PRECISION
CNC TOOLING

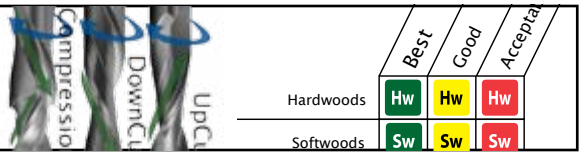


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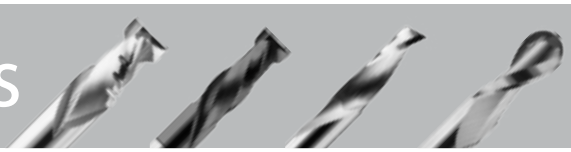
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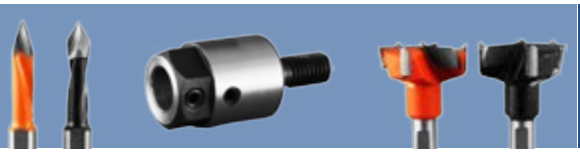
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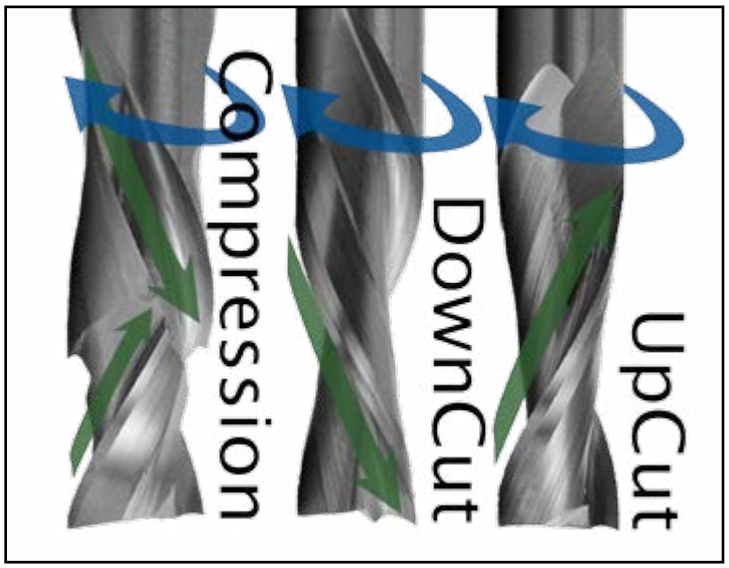
MADE IN NORTH AMERICA

NSF ISO 9001

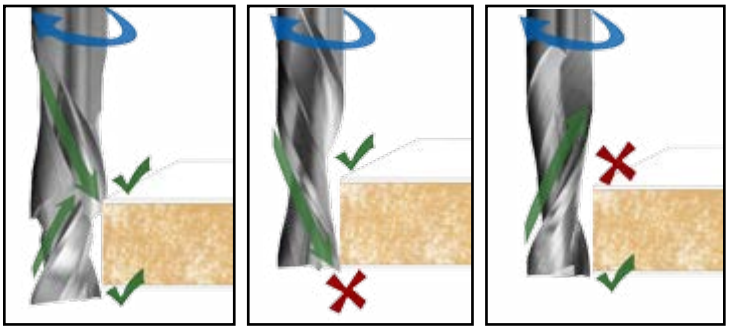
Technical Information

Chip-flow Explanation

UpCut, DownCut, Compression. What are the pros and cons of each of these chip flow styles? Below highlights some of the key considerations that should be taken into account.



When selecting what style tool is best two factors must be considered. First, is chipping on the edge of the material a concern? If you are machining brittle laminate that needs to have a chip free edge the below illustrations must be followed. Second, are moving parts an issue while machining? Upcut tooling provides superior chip removal, which means longer life and faster feed rates, however it will have the tendency to pull the parts towards the spindle when cutting, this can cause smaller or inadequately held parts to move.



Material Selection

What tool works well on what material? We know that selecting tools can be a daunting task. Our material selection system is designed to make this task less daunting.

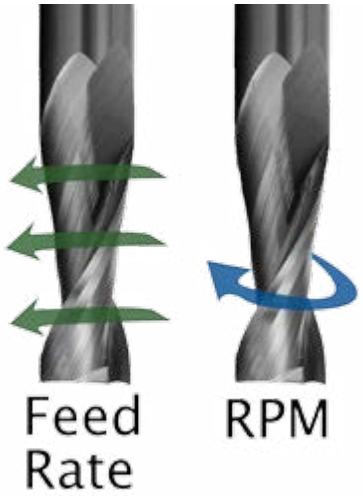
	Best	Good	Acceptable
Hardwoods	Hw	Hw	Hw
Softwoods	Sw	Sw	Sw
Particle Board	Pb	Pb	Pb
Fiberboard	Fb	Fb	Fb
Plywood	Pl	Pl	Pl
Hard Plastic	Hp	Hp	Hp
Soft Plastic	Sp	Sp	Sp
Fibre Re-enforced Plastic Composites	Rp	Rp	Rp
Aluminium	Al	Al	Al
Material with Laminate	Lm	Lm	Lm

Chipload Chart

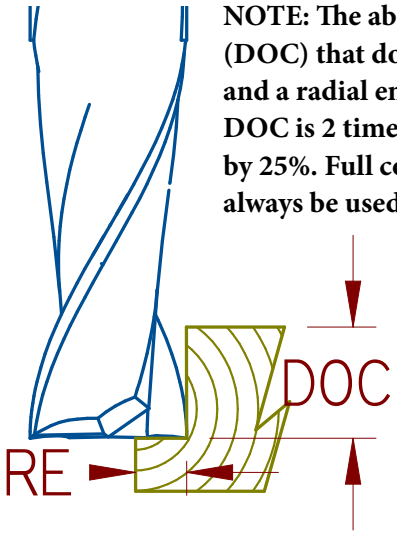
From a tool life standpoint you want to have as high of a feed rate as possible in relation to your RPM. Another way of looking at it, produce as large of a chip load as possible. Having a larger chip will draw more heat away from the tool cutting edge providing longer tool life. Many factors exist that will limit your feed rate such as.

- Insufficient work holding (parts will start to move)
- Unsatisfactory finish quality, or finish quality starts to deteriorate
- Tool breakage (tool cannot withstand the chipload)
- Machine horsepower or feed rate
- Rigidity of tool holder, machine, or part being cut

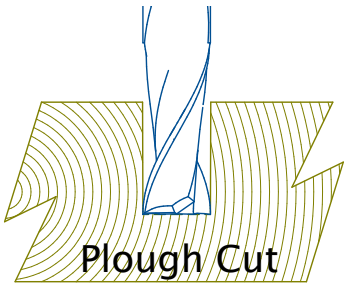
The chart below gives some conservative starting ranges of chiploads. Use the lower values for tools with simple geometry such as straight carbide tipped tools, down cut tools, or profiled tools with a flat cutting face. The higher end of the range can be used for tools that cut more freely such as O-flutes or roughing tools with serrated cutting edges. The optimum feed rate is found by slowly increasing the feed rate until parts move, cut quality depreciates, or tools break. Then reduce the feed rate by about 10% from that point.



Diameter	Hard Wood	Soft Wood	Hard Plastic	Soft Plastic	Fiber-Board (MDF)	Particle Board	Plywood	Alumi-num	Fiber re-inforced plastics
1/16" (2mm)	.001"-.003"	.002"-.004"	.002"-.004"	.002"-.004"	.003"-.005"	.003"-.005"	.002"-.004"	.002"-.004"	
1/8" (3mm)	.001"-.005"	.003"-.007"	.002"-.004"	.003"-.005"	.004"-.007"	.004"-.007"	.003"-.005"	.002"-.004"	.002"-.004"
3/16" (5mm)	.002"-.006"	.003"-.009"	.004"-.007"	.005"-.008"	.004"-.009"	.005"-.010"	.005"-.008"	.002"-.004"	.004"-.007"
1/4" (6mm)	.004"-.008"	.005"-.011"	.004"-.008"	.005"-.008"	.006"-.012"	.006"-.012"	.005"-.008"	.003"-.006"	.004"-.008"
3/8" (9mm)	.005"-.012"	.007"-.014"	.005"-.010"	.006"-.010"	.008"-.016"	.010"-.020"	.006"-.010"	.006"-.008"	.005"-.010"
1/2" (13mm)	.007"-.014"	.009"-.016"	.007"-.012"	.008"-.012"	.010"-.018"	.014"-.024"	.008"-.012"	.007"-.012"	.005"-.012"
9/16" (14mm)	.007"-.014"	.009"-.018"	.007"-.012"	.008"-.012"	.010"-.018"	.014"-.024"	.008"-.012"	.007"-.012"	.006"-.012"
5/8" (16mm)	.008"-.018"	.010"-.020"	.008"-.015"	.010"-.015"	.012"-.020"	.016"-.028"	.010"-.015"	.010"-.016"	.006"-.015"
3/4" (19mm)	.010"-.020"	.012"-.022"	.012"-.016"	.012"-.016"	.012"-.022"	.016"-.028"	.012"-.016"	.010"-.016"	.008"-.016"
7/8" (22mm)	.012"-.022"	.014"-.024"	.012"-.016"	.012"-.016"	.014"-.024"	.016"-.028"	.012"-.016"	.012"-.020"	.008"-.016"
1" (25mm)	.012"-.022"	.014"-.024"	.012"-.016"	.012"-.016"	.014"-.024"	.016"-.028"	.012"-.016"	.012"-.020"	.008"-.016"



NOTE: The above values are for a depth of cut (DOC) that does not exceed the tool diameter, and a radial engagement (RE) of 100%. If the DOC is 2 times the diameter reduce chipload by 25%. Full coolant, or a coolant mist should always be used when routing aluminum.



Calculations

RPM = (3.82 x SFM) / Diameter(in)
SFM = 3.14 *x* Diameter(in) x (RPM/12)
Feed Rate (IPM) = Chip-load(in) *x* # Wings x RPM
Chipload (in) = Feed-Rate (IPM) / (RPM *x* # wings)
Feed Rate (mm/Min) = Chip-load(mm) *x* # wings x RPM
Chipload (mm/min) = F-Rate(mm/m) / (RPM *x* # wings)

1 Flute Veining Bit



PART #	DIA	CEL	SHK	OAL
R16-52710	1/16	1/4	1/4	1-1/2
R16-52711	3/32	1/4	1/4	1-1/2
R16-52712	1/8	1/4	1/4	1-1/2

Hw Sw Fb Pl Pl Hp Sp

See Material Guide p4

Good for carving, and or engraving in most materials.

2 Flute Straight Flute "V" Bottom



PART #	DIA	CEL	SHK	OAL
R37-51301	3/16	5/8	1/4	2
R37-51302	1/4	3/4	1/4	2
R37-51303	3/8	3/4	3/8	2-1/2

Hw Sw Fb Pl Pl Hp Sp

See Material Guide p4

Good for carving, and or engraving in most materials.

2 Flute Ballnose Slow Helix



PART #	DIA	CEL	SHK	OAL
R38-51351	1/8	3/8	1/4	2
R38-51352	3/16	5/8	1/4	2
R38-51353	1/4	3/4	1/4	2
R38-51354	3/8	3/4	3/8	2-1/4

Hw Sw Fb Pl Pl Hp Sp

See Material Guide p4

Good for carving, and or engraving in most materials.

2 Flute UpCut (Aluminum & Hard Plastics)



PART #	DIA	CEL	SHK	OAL
R52-02401	1/8	1/2	1/4	2
R52-02402	5/32	9/16	1/4	2
R52-02403	3/16	5/8	1/4	2
*R52-02404**	3/16	5/8	1/4	2
R52-02405	7/32	5/8	1/4	2-1/2
R52-02406	1/4	3/4	1/4	2-1/2
R52-02407*	1/4	3/4	1/4	2-1/2
R52-02408	9/32	3/4	3/8	2-1/2
R52-12409	5/16	13/16	3/8	2-1/2
R52-12410	3/8	7/8	3/8	2-1/2
R52-12411	7/16	1	1/2	3
R52-12412	1/2	1	1/2	3

* Indicates left hand tool

Hp Al Fb Sp

See Material Guide p4

Excellent for routing in hard plastics and aluminum



Sw Hw Fb Pl Al Hp Sp

See Material Guide p4

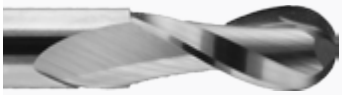
General purpose router for solid wood, wood composites and some plastics. Upcut spiral gives good chip evacuation.

2 Flute UpCut Spiral

PART #	DIA	CEL	SHK	OAL
R52-22800	1/8	3/4	1/4	2
R52-22801	1/8	1/2	1/4	2
*R52-22802**	1/8	1/2	1/4	2
R52-22803	5/32	1/2	1/4	2-1/2
R52-22804	5/32	5/8	1/4	2
R52-22893	3/16	3/4	3/16	2
R52-22843	3/16	3/4	1/4	2
*R52-22806**	3/16	3/4	1/4	2
R52-22807	3/16	3/4	1/4	2-1/2
R52-22808	7/32	3/4	1/4	2-1/2
R52-22809	7/32	1	1/4	2-1/2
R52-22810	1/4	7/8	1/4	2-1/2
R52-22812	1/4	1	1/4	2-1/2
R52-22813*	1/4	1	1/4	2-1/2
R52-22814	1/4	1-1/8	1/4	3
R52-22815	9/32	1	5/16	2-1/2
R52-32816	5/16	1-1/8	5/16	3
R52-32817	5/16	1-1/4	5/16	3
R52-32818	5/16	1-1/8	1/2	3
R52-32819*	5/16	1-1/8	1/2	3
R52-32820	3/8	1	3/8	3
R52-32821	3/8	1-1/4	3/8	3
R52-32823	1/2	1-1/4	1/2	3-1/2
*R52-32824**	1/2	1-5/8	1/2	3-1/2
R52-32826	7/16	1	1/2	3
R52-32827	1/2	1-1/8	1/2	3
R52-32829	1/2	1-1/4	1/2	3-1/2
R52-32830	1/2	1-5/8	1/2	3-1/2
R52-32831*	1/2	1-5/8	1/2	3-1/2
R52-32832	1/2	2-1/2	1/2	5
R52-32833	1/2	2-1/8	1/2	4
R52-32834	17/32	1-1/8	1/2	3
R52-32835	5/8	1-5/8	5/8	3-1/2
R52-32836	5/8	2-1/8	5/8	4
*R52-32837**	5/8	2-1/8	5/8	4
R52-32838	3/4	1-5/8	3/4	4
R52-32839	3/4	2-1/8	3/4	4
*R52-32840**	3/4	2-1/8	3/4	4
R52-32841	1	3	1	5

* Indicates Left Hand Tool

2 Flute UpCut Ballnose

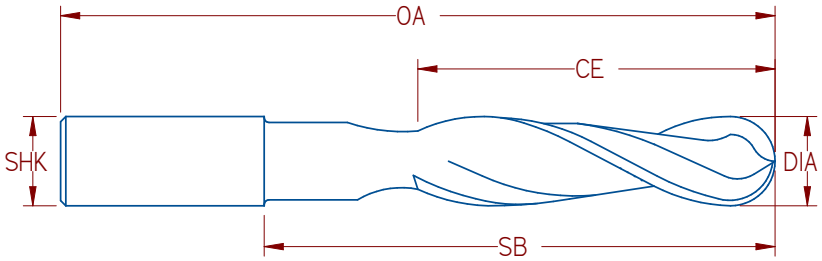


Sw Hw Fb Pl Al Hp Sp

See Material Guide p4

General purpose for solid wood and wood composites. Upcut spiral gives good chip evacuation. Ball nose design for carving applications.

PART #	DIA	CEL	SHK	SB	OAL
R52-23401	1/8	3/4	1/4	N/A	2-1/2
R52-23402	1/8	1/2	1/4	N/A	2-1/2
R52-23403	3/16	3/4	1/4	N/A	2
R52-23404	3/16	3/4	1/4	N/A	3
R52-23405	1/4	7/8	1/4	N/A	2-1/2
R52-23406	1/4	1	1/4	N/A	4
R52-33407	3/8	1-1/8	3/8	N/A	3
R52-33408	3/8	1-1/4	3/8	N/A	4
R52-33409	1/2	1-1/8	1/2	N/A	4
R52-33411	1/2	1-1/2	1/2	N/A	5
R52-33413	5/8	2-1/2	5/8	N/A	5
R52-33417	3/4	3-1/2	3/4	4-1/4	6



2 Flute "O" Flute Upcut Slow Spiral



Hp Sp Hw Sw Fb

See Material Guide p4

O Flute slow spiral, excellent for machining both soft and hard plastics.

PART#	DIA	CEL	SHK	OAL
R52-62601	1/4	3/8	1/4	2-1/2
R52-62602	1/4	3/4	1/4	2-1/2
R52-62603	3/8	1	3/8	3
R52-62604	1/2	1-1/8	1/2	3-1/2

2 Flute Upcut High Impact



Sw Hw Fb Pl Al Hp Sp

See Material Guide p4

General purpose router for solid wood, wood composites and some plastics. Upcut spiral gives good chip evacuation. Smaller flutes and thicker core create a stronger tool.

PART#	DIA	CEL	SHK	OAL
R52-92901	1/4	7/8	1/4	2-1/2
R52-92902	3/8	1-1/8	3/8	3
R52-92903	3/8	1-1/4	3/8	3
R52-92904	1/2	1-1/4	1/2	3

4 Flute Downcut Spiral



Hp Rp Lm

See Material Guide p4

Downcut spiral for hard plastics. 4 wings for smoother finish than conventional tools.

PART#	DIA	CEL	SHK	OAL
R54-01101	1/8	1/2	1/4	2
R54-01102	5/32	9/16	1/4	2
R54-01103	3/16	5/8	1/4	2
R54-01104	1/4	3/4	1/4	2-1/2

4 Flute Upcut Fiberglass Router

PART #	DIA	CEL	SHK	OAL
R55-31351	3/8	5/8	3/8	3
R55-31352	3/8	1-1/8	3/8	3
R55-31353	1/2	5/8	1/2	3-1/2
R55-31354	1/2	1-1/8	1/2	3-1/2



Rp Hp

See Material Guide p4

4 wing Upcut router for fiberglass.

2 Flute Straight General Purpose

PART #	DIA	CEL	SHK	OAL
R56-01801	1/8	1/4	1/4	2
R56-01802	3/16	3/8	1/4	2
R56-01803	3/16	5/8	1/4	2
*R56-01804**	3/16	5/8	1/4	2
R56-01805	3/16	5/8	1/4	4
R56-01806	1/4	3/8	1/4	2-1/2
R56-01807	1/4	3/4	1/4	2-1/2
*R56-01808**	1/4	3/4	1/4	2-1/2
R56-01809	1/4	1-1/4	1/4	4
R56-11810	3/8	5/8	3/8	2-1/2
R56-11811	3/8	7/8	3/8	2-1/2
*R56-11812**	3/8	7/8	3/8	2-1/2
R56-11813	3/8	1-5/8	3/8	6
R56-11814	1/2	1	1/2	3
*R56-11815**	1/2	1	1/2	3
R56-11816	1/2	2-1/8	1/2	6

* Indicates left hand rotation



Hw Sw Fb Pl Hp

See Material Guide p4

General purpose 2 wing straight carbide router bit. Suitable for routing solid wood and MDF and some plastics.



Hw Hp Pl Fb

See Material Guide p4

General purpose for routing solid wood and hard plastic.

2 Flute Straight Wood & Plastic

PART #	DIA	CEL	SHK	OAL
R56-21101	1/8	1/2	1/4	2
R56-21102	5/32	5/8	1/4	2
R56-21103	3/16	3/4	1/4	2
R56-21104	7/32	3/4	1/4	2-1/2
R56-21105	1/4	7/8	1/4	2-1/2
R56-21106	1/4	7/8	1/4	2-1/2
R56-21107	1/4	1	1/4	2-1/2
R56-21108	1/4	1-1/8	1/4	3
R56-21109	9/32	1	5/16	2-1/2
R56-31110	5/16	1-1/8	5/16	3
R56-31111	5/16	1-1/8	1/2	3
R56-31112	3/8	1-1/8	3/8	3
R56-31114	3/8	1-1/4	3/8	3
R56-31115	3/8	1-1/4	1/2	3
R56-31116	7/16	1	1/2	3
R56-31117	1/2	1-1/8	1/2	3
R56-31119	1/2	1-1/4	1/2	3-1/2
R56-31120	1/2	1-5/8	1/2	3-1/2
R56-31122	17/32	1-1/8	1/2	3
R56-31123	5/8	2-1/8	5/8	4
R56-31124	3/4	1-5/8	3/4	4

2 Flute "O" Style Straight Cut



Sp Hp Hw Sw

See Material Guide p4

Single wing O Flute designed for routing soft plastics.

