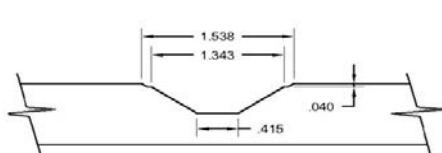
MDF Inside Door Profiles

Inside Roughing Profile

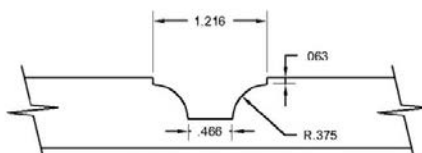
[SHOP NOW](#)

These “multiple” pass cutter sets can be used in combination to rough out and corner clean to provide the appearance of a square inside corner. Combine with a raised panel cutter to complete the look of a five piece assembled door. Bead profile (7964) will accept both a small bead (1/4” radius) or a large bead (3/8” radius) insert so one tool can do both profiles.

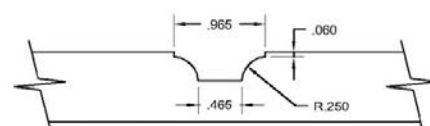
BODY PART #	INSERT PART #	SHANK DIAMETER	INSIDE PROFILE
7960	INS-7960	3/4	Bevel
7964	INS-7964	3/4	Large Bead (3/8”R)
7964	INS-9358	3/4	Small Bead (1/4”R)



7960 - Inside Bevel Profile



7964 - Inside Large Bead



7964 - Inside Small Bead



Inside Corner Cleaning Profiles

[SHOP NOW](#)

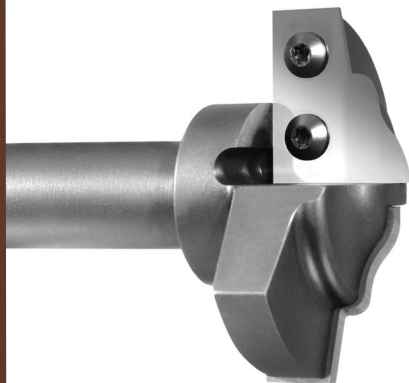
Used to clean the inside corners after the above tool has “roughed out” the material. This tool will create the look of a five piece assembled door.

BODY PART #	INSERT PART #	SHANK DIAMETER	INSIDE PROFILE
7961	INS-7961	3/4	Bevel
7965	INS-7965	3/4	Large Bead (3/8”R)
7965	INS-9357	3/4	Small Bead (1/4”R)



VORTEX
TOOL COMPANY INC.

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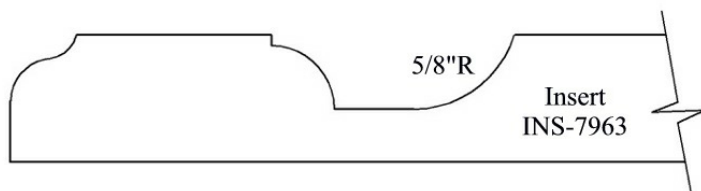


MDF Panel Raise Profiles

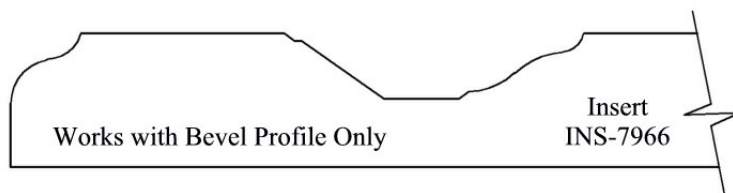
Complete your MDF door by adding even more detail by selecting from one of the following panel raise patterns. All cutters are balanced to a G2.5 or better rating. These cutters are designed to be used in conjunction with the “multiple pass” inside profiles found on page 43.

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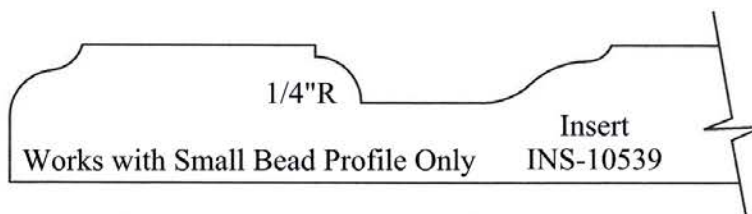
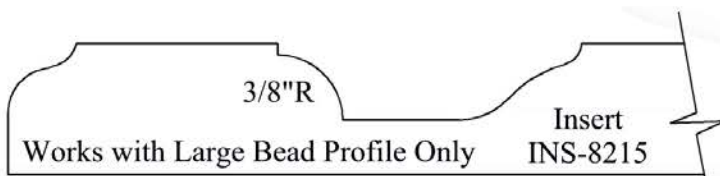
BODY PART #	INSERT PART #	SHANK DIAMETER
7963	INS-7963	3/4



BODY PART #	INSERT PART #	SHANK DIAMETER
7966	INS-7966	3/4



BODY PART #	INSERT PART #	SHANK DIAMETER
8215	INS-8215	3/4
8215	INS-10539	3/4



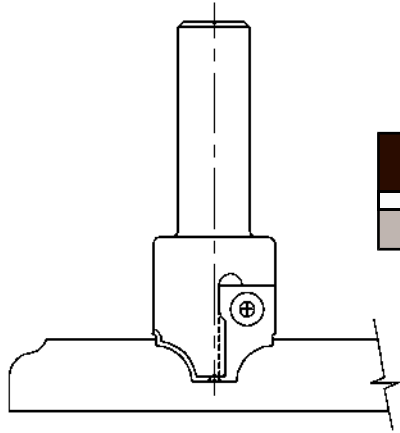
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One Pass MDF Door Profiles

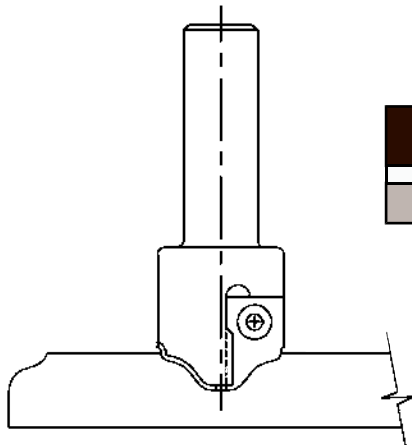
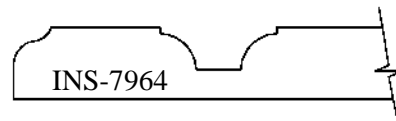
This two flute insert MDF door cutter can be run in a single pass to create the appearance of a raised panel door. Designed so that one body accepts all profiles. Tool is manufactured with a 3/4" shank diameter. Please verify which profile insert should be included in body at time of purchase.

SHOP NOW



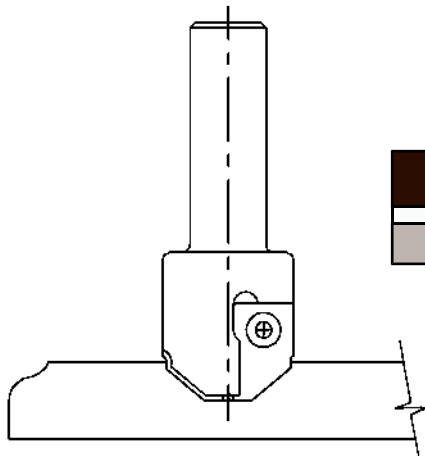
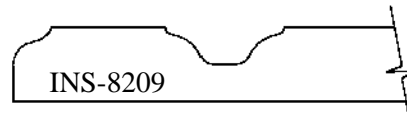
INSERT PART #

INS-7964



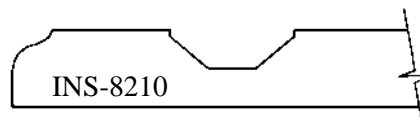
INSERT PART #

INS-8209



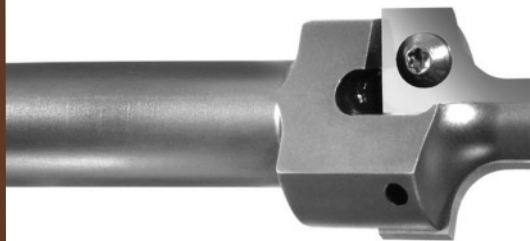
INSERT PART #

INS-8210



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Series 8200 Insert Round Over

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These tools have been designed to round over the top edge of your material. Our unique capture groove allows this series of tools to maintain small cutting diameters, yet provide two cutting edges. These bodies are designed so that they will accept all five inserts! Specify which set of inserts is to be included with the original body purchase.

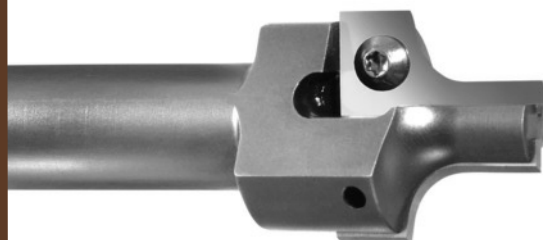
PART #	DESCRIPTION	SMALL DIAMETER	RADIUS	SHANK DIAMETER
8200	Insert Body	1/2		1/2
8205	Insert Body	1/2		3/4
INS-8200	Replacement Insert		1/8	
INS-8201	Replacement Insert		3/16	
INS-8202	Replacement Insert		1/4	
INS-8203	Replacement Insert		5/16	
INS-8204	Replacement Insert		3/8	

**1/16" radius inserts available upon request - body modification is required

REPLACEMENT PARTS

67114 - Screws

7000W - Wrench



Insert Round & Rout

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Unique "capture" groove allows this series of insert tools to maintain small cutting diameters, while still providing two cutting edges. Designed to cut .010" through on 3/4" material and top edge round. It is recommended that you ramp in or start off the part when using this tool. Tool is designed so that one body accepts all five inserts! Specify which set of inserts is to be included with the original body purchase.

PART #	DESCRIPTION	SMALL DIAMETER	RADIUS	SHANK DIAMETER
8210	Insert Body	1/2		1/2
8211	Insert Body	1/2		3/4
INS-8211	Replacement Insert		1/8	
INS-8212	Replacement Insert		3/16	
INS-8213	Replacement Insert		1/4	
INS-7830	Replacement Insert		5/16	
INS-8214	Replacement Insert		3/8	

**1/16" radius inserts available upon request - body modification is required

REPLACEMENT PARTS

67114 - Screws

7000W - Wrench



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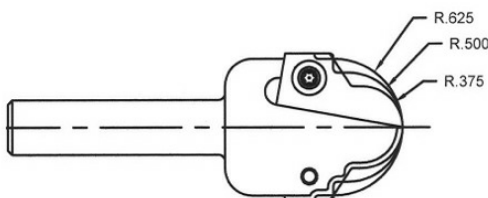
Series 8200

Multi Profile Ballnose Insert Body

[SHOP NOW](#)

This “multi profile” insert tool body has been designed so that one body will accept three different sized radii. For use when larger diameter fluting is required or as cove profiles are needed. Precision insert design provides superior cut quality (particularly at the point) and greatly improved cutter life.