PART #	DIA	CEL	SHK	OAL
R56-61401	1/8	5/16	1/4	2
R56-61402	1/8	1/2	1/4	2
R56-61403	1/8	5/8	1/4	4
R56-61404	3/16	3/8	1/4	2
R56-61405	3/16	5/8	1/4	2
R56-61406	3/16	1	1/4	4
R56-61407	1/4	3/8	1/4	2-1/2
R56-61408	1/4	1	1/4	2-1/2
*R56-61409**	1/4	1	1/4	3-1/4
R56-61410	1/4	1	1/4	3-1/4
R56-61411	1/4	1-1/4	1/4	4
R56-61412	3/8	7/8	3/8	2-1/2
R56-61413	3/8	1	3/8	4
R56-61414	1/2	1	1/2	3
R56-61415	1/2	1	1/2	4
R56-61416	1/2	1-3/4	1/2	4
R56-61417	1/2	2-1/8	1/2	6

* Indicates left hand rotation

2 Flute Downcut Hard Plastic & Aluminum



Hp Al Lm

See Material Guide p4

For hard plastics and aluminum. End mill finish for improved bottom finish in pockets.

PART #	DIA	CEL	SHK	OAL
R57-02401	1/8	1/2	1/4	2
R57-02402	5/32	9/16	1/4	2
R57-02403	3/16	5/8	1/4	2
R57-02404	7/32	5/8	1/4	2-1/2
R57-02405	1/4	3/4	1/4	2-1/2
R57-02406	9/32	3/4	3/8	2-1/2
R57-12407	5/16	13/16	3/8	2-1/2
R57-12408	3/8	7/8	3/8	2-1/2
R57-12409	7/16	1	1/2	3
R57-12410	1/2	1	1/2	3



Pb Sw Hw Fb Lm Pl
Al Hp Sp

See Material Guide p4

General purpose router for solid wood, wood composites and some plastics. Downcut design gives a clean edge when cutting a dado on laminated material.

2 Flute DownCut Spiral

PART #	DIA	CEL	SHK	OAL
R57-22003	1/16	1/4	1/4	2
R57-22201	1/8	1/2	1/4	2
R57-22202*	1/8	1/2	1/4	2
R57-22200	1/8	3/4	1/4	2-1/2
R57-22204	5/32	1/2	1/4	2-1/2
R57-22244	5/32	5/8	1/4	2
R57-22206	3/16	3/4	3/16	2
R57-22207	3/16	3/4	1/4	2
*R57-22208**	3/16	3/4	1/4	2
R57-22209	3/16	3/4	1/4	2-1/2
R57-22210	7/32	3/4	1/4	2-1/2
R57-22211	7/32	1	1/4	2-1/2
R57-22212	1/4	7/8	1/4	2-1/2
R57-22214	1/4	1	1/4	2-1/2
R57-22215*	1/4	1	1/4	2-1/2
R57-22216	1/4	1-1/8	1/4	3
R57-22217	9/32	1	5/16	2-1/2
R57-32218	5/16	1-1/8	5/16	3
R57-32219	5/16	1-1/4	5/16	3
R57-32220	5/16	1-1/8	1/2	3
*R57-32221**	5/16	1-1/8	1/2	3
R57-32222	3/8	1	3/8	3
R57-32223	3/8	1-1/8	3/8	3
R57-32225	3/8	1-1/4	3/8	3
R57-32226*	3/8	1-1/4	3/8	3
R57-32227	3/8	1-1/4	1/2	3
R57-32228	7/16	1	1/2	3
R57-32229	1/2	1-1/8	1/2	3
R57-32231	1/2	1-1/4	1/2	3-1/2
R57-32232	1/2	1-5/8	1/2	3-1/2
R57-32233*	1/2	1-5/8	1/2	3-1/2
R57-32235	1/2	2-1/8	1/2	4
R57-32236	17/32	1-1/8	1/2	3
R57-32237	5/8	1-5/8	5/8	3-1/2
R57-32238	5/8	2-1/8	5/8	4
*R57-32239**	5/8	2-1/8	5/8	4
R57-32240	3/4	1-5/8	3/4	4
R57-32241	3/4	2-1/8	3/4	4
*R57-32242**	3/4	2-1/8	3/4	4
R57-32243	1	3	1	5

* Indicates left hand tool

2 Flute "O" Style Downcut Slow Spiral

PART #	DIA	CEL	SHK	OAL
R57-62301	1/4	3/8	1/4	2-1/2
R57-62302	1/4	3/4	1/4	2-1/2
R57-62303	3/8	1	3/8	3
R57-62304	1/2	1-1/8	1/2	3-1/2



Hp Al Al

See Material Guide p4

For hard plastics and aluminum. O Flute provides free cutting action.

2 Flute Downcut High Impact

PART #	DIA	CEL	SHK	OAL
R57-92501	1/4	7/8	1/4	2-1/2
R57-92502	3/8	7/8	3/8	3
R57-92503	3/8	1-1/8	3/8	3
R57-92504	3/8	1-1/4	3/8	3
R57-92505	1/2	1-1/4	1/2	3



Pb Sw Hw Fb Lm Pl
Al Hp Sp

See Material Guide p4

General purpose router for solid wood, wood composites and some plastics. Downcut design gives a clean edge when cutting a dado on laminated material. Shallower flutes and thicker core make it more resilient to breaking.

3 Flute Upcut Spiral Mill End

PART #	DIA	CEL	SHK	OAL
R58-01201	1/8	1/2	1/4	2
R58-01202	3/16	5/8	1/4	2
R58-01203	1/4	3/4	1/4	2-1/2
R58-01204	3/8	1-1/4	3/8	3



Hp Hw Fb

See Material Guide p4

Good for routing hard plastics and finish passes on solid woods.

3 Flute Downcut Spiral

PART #	DIA	CEL	SHK	OAL
R59-01001	1/8	1/2	1/4	2
R59-01002	3/16	5/8	1/4	2
R59-01003	1/4	3/4	1/4	2-1/2
R59-01006	1/2	1-1/2	1/2	3-1/2



Hp Hw Fb Lm

See Material Guide p4

Good for routing hard plastics and finish passes on solid woods.



Hw Sw Pl

See Material Guide p4

Serrated tooth design to eliminate tear out in difficult wood grains. Tooth design greatly reduces horsepower required to cut. Downcut to assist material hold down.

3 Flute DownCut Low Helix Ripper

PART #	DIA	CEL	SHK	OAL
R60-01401	3/8	1-1/8	3/8	3-1/2
R60-01402	1/2	1-1/8	1/2	3-1/2
R60-01404	1/2	1-5/8	1/2	4
R60-01405	5/8	1-5/8	5/8	4
R60-01406	5/8	2-1/8	5/8	5
R60-01407	3/4	1-5/8	3/4	4
R60-01408	3/4	2-1/8	3/4	5



Hw Sw Pl Fb

See Material Guide p4

Serrated tooth design to eliminate tear out in difficult wood grains. Tooth design greatly reduces horsepower required to cut. Downcut to assist material hold down.

3 Flute DownCut High Helix Ripper

PART #	DIA	CEL	SHK	OAL
R60-01501	3/8	1-1/8	3/8	3-1/2
R60-01503	1/2	1-1/8	1/2	3-1/2
R60-01504	1/2	1-5/8	1/2	4
R60-01505	5/8	1-5/8	5/8	4
R60-01506	5/8	2-1/8	5/8	5
R60-01509	3/4	1-5/8	3/4	4
R60-01510	3/4	2-1/8	3/4	5



Hw Sw Pl Fb

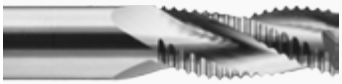
See Material Guide p4

Serrated tooth design to eliminate tear out in difficult wood grains. Tooth design greatly reduces horsepower required to cut. Upcut to assist with chip evacuation.

3 Flute UpCut Low Helix Ripper

PART #	DIA	CEL	SHK	OAL
R60-01601	3/8	1-1/8	3/8	3-1/2
R60-01602	1/2	1-1/8	1/2	3-1/2
R60-01603	1/2	1-5/8	1/2	4
R60-01604	5/8	1-5/8	5/8	4
R60-01605	5/8	2-1/8	5/8	5
R60-01606	3/4	1-5/8	3/4	4
R60-01607	3/4	2-1/8	3/4	5

3 Flute UpCut High Helix Ripper



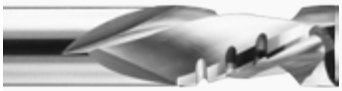
Hw Sw Pl Fb

See Material Guide p4

Serrated tooth design to eliminate tear out in difficult wood grains. Tooth design greatly reduces horsepower required to cut. Upcut to assist with chip evacuation.

PART #	DIA	CEL	SHK	OAL
R60-01701	3/8	1-1/8	3/8	3-1/2
R60-01703	1/2	1-1/8	1/2	3-1/2
R60-01704	1/2	1-5/8	1/2	4
R60-01711	1/2	2	1/2	4
R60-01705	5/8	1-5/8	5/8	4
R60-01706	5/8	2-1/2	5/8	5
R60-01709	3/4	1-5/8	3/4	4
R60-01710	3/4	2-1/8	3/4	5

2 Flute Compression Chipbreaker



Pl Fb Lm Pl Hw Sw

See Material Guide p4

Laminated or veneered wood and wood composites when top and bottom finish is critical. Upward and downward shearing action prevents chipping of laminates. Chipbreakers help to prevent furring or tearout of core on plywood.

PART #	DIA	CEL	UPCUT	SHK	OAL
R60-11001	3/8	7/8	.385"	3/8	3
R60-11002	3/8	1-1/8	.495"	3/8	3
R60-11014	1/2	7/8	.400"	1/2	3
R60-11003	1/2	1-1/8	.440"	1/2	3
R60-11004	1/2	1-1/8	.495"	1/2	3
R60-11005	1/2	1-3/8	.605"	1/2	3-1/2
R60-11006	1/2	1-5/8	.715"	1/2	4
R60-11007	5/8	2-1/4	.990"	5/8	5
R60-11008	3/4	1-7/8	.825"	3/4	4

1 Flute Compression Spiral



Pb Fb Lm Pl Hw Sw

See Material Guide p4

Laminated or veneered wood and wood composites when top and bottom finish is critical. Upward and downward shearing action prevents chipping of laminates.

PART #	DIA	CEL	UPCUT	SHK	OAL
R60-11201	1/8	3/8	.187"	1/4	2-1/2
R60-11202	3/16	5/8	.375"	1/4	2-1/2
R60-11203	1/4	7/8	.500"	1/4	2-1/4
R60-11204	3/8	1-1/8	.500"	3/8	3
R60-11207	1/2	1	.400"	1/2	3
R60-11209	1/2	1-1/8	.400"	1/2	3
R60-11211	1/2	1-3/8	.625"	1/2	3-1/2
R60-11212	1/2	1-5/8	.750"	1/2	3-1/2
*R60-11213**	1/2	1-5/8	.750"	1/2	3-1/2
R60-11215	3/4	2	1.00"	3/4	4

* Indicates left hand rotation



Pb Fb Lm Pl Hw Sw

See Material Guide p4

Laminated or veneered wood and wood composites when top and bottom finish is critical. Upward and downward shearing action prevents chipping of laminates.

2 Flute Compression

PART #	DIA	CEL	UPCUT	SHK	OAL
R60-11409	1/4	7/8	.500	1/4	2-1/2
R60-11409.LH	1/4	7/8	.500	1/4	2-1/2
R60-11401	3/8	7/8	.500	3/8	3
R60-11402	1/2	7/8	.500	1/2	3
R60-11403	1/2	1-1/8	.400	1/2	3
R60-11404	1/2	1-3/8	.625	1/2	3-1/2
R60-11405	1/2	1-5/8	.750	1/2	4
R60-11410	1/2	2-1/2	1.125	1/2	5
R60-11406	5/8	2-1/4	1.125	5/8	5
R60-11407	3/4	1-7/8	.750	3/4	4
R60-11408	3/4	2-1/2	1.25	3/4	5
R60-11408.LH	3/4	2-1/2	1.25	3/4	5

LH = Indicates left hand rotation



Pb Fb Lm Pl Hw Sw

See Material Guide p4

Laminated or veneered wood and wood composites when top and bottom finish is critical. Upward and downward shearing action prevents chipping of laminates. Ultimax coating for extended life in nested sheet goods.

2 Flute Ultimax Compression

PART #	DIA	CEL	UPCUT	SHK	OAL
R60-11401UM	3/8	7/8	.500	3/8	3
R60-11402UM	1/2	7/8	.500	1/2	3
R60-11403UM	1/2	1-1/8	.400	1/2	3
R60-11404UM	1/2	1-3/8	.625	1/2	3-1/2
R60-11405UM	1/2	1-5/8	.750	1/2	4

ULTIMAX COATING

Unique coating was selected after extensive testing on multiple coatings. Minimizes friction, increases edge hardness, and has excellent adhesion. Provides exceptional tool life specifically on nested routing applications.



Pb Fb Lm Pl Hw Sw

See Material Guide p4

Laminated or veneered wood and wood composites when top and bottom finish is critical. Upward and downward shearing action prevents chipping of laminates. Short upcut allows for chip free dado to be cut.

1 Flute Mortise Compression

PART #	DIA	CEL	UPCUT	SHK	OAL
R60-11901	1/4	7/8	.175	1/4	2-1/2
R60-11902	3/8	7/8	.188	3/8	3
R60-11903	1/2	7/8	.200	1/2	3
R60-11904	1/2	7/8	.200	1/2	3
R60-11905	1/2	1-5/8	.200	1/2	3-1/2

3 Flute Compression



PART#	DIA	CEL	UPCUT	SHK	OAL
R60-12101	3/8	7/8	.215	3/8	3
R60-01621	3/8	7/8	.375	3/8	3
R60-11501	3/8	1-1/8	.375	3/8	3
R60-12102	1/2	7/8	.230	1/2	3
R60-11502	1/2	1-1/8	.490	1/2	3
R60-12103	1/2	1-3/8	.290	1/2	3-1/2

Pb Fb Lm Pl Hw Sw

See Material Guide p4

Laminated or veneered wood and wood composites when top and bottom finish is critical. 3 wings make higher feed rates possible.

2 Flute Mortise Compression



PART #	DIA	CEL	UPCUT	SHK	OAL
R60-12001	1/4	7/8	.200	1/4	2-1/2
R60-12002	3/8	7/8	.210	3/8	3
R60-12012	3/8	1-1/8	.188	3/8	3
R60-12003	1/2	7/8	.230	1/2	3
R60-12007	1/2	7/8	.230	1/2	2-1/2
R60-12004	1/2	1-1/8	.230	1/2	3
R60-12004-3.5	1/2	1-3/8	.250	1/2	3-1/2

Pb Fb Lm Pl Hw Sw

See Material Guide p4

Laminated or veneered wood and wood composites when top and bottom finish is critical. Upward and downward shearing action prevents chipping of laminates. Short upcut allows chip free dado to be routed.

2 Flute Ultimax Mortise Compression



PART #	DIA	CEL	UPCUT	SHK	OAL
R60-12012UM	3/8	1-1/8	.188	3/8	3
R60-12003UM	1/2	7/8	.230	1/2	3
R60-12007UM	1/2	7/8	.230	1/2	2-1/2
R60-12004UM	1/2	1-1/8	.230	1/2	3
R60-12004-3.5UM	1/2	1-3/8	.230	1/2	3-1/2

Pb Fb Lm Pl Hw Sw

See Material Guide p4

Laminated or veneered wood and wood composites when top and bottom finish is critical. Upward and downward shearing action prevents chipping of laminates. Short upcut allows a chip free dado to be routed.

ULTIMAX COATING

Unique coating was selected after extensive testing on multiple coatings. Minimizes friction, increases edge hardness, and has excellent adhesion. Provides exceptional tool life specifically on nested routing applications.



Pb Fb Lm Pl Hw Sw

See Material Guide p4

Laminated or veneered wood and wood composites when top and bottom finish is critical. Short Upcut allows a chip free dado to be routed.

3 Flute Ultimax Compression

PART#	DIA	CEL	UPCUT	SHK	OAL
R60-12101UM	3/8	7/8	.215	3/8	3
R60-01621UM	3/8	7/8	.375	3/8	3
R60-11501UM	3/8	1-1/8	.375	3/8	3
R60-12102UM	1/2	7/8	.230	1/2	3
R60-11502UM	1/2	1-1/8	.490	1/2	3

ULTIMAX COATING

Unique coating was selected after extensive testing on multiple coatings. Minimizes friction, increases edge hardness, and has excellent adhesion. Provides exceptional tool life specifically on nested routing applications.



Hw Hp Sw Sp Rp

See Material Guide p4

For routing plastics, composites, as well as finish passes on solid wood.

3 Flute DownCut Low Helix Finisher

PART #	DIA	CEL	SHK	OAL
R60-22301	1/4	3/8	1/4	3
R60-22302	1/4	7/8	1/4	3
R60-22303	3/8	5/8	3/8	3
R60-22310	3/8	1-1/8	3/8	3
R60-22307	1/2	2-1/8	1/2	4-1/2
R60-22311	1/2	1-1/8	1/2	3-1/2
R60-22312	1/2	1-5/8	1/2	4
R60-22313	3/4	1-5/8	3/4	4
R60-22309	3/4	2-1/8	3/4	5



Hw Hp Sw Sp Rp

See Material Guide p4

For routing plastics, composites, as well as finish passes on solid wood.

3 Flute UpCut Low Helix Finisher

PART #	DIA	CEL	SHK	OAL
R60-22501	1/4	3/8	1/4	3
R60-22502	1/4	7/8	1/4	3
R60-22503	3/8	5/8	3/8	3
R60-22504	3/8	1-1/8	3/8	3
R60-22507	1/2	1-1/8	1/2	3-1/2
R60-22509	1/2	1-5/8	1/2	4
R60-22510	1/2	2-1/8	1/2	4
R60-22511	3/4	1-5/8	3/4	4
R60-22512	3/4	2-1/8	3/4	5

2 Flute DownCut Chipbreaker Finisher



Hw Sw Pl Pb Fb

See Material Guide p4

General purpose for solid wood, wood composites. Downcut design to give a clean edge when cutting a dado on laminated material. Chip breakers help with furring and tear out.

PART #	DIA	CEL	SHK	OAL
R60-31001	3/8	1-1/8	3/8	3
R60-31002	1/2	1-1/8	1/2	3
R60-31003	1/2	1-5/8	1/2	3-1/2
R60-31004	1/2	1-7/8	1/2	4
R60-31005	1/2	2-1/8	1/2	4
R60-31006	5/8	2-1/8	5/8	4
R60-31007	3/4	2-1/8	3/4	4

3 Flute DownCut Chipbreaker Finisher



Hw Sw Pl Pb Fb Lm

See Material Guide p4

General purpose for solid wood, wood composites. Downcut design to give a clean edge when cutting a dado on laminated material. Chip breakers help with furring and tear out.

PART #	DIA	CEL	SHK	OAL
R60-32001	3/8	1-1/8	3/8	3
R60-32002	1/2	1-1/8	1/2	3
R60-32003	1/2	1-3/8	1/2	3-1/2
R60-32004	1/2	1-5/8	1/2	3-1/2
R60-32005	5/8	1-5/8	5/8	4
R60-32006	3/4	1-5/8	3/4	4
R60-32007	3/4	2-1/4	3/4	5
R60-32008	3/4	3-1/8	3/4	6

3 Flute UpCut Chipbreaker Finisher

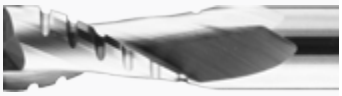


Hw Sw Pl Pb Fb

See Material Guide p4

General purpose for solid wood, wood composites. Downcut design to give a clean edge when cutting a dado on laminated material. Chip breakers help with furring and tear out.

PART #	DIA	CEL	SHK	OAL
R60-32101	3/8	1-1/8	3/8	3
R60-32102	1/2	1-1/8	1/2	3
R60-32103	1/2	1-3/8	1/2	3-1/2
R60-32104	1/2	1-5/8	1/2	3-1/2
R60-32105	5/8	1-5/8	5/8	4
R60-32106	3/4	1-5/8	3/4	5
R60-32107	3/4	2-1/4	3/4	4
R60-32108	3/4	3-1/8	3/4	6



Hw Sw Pl Pb Fb

See Material Guide p4

General purpose for solid wood and wood composites. Upcut spiral gives good chip evacuation. Chip breakers help with furring and tear out.

2 Flute UpCut Chipbreaker Finisher

PART #	DIA	CEL	SHK	OAL
R60-31201	3/8	1-1/8	3/8	3
R60-31202	1/2	1-1/8	1/2	3
R60-31203	1/2	1-5/8	1/2	3-1/2
R60-31205	1/2	1-7/8	1/2	3-1/2
R60-31204	1/2	2-1/8	1/2	4
R60-31206	5/8	2-1/8	5/8	4-1/2
R60-31207	3/4	2-1/8	3/4	4-1/2



Pb Lm Fb Pl Hw Sw

See Material Guide p4

Laminated or veneered wood and wood composites when top and bottom finish is critical. Short Upcut allows a chip free dado to be routed.

4 Flute Compression

PART#	DIA	CEL	UPCUT	SHK	OAL
R60-51701	1/2	1	.400"	1/2	3
R60-51702	1/2	1-1/8	.400"	1/2	3
R60-51703	1/2	1-3/8	.625"	1/2	3-1/2
R60-51704	1/2	1-5/8	.750"	1/2	4
R60-51705	5/8	2-1/4	1.00"	5/8	5
R60-51706	3/4	1-7/8	1.00"	3/4	4
R60-51707	3/4	2-1/2	1.00"	3/4	5



Pb Lm Fb Pl Hw Sw

See Material Guide p4

Laminated or veneered wood and wood composites when top and bottom finish is critical. Short Upcut allows a chip free dado to be routed.

4 Flute Mortise Compression

PART#	DIA	CEL	UPCUT	SHK	OAL
R60-52201	1/2	7/8	.200"	1/2	3
R60-52202	1/2	1-3/8	.200"	1/2	3-1/2



Pb Lm Fb Pl Hw Sw

See Material Guide p4

Laminated or veneered wood and wood composites when top and bottom finish is critical. Unique rougher finisher in one allows faster feed rates.

4 Flute Combination Compression

PART#	DIA	CEL	UPCUT	SHK	OAL
R60-61801	*1/2*	*1*	.400"	*1/2*	*3*
R60-61802	1/2	1-1/8	.400"	1/2	3
R60-61803	*1/2*	*1-3/8*	.625"	*1/2*	*3-1/2*
R60-61804	1/2	1-5/8	.750"	1/2	4
R60-61805	5/8	2-1/4	1.00"	5/8	5
R60-61806	*3/4*	*1-7/8*	1.00"	*3/4*	*4*
R60-61807	*3/4*	*2-1/2*	1.00"	*3/4*	*5*

4 Flute Combination UpCut

PART #	DIA	CEL	SHK	OAL
R60-71001	1/2	1-1/8	1/2	3-1/2
R60-71002	1/2	1-5/8	1/2	4
R60-71003	1/2	2-1/8	1/2	4-1/2
R60-71004	5/8	2-1/8	5/8	5
R60-71005	3/4	2-1/8	3/4	5



Pb Fb Hw Pl Sw

See Material Guide p4

Laminated or veneered wood and wood composites when top and bottom finish is critical. Unique rougher finisher in one allows faster feed rates.

4 Flute Combination DownCut

PART #	DIA	CEL	SHK	OAL
R60-71101	1/2	1-1/8	1/2	3-1/2
R60-71102	1/2	1-5/8	1/2	4
R60-71103	1/2	2-1/8	1/2	4
R60-71104	5/8	2-1/8	5/8	5
R60-71105	3/4	2-1/8	3/4	5



Pb Fb Hw Pl Sw Lm

See Material Guide p4

Laminated or veneered wood and wood composites when top and bottom finish is critical. Unique rougher finisher in one allows faster feed rates.

1 Flute "O" Style General Plastics

PART #	DIA	CEL	SHK	OAL
R61-01001	1/8	5/16	1/4	2
R61-01002	1/8	1/2	1/4	2
*R61-01003**	1/8	1/2	1/4	2
R61-01004	1/8	5/8	1/4	4
R61-01005	1/8	1/2	1/8	2
R61-01006	1/8	5/8	1/8	3
R61-01009	5/32	9/16	1/4	2
R61-01014	7/32	5/8	1/4	2-1/2
R61-01010	3/16	3/8	1/4	2
R61-01011	3/16	3/8	1/4	2
*R61-01012**	3/16	5/8	1/4	2
R61-01013	3/16	1	1/4	4
R61-01007	3/16	5/8	3/16	2-1/2
R61-01015	1/4	3/8	1/4	2-1/2
R61-01016	1/4	3/4	1/4	2-1/2
R61-01017*	1/4	3/4	1/4	3-1/2
R61-01018	1/4	3/4	1/4	3-1/2
*R61-01019**	1/4	3/4	1/4	3-1/2
R61-01020	1/4	1	1/4	3-1/4
R61-01008	1/4	1-1/4	1/4	4
R61-11022	3/8	5/8	3/8	2-1/3
R61-11023	3/8	7/8	3/8	2-1/3
R61-11024	3/8	1-5/8	3/8	6



Hp Sp Hw

See Material Guide p4

Generic router bit for plastics, will work for both soft and hard plastics. Free cutting "O" flute design enables easy cutting of plastics.

1 Flute "V" Style Flute



Hw Hp Sw Fb

See Material Guide p4

General purpose "V" flute good for engraving and carving on solid wood and hard plastics.

PART #	DIA	CEL	SHK	OAL
R61-21001	1/8	1/2	1/4	2
R61-21002	3/16	3/4	1/4	2
R61-21003	1/4	7/8	1/4	2-1/2
R61-21004	1/4	1	1/4	2-1/2

1 Flute DownCut Hard Plastic & Aluminum



Hp Al Hw Fb Lm

See Material Guide p4

Single flute downcut tools for cutting hard plastic and aluminum. Downcut assists with material hold down on nested routers.

PART #	DIA	CEL	SHK	OAL
R62-01801	1/8	1/2	1/4	2
R62-01802	1/4	3/4	1/4	2-1/2
R62-11803	5/16	13/16	3/8	2-1/2
R62-11804	3/8	7/8	3/8	2-1/2

1 Flute DownCut



Pl Hw Sw Fb Hp Sp Lm

See Material Guide p4

Single flute downcut for general purpose cutting of most wood based materials and some plastics. Downcut assists with material hold down on nested routers.

PART #	DIA	CEL	SHK	OAL
R62-21901	1/8	1/2	1/4	2
R62-21902	3/16	3/4	1/4	2
R62-21903	1/4	7/8	1/4	2-1/2
R62-21904	1/4	1	1/4	2-1/2

1 Flute DownCut "O" Style Aluminum



Al Hp

See Material Guide p4

Designed for routing aluminum sheet and solid material on CNC machines. Downcut design to assist material hold down.

PART #	DIA	CEL	SHK	OAL
R62-60002	1/16	1/4	1/8	1-1/2
R62-60006	1/8	1/4	1/4	2
R62-60010	1/8	1/2	1/4	2
R62-60014	3/16	3/8	1/4	2
R62-60020	1/4	1-1/8	1/4	2-1/2
R62-60022	1/4	3/4	1/4	2-1/2
R62-60024	1/4	1-1/4	1/4	3
R62-60025	3/8	3/4	3/8	3
R62-60031	1/2	1-1/8	1/2	3-1/2

1 Flute DownCut "O" Style Hard Plastic



Hp Al Hw Sw

See Material Guide p4

Designed for routing hard plastics. Downcut design to assist material hold down.

PART #	DIA	CEL	SHK	OAL
R62-71408	1/8	1/2	1/8	2
R62-71401	1/8	1/2	1/4	2
R62-71409	3/16	5/8	3/16	2
R62-71403	3/16	5/8	1/4	2
R62-71405	1/4	3/4	1/4	2-1/2
R62-71406	1/4	1-1/4	1/4	3
R62-71407	3/8	1-1/8	3/8	3

1 Flute DownCut "O" Style Soft Plastic



Sp Hp Hw Sw Al

See Material Guide p4

Designed for routing soft plastics. Downcut design to assist material hold down.

PART #	DIA	CEL	SHK	OAL
R62-71501	1/8	1/2	1/8	2
R62-71502	1/8	1/2	1/4	2
R62-71503	3/16	5/8	3/16	2
R62-71504	3/16	5/8	1/4	2
R62-71505	1/4	3/4	1/4	2-1/2
R62-71506	1/4	1-1/4	1/4	3
R62-71507	3/8	1-1/8	3/8	3

1 Flute Upcut Spiral Hard Plastic & Aluminum



Hp Al Hw Fb

See Material Guide p4

Single flute UpCut tools for cutting hard plastic and aluminum.

PART #	DIA	CEL	SHK	OAL
R63-02001	1/8	1/2	1/4	2
R63-02002	5/32	9/16	1/4	2
R63-02003	3/16	5/8	1/4	2
R63-02004	7/32	5/8	1/4	2-1/2
R63-02005	1/4	3/4	1/4	2-1/2
R63-02006	9/32	3/4	3/8	2-1/2
R63-12007	5/16	1-3/16	3/8	2-1/2
R63-12008	3/8	7/8	3/8	2-1/2
R63-12009	7/16	1	1/2	3
R63-12010	1/2	1	1/2	3



Sp Hp Fb Hw Sw

See Material Guide p4

Single flute spiral designed for routing soft plastic

1 Flute UpCut Soft Plastics

PART #	DIA	CEL	SHK	OAL
R63-22101	1/8	1/2	1/4	2
R63-22102	3/16	3/4	1/4	2
R63-22103	1/4	7/8	1/4	2-1/2
R63-22104	1/4	1	1/4	2-1/2
R63-32105	5/16	1-1/8	5/16	3
R63-32106	3/8	1-1/8	3/8	3
R63-32107	1/2	1-1/8	1/2	3



Al Hp

See Material Guide p4

Designed for routing aluminum sheet and solid material on CNC machines. Upcut design gives good chip removal.

1 Flute UpCut "O" Style Aluminum

PART #	DIA	CEL	SHK	OAL
R63-60002	1/16	1/4	1/8	1-1/2
R63-60006	1/8	1/4	1/4	2
R63-60010	1/8	1/2	1/4	2
R63-60014	3/16	3/8	1/4	2
R63-60018	3/16	5/8	1/4	2
R63-60020	1/4	3/8	1/4	2
R63-60022	1/4	3/4	1/4	2-1/2
R63-60024	1/4	1-1/4	1/4	3
R63-60025	3/8	3/4	3/8	3
R63-60026	3/8	1-1/8	3/8	3
R63-60031	1/2	1-1/8	1/2	3-1/2
R63-60032	1/2	1-3/8	1/2	3-1/2



Hp Al Hw Sw

See Material Guide p4

Designed for routing hard plastics. Upcut design gives good chip removal.

1 Flute UpCut "O" Style Hard Plastic

PART #	DIA	CEL	SHK	OAL
R63-71609	1/16	1/4	1/8	2
R63-71601	1/16	1/4	1/4	2
R63-71610	1/8	1/4	1/8	2
R63-71602	1/8	1/4	1/4	2
R63-71611	1/8	1/2	1/8	2
R63-71603	1/8	1/2	1/4	2
R63-71604	3/16	3/8	1/4	2
R63-71605	3/16	5/8	1/4	2
R63-71613	3/16	5/8	3/16	2
R63-71614	1/4	3/8	1/4	2
R63-71606	1/4	3/4	1/4	2-1/2
R63-71607	1/4	1-1/4	1/4	3
R63-71608	3/8	1-1/8	3/8	3

1 Flute UpCut "O" Style Soft Plastic



PART #	DIA	CEL	SHK	OAL
R63-71701	1/16	1/4	1/8	2
R63-71702	1/16	1/4	1/4	2
R63-71703	1/8	1/4	1/8	2
R63-71704	1/8	1/4	1/4	2
R63-71705	1/8	1/2	1/8	2
R63-71706	1/8	1/2	1/4	2
R63-71708	3/16	3/8	3/16	2
R63-71709	3/16	3/8	1/4	2
R63-71710	3/16	5/8	1/4	2
R63-71715	1/4	3/8	1/4	2
R63-71712	1/4	3/4	1/4	2-1/2
R63-71713	1/4	1-1/4	1/4	3
R63-71714	3/8	1-1/8	3/8	3

Sp Hp Hw Sw Al

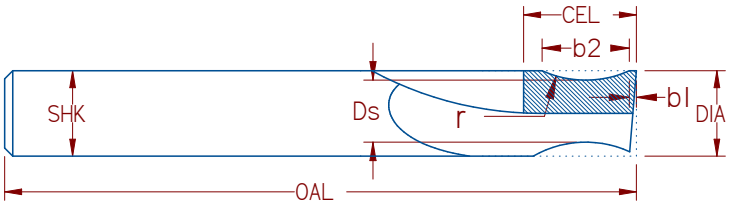
See Material Guide p4

Designed for routing soft plastics. Upcut design gives good chip removal.

1 Flute Straight "O" Style Edge Rounding



PART #	DIA	CEL	SHK	OAL	r	Ds	b1	b2
R66-02001	1/4	3/8	1/4	2-1/2	1/8	.195"	1/16	5/32
R66-02002	1/4	3/8	1/4	2-1/2	3/16	.180"	1/16	7/32
R66-02003	1/4	3/8	1/4	2-1/2	9/32	.163"	1/16	9/32



Sp Hp Hw Sw Al

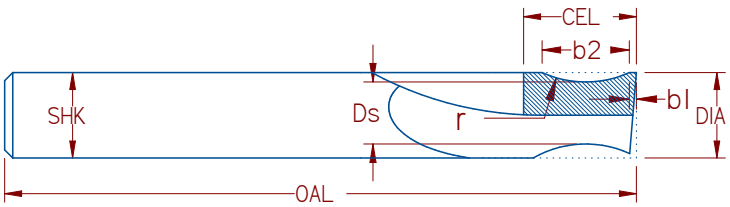
See Material Guide p4

Designed for the POP display industry, made to apply a radius on the edge of plastics. Straight "O"flute design good for plastics.

1 Flute Spiral "O" Style Edge Rounding



PART #	DIA	CEL	SHK	OAL	r	Ds	b1	b2
R66-02101	1/4	3/8	1/4	2-1/2	1/8	.195"	1/16	5/32
R66-02102	1/4	3/8	1/4	2-1/2	3/16	.180"	1/16	7/32
R66-02103	1/4	3/8	1/4	2-1/2	9/32	.163"	1/16	9/32



Sp Hp Hw Sw Al

See Material Guide p4

Designed for the POP display industry, made to apply a radius on the edge of plastics. UpCut "O"flute design for higher removal rates.



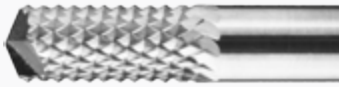
Hp Sp Hw Sw Al

See Material Guide p4

Designed for the POP display industry, made to apply a radius on the edge of plastics. Straight standard flute design for more resilient cutting edge.

2 Flute Straight Style Edge Rounding

PART #	DIA	CEL	SHK	OAL	r	Ds	b1	b2
R66-02201	1/4	3/8	1/4	2-1/2	1/8	.195"	1/16	5/32
R66-02202	1/4	3/8	1/4	2-1/2	3/16	.180"	1/16	7/32
R66-02203	1/4	3/8	1/4	2-1/2	9/32	.163"	1/16	9/32



Rp

See Material Guide p4

Burr style router bit for routing Fiberglass and other re-enforced plastic material.

Fiberglass Burr Tools

PART #	DIA	CEL	SHK	OAL
R67-02601B	1/4	3/4	1/4	2-1/2
R67-02604B	1/4	1	1/4	3
R67-12605B	3/8	7/8	3/8	2-1/2
R67-12608B	1/2	1	1/2	3



Rp

See Material Guide p4

Burr style router bit for routing Fiberglass and other re-enforced plastic material. Fluted Burr style tool enables higher feed rates, more free cutting.

Fiberglass Rougher Finisher Burr

PART #	DIA	CEL	SHK	OAL
R67-02602	1/4	3/4	1/4	2-1/2
R67-12606	3/8	7/8	3/8	2-1/2
R67-12609	1/2	1	1/2	3



Fb Hp Sp Hw Sw

See Material Guide p4



For beading profiles in MDF, Solid Wood, and plastics. 10° flares provide line free overlaps in MDF doors.

2 Flute Beading Tools

PART #	DIA	r	b	SHK	OAL
R68-02001	3/8	1/16	1mm (.039")	3/8	2-1/2
R68-02002	3/8	1/8	1mm (.039")	3/8	2-1/2
R68-02003	1/2	3/16	1.5mm (.059")	1/2	3
R68-02004	1/2	1/4	1.5mm (.059")	1/2	3

3 Flute DownCut Phenolic Spiral

PART #	DIA	CEL	SHK	OAL
R72-20004	3/8	7/8	3/8	3
R72-20007	1/2	1-1/4	1/2	3-1/2
R72-20010	1/2	2-1/8	1/2	4



Rp Hp Lm

See Material Guide p4

Designed for routing phenolic and other fiber re-enforced plastics, unique style chip-breakers help eliminate harmonics in routing.

3 Flute UpCut Phenolic Spiral

PART #	DIA	CEL	SHK	OAL
R72-10004	3/8	7/8	3/8	3
R72-10007	1/2	1-1/4	1/2	3-1/2
R72-10010	1/2	2-1/8	1/2	4



Rp Hp

See Material Guide p4

Designed for routing phenolic and other fiber re-enforced plastics, unique style chip-breakers help eliminate harmonics in routing.

Spiral Dovetail bits OMEC®

PART # RH	PART # LH	DIA	SHK	OAL	b1	Ds
R90-90100	R90-90100L	14mm	14mm + Flat	60mm	9mm	10.8mm
R90-90110U	R90-90110UL	14mm	14mm + Flat	60mm	9mm	10.8mm
R90-90110D		14mm	14mm + Flat	60mm	10mm	10.4mm

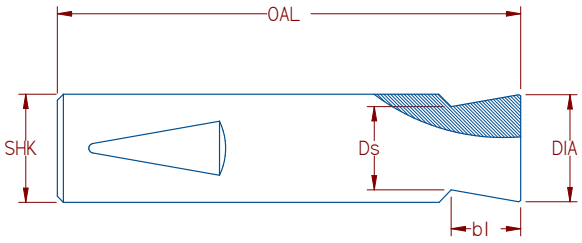
U=Upcut, D=DownCut



Hw Pl Fb

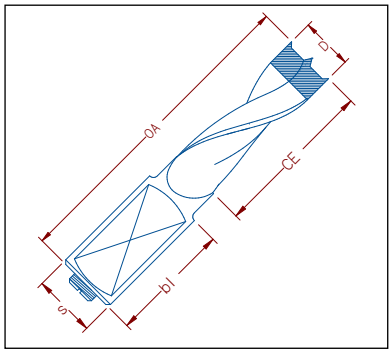
See Material Guide p4

Specifically for use on OMEC® dovetail machines. Tools work well for routing solid wood and wood composites.



Pro-Line Carbide Dowel Drills





Lm Pb Pl Fb Hw Sw

See Material Guide p4

For use on CNC drill banks and portable machines. Pro line dowel drills provide quality at a great price. Dowel drill style for drilling blind holes in Particle Board, MDF, and Solid Wood. Carbide tipped for long life. Screw in the end for height adjustment, 10mm shank with flat for set screws.