PART #	DESCRIPTION	COVE DIA	SHANK DIA	RADIUS
8220	Insert Body		1/2	
INS-8220	Insert	3/4		3/8
INS-8221	Insert	1		1/2
INS-8222	Insert	1 1/4		5/8

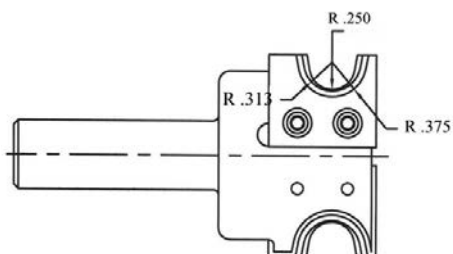


Multi Profile Bull Nose Insert Body

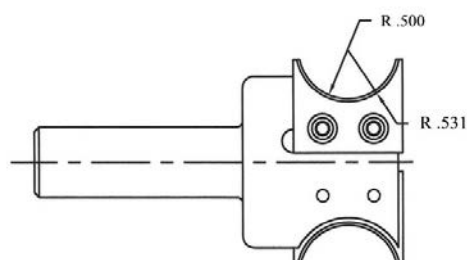
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These insert cutters are designed to perfectly bull nose the material sizes shown providing superior cut quality only precision insert tooling can provide. Two multi profile tool bodies are available from stock and will cut several different radii per cutter body.

PART #	DESCRIPTION	SHANK DIA	MATERIAL THICKNESS
8230	Insert Body	3/4	1/2" thru 3/4"
8240	Insert Body	3/4	1" thru 1 1/16"
INS-8230	1/4" Radius Insert - Body 8230		1/2"
INS-8231	5/16" Radius Insert - Body 8230		5/8"
INS-8232	3/8" Radius Insert - Body 8230		3/4"
INS-8240	1/2" Radius Insert - Body 8240		1"
INS-8241	17/32" Radius Insert - Body 8240		1 1/16"



Body 8230 for material thickness of 1/2" to 3/4"



Body #8240 for material thickness of 1" - 1 1/16"



Series 8300

SHOP NOW

Insert Shaker Door Cutter

Two wing insert design with upshear angle can be used to quickly “rough out” the center panel area of a Shaker Style MDF Door. The user would then use a series of smaller diameter tooling to “square up” the inside corners of the recessed panel area. Insert cutter sold separately or as a kit with the tools shown below.

PART #	BODY DIA	DEPTH OF CUT	SHK DIA	# WINGS
8300	1 1/4	1/2	1/2	2

REPLACEMENT PARTS

13276 - Inserts (sold in boxes of 10)

67116 - Screws

7001W - Wrench



KIT #8310

Includes:

Insert Body - 8300

Box of 10 Replacement Inserts - 13276

1 - 3850 - 1/2” 60° V-Groove Bit

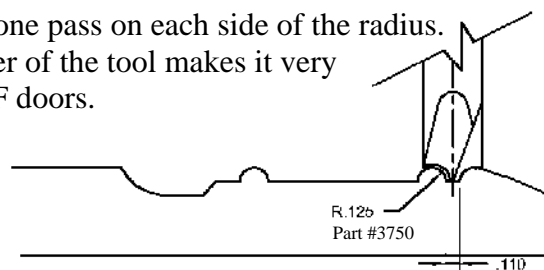
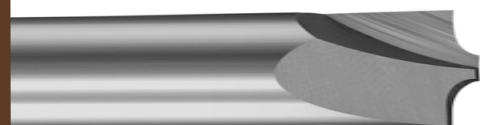
1 - 3189 - 1/2” Mortise Compression

2 - 1310 - 1/8” Downcut



Solid Carbide Beading Profiles

This tool series can be used to create various sized “raised beads” by taking one pass on each side of the radius. The small diameter of the tool makes it very desirable for MDF doors.



PART #	SMALL DIA	RADIUS	SHK DIA	OAL
3750	.110	.125	1/2	3
3760	.110	.187	1/2	3
3770	.110	.250	1/2	3

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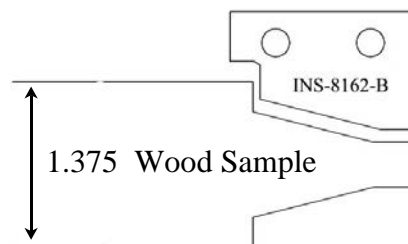
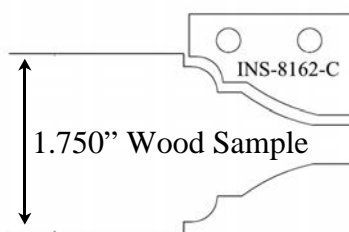
Series 8500

One Sided Insert Raised Panel Door Cutter

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This raised panel design will create a raised profile on one side of your entry door and is manufactured to accept two different insert profiles. An integrated tool design which means less weight, better balance, less run out and never having to change collets again is available with an HSK63F taper.

BODY #	BEVEL INSERT #	COPE INSERT #	SHANK DIA
8550	INS-8162-B	INS-8162-C	3/4
8560	INS-8162-B	INS-8162-C	HSK63F Taper



Tapered Upcut Spiral for Wood Doors

This tool is designed with a 3.5 degree taper (per side) for tapering the edge of entry way doors or for vacuum mold production. The spiral geometry provides an extremely smooth cut and faster feed rates as compared to carbide tipped or insert tooling.

PART NUMBER	SMALL DIA	CEL	SHK DIA	OAL
8534	.442	2 1/2	3/4	5



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Multi Profile Insert Entry Way Door Cutters - Glass Profile

These multi-profile insert tools are designed to take a full pass and have .005" fit tolerance between cope and stick patterns. Door profiles are available on page 51. Insert bodies are balanced to a G2.5 or better rating and can be used on conventional CNC routers. One set of inserts is included with the purchase of the body. These cutters are available in either a 3/4" straight shank or an integrated HSK63F taper.

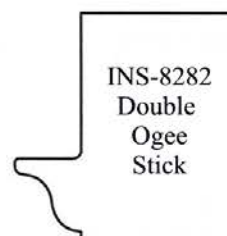


"Multi Profile" Cope Glass

PART #	DESCRIPTION
8510	3/4" Shank Body
8520	HSK63F Integrated Body
INS-8283	Dbl Ogee Glass Cope Insert
INS-8284	Bevel Glass Cope Insert
INS-8285	Bead Glass Cope Insert

"Multi Profile" Stick Glass

PART #	DESCRIPTION
8515	3/4" Shank Body
8525	HSK63F Integrated Body
INS-8282	Dbl Ogee Glass Stick Insert
INS-8286	Bevel Glass Stick Insert
INS-8287	Bead Glass Stick Insert



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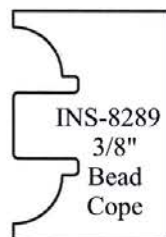
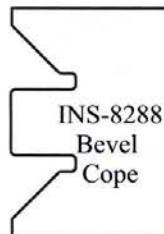
Multi Profile Insert Entry Way Door Cutters - Door Profiles

These multi profile insert tools are designed to take a full pass and have .005" fit tolerance between cope and stick patterns. Glass profiles also available on page 50. Insert bodies are balanced to a G2.5 rating or better and can be used on conventional CNC routers. One set of inserts is included with the purchase of the body. These cutters are available in a 3/4" straight shank or an integrated HSK63F taper.



“Multi Profile” Cope Door

PART #	DESCRIPTION
8530	3/4" Shank Body
8540	HSK63F Integrated Body
INS-8280	Dbl Ogee Cope Door Insert
INS-8288	Bevel Cope Door Insert
INS-8289	Bead Cope Door Insert



“Multi Profile” Stick Door

PART #	DESCRIPTION
8535	3/4" Shank Body
8545	HSK63F Integrated Body
INS-8281	Dbl Ogee Stick Door Insert
INS-8290	Bevel Stick Door Insert
INS-8291	Bead Stick Door Insert



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Series 8500

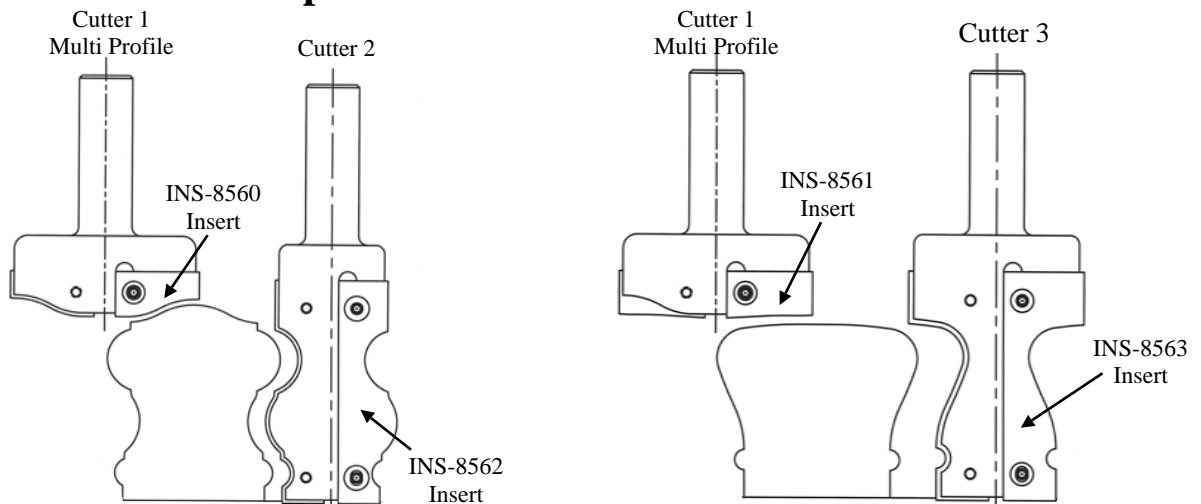
Insert Hand Rail Cutter Sets

SHOP NOW

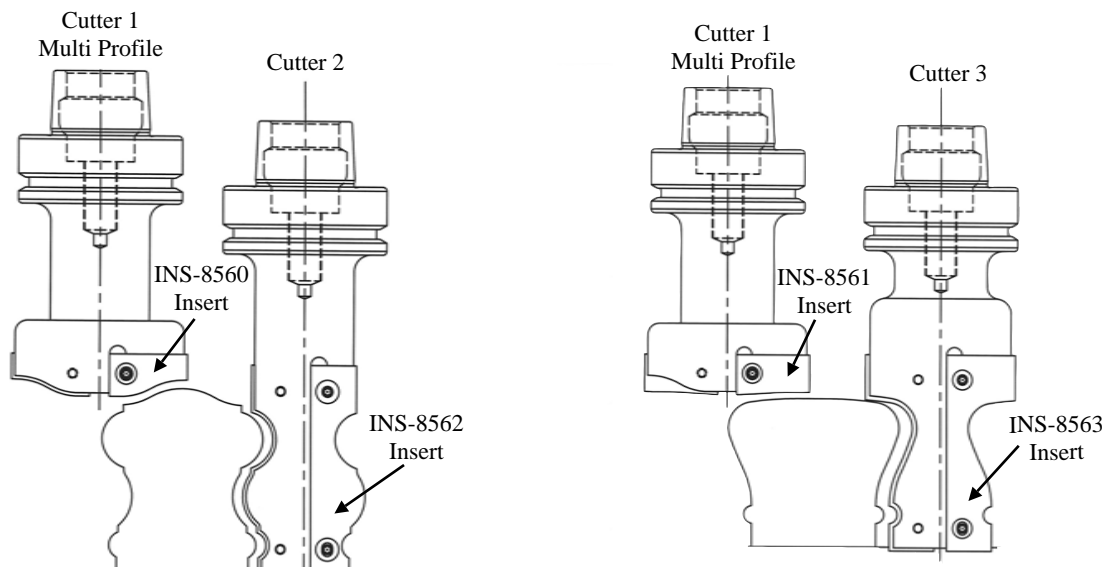
A set of three cutters will produce the two different hand rails shown. These sets are available with either a straight 3/4" shank or an integrated HSK63F taper. Cutters are supplied with a complete set of inserts to do both profiles at the time of purchase.

PART #	DESCRIPTION	SHANK
8565	3 Piece Hand Rail Set - Shank Style	3/4
8570	3 Piece Hand Rail Set - Integrated Style	HSK63F Taper
INS-8560	Replacement Insert for Cutter #1 - Profile	
INS-8561	Replacement Insert for Cutter #1 - Straight	
INS-8562	Replacement Insert for Cutter #2	
INS-8563	Replacement Insert for Cutter #3	

Part #8565 - 3pc Insert Handrail Set - 3/4" Shank Diameter



Part #8570 - 3pc Insert Handrail Set - Integrated w/HSK63F Taper



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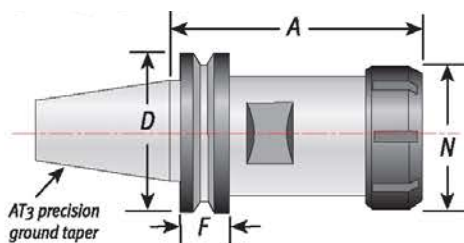
Machine Tool Accessories





ISO & SK Toolholders

- ▼ Balanced to 25,000 RPM @ G2.5
- ▼ Inspection report included for accuracy and balance
- ▼ Includes Collet Nut



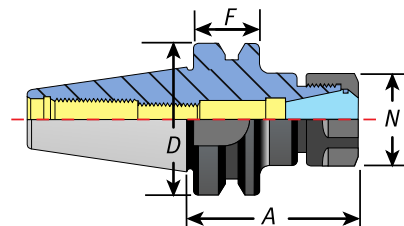
Measure the "A" dimension with the collet in the nut
Dimensions in millimeters.

PART #	DESCRIPTION	D	A	N	NUT	WRENCH	FLATS
12000-CMS	ISO 30 x ER32 - CMS	46	58	50	46132	04616	36
CMS-RR-32	CMS w/turret nut x ER32	57.9	- -	69.8	46132	04616	55
12040-CMS	ISO 30 X ER 40 - CMS w/o nut	46	66	63	46140	04617	42
12213-W-50	ISO 30 x ER 32 - 50	50	50	50	46132	04616	47
12213-W-63	ISO 30 x ER 32 - 63	50	63	50	46132	04616	36
12213-W-90	ISO 30 x ER 32 - 90	50	90	50	46132	04616	36
NT-54300130	SK30 x SYOZ 25 - 70 (Weeke)	50	70	60	83632	03691	38
W507TH	ISO30 x ER 32 (Thermwood)	57.1	55	50	included	04616	- -



BT30 & BT35 Toolholders

- ▼ Balanced to 25,000 RPM @ G2.5
- ▼ Inspection report included for accuracy and balance
- ▼ Includes Collet Nut



Measure the "A" dimension with the collet in the nut.
Dimensions in millimeters.

PART #	DESCRIPTION	D	A	N	NUT	WRENCH
06108-2.5	BT 30 x ER20 - 2.5" (Laguna)	46	63.5	34	41120	04610
16106-W	BT 30 x ER20 - 70 w/o slots (Laguna)	46	70	35	41120	04610
06112	BT 30 x ER32 - 60 with slots	46	60	50	46132	04616
06113	BT 30 x ER32 - 70 with slots	46	70	50	46132	04616
06113-W-60	BT 30 x ER32 - 60, 41mm flats (Komo)	46	60	50	46132	04616
06113-W-90	BT 30 x ER32 - 90, 38mm flats (Komo)	46	90	50	46132	04616
06001-W	BT 30 x SYOZ 25 - 70, 38mm flats (Komo)	46	70	60	83632	03691
06010	BT 35 x SYOZ 25 - 76 (Heian)	53	76	60	83632	03691
061BT353276	BT 35 x ER32 - 76	53	76	50	46132	4616

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Retention Knobs for CNC Routers



Retention knobs make the important connection between the spindle and the tool holder.

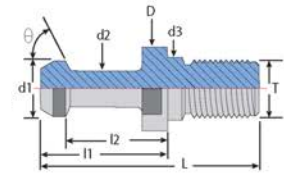
PART #	TYPE	D	d1	d2	d3	L	I1	I2	O
750-19	Komo ISO/BT30-A 12.5	17	13	9	12.5	44	23.4	18.2	15°
13001	DAT 30-A	17	13	9	13	44	24	19	15°
13001-45	Colombo ISO 30 - Ball	17	12.8	9	13	44	24	19	45°
13019	HSD ISO 30	17	12	8	13	44	23.9	-	radius
07801	BT 30 - 45° (P30T-1)	16.5	11	7	12.5	43	23	-	45°
07806	BT 30 - 60° (P30T-2)	16.5	11	7	12.5	43	23	-	60°
4403502	BT 35 Heian	20	13	8.5	12.5	43	28	22.5	-

750-19 - KOMO Router for BT30 Toolholder

13001 - Colombo Spindles (Billet spindle)

13001-45 - Colombo Spindle clamping my balls (RS Spindle)

13019 - HSD Spindles

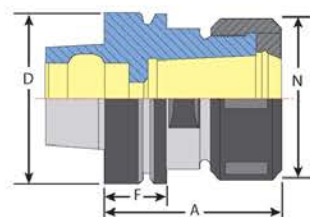


HSK 63F Toolholders

- ▼ Balanced to 24,000 RPM at G2.5
- ▼ Inspection report included for accuracy and balance
- ▼ Includes Collet Nut



PART NUMBER	DESCRIPTION	D	A	N	NUT	WRENCH	FLATS
30000	HSK 63F x ER32 - 70	63	70	50	46132	04616	36
30001	HSK 63F x ER40 - 75	63	75	63	46140	04617	46
30002	HSK 63F x ER40 - 90	63	90	63	46140	04617	46
30005	HSK 63F x ER40 - 125	63	125	63	46140	04617	46
41025	HSK 63F x SYOZ25 - 80	63	80	60	83632	03691	38
H63ER32	HSK63F x ER32 - 70	63	70	50	E32NUT	E32SPAN	46
H63ER40	HSK63F x ER40 - 76	63	76	63	E40NUT	E40SPAN	46
H63SYOZ	HSK63F x SYOZ25 - 80	63	80	63	S25NUT	S25HOOK	46



Measure the "A" dimension with the collet in the nut. Dimensions in millimeters.



H63SYOZ Model

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Albrect Milling Chuck

- ▼ Also known as the Überchuck this holder is guaranteed to run within 0.0001" TIR or better at 2.5 x diameter
- ▼ Dynamically balanced to G2.5 @ 24,000
- ▼ Carefully optimized expansion tolerances and unique vibration dampening capabilities provide smoother part finishes and up to a 60% increase in tool life

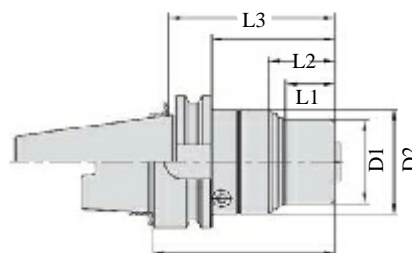
PART NUMBER	TAPER	CAPACITY	GAGE LENGTH	D2	D1	L1	L2	L3
74329	BT30	1/8 - 3/4	3.23	1.97	1.57	0.79	1.12	2.36
74221	HSK63F	1/8 - 3/4	3.62	1.97	1.57	0.79	1.12	2.60



APC Tightening Tool
Economy Model
#74402



APC Tightening Tool
Deluxe Model
#74399



HSK63F Sino-R Toolholders

The Sino-R toolholder is a clamping system with a run out accuracy of <.005mm. The toolholder is hand tightened with a C'Spanner type wrench. Purchase intermediate sleeves on page 57 to run smaller diameter tools.

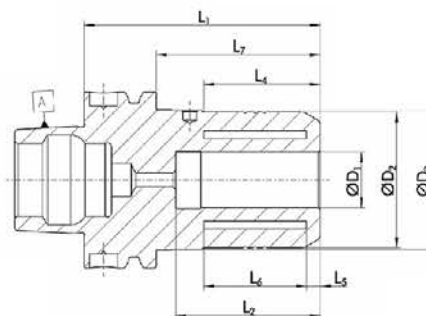
PART NUMBER	D1	D2	D3	L1	L2	L4	L7
209662	1/2"	39mm	44.9mm	80mm	47mm	34mm	54mm
209664	3/4"	48mm	50.15mm	85mm	52mm	42mm	59mm



SINO C'Spanner Wrench
Part #208877



SINO Sleeve Extractor
Part #208840



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Collets for Albrecht Milling Chucks

- ▼ The shallow included angle of this collet creates a locking tapered fit with the holder.
- ▼ A special surface coating increases wear-resistance and reduces friction, resulting in high gripping torque.
- ▼ A deep throat and long, ground gripping surface produces superior accuracy and rigidity.