PD100 = 10mm x 20mm Shank - 57mm Over all Length
PD105 = 10mm x 20mm Shank - 70mm Over all Length
PD110 = 10mm x 27mm Shank - 57mm Over all Length
PD120 = 10mm x 27mm Shank - 70mm Over all Length

PART# RH	PART# LH	D	CE	b1	s	OA
PD100.040R	PD100.040L	4	34	20	10	57
PD100.045R	PD100.045L	4.5	34	20	10	57
PD100.050R	PD100.050L	5	34	20	10	57
PD100.051R	PD100.051L	5.1	34	20	10	57
PD100.070R	PD100.070L	7	34	20	10	57
PD100.080R	PD100.080L	8	34	20	10	57
PD100.081R	PD100.081L	8.1	34	20	10	57
PD100.082R	PD100.082L	8.2	34	20	10	57
PD100.095R	PD100.095L	3/8”	34	20	10	57
PD100.100R	PD100.100L	10	34	20	10	57
PD100.110R	PD100.110L	11	34	20	10	57
PD100.150R	PD100.150L	15	34	20	10	57
PD100.158R	PD100.158L	5/8”	34	20	10	57

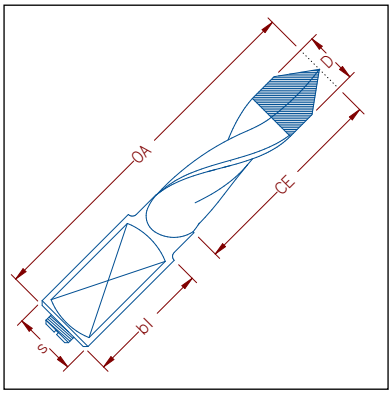
PART# RH	PART# LH	D	CE	b1	s	OA
PD110.040R	PD110.040L	4	27	27	10	57
PD110.047R	PD110.047L	3/16”	27	27	10	57
PD110.050R	PD110.050L	5	27	27	10	57
PD110.060R	PD110.060L	6	27	27	10	57
PD110.063R	PD110.063L	1/4”	27	27	10	57
PD110.070R	PD110.070L	7	27	27	10	57
PD110.080R	PD110.080L	8	27	27	10	57
PD110.090R	PD110.090L	9	27	27	10	57
PD110.095R	PD110.095L	3/8”	27	27	10	57
PD110.100R	PD110.100L	10	27	27	10	57
PD110.110R	PD110.110L	11	27	27	10	57
PD110.111R	PD110.111L	7/16”	27	27	10	57
PD110.120R	PD110.120L	12	27	27	10	57
PD110.127R	PD110.127L	1/2”	27	27	10	57
PD110.130R	PD110.130L	13	27	27	10	57
PD110.140R	PD110.140L	14	27	27	10	57
PD110.150R	PD110.150L	15	27	27	10	57
PD110.160R	*PD110.160L*	16	27	27	10	57

PART# RH	PART# LH	D	CE	b1	s	OA
PD105.040R	PD105.040L	4	41	20	10	70
PD105.045R	PD105.045L	4.5	41	20	10	70
PD105.050R	PD105.050L	5	41	20	10	70
PD105.055R	PD105.055L	5.5	41	20	10	70
PD105.060R	PD105.060L	6	41	20	10	70
PD105.064R	PD105.064L	1/4”	41	20	10	70
PD105.070R	PD105.070L	7	41	20	10	70
PD105.080R	PD105.080L	8	41	20	10	70
PD105.082R	PD105.082L	8.2	41	20	10	70
PD105.090R	PD105.090L	9	41	20	10	70
PD105.095R	PD105.095L	3/8”	41	20	10	70
PD105.100R	PD105.100L	10	41	20	10	70
PD105.110R	PD105.110L	11	41	20	10	70
PD105.120R	PD105.120L	12	41	20	10	70
PD105.127R	PD105.127L	1/2”	41	20	10	70
PD105.130R	PD105.130L	13	41	20	10	70
PD105.140R	PD105.140L	14	41	20	10	70
PD105.150R	PD105.150L	15	41	20	10	70
PD105.160R		16	41	20	10	70

PART# RH	PART# LH	D	CE	b1	s	OA
PD120.040R	PD120.040L	4	35	27	10	70
PD120.047R	PD120.047L	3/16”	35	27	10	70
PD120.050R	PD120.050L	5	35	27	10	70
PD120.055R	PD120.055L	5.5	35	27	10	70
PD120.060R	PD120.060L	6	35	27	10	70
PD120.063R	PD120.063L	1/4”	35	27	10	70
PD120.070R	PD120.070L	7	35	27	10	70
PD120.080R	PD120.080L	8	35	27	10	70
PD120.090R	PD120.090L	9	35	27	10	70
PD120.095R	PD120.095L	3/8”	35	27	10	70
PD120.100R	PD120.100L	10	35	27	10	70
PD120.110R	PD120.110L	11	35	27	10	70
PD120.111R	PD120.111L	7/16”	35	27	10	70
PD120.120R	PD120.120L	12	35	27	10	70
PD120.127R	PD120.127L	1/2”	35	27	10	70
PD120.130R	PD120.130L	13	35	27	10	70
PD120.140R	PD120.140L	14	35	27	10	70
PD120.150R	PD120.150L	15	35	27	10	70
PD120.160R	PD120.160L	16	35	27	10	70

Pro-Line Carbide Thru-hole Drills





Lm Pb Pl Fb Hw Sw

See Material Guide p4

For use on CNC drill banks, and portable machines. Pro line thru-hole drills provide good quality at a great price. Carbide tipped for long life. Screw in the end for height adjustment, 10mm shank with flat for set screws.

PD145 = 10mm x 20mm Shank - 57mm Over all Length

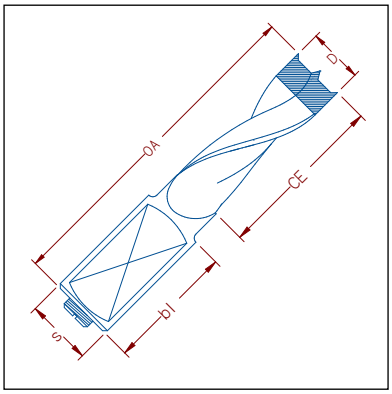
PART# RH	PART# LH	D	CE	b1	s	OA
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PD145.050R	PD145.050L	5	27	20	10	57
PD145.060R	*PD145.060L*	6	27	20	10	57
PD145.070R	*PD145.070L*	7	27	20	10	57
PD145.080R	PD145.080L	8	27	20	10	57
PD145.090R	*PD145.090L*	9	27	20	10	57
PD145.100R	PD145.100L	10	27	20	10	57
PD145.110R	*PD145.110L*	11	27	20	10	57
PD145.120R	*PD145.120L*	12	27	20	10	57
PD145.130R	*PD145.130L*	13	27	20	10	57
PD145.140R	*PD145.140L*	14	27	20	10	57
PD145.150R	*PD145.150L*	15	27	20	10	57
PD145.160R	*PD145.160L*	16	27	20	10	57

PD150 = 10mm x 20mm Shank - 70mm Over all Length

PART# RH	PART# LH	D	CE	b1	s	OA
PD150.040R	PD150.040L	4	35	20	10	70
PD150.050R	PD150.050L	5	35	20	10	70
PD150.060R	PD150.060L	6	35	20	10	70
PD150.070R	PD150.070L	7	35	20	10	70
PD150.080R	PD150.080L	8	35	20	10	70
PD150.090R	PD150.090L	9	35	20	10	70
PD150.100R	PD150.100L	10	35	20	10	70
PD150.110R	*PD150.110L*	11	35	20	10	70
PD150.120R	PD150.120L	12	35	20	10	70
PD150.127R	*PD150.127L*	1/2"	35	20	10	70
PD150.130R	*PD150.130L*	13	35	20	10	70
PD150.140R	PD150.140L	14	35	20	10	70
PD150.150R	PD150.150L	15	35	20	10	70
PD150.160R	*PD150.160L*	16	35	20	10	70

Industrial Quality Carbide Dowel Drills





Lm Pb Pl Fb Hw Sw

See Material Guide p4

For use on CNC drill banks, and portable machines. Industrial quality dowel drills have larger carbide tip and improved geometry for longer life. Dowel drill style for drilling blind holes in Particle Board, MDF, and Solid Wood. Carbide tipped for long life. Screw in the end for height adjustment, 10mm shank with flat for set screws.

D100 = 10mm x 20mm Shank - 57mm Over all Length

PART# RH	PART# LH	D	CE	b1	s	OA
D100.030R	D100.030L	3	27	20	10	57
D100.040R	D100.040L	4	30	20	10	57
D100.045R	D100.045L	4.5	30	20	10	57
D100.050R	D100.050L	5	30	20	10	57
D100.052R	*D100.052L*	5.2	30	20	10	57
D100.055R	D100.055L	5.5	30	20	10	57
D100.060R	D100.060L	6	30	20	10	57
D100.064R	D100.064L	1/4"	30	20	10	57
D100.070R	D100.070L	7	30	20	10	57
D100.080R	D100.080L	8	30	20	10	57
D100.082R	D100.082L	8.2	30	20	10	57
D100.090R	D100.090L	9	30	20	10	57
D100.095R	D100.095L	3/8"	30	20	10	57
D100.100R	D100.100L	10	30	20	10	57
D100.110R	*D100.110L*	11	30	20	10	57
D100.120R	D100.120L	12	30	20	10	57
D100.127R	*D100.127L*	1/2"	30	20	10	57
D100.130R	D100.130L	13	30	20	10	57
D100.140R	D100.140L	14	30	20	10	57
D100.150R	D100.150L	15	30	20	10	57
D100.158R	*D100.158L*	5/8"	30	20	10	57
D100.160R	*D100.160L*	16	30	20	10	57

D105 = 10mm x 20mm Shank - 70mm Over all Length

PART# RH	PART# LH	D	CE	b1	s	OA
D105.030R	D105.030L	3	43	20	10	70
D105.040R	D105.040L	4	43	20	10	70
D105.047R	D105.047L	3/16"	43	20	10	70
D105.050R	D105.050L	5	43	20	10	70
D105.052R	*D105.052L*	5.2	43	20	10	70
D105.055R	*D105.055L*	5.5	43	20	10	70
D105.060R	D105.060L	6	43	20	10	70
D105.064R	D105.064L	1/4"	43	20	10	70
D105.070R	D105.070L	7	43	20	10	70
D105.075R	D105.075L	7.5	43	20	10	70
D105.080R	D105.080L	8	43	20	10	70
D105.090R	D105.090L	9	43	20	10	70
D105.095R	D105.095L	3/8"	43	20	10	70
D105.100R	D105.100L	10	43	20	10	70
D105.110R	D105.110L	11	43	20	10	70
D105.111R	*D105.111L*	7/16"	43	20	10	70
D105.120R	D105.120L	12	43	20	10	70
D105.127R	D105.127L	1/2"	43	20	10	70
D105.130R	D105.130L	13	43	20	10	70
D105.140R	D105.140L	14	43	20	10	70
D105.150R	D105.150L	15	43	20	10	70
D105.158R	*D105.158L*	5/8"	43	20	10	70
D105.160R	D105.160L	16	43	20	10	70

D125 = 10mm x 30mm Shank - 77mm Over all Length

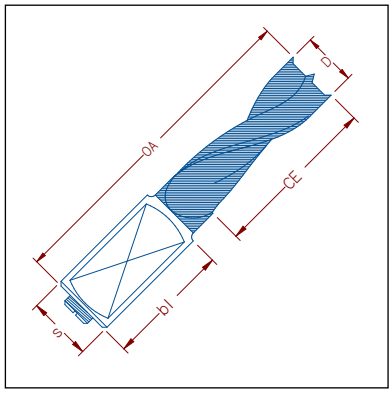
PART# RH	PART# LH	D	CE	b1	s	OA
D125.050R	D125.050L	5	44	30	10	77
D125.060R	*D125.060L*	6	44	30	10	77
D125.080R	D125.080L	8	44	30	10	77
D125.100R	*D125.100L*	10	44	30	10	77
D125.120R	*D125.120L*	21	44	30	10	77

D130 = 10mm x 27mm Shank - 85mm Over all Length

PART# RH	PART# LH	D	CE	b1	s	OA
D130.050R	*D130.050L*	5	50	27	10	85
D130.060R	*D130.060L*	6	50	27	10	85
D130.080R	*D130.080L*	8	50	27	10	85
D130.100R	*D130.100L*	10	50	27	10	85
D130.120R	*D130.120L*	12	50	27	10	85

Solid Carbide Dowel Drills





Lm Pb Pl Fb Hw Sw

See Material Guide p4

For use on CNC drill banks, and portable machines. Solid carbide design provides maximum wear resistance and strength. Dowel drill style for drilling blind holes in Particle Board, MDF, and Solid Wood. Screw in the end for height adjustment.

D107 = 10mm x 20mm Shank - 57mm Over all Length

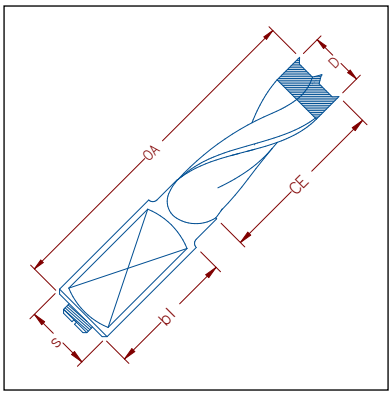
PART# RH	PART# LH	D	CE	b1	s	OA
D107.030R		3	37	20	10	57
D107.050R	**D107.050L**	5	37	20	10	57
D107.060R	*D107.060L*	6	37	20	10	57
D107.080R	*D107.080L*	8	37	20	10	57

PD108 = 10mm x 27mm Shank - 70mm Over all Length

PART# RH	PART# LH	D	CE	b1	s	OA
D108.030R	*D108.030L*	3	43	27	10	70
D108.050R	**D108.050L**	5	43	27	10	70
D108.060R		6	43	27	10	70
D108.080R	**D108.080L**	8	43	27	10	70

Industrial Quality Carbide Dowel Drills (8mm Shank)





Lm Pb Pl Fb Hw Sw

See Material Guide p4

For use on CNC drill banks, and portable machines. Industrial quality dowel drills have larger carbide tip and improved geometry for longer life. Dowel drill style for drilling blind holes in Particle Board, MDF, and Solid Wood. Carbide tipped for long life. Screw in the end for height adjustment.

D135 = 8mm x 20mm Shank - 55mm Over all Length

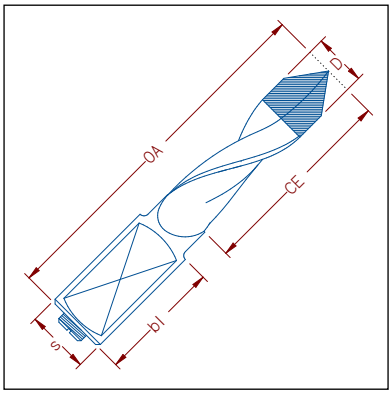
PART# RH	PART# LH	D	CE	b1	s	OA
D135.050R	*D135.050L*	5	30	20	8	55
D135.060R	*D135.060L*	6	30	20	8	55
D135.064R		1/4"	30	20	8	55
D135.070R	*D135.070L*	7	30	20	8	55
D135.080R	*D135.080L*	8	30	20	8	55
D135.090R	*D135.090L*	9	30	20	8	55
D135.100R	**D135.100L**	10	30	20	8	55
D135.120R	*D135.120L*	12	30	20	8	55

D140 = 8mm x 20mm Shank - 67mm Over all Length

PART# RH	PART# LH	D	CE	b1	s	OA
D140.040R		4	40	20	8	67
D140.050R	*D140.050L*	5	40	20	8	67
D140.060R	*D140.060L*	6	40	20	8	67
D140.064R		1/4"	40	20	8	67
D140.070R	*D140.070L*	7	40	20	8	67
D140.080R	*D140.080L*	8	40	20	8	67
D140.090R		9	40	20	8	67
D140.095R		3/8"	40	20	8	67
D140.100R		10	40	20	8	67
D140.120R		12	40	20	8	67

Industrial Quality Thru-Hole Drills





Lm Pb Pl Fb Hw Sw

See Material Guide p4

For use on CNC drill banks, and portable machines. Industrial quality dowel drills have larger carbide tip and improved geometry for longer life. Thru-hole drill minimizes chipping on exit hole on laminates, particle board, MDF, and Solid Wood. Carbide tipped for long life. Screw in the end for height adjustment.

D145 = 10mm x 20mm Shank - 57mm Over all Length

PART# RH	PART# LH	D	CE	b1	s	OA
D145.040R	D145.040L	5/32"	27	20	10	57
D145.050R	D145.050L	5	27	20	10	57
D145.060R	*D145.060L*	6	27	20	10	57
D145.070R	D145.070L	7	27	20	10	57
D145.080R	D145.080L	8	27	20	10	57
D145.090R	D145.090L	9	27	20	10	57
D145.100R	D145.100L	10	27	20	10	57
D145.110R	*D145.110L*	11	27	20	10	57
D145.120R	*D145.120L*	12	27	20	10	57
D145.130R	*D145.130L*	13	27	20	10	57
D145.140R	*D145.140L*	14	27	20	10	57
D145.150R	*D145.150L*	15	27	20	10	57

D155 = 10mm x 26mm Shank - 77mm Over all Length

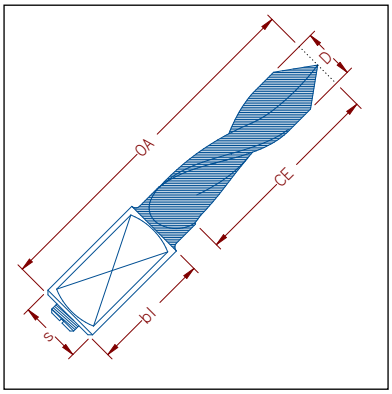
PART# RH	PART# LH	D	CE	b1	s	OA
D155.040R		4	45	26	10	77
D155.050R	D155.050L	5	45	26	10	77
D155.060R	*D155.060L*	6	45	26	10	77
D155.070R		7	45	26	10	77
D155.080R	*D155.080L*	8	45	26	10	77
D155.100R	*D155.100L*	10	45	26	10	77

D150 = 10mm x 20mm Shank - 70mm Over all Length

PART# RH	PART# LH	D	CE	b1	s	OA
D150.040R	D150.040L	5/32"	40	20	10	70
D150.047R	D150.047L	3/16"	40	20	10	70
D150.050R	D150.050L	5	40	20	10	70
D150.055R	D150.055L	7/32"	40	20	10	70
D150.060R	D150.060L	6	40	20	10	70
D150.064R	D150.064L	1/4"	40	20	10	70
D150.070R	D150.070L	7	40	20	10	70
D150.080R	D150.080L	8	40	20	10	70
D150.090R	D150.090L	9	40	20	10	70
D150.095R	D150.095L	3/8"	40	20	10	70
D150.100R	D150.100L	10	40	20	10	70
D150.110R	*D150.110L*	11	40	20	10	70
D150.111R	*D150.111L*	7/16"	40	20	10	70
D150.120R	D150.120L	12	40	20	10	70
D150.127R	D150.127L	1/2"	40	20	10	70
D150.130R	D150.130L	13	40	20	10	70
D150.140R	D150.140L	14	40	20	10	70
D150.150R	D150.150L	15	40	20	10	70
D150.160R	*D150.160L*	16	40	20	10	70

Solid Carbide Thru-Hole Drills





Lm Pb Pl Fb Hw Sw

See Material Guide p4

For use on CNC drill banks, and portable machines. Solid carbide design provides maximum wear resistance and strength. Thru-hole drill minimizes chipping on exit hole on laminates, particle board, MDF, and solid wood. Screw in the end for height adjustment.

D157 = 10mm x 20mm Shank - 57mm Over all Length

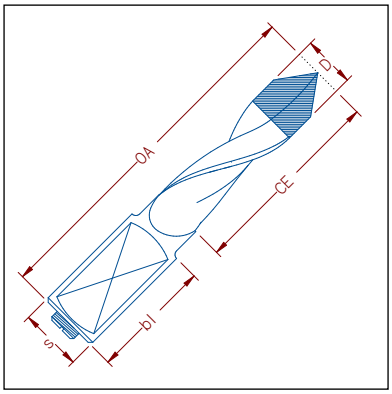
PART# RH	PART# LH	D	CE	b1	s	OA
D157.030R	D157.030L	3	30	20	10	57
D157.040R	*D157.040L*	5/32"	30	20	10	57
D157.050R	D157.050L	5	30	20	10	57
D157.080R	D157.080L	8	30	20	10	57

D158 = 10mm x 20mm Shank - 70mm Over all Length

PART# RH	PART# LH	D	CE	b1	s	OA
D158.030R	D158.030L	3	35	27	10	70
D158.040R	*D158.040L*	5/32"	35	27	10	70
D158.050R	*D158.050L*	5	35	27	10	70
D158.060R	*D158.060L*	6	35	27	10	70
D158.070R	D158.070L	7	35	27	10	70
D158.080R	*D158.080L*	5/16"	35	27	10	70

Industrial Quality Carbide Thru-Hole (8mm Shank)





Lm Pb Pl Fb Hw Sw

See Material Guide p4

For use on CNC drill banks, and portable machines. Industrial quality dowel drills have larger carbide tip and improved geometry for longer life. Thru-hole drill minimizes chipping on exit hole on laminates, particle board, MDF, and solid wood. Carbide tipped for long life. Screw in the end for height adjustment.