PART NUMBER	COLLET SIZE	MAX THROAT DEPTH
74357	1/8"	1.10"
74362	1/4"	1.42"
74364	5/16"	1.42"
74366	3/8"	1.57"
74370	1/2"	1.77"
74374	5/8"	1.89"
74378	3/4"	1.97"
74387	6mm	1.42"
74388	8mm	1.42"
74389	10mm	1.57"

**Other sizes available upon request

Intermediate Sleeves For Sino-R Toolholders



Achieve several clamping diameters with one toolholder with the use of intermediate sleeves. Available in both a sealed and slotted design. The sealed sleeve offers a "dust cover" like seal and results in less maintenance/cleaning of the toolholder/sleeve. The slotted design allows for more efficient cooling and chip evacuation of the cutting area and can be used with coolant systems.

SEALED PART #	SLOTTED PART #	CHUCK DIAMETER	TOOL DIAMETER
224376	217376	1/2"	1/8"
224378	217378	1/2"	1/4"
224379	217379	1/2"	5/16"
224380	217380	1/2"	3/8"
224386	217960	3/4"	1/8"
224388	217962	3/4"	1/4"
224389	217963	3/4"	5/16"
224390	217964	3/4"	3/8"
224392	217966	3/4"	1/2"
224394	217968	3/4"	5/8"

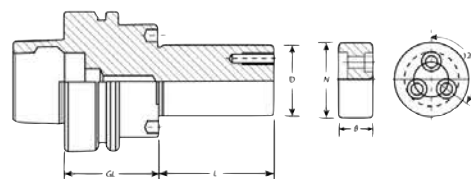
**Other sizes available upon request

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HSK 63F Arbors

- ▼ Special 3 screw design improves safety
- ▼ Precision ground taper provides high accuracy
- ▼ Balanced to 25,000 RPM @ G2.5



PART NUMBER	DESCRIPTION	L	GL	D	B	N
41060	HSK63F x 1 1/4" x 55	55	45	1 1/4"	20	42
41080-3H	HSK63F x 1 1/4" x 80	80	45	1 1/4"	20	42
41085	HSK63F x 1 1/4" x 100	100	45	1 1/4"	20	42
41087	HSK63F x 1 1/4" x 112	112	45	1 1/4"	20	42

Dimensions in millimeters unless otherwise indicated



HSK 63F Drill Chucks

- ▼ Run non-standard shank diameters without having to buy special collets
- ▼ Balanced to 24,000 RPM
- ▼ Adjustable up to 5/8" capacity

PART NUMBER	DESCRIPTION	CAPACITY
H63CHUCK-500	HSK 63F Drill Chuck	1mm - 13mm (1/2")
H63CHUCK-625	HSK 63F Drill Chuck	3mm - 16mm (5/8")



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ER Series Collets

Precision Inch Collets

▼ Runout (T.I.R.) only .0002"

▼ Collapse Range 0.039"

Made from high-carbon bearing steel that is heat-treated for improved flexibility and longer life. Each collet is precisely ground and honed using a swiss technique, then individually inspected and tested for accuracy. Compatible with DR, RD, ESX, AR & BR series collets. For best rigidity and cutter life use Power Coated nuts (page 62).

COLLET ID	ER11 PART #	ER16 PART #	ER20 PART #	ER25 PART #	ER32 PART #	ER40 PART #
1/16"	04211-1/16	04216-1/16				
3/32"	04211-3/32	04216-3/32	04220-3/32	04225-3/32	04232-3/32	
1/8"	04211-1/8	04216-1/8	04220-1/8	04225-1/8	04232-1/8	04240-1/8
5/32"	04211-5/32	04216-5/32	04220-5/32	04225-5/32	04232-5/32	04240-5/32
3/16"	04211-3/16	04216-3/16	04220-3/16	04225-3/16	04232-3/16	04240-3/16
7/32"	04211-7/32	04216-7/32	04220-7/32	04225-7/32	04232-7/32	04240-7/32
1/4"	04211-1/4	04216-1/4	04220-1/4	04225-1/4	04232-1/4	04240-1/4
9/32"		04216-9/32	04220-9/32	04225-9/32	04232-9/32	04240-9/32
5/16"		04216-5/16	04220-5/16	04225-5/16	04232-5/16	04240-5/16
11/32"		04216-11/32	04220-11/32	04225-11/32	04232-11/32	04240-11/32
3/8"		04216-3/8	04220-3/8	04225-3/8	04232-3/8	04240-3/8
13/32"		04216-13/32	04220-13/32	04225-13/32	04232-13/32	04240-13/32
7/16"			04220-7/16	04225-7/16	04232-7/16	04240-7/16
15/32"			04220-15/32	04225-15/32	04232-15/32	04240-15/32
1/2"			04220-1/2	04225-1/2	04232-1/2	04240-1/2
17/32"				04225-17/32	04232-17/32	04240-17/32
9/16"				04225-9/16	04232-9/16	04240-9/16
19/32"				04225-19/32	04232-19/32	04240-19/32
5/8"				04225-5/8	04232-5/8	04240-5/8
21/32"					04232-21/32	04240-21/32
11/16"					04232-11/16	04240-11/16
23/32"					04232-23/32	04240-23/32
3/4"					04232-3/4	04240-3/4
7/8"						04240-7/8
1"						04240-1

**To determine your collet type see page 77



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ER Series Collets Precision Metric Collets

- ▼ Runout (T.I.R.) only .0002"
- ▼ Collapse Range 0.039"

Made from high-carbon bearing steel that is heat-treated for improved flexibility and longer life. Each collet is precisely ground and honed using a swiss technique, then individually inspected and tested for accuracy. Compatible with DR, RD, ESX, AR & BR series collets. For best rigidity and cutter life use Power Coated Nuts (page 62).

COLLET ID	ER16 PART #	ER20 PART #	ER25 PART #	ER32 PART #	ER40 PART #	RANGE
0.5-1	04216-01					.019 - .039"
1-2	04216-02	04220-02	04225-02			.039 - .079"
2-3	04216-03	04220-03	04225-03	04232-03		.079 - .118"
3-4	04216-04	04220-04	04225-04	04232-04	04240-04	.118 - .157"
4-5	04216-05	04220-05	04225-05	04232-05	04240-05	.157 - .197"
5-6	04216-06	04220-06	04225-06	04232-06	04240-06	.197 - .236"
6-7	04216-07	04220-07	04225-07	04232-07	04240-07	.236 - .276"
7-8	04216-08	04220-08	04225-08	04232-08	04240-08	.276 - .315"
8-9	04216-09	04220-09	04225-09	04232-09	04240-09	.315 - .354"
9-10	04216-10	04220-10	04225-10	04232-10	04240-10	.354 - .394"
10-11		04220-11	04225-11	04232-11	04240-11	.394 - .433"
11-12		04220-12	04225-12	04232-12	04240-12	.433 - .472"
12-13		04220-13	04225-13	04232-13	04240-13	.472 - .512"
13-14			04225-14	04232-14	04240-14	.512 - .551"
14-15			04225-15	04232-15	04240-15	.551 - .591"
15-16			04225-16	04232-16	04240-16	.591 - .630"
16-17				04232-17	04240-17	.630 - .669"
17-18				04232-18	04240-18	.669 - .709"
18-19				04232-19	04240-19	.709 - .748"
19-20				04232-20	04240-20	.748 - .787"
20-21					04240-21	.787 - .827"
21-22					04240-22	.827 - .866"
22-23					04240-23	.866 - .906"
23-24					04240-24	.906 - .945"
24-25					04240-25	.945 - .984"
25-26					04240-26	.984 - 1.024"

**To determine your collet type see page 77



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TG Series Collets

Precision Inch Collets

▼ Runout (T.I.R.) .0004"

▼ Collapse Range 1/64"

COLLET ID	TG 75 PART NUMBER	TG100 PART NUMBER
1/8"	04008-1/8	04010-1/8
3/16"	04008-3/16	04010-3/16
1/4"	04008-1/4	04010-1/4
5/16"	04008-5/16	04010-5/16
3/8"	04008-3/8	04010-3/8
1/2"	04008-1/2	04010-1/2
9/16"	04008-9/16	04010-9/16
5/8"	04008-5/8	04010-5/8
3/4"	04008-3/4	04010-3/4
7/8"		04010-7/8
1"		04010-1

**Other sizes available upon request; To determine your collet type see page 77



Perske Series Collets

Precision Collets

▼ Manufactured to DIN 6388 Standards

▼ Runout (T.I.R.) .0004"

▼ Collapse Range 1/64"

COLLET ID	SYOZ 20 PART NUMBER	SYOZ 25 PART NUMBER
1/8"	03520-1/8	03868-1/8
3/16"	03520-3/16	03868-3/16
1/4"	03520-1/4	03868-1/4
5/16"	03520-5/16	03868-5/16
3/8"	03520-3/8	03868-3/8
1/2"	03520-1/2	03868-1/2
5/8"		03868-5/8
3/4"		03868-3/4
1"		03868-1
10mm	03520-10	03868-10

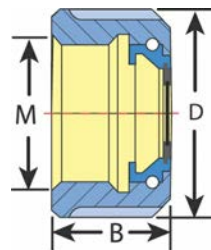
**Other sizes available upon request; To determine your collet type see page 77

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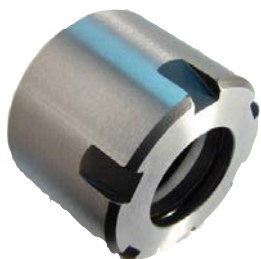
ER Collet Nuts

- ▼ Power Coated providing 40% more holding power than standard bearing nuts
- ▼ Safer: cutting tool is less likely to break free



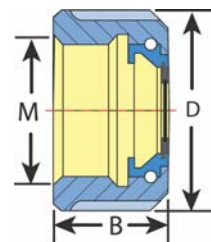
PART #	DESCRIPTION	D	B	M	WRENCH	*MAX TORQUE
46111	ER11 RH Collet Nut	19	11.8	M14 x .75	04608	20 ft/lbs
46116	ER16 RH Collet Nut	32	18.0	M22 x 1.5	04613	50 ft/lbs
46120	ER20 RH Collet Nut	35	19.5	M25 x 1.5	04614	75 ft/lbs
46125	ER25 RH Collet Nut	42	20.5	M32 x 1.5	04615	95 ft/lbs
46132	ER32 RH Collet Nut	50	23.0	M40 x 1.5	04616	125 ft/lbs
46140	ER40 RH Collet Nut	63	26.0	M50 x 1.5	04617	140 ft/lbs
E32NUT*	ER32 RH Collet Nut	50	23.0	M40 x 1.5	E32SPAN	130 ft/lbs
E40NUT*	ER40 RH Collet Nut	63	25.0	M50 x 1.5	E40SPAN	150 ft/lbs

*Bearing style nut



ER Mini-Nuts

- ▼ Use High Speed Mini Nuts for applications where speed exceeds 10,000 RPMs



PART #	DESCRIPTION	D	B	M	WRENCH	*MAX TORQUE
23108	ER8 Mini Nut	12	11	M10 x .75	04620	7 ft/lbs
23111	ER11 Mini Nut	16	12	M13 x .75	04621	14 ft/lbs
23116	ER16 Mini Nut	22	18	M19 x 1.0	04622	22 ft/lbs
23120	ER20 Mini Nut	28	19.5	M24 x 1.0	04623	25 ft/lbs
23125	ER25 Mini Nut	35	21	M24 x 1.0	04624	29 ft/lbs



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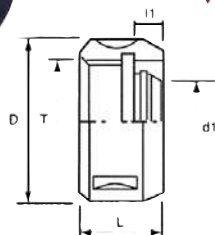
▼ "American Owned and Operated" ▼



TG Collet Nuts

▼ Balanced to 20,000 RPM

▼ “Power Coated” - No bearings to seize and fail



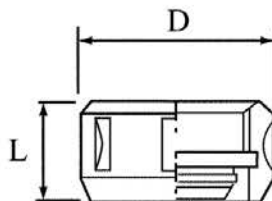
PART #	DESCRIPTION	D	d1	T	I1	L	WRENCH	*TORQUE
27500	TG75 Collet Nut	1.88"	-	1 ½ - 12"	.32"	.94"	04018	100 ft/lbs
28110	TG100 Collet Nut	2.35"	1.12"	1 7/8 - 12"	.44"	1.18"	03691	100 ft/lbs

*Recommended torque is 80-90% of max value



Perske Collet Nuts

▼ Conform to DIN 6388 Standards



PART #	DESCRIPTION	D	L	WRENCH
03520	SYOZ 20 Collet Nut	35mm	20mm	22220
83632	SYOZ 25 Collet Nut	60mm	30mm	03691
S25NUT*	SYOZ 25 Collet Nut	60mm	30mm	S25HOOK

*Bearing style nut



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Torque Wrench

Proper torque on the collet nut reduces collet wear, keeps tools securely in the toolholder and saves you time and money. Benefits include: Safety (proper torque reduces the possibility of tools flying out of the holder); Cost Savings (proper torque extends the life of collets, tools and holders); and Quality (proper torque assures maximum cutting accuracy).



PART #	TORQUE RANGE	LENGTH	WEIGHT	SPIGOT
60TH	5-45 ft/lbs	12"	1 lb	16mm round
200TH	30-150 ft/lbs	16.5"	1.75 lbs	16mm round
300TH	45-228 ft/lbs	21.5"	2.5 lbs	16mm round

Collet Keys

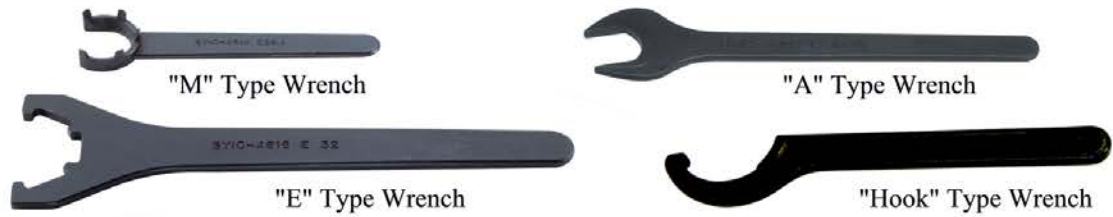
Recommended torque is 80-90% of given value

PART #	COLLET NUT SIZE	WRENCH TYPE	MAX TORQUE
04580-16	ER16	Slotted	50 ft/lbs
04601-16	ER16 Hex	Hex	50 ft/lbs
04580-20	ER20	Slotted	75 ft/lbs
04602-20	ER20 Hex	Hex	75 ft/lbs
04603-25	ER25 Spanner	Slotted	95 ft/lbs
04587	ER25 Mini	Castle	29 ft/lbs
04604-32	ER32 Spanner	Slotted	125 ft/lbs
04605-40	ER40 Spanner	Slotted	140 ft/lbs
03690-25	SYOZ25/TG100	Hook	100 ft/lbs

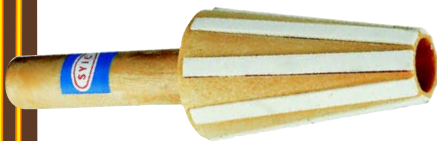


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Hand Wrenches



PART NUMBER	DESCRIPTION	NUT TYPE	LENGTH	WIDTH
04608	ER11 - A Wrench	A (Hex)	120mm	40mm
04609	ER16 - A Wrench	A (Hex)	140mm	53mm
04610	ER20 - A Wrench	A (Hex)	160mm	60mm
04613	ER16 - E Wrench	Slotted	160mm	55mm
04614	ER20 - E Wrench	Slotted	180mm	60mm
04615	ER25 - E Wrench	Slotted	206mm	65mm
04616	ER32 - E Wrench	Slotted	253mm	75mm
04617	ER40 - E Wrench	Slotted	289mm	90mm
04618	ER50 - E Wrench	Slotted	351mm	110mm
04620	ER8 - M Wrench	ER Mini	75mm	13mm
04621	ER11 - M Wrench	ER Mini	95mm	17mm
04622	ER16 - M Wrench	ER Mini	117mm	22.5mm
04623	ER20 - M Wrench	ER Mini	129mm	28.5mm
04624	ER25 - M Wrench	ER Mini	142.5mm	35.5mm
04018	TG75 - Wrench	Hook	253mm	46mm
03691	TG100/SYOZ25 Wrench	Hook	260mm	46mm
22220	SYOZ 20 Wrench	Hook	- -	34mm
E32SPAN	ER32 - E Wrench	Slotted	253mm	75mm
E40SPAN	ER40 - E Wrench	Slotted	289mm	90mm
S25HOOK	SYOZ 25 Wrench	Hook	260mm	46mm



Spindle Wipers

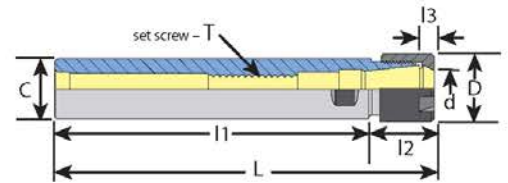
- ▼ Keeps spindles and toolholders clean
- ▼ Removes contaminants to improve T.I.R.

PART NUMBER	TAPER	TOTAL LENGTH	TAPER LENGTH
07703	30	170mm	60mm
07704	40	188mm	78mm
07705	50	240mm	120mm
07711	HSK63F	165mm	31mm

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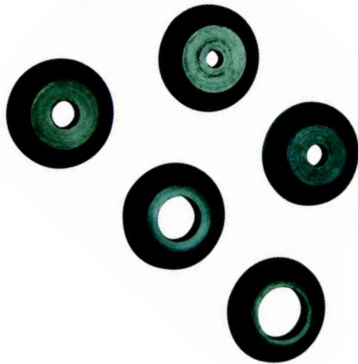
Straight Shank Extensions

- ▼ Works with any toolholder
- ▼ Precision ground pocket
- ▼ Includes ER mini nut



PART #	C	d	l1	L	l2	l3	D	WRENCH
04889	3/8"	ER 8M	100	124	24	6	12	04620
04891	1/2"	ER 11M	140	166.5	26.5	6.6	16	04621
04893	5/8"	ER 11M	140	158.5	18.5	6.6	16	04621
04895	1/2"	ER 16M	140	177	37	10.6	22	04622
04896	3/4"	ER 16M	140	165	25	10.6	22	04622
04894	3/4"	ER 20M	140	180	40	11.5	28	04623
04897	1"	ER 20M	140	168	28	11.5	28	04623
04898	3/4"	ER 25M	100	140	40	12	35	04624
04888	1"	ER 25M	140	190	50	12	35	04624

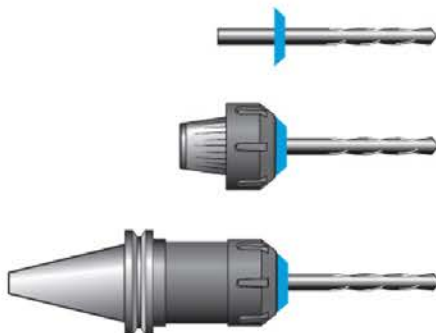
*Dimensions in millimeters unless otherwise noted



Dust Covers

- ▼ Eliminates cleaning collets
- ▼ Extends life of your collets
- ▼ Extends tool life by maintaining T.I.R.

PART NUMBER	DESCRIPTION	TOOL SHANK DIAMETER
DC32-1/4-5	5pc Dust Cover Set	1/4"
DC32-5/16-5	5pc Dust Cover Set	5/16"
DC32-3/8-5	5pc Dust Cover Set	3/8"
DC32-1/2-5	5pc Dust Cover Set	1/2"
DC32-5/8-5	5pc Dust Cover Set	5/8"
DC32-3/4-5	5pc Dust Cover Set	3/4"



Installation:

- 1 - Place dust cover on tool shank
- 2 - Insert tool into collet/nut assembly
- 3 - Tighten assembly into toolholder using proper torque

NOTE: Do not slide dust cover over cutting edge of tool as you may damage it.