D160 = 8mm x 20mm Shank - 55mm Over all Length

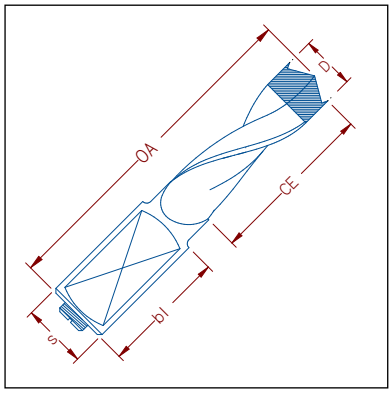
PART# RH	PART# LH	D	CE	b1	s	OA
D160.050R	D160.050L	5	30	20	8	55
D160.080R	*D160.080L*	5/16"	30	20	8	55

D165 = 8mm x 25mm Shank - 67mm Over all Length

PART# RH	PART# LH	D	CE	b1	s	OA
D165.050R		5	40	25	8	67
D165.060R	*D165.060L*	6	40	25	8	67
D165.080R	*D165.080L*	5/16"	40	25	8	67

Industrial Quality “Durox” Dowel Drills





Lm Pb Pl Fb Hw Sw

See Material Guide p4

For use on CNC drill banks, and portable machines. Durox style dowel drills have superior geometry over industrial and pro-line drills to prevent chipping on brittle delicate laminates. Dowel drill style for drilling blind holes in Particle Board, MDF, and Solid Wood. Carbide tipped for long life. Screw in the end for height adjustment.

D146 = 10mm x 30mm Shank - 58mm Over all Length

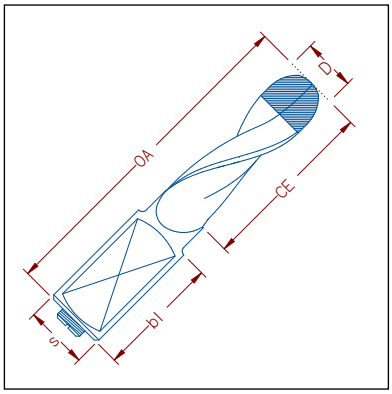
PART# RH	PART# LH	D	CE	b1	s	OA
D146.050R	D146.050L	5	27	30	10	58
D146.080R	D146.080L	5/16”	27	30	10	58

D151 = 10mm x 24mm Shank - 70mm Over all Length

PART# RH	PART# LH	D	CE	b1	s	OA
D151.050R	D151.050L	5	35	24	10	70
D151.080R	D151.080L	5/16”	35	24	10	70

Industrial Quality “Durox” Thru-Hole Drills





Lm Pb Pl Fb Hw Sw

See Material Guide p4

For use on CNC drill banks, and portable machines. Durox style thru hole drills have superior geometry over industrial and pro-line drills to prevent chipping on brittle delicate laminates. Thru-hole drill minimizes chipping on exit hole on laminates, particle board, MDF, and solid wood. Carbide tipped for long life. Screw in the end for height adjustment, 10mm shank with flat for set screws.

D147 = 10mm x 24mm Shank - 57mm Over all Length

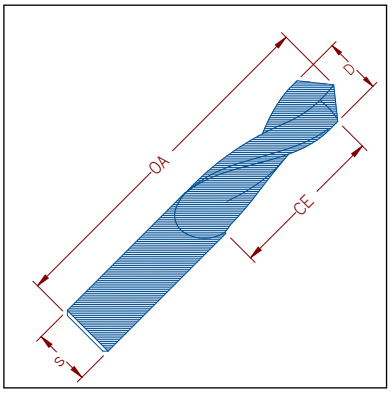
PART# RH	PART# LH	D	CE	b1	s	OA
D147.050R	D147.050L	5	27	24	10	57
D147.080R	D147.080L	5/16”	27	24	10	57

D152 = 10mm x 24mm Shank - 70mm Over all Length

PART# RH	PART# LH	D	CE	b1	s	OA
D152.050R	D152.050L	5	35	24	10	70
D152.080R	D152.080L	5/16”	35	24	10	70

Solid Carbide Center Drill





Lm Pb Pl Fb Hw Sw

See Material Guide p4

For use with D270 & D275 series adapters. Solid carbide center drill provides excellent wear resistance. Good for drilling in wood products, as well as hard plastics.

PART# RH	PART# LH	D	CE	OA
D167.020R	D167.020L	2	18	49
D167.025R	D167.025L	2.5	22	55
D167.030R	D167.030L	3	22	55
D167.032R	D167.032L	1/8"	22	55
D167.035R	D167.035L	3.5	25	55

PART# RH	PART# LH	D	CE	OA
D167.040R	D167.040L	5/32"	25	55
D167.050R	D167.050L	5	25	55

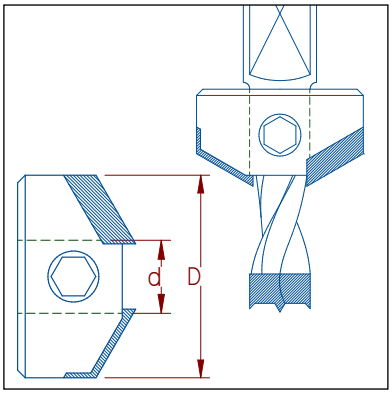
Brad Point

PART# RH	D	CE	OA
D167.030R-BP*	3	22	55
D167.035R-BP*	3.5	25	55

* Available while qty last. To be discontinued

Carbide Tipped Shell Countersink





Lm Pb Pl Fb Hw Sw

See Material Guide p4

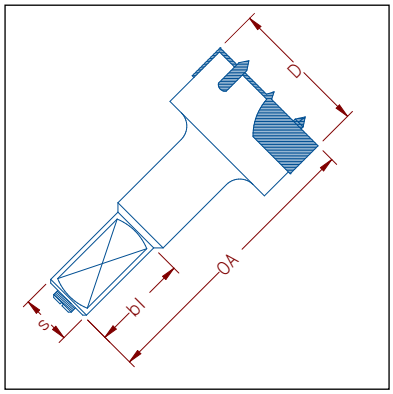
For use with D100 - D155 metric drills. Countersink fastens onto twist of drill with set screw. Countersinks for a 90° screw head.

PART# RH	PART# LH	d	D
D175.040R	*D175.040L*	5/32"	15.5
D175.050R	D175.050L	5	15.5
D175.060R	*D175.060L*	6	15.5
D175.070R	*D175.070L*	7	18

PART# RH	PART# LH	d	D
D175.080R	D175.080L	5/16"	18
D175.090R	*D175.090L*	9	18
D175.100R	*D175.100L*	10	20
D175.110R		11	20
D175.120R	*D175.120L*	12	20

Industrial 2+2 Wing Hinge Boring Drills





Lm Pb Pl Fb Hw Sw

See Material Guide p4

For use on CNC drill banks, and portable machines. Hinge style bits for drilling larger diameter holes. For drilling blind holes in Particle Board, MDF, and Solid Wood. Carbide tipped for long life. Screw in the end for height adjustment.

D180 = 10mm x 30mm Shank - 57mm Over all Length

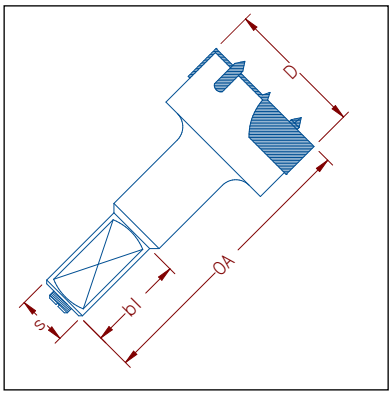
PART# RH	PART# LH	D	b1	s	OA
D180.150R	D180.150L	15	30	10	57
D180.160R	*D180.160L*	16	30	10	57
D180.170R		17	30	10	57
D180.180R	D180.180L	18	30	10	57
D180.190R		19	30	10	57
D180.200R	D180.200L	20	30	10	57
D180.220R	D180.220L	22	30	10	57
D180.250R	D180.250L	25	30	10	57
D180.260R	*D180.260L*	26	30	10	57
D180.300R	*D180.300L*	30	30	10	57
D180.310R	D180.310L	31	30	10	57
D180.320R	D180.320L	32	30	10	57
D180.350R	D180.350L	35	30	10	57
D180.380R	*D180.380L*	38	30	10	57
D180.400R	*D180.400L*	40	30	10	57

D185 = 10mm x 30mm Shank - 70mm Over all Length

PART# RH	PART# LH	D	b1	s	OA
D185.150R	D185.150L	15	30	10	70
D185.160R		16	30	10	70
D185.180R	*D185.180L*	18	30	10	70
D185.190R	*D185.190L*	19	30	10	70
D185.200R	D185.200L	20	30	10	70
D185.220R	*D185.220L*	22	30	10	70
D185.225R	*D185.225L*	22.5	30	10	70
D185.250R	D185.250L	25	30	10	70
D185.260R	*D185.260L*	26	30	10	70
D185.300R	*D185.300L*	30	30	10	70
D185.350R	*D185.350L*	35	30	10	70
D185.380R	D185.380L	38	30	10	70
D185.400R	*D185.400L*	40	30	10	70

Industrial 3+3 Wing Hinge Boring Drills





Pb Pl Fb Hw Sw

See Material Guide p4

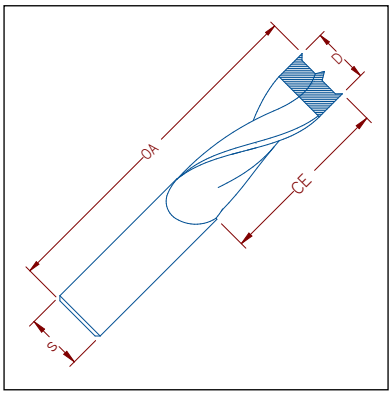
For use on CNC drill banks, and portable machines. Hinge style bits for drilling larger diameter holes. For drilling blind holes in Particle Board, MDF, and Solid Wood. Carbide tipped for long life. Tool has 3 wings to help eliminate chipping in brittle laminates. Screw in the end for height adjustment.

PART# RH	PART# LH	D	b1	s	OA
D195.250R	*D195.250L*	25	26	10	57
D195.260R	*D195.260L*	26	26	10	57
D195.300R	*D195.300L*	30	26	10	57

PART# RH	PART# LH	D	b1	s	OA
D195.350R	D195.350L	35	26	10	57
D195.400R	*D195.400L*	40	26	10	57

Carbide Tipped Brad Point Drills





Lm Pb Pl Fb Hw Sw

See Material Guide p4

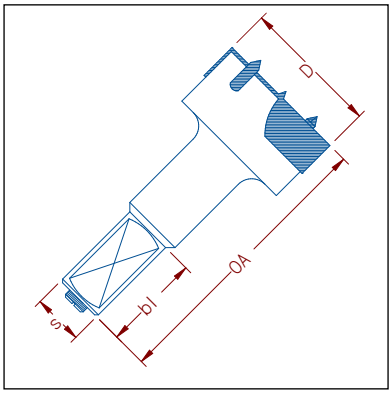
General purpose brad point drills for use on manual or CNC machines. Brad point creates a clean entry point. Carbide tip for long life in abrasive material.

PART# RH	PART# LH	D	CE	OA
D250.050R		5	50	85
D250.055R	*D250.055L*	5.5	50	85
D250.060R	*D250.060L*	6	55	90
D250.065R		6.5	55	90
D250.070R	D250.070L	7	65	105
D250.080R	*D250.080L*	8	75	115

PART# RH	D	CE	OA
D250.090R	9	80	125
D250.100R	10	90	135
D250.110R	11	100	145
D250.120R	12	100	150

Carbide Tipped Boring Bits





Lm Pb Pl Fb Hw Sw

See Material Guide p4

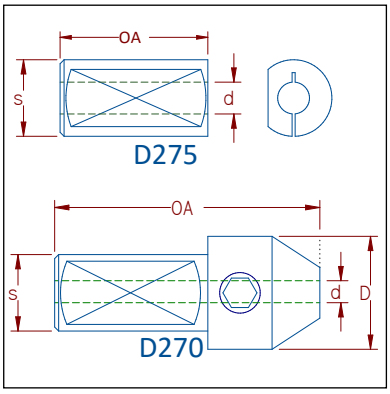
Double flute with center point, two plunge wings and two spurs for wood, veneer, laminate and particle board. Designed for drill press machines. Available in right hand rotation only.

PART# RH	D	b1	s	OA
D260.14R	14	30	10	90
D260.15R	15	30	10	90
D260.16R	16	30	10	90
D260.17R	17	30	10	90
D260.18R	18	30	10	90
D260.19R	19	30	10	90
D260.20R	20	30	10	90
D260.22R	22	30	10	90
D260.23R	25	30	10	90

PART# RH	D	b1	s	OA
D260.28R	28	30	10	90
D260.30R	30	30	10	90
D260.35R	35	30	10	90
D260.40R	40	30	10	90
D260.45R	45	30	10	90
D260.50R	50	30	10	90
D260.55R	55	30	10	90
D260.60R	60	30	10	90

Drill Adapters & Bushings





Pb PI Fb Hw Sw

See Material Guide p4

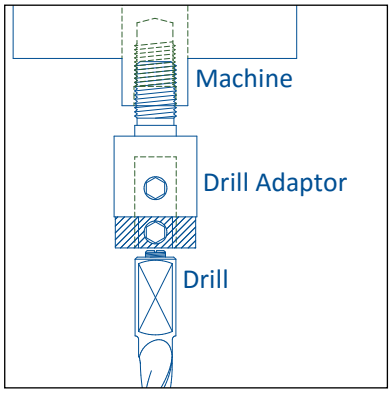
Drill adapters used to allow standard metric shank drills to be used in CNC drill bank or boring machine that requires a 10mm shank with a flat. D270 unit fastens to drill using a set screw, D275 unit uses the clamping pressure on the adapter to tighten the drill.

PART#	d	D	b1	s	OA
D270.20	2	15	20	10	38
D270.25	2.5	15	20	10	38
D270.30	3	15	20	10	38
D270.32	3.2	15	20	10	38
D270.35	3.5	15	20	10	38
D270.40	4	15	20	10	38
D270.45	4.5	15	20	10	38
D270.50	5	15	20	10	38
D270.60	6	15	20	10	38

PART#	d	D	OA
D275.20	2	10	23
D275.25	2.5	10	23
D275.30	3	10	23
D275.32	3.2	10	23
D275.35	3.5	10	23
D275.40	4	10	23
D275.45	4.5	10	23
D275.50	5	10	23

Threaded Drill Adapters

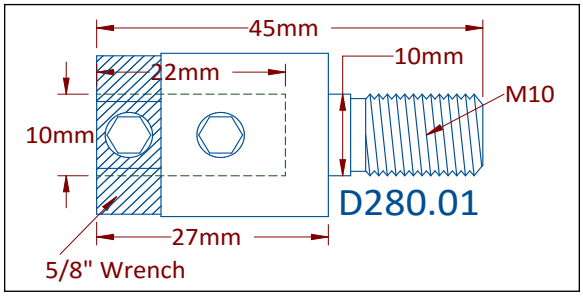




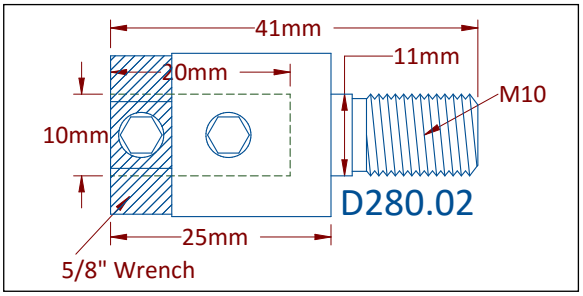
Pb PI Fb Hw Sw

See Material Guide p4

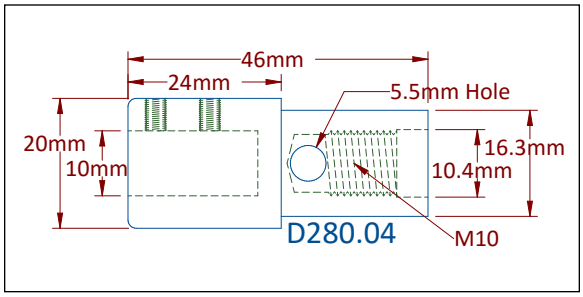
Various drill adapters, all adapters have the ability to take a 10mm drill shank with flat, and have 2 set screws to fasten the drill in. Various thread sizes and tapers are used in different machines. D290.N adapter fits in all of the D290 items listed below.



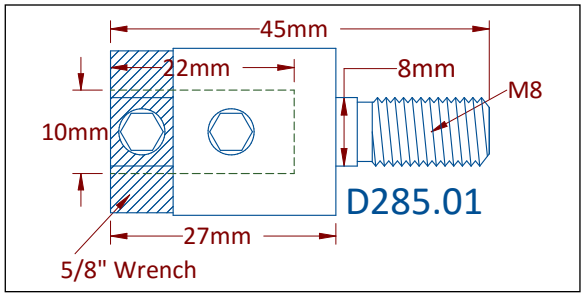
PART#	Thread	Machine Make
D280.01R	Right Hand	Holzma, Ayen, Mayer, Torwegge, Knoevenagel,
D280.01L	Left Hand	



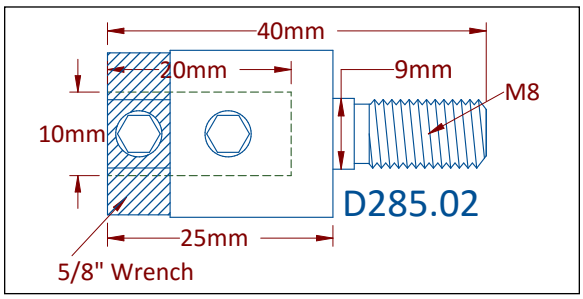
PART#	Thread	Machine Make
D280.02R	Right Hand	Morbidelli, Biesse, Masterwood, Torwegge, Vitap, Weeke
D280.02L	Left Hand	



PART#	Thread	Machine Make
D280.04R	Right Hand	Scheer
D280.04L	Left Hand	



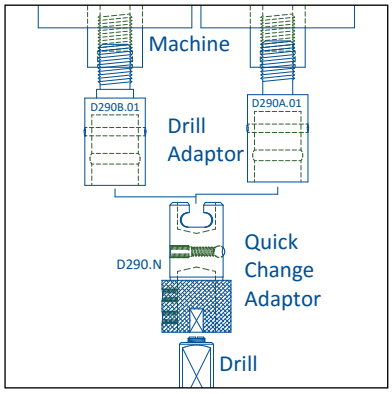
PART#	Thread	Machine Make
D285.01R	Right Hand	Nottmeyer
D285.01L	Left Hand	



PART#	Thread	Machine Make
D285.02R	Right Hand	Morbidelli, Nottmeyer, Masterwood
D285.02L	Left Hand	

Quick Change Drill Adapters Set

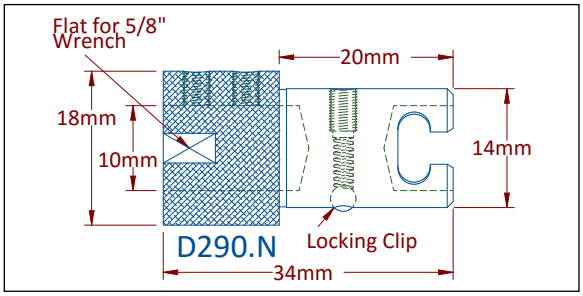




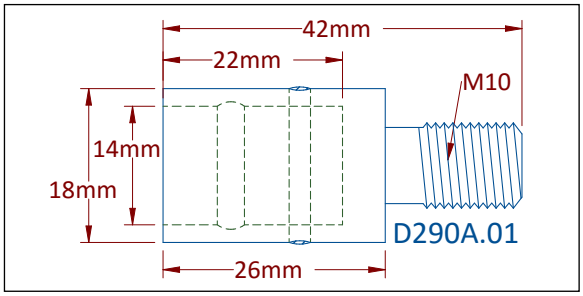
Pb PI Fb Hw Sw

See Material Guide p4

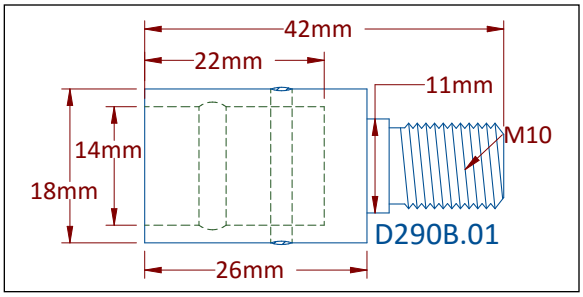
Quick change adapter allows you to change your drills without loosening set screws. Universal holder has the ability to take a 10mm drill shank with flat, and has 2 set screws to fasten the drill in. Various thread sizes and tapers are used in different machines.