Tightening Stands

- ▼ For HSK, ISO and BT Spindles
- ▼ Change Retention Knobs from underneath
- ▼ Bolts right onto workbench

PART #	DESCRIPTION	USED WITH TOOLHOLDER #
NTS-ISO30-36	ISO 30 Taper - 36mm flats	12213-W-63, 12213-W-90
NTS-ISO30-38	ISO 30 Taper - 38mm flats	NT-54300130
NTS-ISO30-47	ISO 30 Taper - 47mm flats	12213-W-50
NTS-BT30-41	BT 30 Taper - 41mm flats	06113-W-60
NTS-HSK63F-36	HSK63F-36mm flats	30000
NTS-HSK63F-38	HSK63F - 38mm flats	41025
NTS-HSK63F-46	HSK63F - 46mm flats	30001
VE340	Universal HSK63F	Used for any HSK63F Taper



VE340 Model Stand



NTS Model Stand

Benchtop Toolsetter

This toolsetter allows you to measure tools off-line. You can measure tools in seconds and be ready for the next job while the machine is still in production. The toolsetter eliminates expensive downtime and costly machine damage which can occur while setting tools.

Instead of extensive bending and stretching of the operator, and the starting and stopping of your CNC machine, the operator pre-sets tools at their workbench.



PART NUMBER	DESCRIPTION	SIZE
727-Taper	Benchtop Toolsetter	16" H x 10" W x 6" D

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Mono Aggregate Heads

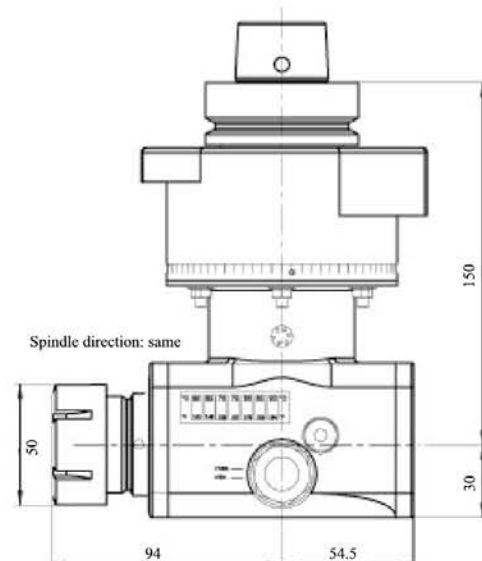
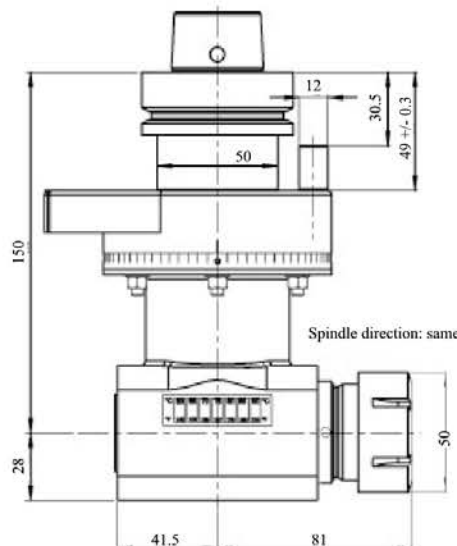
One Spindle Output

Mono output aggregates are an affordable way to add 4th axis capability to your CNC router. Perform routing, boring, mortising and sawing operations faster to increase profits. Choose from a wide variety of spindle outputs.

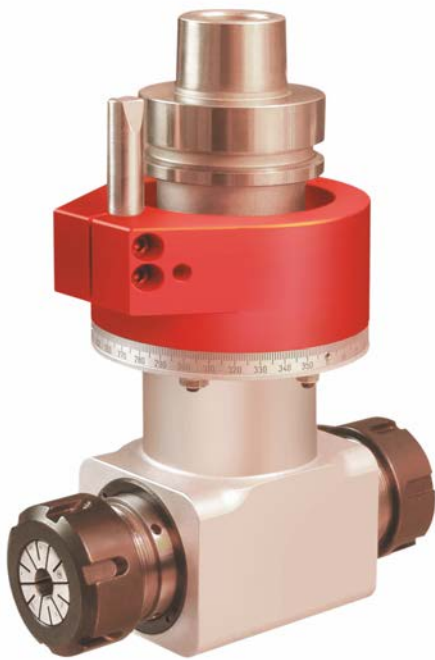
HSK63F center spindle shown.
Please specify your machine spindle and application.

	FUNCTION LINE GREASE LUBRICATED	ULTRA LINE OIL BATH LUBRICATED
Spindle Speed Max	10,000 RPM	10,000 RPM
Tool Speed Max	15,000 RPM	15,000 RPM
Rotation	Aggregate can be rotated 360°	Aggregate can be rotated 360°
Gear Ratio	1:1.48	1:1.48
Maximum Torque	15 ft/lbs	17 ft/lbs
Spindle Direction	Same as machine spindle	Same as machine spindle
Maximum Temperature	185° F	185° F
Spindle Outputs*	M5, R6, S1, S2, Modular	M5, R6, S1, S2, P1, P2, P3, P4, 05

*See Pages 72-73 for spindle output specifications



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Duo Aggregate Heads

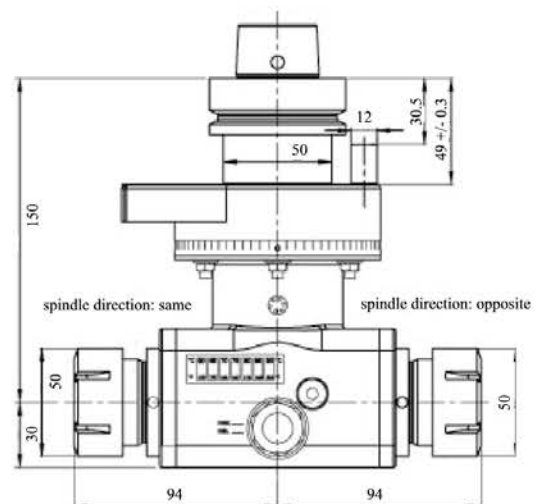
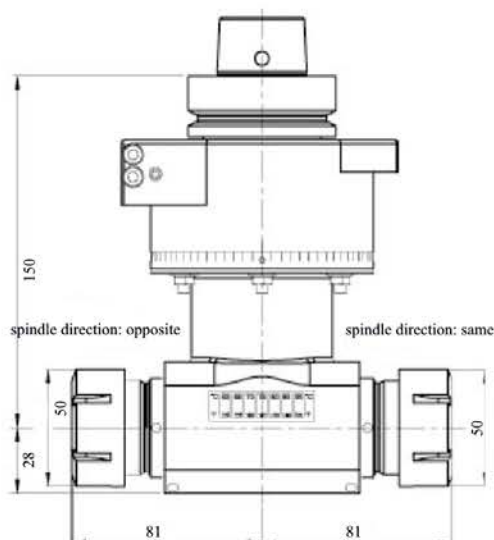
Two Spindle Outputs

Use Duo aggregates for faster manufacturing when more than one tool is required. Choose from a wide variety of spindle outputs. Possibilities include routing, boring, mortising, and sawing operations.

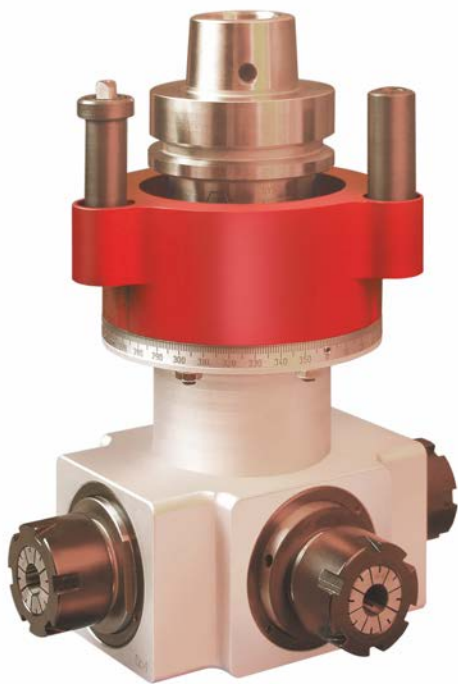
HSK63F center spindle shown.
Please specify your machine spindle and application.

	FUNCTION LINE GREASE LUBRICATED	ULTRA LINE OIL BATH LUBRICATED
Spindle Speed Max	10,000 RPM	10,000 RPM
Tool Speed Max	15,000 RPM	15,000 RPM
Rotation	Aggregate can be rotated 360°	Aggregate can be rotated 360°
Gear Ratio	1:1.48	1:1.48
Maximum Torque	15 ft/lbs	17 ft/lbs
Spindle Direction	#1 clockwise, #2 opposite	#1 clockwise, #2 opposite
Maximum Temperature	185° F	185° F
Spindle Outputs*	M5, R6, S1, S2, Modular	M5, R6, S1, S2, P1, P2, P3, P4, 05

*See Pages 72-73 for spindle output specifications



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Quattro Aggregate Heads

Four Spindle Outputs

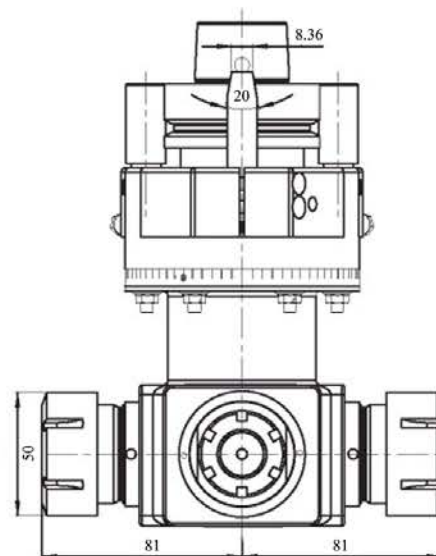
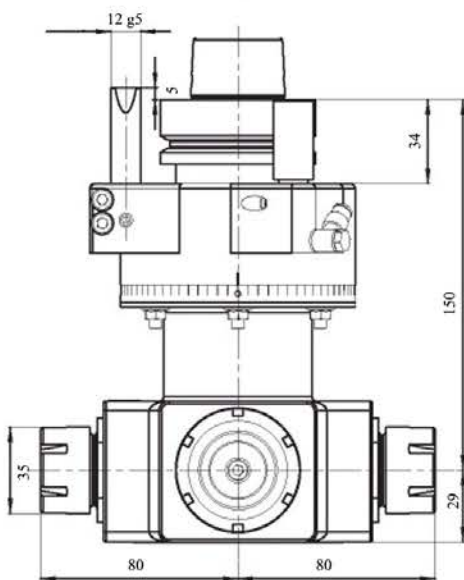
Quattro aggregate heads provide four tool spindles for more flexibility to combine operations. Choose from a wide variety of spindle outputs.