PART#	Description
D290.N	Universal quick change unit for 10mm shank drills



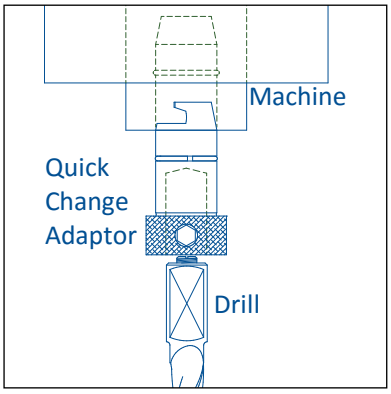
PART#	Thread	Machine Make
D290A.01R	Right Hand	Holzma, Ayen, Mayer Torwegge, Knoevenagel
D290A.01L	Left Hand	



PART#	Thread	Machine Make
D290B.01R	Right Hand	Morbidelli, Biesse, Masterwood, Torwegge, Vitap, Weeke
D280B.01L	Left Hand	

Quick Change Drill Adapters for Existing Systems

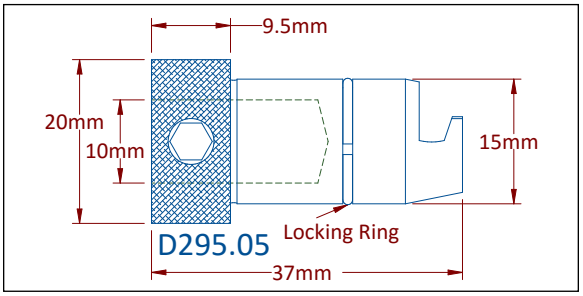




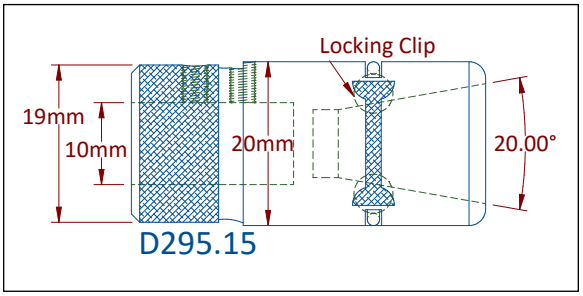
Pb PI Fb Hw Sw

See Material Guide p4

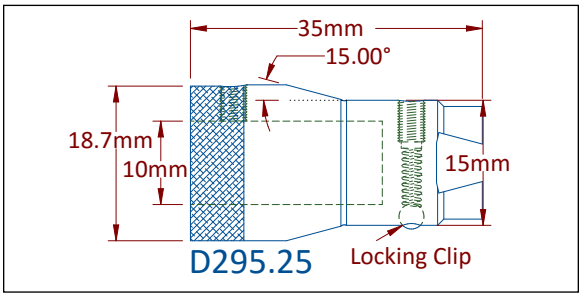
Quick change adapter allows you to change your drills without loosening set screws. These quick change fittings take a 10mm drill shank with flat on one end, on the other end have unique quick change systems for different machines.



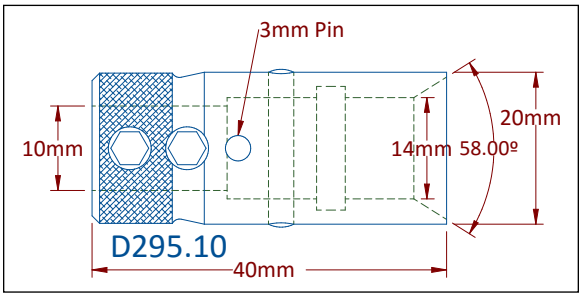
PART#	Machine Make
D295.05R	Biesse



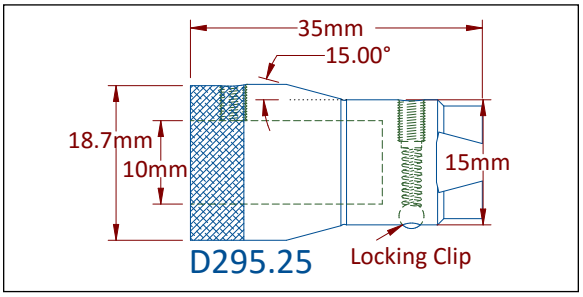
PART#	Thread	Machine Make
D295.15R	Right Hand	Morbidelli



PART#	Machine Make
D295.25R	Busellato



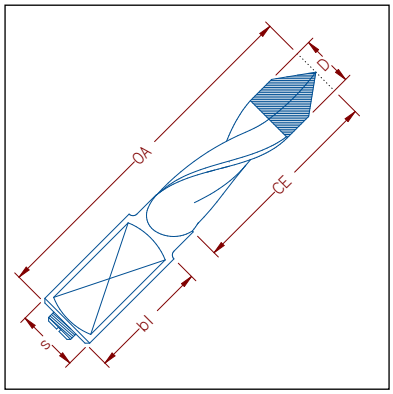
PART#	Machine Make
D295.10R	Nottmeyer



PART#	Machine Make
D295.25R	Busellato

PCD Diamond Dowel Drills





Lm Pl Fb Hw Sw Pb

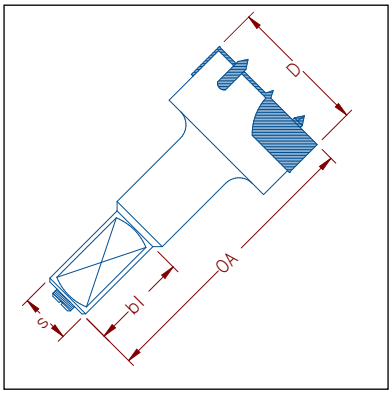
See Material Guide p4

For use on CNC drill banks. Industrial quality PCD diamond dowel drills will outlast conventional drills 50 to 100 times when used in proper applications. Dowel drill style for drilling blind holes in MDF and Solid Wood. Screw in the end for height adjustment, 10mm shank with flat for set screws.

PART# RH	PART# LH	D	b1	s	OA
D100.050R.PCD	*D100.050L.PCD*	5	27	10	57
D100.080R.PCD	*D100.080L.PCD*	8	27	10	57

PCD Diamond Hinge Hole Drills





Lm Pl Fb Hw Sw Pb

See Material Guide p4

For use on CNC drill banks. Industrial quality PCD diamond dowel drills will outlast conventional drills 50 to 100 times when used in proper applications. Hinge style bits for drilling larger diameter blind holes in MDF and Solid Wood. Screw in the end for height adjustment.

D180 = 10mm x 30mm Shank - 57mm Over all Length

PART # RH	PART # LH	D	b1	s	OA
D180.200R.PCD		20	26	10	57
D180.350R.PCD		35	26	10	57

D185 = 10mm x 24mm Shank - 70mm Over all Length

PART# RH	PART # LH	D	b1	s	OA
D185.150R.PCD		15	26	10	70
D185.350R.PCD		35	26	10	70



Rp Fb Hw

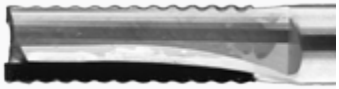
See Material Guide p4

PCD cutting tool provides excellent wear resistance in abrasive materials. Solid carbide body unless indicated.

2 Flute PCD Straight

PART #	DIA	CEL	SHK	OAL
R100-003	1/4	3/4	1/4	2-1/2
R100-004	1/4	3/4	1/4	3
R100-006	3/8	7/8	3/8	3
R100-007	3/8	1-1/8	3/8	3
R100-008	1/2	5/8	1/2	2-1/2
R100-009	1/2	1	1/2	3
R100-009.L	1/2	1	1/2	3
R100-010	1/2	1-3/8	1/2	3-1/2
R100-013•	5/8	1-5/8	5/8	4
R100-019	3/4	3/4	3/4	3-1/2

• Steel Body, L = Left Hand



Rp Hw Fb

See Material Guide p4

PCD cutting tool provides excellent wear resistance in abrasive materials. Serrated cutting edge cuts more freely and reduces de-lamination. Solid carbide body unless indicated.

2 Flute PCD Serrated Tooth

PART #	DIA	CEL	SHK	OAL
R101-004	1/4	3/4	1/4	3
R101-007	3/8	1-1/8	3/8	3
R101-010	1/2	1-3/8	1/2	3-1/2
R101-013•	5/8	1-5/8	5/8	4

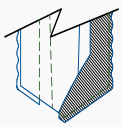
• Steel Body



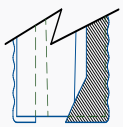
Rp Fb Hp Hw

See Material Guide p4

Serrated tooth design helps cleanly shear glass or carbon fibers in composites. Solid carbide body unless indicated.



Drill Point



End Mill

3 Flute PCD Reinforced Plastic

PART #	DIA	CEL	SHK	OAL	END
R103-004	3/8	1-1/8	3/8	3	Drill Point
R103-007	1/2	1-1/8	1/2	3	Drill Point
R103-008	1/2	1-3/8	1/2	3-7/8	Drill Point
R103-010	1/2	1-5/8	1/2	3-1/2	Drill Point
R103-013•	5/8	1-7/8	5/8	4	Drill Point
R103-004EM	3/8	1-1/8	3/8	3	End Mill
R103-007EM	1/2	1-1/8	1/2	3	End Mill
R103-008EM	1/2	1-1/2	1/2	3-7/8	End Mill
R103-010EM	1/2	1-5/8	1/2	3-1/2	End Mill
R103-013EM•	5/8	1-7/8	5/8	4	End Mill

• Steel Body

3 Flute PCD Rougher Finisher



Rp Fb Hw

See Material Guide p4

PART #	DIA	CEL	SHK	OAL
R104-004	3/8	5/8	3/8	3
R104-007	3/8	7/8	3/8	3
R104-010	1/2	5/8	1/2	3
R104-011	1/2	7/8	1/2	3
R104-013	1/2	1-1/4	1/2	3-1/2
R104-016 •	3/4	1-3/8	3/4	4

• Steel Body

Serrated tooth design helps cleanly shear glass or carbon fibers in composites. Finishing wing provides smooth finish. Solid carbide body unless indicated.

2 Flute PCD Ballnose



Rp Fb Hw

See Material Guide p4

PART #	DIA	CEL	SHK	OAL
R109-004	1/4	3/8	1/4	3
R109-007	3/8	1/2	3/8	3
R109-010	1/2	5/8	1/2	3
R109-013 •	5/8	7/8	5/8	3
R109-017 •	3/4	1	3/4	4

•Steel Body

For adding structural rads in pocketing applications. PCD edge provides excellent wear resistance in abrasive material. Solid carbide body unless indicated.

3 Flute PCD Lock Mortise

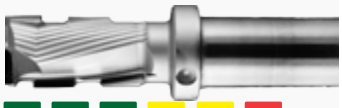


Fb Sw Hw

See Material Guide p4

PART #	DIA	CEL	LOF	SHK	OAL
R230-007	3/4	7/8	4-7/8	3/4	7

Designed for mortising side of doors to hold lock sets. PCD cutting edge for long life in engineered materials. Solid carbide body.



Fb Pl Lm Pb Rp Hw

See Material Guide p4

PCD cutting tool provides excellent wear resistance in abrasive materials. Compression style wings help eliminate chipping and de-lamination.

1+1 Wing PCD "ECODIA" Style

PART #	DIA	CEL	UPCUT	SHK	OAL
ECODIA-00*	3/8	7/8	.250	3/8	2-3/4
ECODIA-01	1/2	1-1/16	.433	1/2	2-3/4
ECODIA-01.S	1/2	1	.433	1/2	2-3/4
ECODIA-01.SM	1/2	15/16	.200	1/2	2-3/4
ECODIA-01L	1/2	1-1/16	.433	1/2	2-3/4
ECODIA-02	1/2	1-3/8	.433	1/2	3-3/4
ECODIA-02L	1/2	1-3/8	.433	1/2	3-3/4
ECODIA-03	5/8	1-1/16	.433	5/8	2-3/4
ECODIA-04	5/8	1-3/8	.433	3/4	4
ECODIA-05	3/4	1-1/16	.433	3/4	3-5/8
ECODIA-06	3/4	1-3/8	.433	3/4	4
ECODIA-07	3/4	1-3/4	.433	3/4	4-3/8
ECODIA-08	3/4	1-7/8	.433	3/4	4-1/2

* Indicates no guarantee against breakage due to small diameter.
L = left hand



Fb Pl Lm Pb Rp Hw

See Material Guide p4

PCD cutting tool provides excellent wear resistance in abrasive materials. Compression style wings help eliminate chipping and de-lamination.

2+2 PCD "ECO-SPARK" Style

PART #	DIA	CEL	UPCUT	SHK	OAL
ECO-SPARK-03	5/8	1-1/8	.290	5/8	3-3/4
ECO-SPARK-04	5/8	1-3/8	.290	5/8	4
ECO-SPARK-05	3/4	1	.290	3/4	3-1/2
ECO-SPARK-06	3/4	1-3/8	.290	3/4	4
ECO-SPARK-07	3/4	1-3/4	.290	3/4	4-3/8

3 Flute PCD "HIFEED" Style

PART #	DIA	CEL	UPCUT	SHK	OAL
DIA-M12.28.3	12mm	26mm	7mm	1/2	3
DIA-HIFEED.01	1/2	1	.290"	1/2	3
DIA-HIFEED.03	5/8	1	.290"	3/4	4
DIA-HIFEED.05	3/4	1-1/8	.290"	3/4	3-3/4
DIA-HIFEED.06	3/4	1-1/4	.290	3/4	4-3/8
DIA-HIFEED.07	3/4	1-7/8	.290"	3/4	4-3/8
DIA-HIFEED.11	1	1-7/8	.290"	1	4-3/8



Rp Fb Lm Pb Hw

See Material Guide p4

PCD cutting tool provides excellent wear resistance in abrasive materials. Compression style wings help eliminate chipping and de-lamination. Complex geometry closely matches 3 wings spiral tools.

2 Flute "HI SHEAR" PCD Routers

PART #	DIA	CEL	UPCUT	SHK	OAL
DIA-RTR-HS16	16mm	24mm	.18mm	1/2	75mm



Rp Fb Lm Pb

See Material Guide p4

PCD cutting tool provides excellent wear resistance in abrasive materials. High Shear up cut and down cut to reduce chipping on delicate paper laminates.

3 Flute "HOGGING" PCD Routers

PART #	DIA	CEL	SHK	OAL
DIA-HIFEED.06RO	3/4	1-3/8	3/4	4
DIA-HIFEED.08RO	3/4	2-1/4	3/4	4-1/4

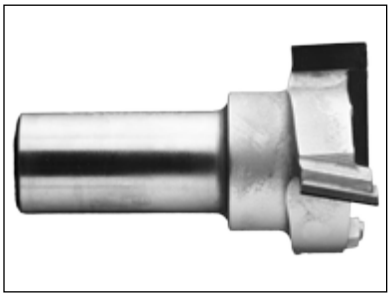


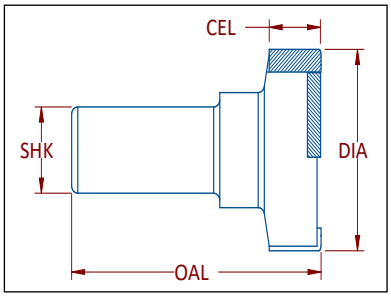
Fb Hw Rp

See Material Guide p4

PCD cutting tool provides excellent wear resistance in abrasive materials. Rougher style suited for hogging solid wood and MDF.

PCD Diamond Pocketing Tool (with plunge)





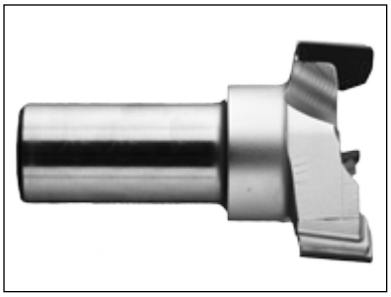
Fb Hp Hw Rp

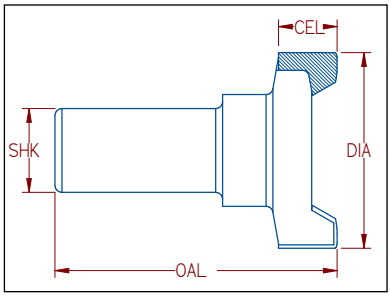
See Material Guide p4

Excellent for pocketing center panel on MDF doors. Unique "LA" grind generates extremely smooth bottom finish to reduce sanding required for before finishing doors. Can also be used to surface or pocket in solid woods and plastics. Center cutting tip allows plunging.

PART#	DIA	CE	SHK	Z	OAL
DIA-RTR.1008	1-1/4	.470"	3/4	3+1	2-3/4
DIA-RTR.2008	1-3/4	1/2	3/4	3+1	2-1/2
DIA-RTR.4002	2	3/4	5/8	3+1	2-5/8

PCD Diamond Pocketing Tool (ramp in)





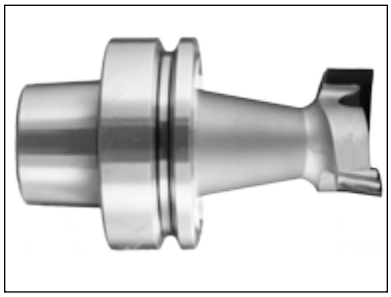
Fb Hp Hw Rp

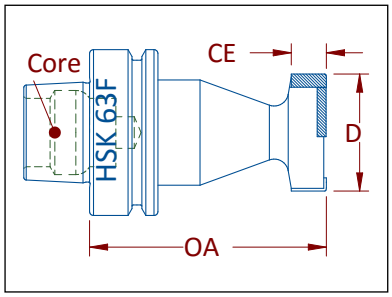
See Material Guide p4

Excellent for pocketing center panel on MDF doors. Unique "LA" grind generates extremely smooth bottom finish to reduce sanding required for before finishing doors. Can also be used to surface or pocket in solid woods and plastics. Tool does not have plunge and must be ramped into material.

PART#	DIA	CE	SHK	Z	OAL
DIA-RTR.2009	1-3/4	1/2	3/4	3	2-1/2
DIA-RTR.4003	2	3/4	5/8	3	2-5/8

PCD Diamond Integrated Pocketing Tool (with plunge)





Fb Hp Hw Rp

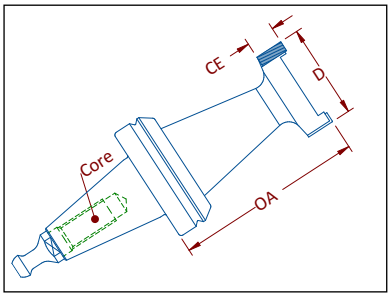
See Material Guide p4

Excellent for pocketing center panel on MDF doors. Unique "LA" grind generates extremely smooth bottom finish to reduce sanding required for before finishing doors. Can also be used to surface or pocket in solid woods and plastics. Center cutting tip allows plunging. Integrated tool design for maximum tool stability and reduced run out.

PART#	D	CE	Core	Z	OA
DIA-RTR.2008.HSK63F	1-3/4	1/2	HSK 63F	3+1	90mm

PCD Diamond Integrated Pocketing Tool (with plunge)





Fb Hp Hw Rp

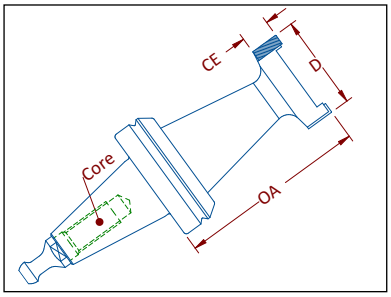
See Material Guide p4

Excellent for pocketing center panel on MDF doors. Unique "LA" grind generates extremely smooth bottom finish to reduce sanding required for before finishing doors. Can also be used to surface or pocket in solid woods and plastics. Center cutting tip allows plunging. Integrated tool design for maximum tool stability and reduced run out.

PART#	D	CE	Core	Z	OA
DIA-RTR.2008.TH30	1-3/4	1/2	Thermwood 30	3+1	3-1/2

PCD Diamond Integrated Pocketing Tool (ramp in)





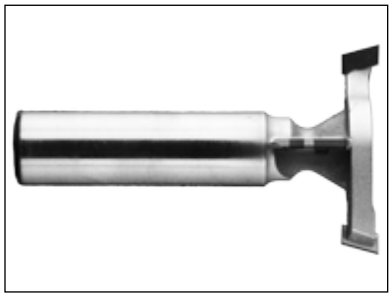
Fb Hp Hw Rp

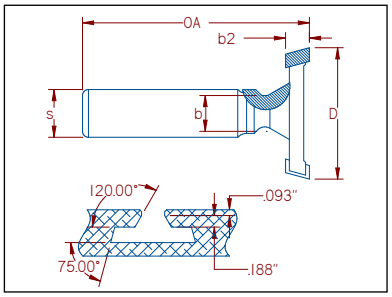
See Material Guide p4

Excellent for pocketing center panel on MDF doors. Unique "LA" grind generates extremely smooth bottom finish to reduce sanding required for before finishing doors. Can also be used to surface or pocket in solid woods and plastics. Tool does not have plunge and must be ramped into material. Integrated tool design for maximum tool stability and reduced run out.