- ▼ Add 4th axis capability to your CNC
- ▼ Reduce the number of tool changes needed
- ▼ Features 2 - ER25 spindles for boring, and 2 - ER32 spindles for custom applications

HSK63F center spindle shown.
Please specify your machine spindle and application.

FUNCTION LINE (GREASE LUBRICATED)	
Spindle Speed Max	10,000 RPM
Tool Speed Max	15,000 RPM
Rotation	Aggregate can be rotated 360°
Gear Ratio	1:1.48
Maximum Torque	15 ft/lbs
Maximum Temperature	185° F
Spindle Outputs*	M5, R6, Modular

*See Pages 72-73 for spindle output specifications



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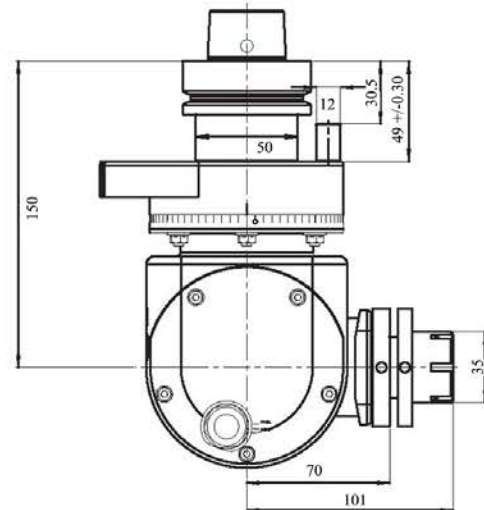
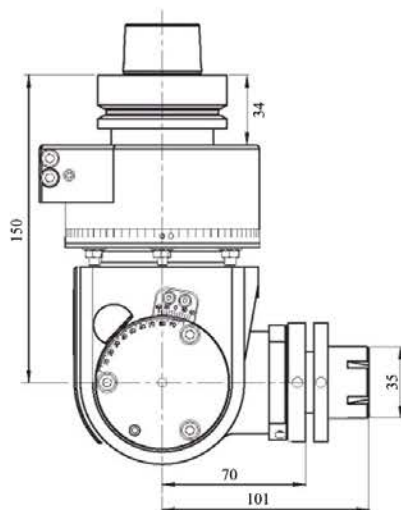
Vario Aggregate Heads Variable-Angle

The Vario can operate at any angle within its range to perform “impossible” cuts, right on your CNC.

- ▼ Function Line Vario operates at any angle from 0° to 100° (100° adjustable)
- ▼ Ultra Line Vario operators at any angle from -100° to 100° (200° adjustable)

HSK63F center spindle shown.
Please specify your machine spindle and application.

	FUNCTION LINE GREASE LUBRICATED	ULTRA LINE OIL BATH LUBRICATED
Spindle Speed Max	10,000 RPM	10,000 RPM
Tool Speed Max	15,000 RPM	15,000 RPM
Rotation	Aggregate can be rotated 360°	Aggregate can be rotated 360°
Gear Ratio	1:1.48	1:1.48
Maximum Torque	15 ft/lbs	17 ft/lbs
Spindle Direction	Same as machine spindle	Same as machine spindle
Maximum Temperature	185° F	185° F
Spindle Outputs*	M5, R6, S1, S2, Modular	M5, R6, S1, S2, P1, P2, P3, P4, 05

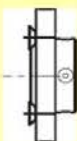


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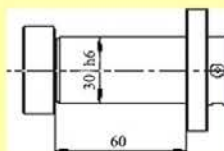
Spindle outputs are designed to hold specific tools to perform a variety of tasks. Some spindle outputs cannot be used with certain aggregates. Please contact us for help in selecting your outputs.

Modular spindle outputs (highlighted in yellow boxes) are all interchangeable on the aggregates that support the modular output system.

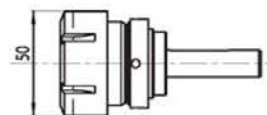
S1
Modular Saw Spindle



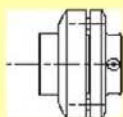
08
Modular Arbor



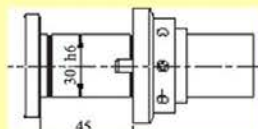
R6
ER32 collet and nut
Range: 3mm - 20mm



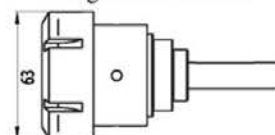
P1
Modular Saw Arbor
Range 1.5mm - 4mm tool shank



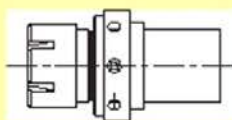
09
Modular Arbor



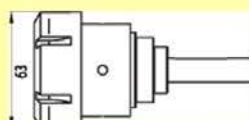
R7
ER 40 - for Soft Touch
Range: 4mm - 26mm



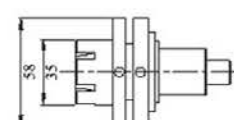
M5
Modular ER25



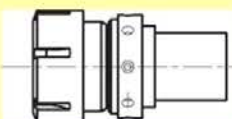
R7
Modular ER 40



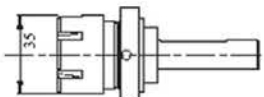
K1
ER25 collet and nut



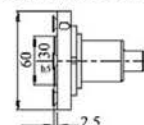
R6
Modular ER32



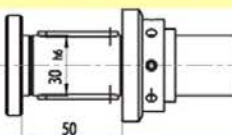
M5
ER 25 collet and nut
Range: 1mm - 16mm



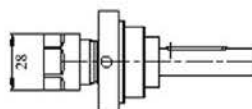
K2
Combi spindle, 45mm and
52mm bolt circle



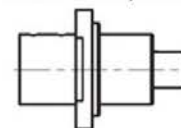
07
Modular Arbor



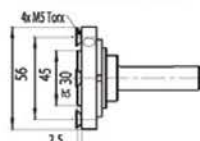
R3
ER 16 collet and nut
Range: 0.5mm - 10mm



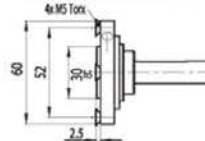
W3
Weldon
DIN 1835 BØ10H6



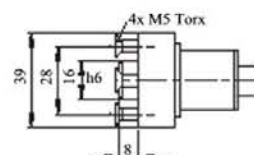
S1
Saw Spindle
45mm bolt circle



S2
Saw Spindle
52mm bolt circle



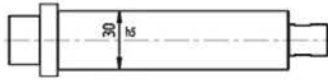
01
Saw Spindle



Additional Spindle Output Options

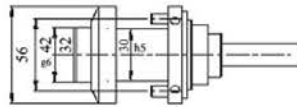
UHM12030

Spindle for Moulder Head



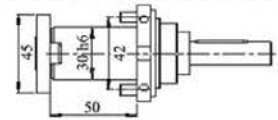
P4

Prolock Spindle
Range: 28mm - 32mm



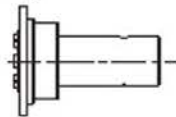
10

Special Spindle $\varnothing 30$
2x $\varnothing 6H7$, 2x M5 -
bolt circle 42mm M10 central



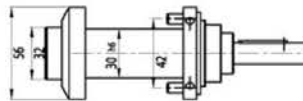
I3

ER16 collet inside
Range: 1mm - 10mm



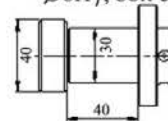
P5

Prolock Spindle
Range: 58mm - 62mm



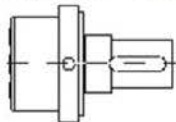
12

Special spindle $\varnothing 30$ h5
2x M5 - bolt circle 45mm;
 $\varnothing 6H7$, bolt circle 42mm
M10 central



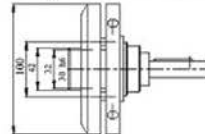
I5

ER25 collet inside
Range: 1mm - 16mm



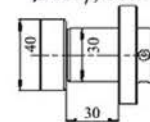
P6

Prolock Spindle
Range: 1.5mm - 6mm



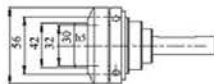
13

Special spindle $\varnothing 30$ h5
2x M5 - bolt circle 45mm;
 $\varnothing 6H7$, bolt circle 42mm
M10 central



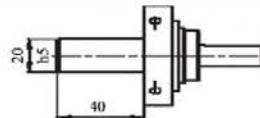
P1

Prolock Spindle
Range: 1.5MM - 6mm tool shank



03

Special Spindle $\varnothing 20$ h5
2x $\varnothing 6H7$, 2x M6 -
bolt circle 32mm M10 central



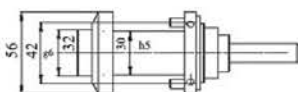
N1

Notch Whistle
DIN 1835 E $\varnothing 6H7$



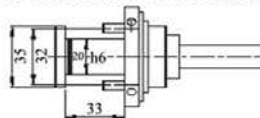
P2

Prolock Spindle
Range: 48mm - 52mm tool shank



05

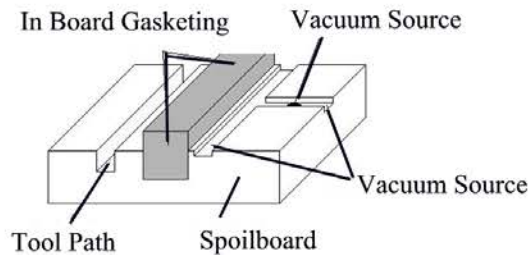
Special Spindle $\varnothing 20$ h6
2x $\varnothing 5H7$, 2x M5 -
bolt circle 32mm M10 central



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In-Board Gasketing

If you are looking to make a dedicated spoilboard for long-term repetitive use, in-board gasketing is the product that makes the most sense. In-board gasketing, while requiring a bit more programming and set-up time to produce, offers customers a more consistent, longer lasting fixture.



These foam sealants are coated with a pressure sensitive adhesive on one side. The product has been created for those high volume applications which require the creation of a permanent or “dedicated” fixture. The demand to produce great quantities of a part on your CNC router behooves taking additional steps to construct your spoilboard.

Cutting a Channel for the Gasketing

A dedicated fixture requires a second channel to be programmed for the foam sealant. This gasketing channel is positioned parallel to the tool path, and offset to the interior side. Tip: the depth of the channel should be 3/4's the thickness of the sealant used and cut this channel twice.