PART#	D	CE	SHK	Z	OA
DIA-RTR.2009.TH30	1-3/4	1/2	Thermwood 30	3	3-1/2

PCD Diamond "T" Slot Router Bit





Fb

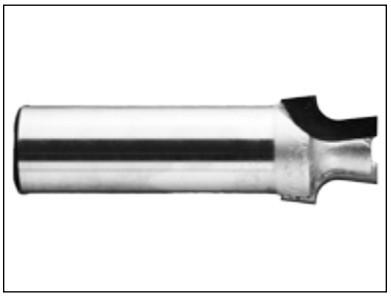
See Material Guide p4

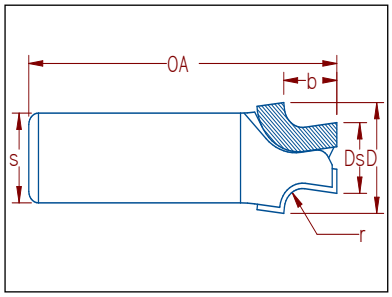
For machining T-slots in MDF. Built to accept standard hanger brackets. Not designed to accept aluminum insert.

PART# RH	PART# LH	D	b1	b2	s	Z	OA
DIA-RTR.1447	DIA-RTR.1447L	1-3/8	3/8	1/4	1/2	2+1	2-3/8

L = Left Hand Rotation

PCD Diamond CNC Dovetail Tool





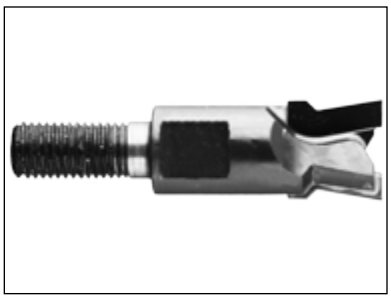
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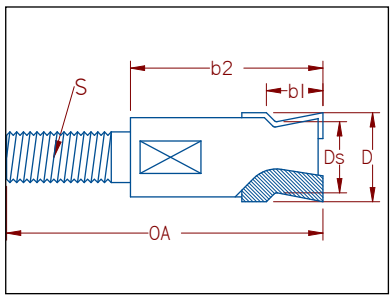
See Material Guide p4

Dovetail tool allows dovetail boxes to be used on CNC machines. For use with material thicknesses of 3/8" to 1/2". Mating dovetail joint is cut with 1/4" straight spiral.

PART#	DIA	Ds	b	r	s	OA
DIA-RTR.DT10	15.7mm	.470"	3/4	3+1	2-3/4	2

PCD Diamond Dodds Dovetail Tool





Fb Pl Hw Hp

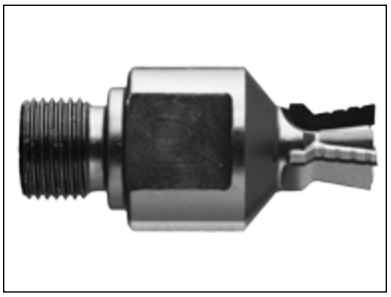
See Material Guide p4

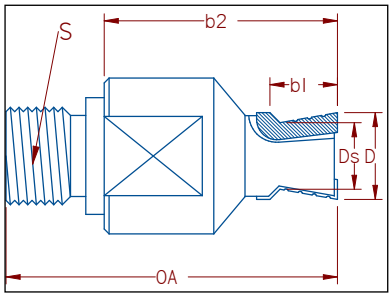
Dovetail tool for Dodds dovetail machines. Diamond cutting edge provides 50-100 times the life in MDF, Plywood, and most hardwoods.

PART# RH	PART# LH	D	Ds	b1	b2	s	OA
DIA-RTR.DTD.312R	DIA-RTR.DTD.312L	14mm	11mm	0.349"	1.157"	5/16"-24	2
DIA-RTR.DTD.375R	DIA-RTR.DTD.375L	14mm	11mm	0.418"	1.250"	5/16"-24	2

R = Right Hand Rotation, L = Left Hand Rotation,

PCD Diamond MJ Dovetail Tool





Fb Pl Hw Hp

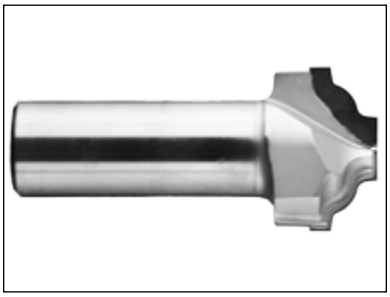
See Material Guide p4

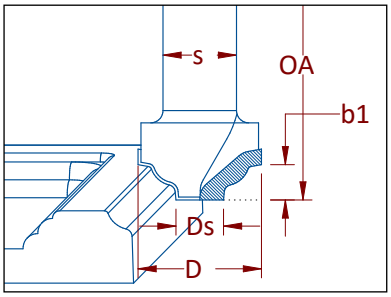
Dovetail tool for Mereen Johnson dovetail machines. Diamond cutting edge provides 50-100 times the life in MDF, Plywood, and most hardwoods. Unique chipbreaker design helps reduce tearing in plywoods.

PART#	PART#	D	Ds	b1	b2	s	OA
DIA-RTR.DTD.4213R	DIA-RTR.DTD.4213L	0.557"	0.427"	11mm	38mm	5/8"-24	2-1/8

R = Right Hand Rotation, L = Left Hand Rotation

PCD Diamond “16C” MDF Door Bit





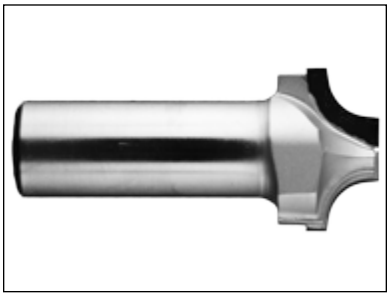
Fb Hw Hp Rp

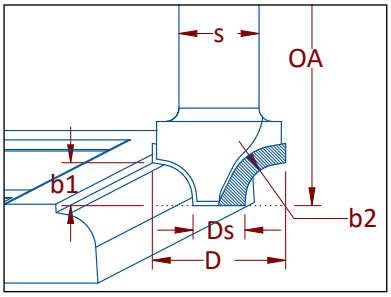
See Material Guide p4

PCD Diamond router bit for applying a decorative edge to MDF Doors. PCD will outlast carbide 50 to 100 times on MDF when care is taken.

PART#	D	Ds	b1	s	Z	OA
DIA-RTR.16C	1.260”	1/2	.355”	3/4	2	2-3/4

PCD Diamond “16D” MDF Door Bit





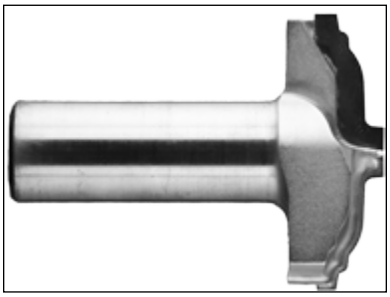
Fb Hw Hp Rp

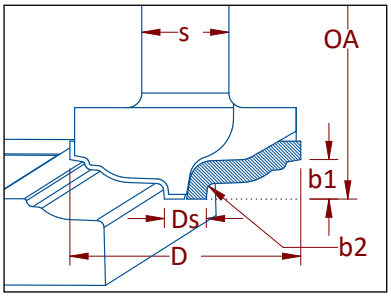
See Material Guide p4

PCD Diamond router bit for applying a decorative edge to MDF Doors. PCD will outlast carbide 50 to 100 times on MDF when care is taken.

PART#	D	Ds	b1	s	Z	OA
DIA-RTR.16D	1.248”	1/2	.402”	3/4	2	2-3/4

PCD Diamond “16E” MDF Door Bit





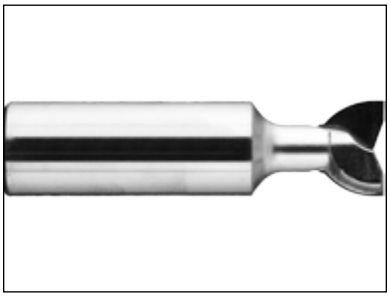
Fb Hw Hp Rp

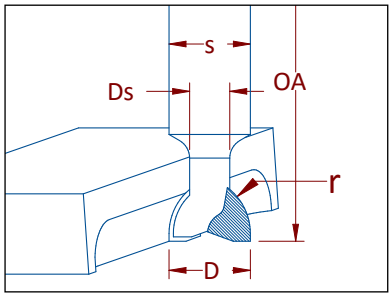
See Material Guide p4

PCD Diamond router bit for applying a decorative edge to MDF Doors. PCD will outlast carbide 50 to 100 times on MDF when care is taken.

PART#	D	Ds	b1	s	Z	OA
DIA-RTR.016E	1.988”	.375”	.320”	3/4	2	2-3/4

PCD Diamond “16F” MDF Door Bit





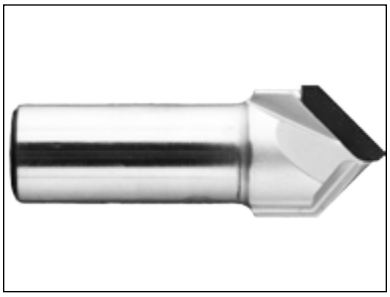
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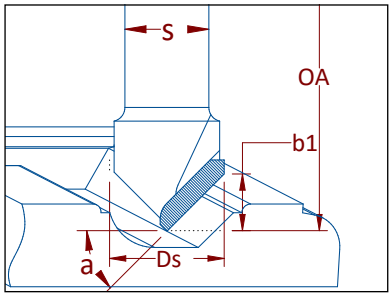
See Material Guide p4

PCD Diamond router bit for routing finger pull groove in cabinet Doors. PCD will outlast carbide 50 to 100 times on MDF when care is taken.

PART#	D	Ds	r	s	Z	OA
DIA-RTR.016F	3/4	.370”	.531”	3/4	2	3

PCD Diamond “26A” MDF Door Bit





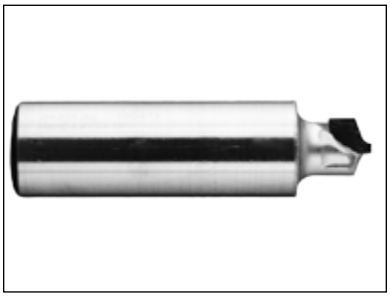
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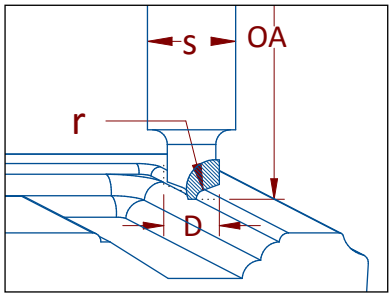
See Material Guide p4

PCD Diamond router bit for applying a decorative inside profile to MDF Doors. PCD will outlast carbide 50 to 100 times on MDF when care is taken.

PART#	D	b1	a	s	Z	OA
DIA-RTR.26A	26mm	13mm	45°	3/4	1	2-3/4

PCD Diamond “26B” MDF Door Bit





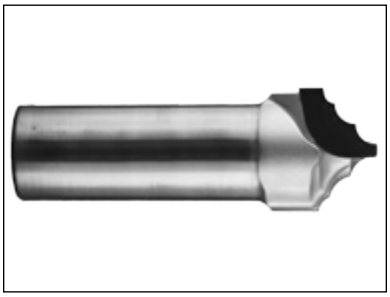
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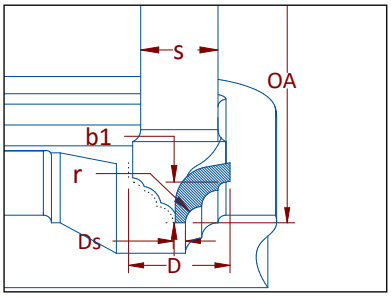
See Material Guide p4

PCD Diamond router bit for applying a decorative inside profile to MDF Doors. PCD will outlast carbide 50 to 100 times on MDF when care is taken.

PART#	D	r	s	Z	OA
DIA-RTR.26B	12mm	2mm	3/4	1	2-3/4

PCD Diamond “26C” MDF Door Bit





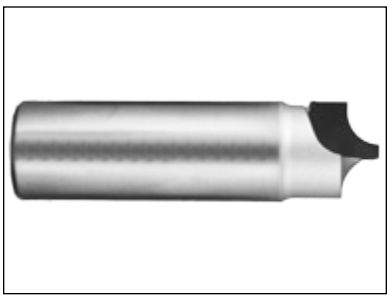
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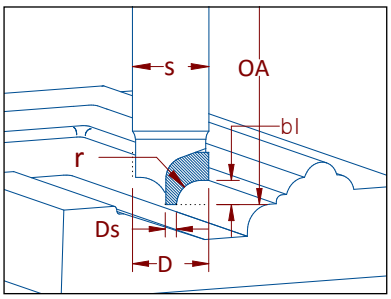
See Material Guide p4

PCD Diamond router bit for applying a decorative inside profile to MDF Doors. PCD will outlast carbide 50 to 100 times on MDF when care is taken.

PART#	D	Ds	b1	r	s	Z	OA
DIA-RTR.26C	25mm	3mm	10mm	4mm	3/4	1	2-3/4

PCD Diamond “26D” MDF Door Bit





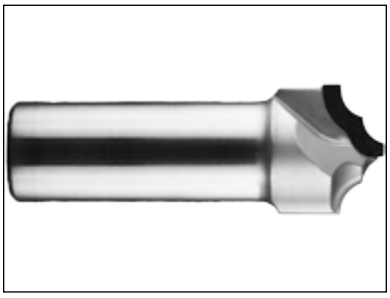
Fb Hw Hp Rp

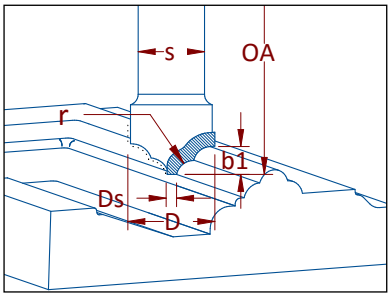
See Material Guide p4

PCD Diamond router bit for applying a decorative inside profile to MDF Doors. PCD will outlast carbide 50 to 100 times on MDF when care is taken.

PART#	D	Ds	r	b1	s	Z	OA
DIA-RTR.26D	19mm	3mm	6.1mm	6mm	3/4	1	2-5/8

PCD Diamond “26E” MDF Door Bit





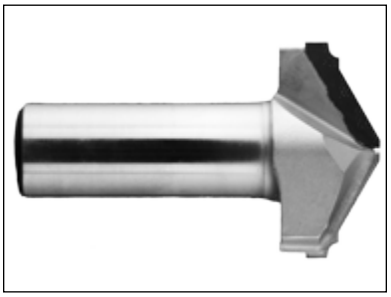
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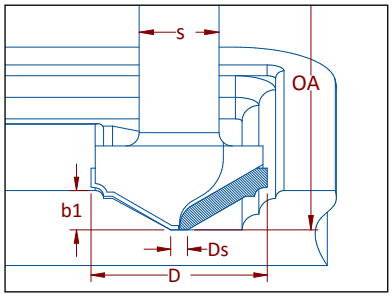
See Material Guide p4

PCD Diamond router bit for applying a decorative inside profile to MDF Doors. PCD will outlast carbide 50 to 100 times on MDF when care is taken.

PART#	D	Ds	b1	r	s	Z	OA
DIA-RTR.26E	25mm	3mm	8mm	5mm	3/4	1	2-3/4

PCD Diamond “40A” MDF Door Bit





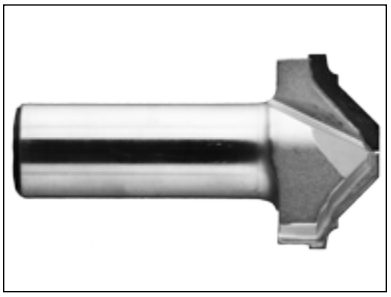
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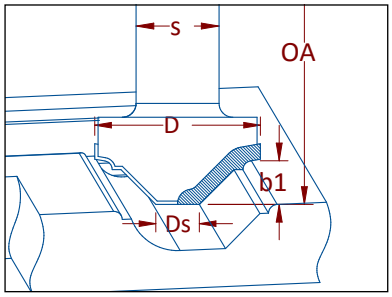
See Material Guide p4

PCD Diamond router bit for applying a decorative raised panel profile to MDF Doors. PCD will outlast carbide 50 to 100 times on MDF when care is taken.

PART#	D	Ds	b1	s	Z	OA
DIA-RTR.40A	42mm	4mm	10mm	3/4	2	2-3/4

PCD Diamond “40B” MDF Door Bit





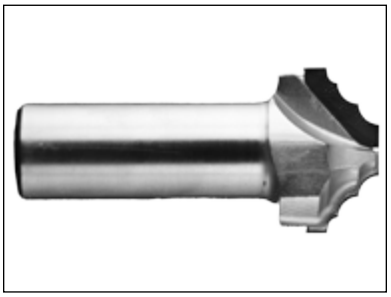
Fb Hw Hp Rp

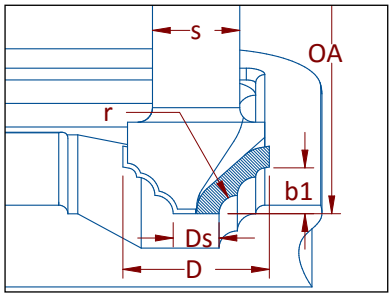
See Material Guide p4

PCD Diamond router bit for applying a decorative raised panel profile to MDF Doors. PCD will outlast carbide 50 to 100 times on MDF when care is taken.

PART#	D	Ds	b1	s	Z	OA
DIA-RTR.40B	38mm	.369”	10mm	3/4	2	2-3/4

PCD Diamond “40C” MDF Door Bit





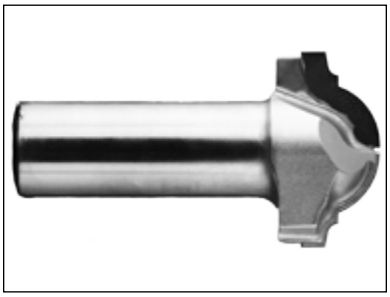
Fb Hw Hp Rp

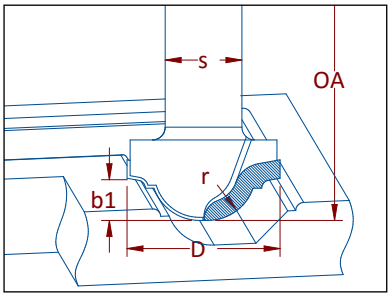
See Material Guide p4

PCD Diamond router bit for applying a decorative inside profile to MDF Doors. PCD will outlast carbide 50 to 100 times on MDF when care is taken.

PART#	D	Ds	b1	r	s	Z	OA
DIA-RTR.40C	32mm	10mm	10mm	4mm	3/4	2	2-3/4

PCD Diamond “40D” MDF Door Bit





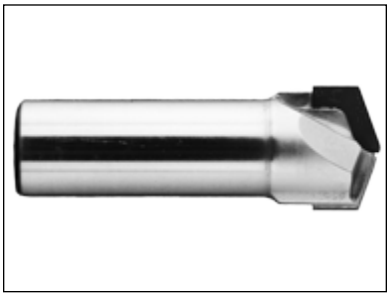
Fb Hw Hp Rp

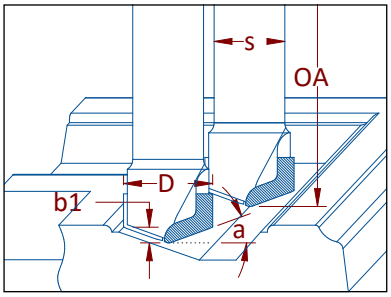
See Material Guide p4

PCD Diamond router bit for applying a decorative raised panel profile to MDF Doors. PCD will outlast carbide 50 to 100 times on MDF when care is taken.

PART#	D	b1	r	s	Z	OA
DIA-RTR.40D	38mm	10mm	12mm	3/4	2	2-3/4

PCD Diamond “40E” MDF Door Bit





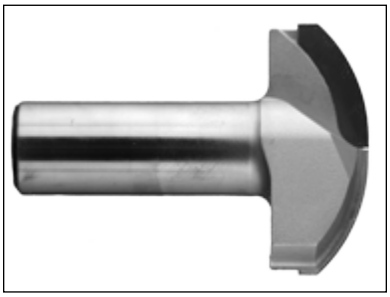
Fb Hw Hp Rp

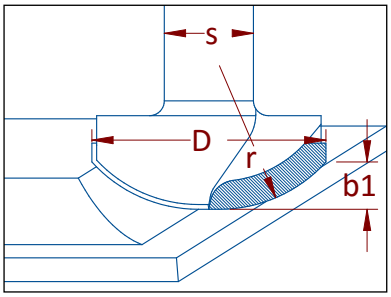
See Material Guide p4

PCD Diamond router bit for applying a decorative raised panel profile to MDF Doors. PCD will outlast carbide 50 to 100 times on MDF when care is taken.