Fill the Channel with the Gasketing

Place the foam into the channel you have created. Don't worry about the foam “rolling over” or “popping out” of the channel, the adhesive will hold the In-Board gasketing where it belongs.

Create Vacuum Holes

Drill one or more vacuum holes within each of the gasketed zones of your fixture. Tip: Create one or more vacuum channel(s) or a “pocket” to disperse the vacuum to the perimeter of the zone and make sure that each hole is over a channel in your CNC table or pods.

Ready to Rout

After you place the substrate onto the fixture, the sealant will compress slightly. When the vacuum system is engaged, the In-Board gasket recesses into its channel while maintaining a perfect vacuum seal. Tip: closed cell foam creates the seal, the density of the foam reduces the vibration.

PART NUMBER	THICKNESS	WIDTH	LENGTH	DENSITY
CRS 2512	1/4"	1/8"	39'	Low-Medium
CRS 2525	1/4"	1/4"	39'	Low-Medium
CRS 2538	1/4"	3/8"	82'	Low-Medium
CRS 2550	1/4"	1/2"	82'	Low-Medium

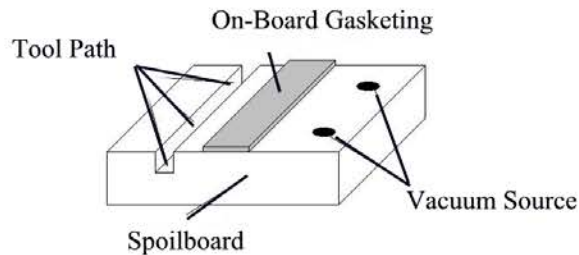


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On Board Gasketing

When you're looking to create a spoilboard for a short run application, on board gasketing is the product that makes the most sense. Operators apply the adhesive backed product directly to the surface of an MDF spoilboard. It is positioned inside the tool path that will be used to rout the particular part.



Start by adhering the foam gasket onto the surface of your fixture; position it parallel and fairly close to the interior side of the previously cut tool path channel. Next, create adequate vacuum holes inside this sealed border; when the vacuum system is engaged the spoilboard will maintain a vacuum chamber using 1) the walls of the compressed sealant, 2) the underside of your substrate and 3) the top surface of your spoilboard.

Two rules for On Board sealants: Thinner is better than thicker and higher density is better than lower density.

PART #	THICKNESS	WIDTH	LENGTH	DENSITY
CR 06100	1/16"	1"	100'	Medium
CR 0625	1/16"	1/4"	100'	Medium
CR 0638	1/16"	3/8"	100'	Medium
CR 0650	1/16"	1/2"	100'	Medium

All-A-Board Gasketing

To be used either on or in your spoilboard. It has an adhesive on one side and works in many applications. All-A-Board indicates that it is thick enough to be used as an in-board product in a shallow channels (usually about 3/32" deep) of a dedicated spoilboard. It is also thin enough to be used on the surface of a fixture as an on-board gasket when working with extremely warped or uneven surfaced materials.

PART #	THICKNESS	WIDTH	LENGTH	DENSITY
CRS 1212	1/8"	1/8"	82'	Low-Medium
CRS 1225	1/8"	1/4"	82'	Low-Medium
CRS 1238	1/8"	3/8"	82'	Low-Medium
CRS 1250	1/8"	1/2"	82'	Low-Medium



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Grid & Pod Gasketing

Grid and pod gasketing are products that do not have an adhesive. The proper size grid/pod gasket is determined by the channel size of the router. Try to fit the width of the channel nice and snug width-wise, then stick above the surface of the channel by roughing 1/16". It is time to replace the gasket when it starts to wear down and becomes flush with the channel depth.

PART #	THICKNESS	WIDTH	LENGTH	DENSITY
UIR 25 312	1/4"	5/16"	50'	Firm
UMG 25 312	1/4"	5/16"	75'	Medium
UMG 25 500	1/4"	1/2"	75'	Medium
XM 2550	1/4"	round	250'	Medium
XM 3150	5/16" (8mm)	round	100'	Medium

ZGRABber Gasketing

ZGRABber is a very firm type of on-board gasketing that has a rubber surface to help "grip" the part and prevent movement.

PART #	THICKNESS	WIDTH	LENGTH
GRAB-0338	1/32"	3/8"	54'

Spoilboard Covers

Are you having trouble holding down small parts? Are you forced to use skin cuts or membrane cutting techniques and the necessary deburring and finishing follow-up procedures for your narrow parts? Are you spending far too much time routing and filling channels for gasketing for those parts which require custom fixtures? Then try something new; the Spoilboard Cover concept of cutting. This product uses a .062" thick low-density foam and is coated with a high shear acrylic pressure-sensitive coating. This product is available in rolls over 48" wide and over 10 feet in length; more than enough gasketing to utilize the entire surface of your CNC router. You will be cutting finished parts in minutes instead of hours.

The procedure is as follows:

- 1) Cover the cutting area of your spoilboard with a sheet of adhesive coated gasketing and place the spoilboard onto your router.
- 2) Cut your pre-programmed tool path.
- 3) Next, run a secondary, offset program just to the inside of the tool path. You are now using the router to create a custom fitted spoilboard for your small parts application.
- 4) Now remove the foam from your weeded or "pocketed" areas.
- 5) Finally, drill vacuum holes in those locations where you have weeded or removed the SBC gasketing. This procedure will maximize the vacuum surface area for the smallest of parts. You can now run your router quicker and it will cut cleaner with fewer problems than ever before.

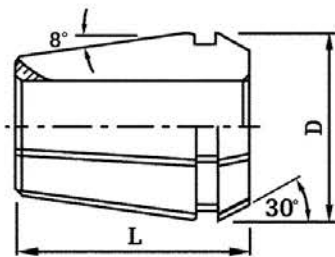
PART #	THICKNESS	WIDTH	LENGTH	DENSITY
SBC CE 0648	1/16"	48"	11'	Low
SBC CE 1224	1/8"	24"	12'	Low
SBC CR 0324	1/32"	24"	24'	Medium
SBC CR 0656	1/16"	56"	11'	Medium

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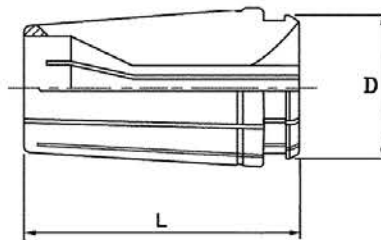
Collet Measuring Guide

All collets have a distinct length and diameter so easiest way to determine the type of collet your machine has is to measure the length and diameter and refer to the chart below to determine the collet series you require.

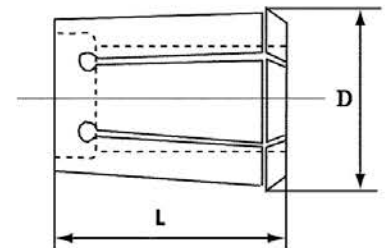
COLLET SERIES	LENGTH	DIAMETER
ER11	18mm (.708")	11.5mm (.45")
ER16	27.5mm (1.08")	17mm (.67")
ER20	31.5mm (1.24")	21mm (.83")
ER25	34mm (1.34")	26mm (1.02")
ER32	40mm (1.57")	33mm (1.3")
ER40	46mm (1.81")	41mm (1.61")
SYOZ 20	34mm (1.34")	20mm (.78")
SYOZ 25	52mm (2.06")	35mm (1.38")
TG75	47mm (1.85")	27mm (1.06")
TG100	60mm (2.36")	35mm (1.38")



ER Series Collet



TG Collet Series



SYOZ 25 Collet Series



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Toolholder Measuring Guide

Make and Model of CNC Router _____

Pull Stud Dimensions

P = _____

A = _____

L = _____

R = _____

Toolholder Dimensions

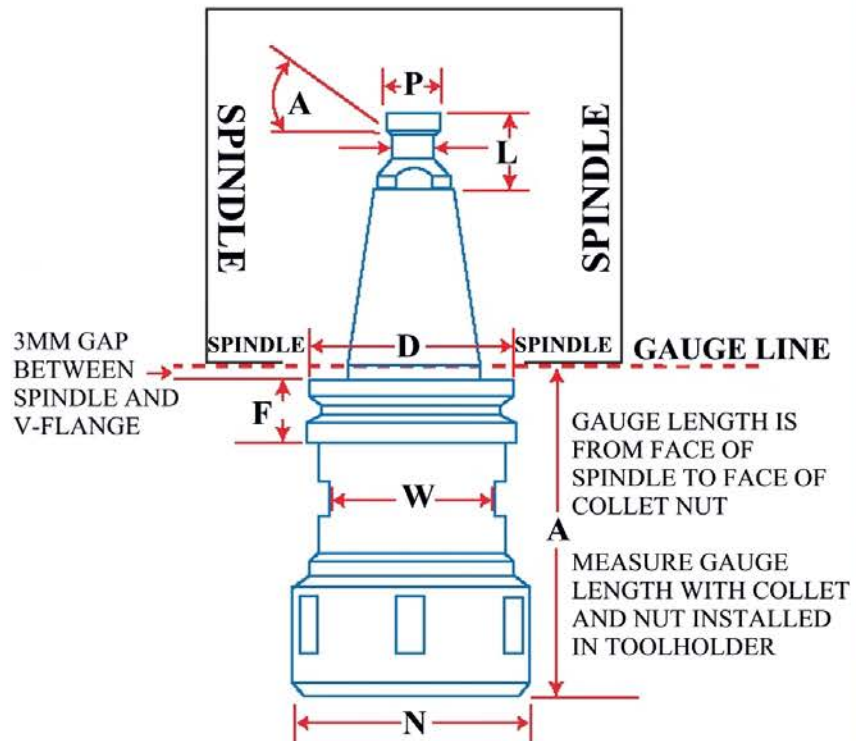
D = _____

F = _____

W = _____

A = _____

N = _____



Make and model of HSK spindle CNC Router _____

Toolholder Dimensions

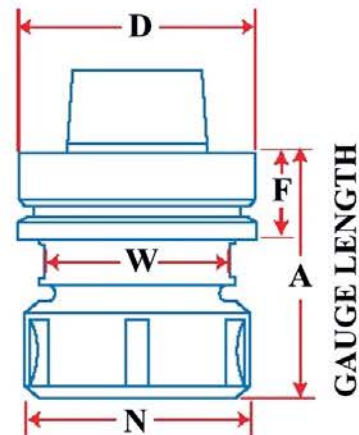
D = _____

F = _____

W = _____

A = _____

N = _____



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Order History

DATE	PART NUMBER	APPLICATION



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