PART#	D	a	b1	s	Z	OA
DIA-RTR.40E	24mm	20°	4mm	3/4	2	2-3/4

PCD Diamond “50A” MDF Door Bit





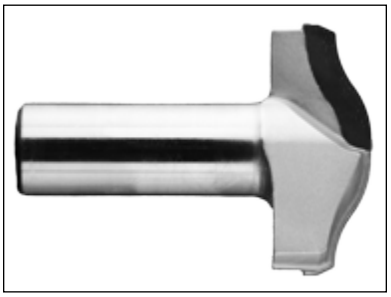
Fb Hw Hp Rp

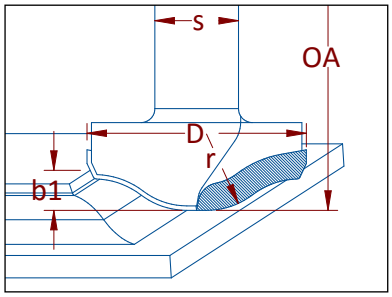
See Material Guide p4

PCD Diamond router bit for applying a decorative raised panel profile to MDF Doors. PCD will outlast carbide 50 to 100 times on MDF when care is taken.

PART#	D	b1	r	s	Z	OA
DIA-RTR.50A	50mm	10mm	30.7mm	3/4	2	2-3/4

PCD Diamond “50B” MDF Door Bit





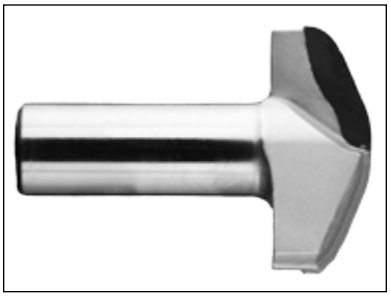
Fb Hw Hp Rp

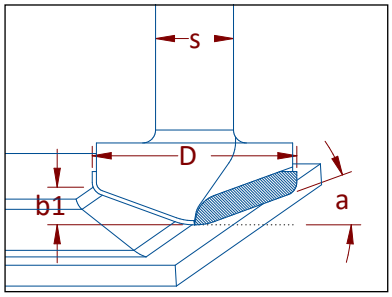
See Material Guide p4

PCD Diamond router bit for applying a decorative raised panel profile to MDF Doors. PCD will outlast carbide 50 to 100 times on MDF when care is taken.

PART#	D	b1	r	s	Z	OA
DIA-RTR.50B	50mm	10mm	17.4mm	3/4	2	2-3/4

PCD Diamond “50C” MDF Door Bit





Fb Hw Hp Rp

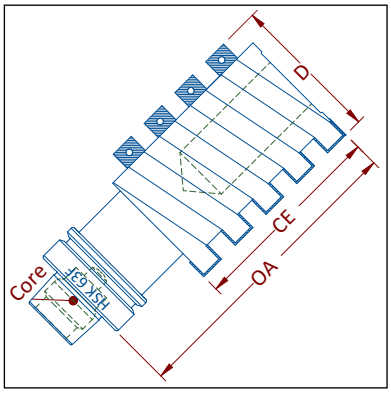
See Material Guide p4

PCD Diamond router bit for applying a decorative raised panel profile to MDF Doors. PCD will outlast carbide 50 to 100 times on MDF when care is taken.

PART#	D	b1	a	s	Z	OA
DIA-RTR.50C	50mm	10mm	20°	3/4	2	2-3/4

Insert Hogging "510HI" Integrated Tool





Hw Sw Fb Hp

See Material Guide p4

Best suited for hogging solid wood on CNC routers. Inserts can be rotated when dull, tool has spurs to allow rebating. Reduce cycle times by utilizing the high removal rates. Integrated tool design for maximum tool strength and reduced run out.

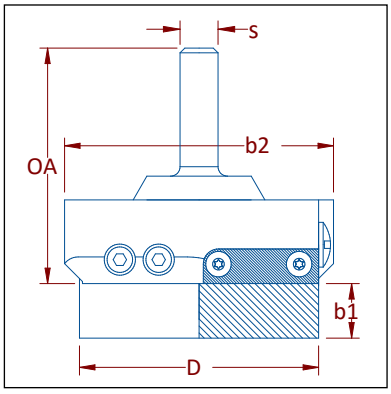
PART#	D	CE	Core	Z	OA
510HI-090.120.63F2	90mm	120mm	HSK63F	2+2+2	180mm

Replacement Parts

PART#	Description
590-0150	Insert Knives
581-26800-12	Gibs
580.HC-M5016	Gib Screws
592-1414	Spur Knives
580.CST-M4067.TX	Spur Screws

Insert Multi-Profile "560RT" Rosette Tool





Fb Hw Sw

See Material Guide p4

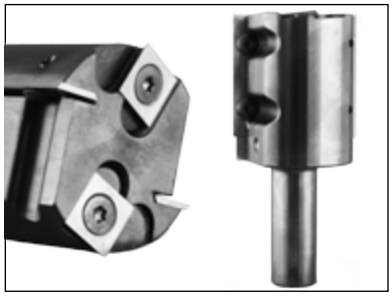
Replacement insert rosette tool. Solid carbide knives for extended life. Hard anodized backers for extra durability. Knives and backers can be profiled to any profile that fits within the area shown. If a new profile is required simply replace the backers and knives.

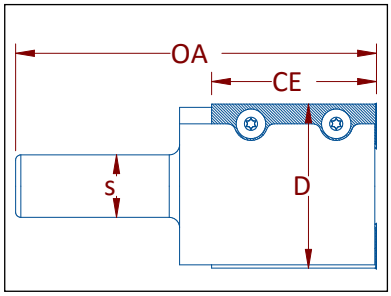
PART#	D	b1	b2	s	Z	OA
560RT.080-02W	80mm	18mm	90mm	1/2	1	79mm

Replacement Parts

PART#	Description
580.RH-M3505.9A	Knife Screws
580.HC-M5010	Backer Screws
580-M5016.CAP	Stop Screws

Insert Rebate CNC Router Bit





Hw Sw Fb Hp

See Material Guide p4

Turn over knife (TOK) insert router bit. Reversible knives have 2 cutting edges. Good for producing rebates in solid wood, suitable for cutting MDF and some plastics. 2 spurs on the bottom of the tool for improved bottom cutting.

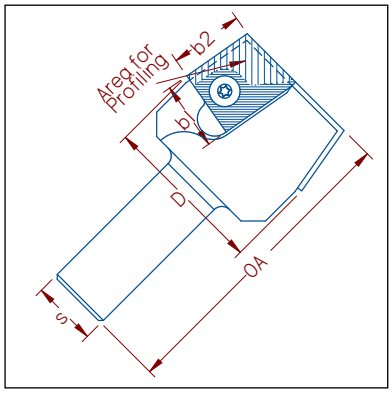
PART#	D	CE	s	Z	OA
561.050.050	50mm	10mm	3/4	2 + 2	2-3/4

Replacement Parts

PART#	Description
590-0500	50mm main turn over knives
580.RH-M3505.9	Screws for above 50mm knives
592-1414	14 x 14 Bottom spurs
580.CST-M4067.TX	Screws for above 14mm spurs

Insert Blank “Semi-Stock” Insert Bit “562B”





Fb Hw Hp Rp

See Material Guide p4

1 and 2 wing insert router bits that have a generic un-profiled body. Insert tool can be profiled to your specifications for quicker delivery.

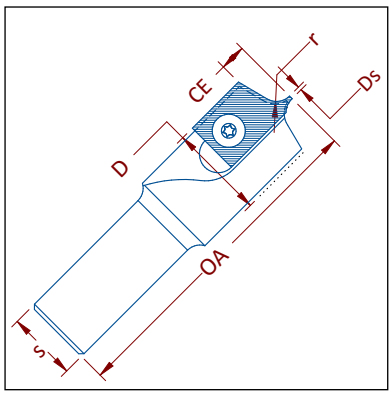
Replacement Parts

PART#	Description
580.RH-M3505.9	Knife Screws

PART#	D	b1	b2	s	Z	OA
562B.026-1W	26mm	15mm	25mm	3/4	1	3-1/2
564B.040-2W	48mm	20mm	21mm	3/4	2	3-1/2
564B.050-2W	58mm	20mm	20mm	3/4	2	3-1/2

Insert Radius Profile Router Bit “562R1”





Fb Hw Hp Rp

See Material Guide p4

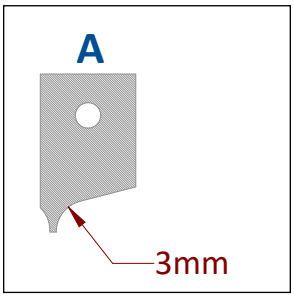
Tool is used primarily when manufacturing MDF door profiles. Single steel body can hold multiple knives shown below. Tool body comes standard with “A” knives installed. Optional knives are shown below.

Replacement Parts

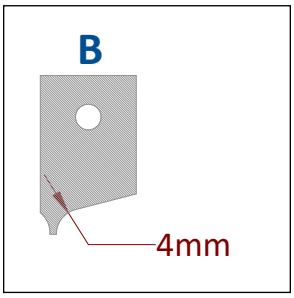
PART#	Description
580.RH-M3505.9	Knife Screws

PART#	D	Ds	CE	r	s	Z	OA
562R1.026-1W	26mm	1mm	7mm	5mm	3/4	2 + 2	2-3/4

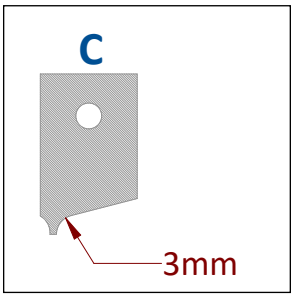
Tool body comes installed with “A” knife



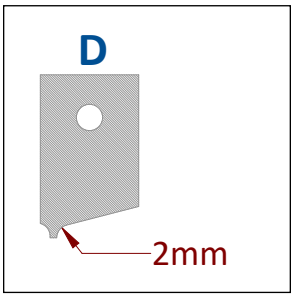
PART#
158-562R1.026-1W-A



PART#
158-562R1.026-1W-B



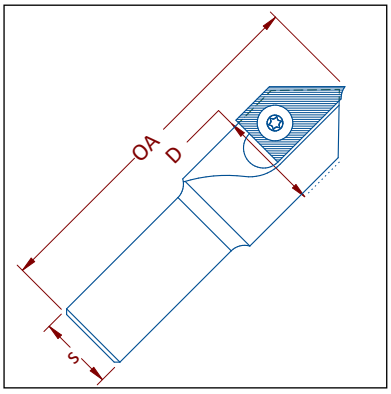
PART#
158-562R1.026-1W-C



PART#
158-562R1.026-1W-D

Insert Corner Clean out Profile Router Bit “562SC”





Fb Hw Hp Rp

See Material Guide p4

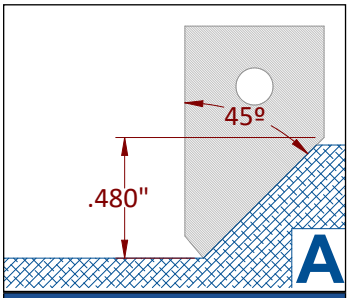
Tool is used primarily when manufacturing MDF door profiles. Single steel body can hold multiple knives shown below. Tool body comes standard with “A” knives installed. Optional knives are shown below.

PART#	D	s	Z	OA
562SC.026-1W	26mm	3/4	1	2-3/4

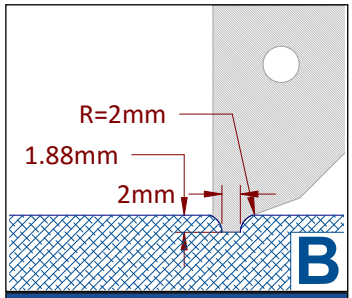
Tool body comes installed with “A” knife

Replacement Parts

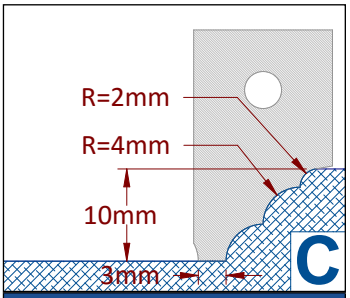
PART#	Description
580.RH-M3505.9	Knife Screws



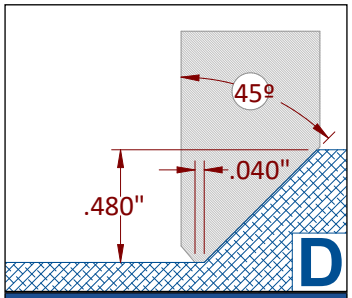
PART# 158-562SC.026-1W-A



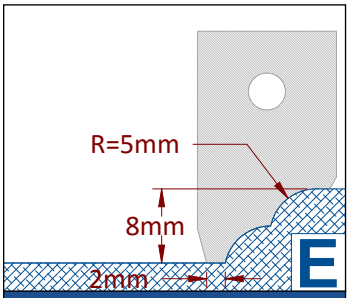
PART# 158-562SC.026-1W-B



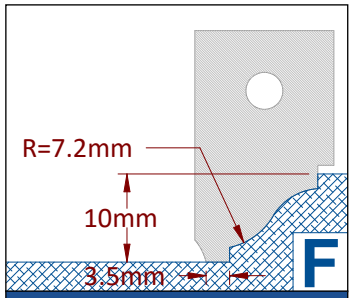
PART# 158-562SC.026-1W-C



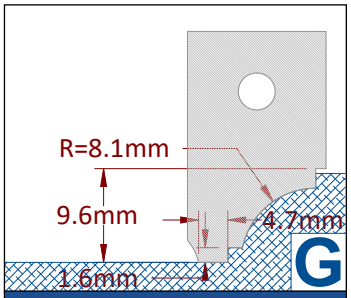
PART# 158-562SC.026-1W-D



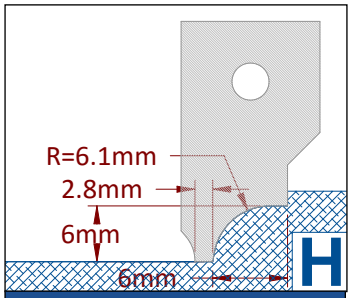
PART# 158-562SC.026-1W-E



PART# 158-562SC.026-1W-F



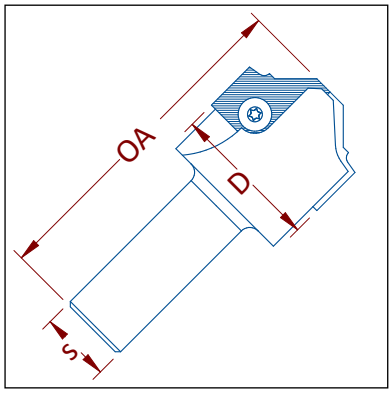
PART# 158-562SC.026-1W-G



PART# 158-562SC.026-1W-H

Insert Inside Profile Router Bit “564IP”





Fb Hw Hp Rp

See Material Guide p4

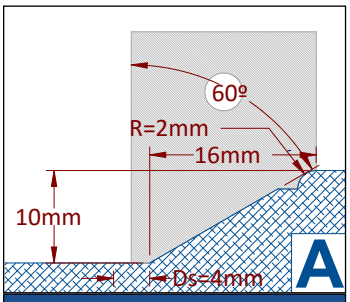
Tool is used primarily when manufacturing MDF door profiles. Single steel body can hold multiple knives shown below. Tool body comes standard with “A” knives installed. Optional knives are shown below.

PART#	D	s	Z	OA
564IP.040-2W	40mm	3/4	2	3-1/2

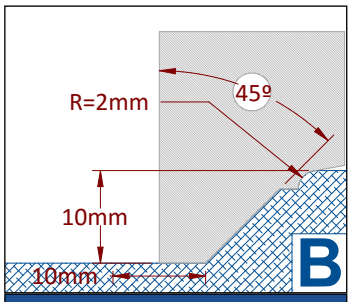
Tool body comes installed with “A” knife

Replacement Parts

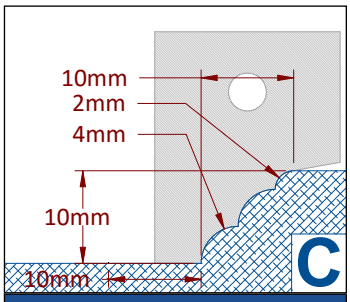
PART#	Description
580.RH-M3505.9	Knife Screws



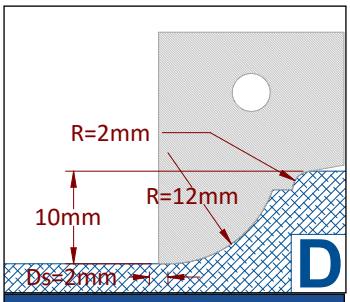
PART#
158-564IP.040-2W-A



PART#
158-564IP.040-2W-B



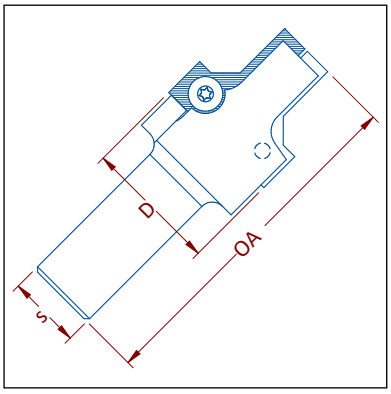
PART#
158-564IP.040-2W-C



PART#
158-564IP.040-2W-D

Outside Edge Profile Router Bit “5640P”





Fb Hw Hp Rp

See Material Guide p4

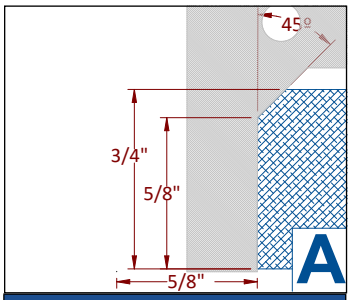
Tool is used primarily when manufacturing MDF door profiles. Single steel body can hold multiple knives shown below. Tool body comes standard with “A” knives installed. Optional knives are shown below.

PART#	D	s	Z	OA
5640P.016-2W	35mm	3/4	2	3-1/2

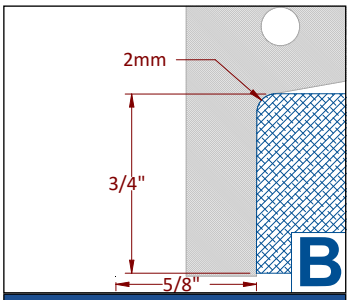
Tool body comes installed with “A” knife

Replacement Parts

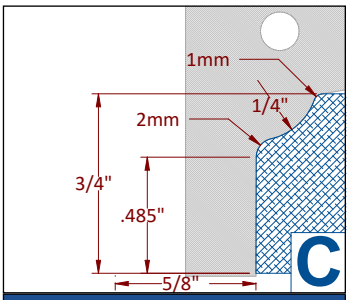
PART#	Description
580.RH-M3505.9	Knife Screws



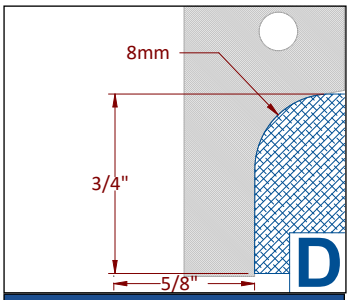
PART#
158-5640P.016-2W-A



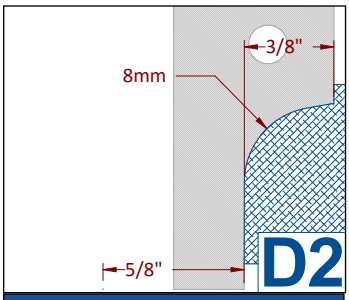
PART#
158-5640P.016-2W-B



PART#
158-5640P.016-2W-C



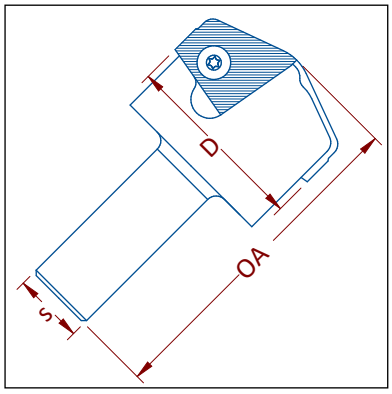
PART#
158-5640P.016-2W-D



PART#
158-5640P.016-2W-D2

Insert Panel and Outside Router Bit “564RP”





Fb Hw Hp Rp

See Material Guide p4

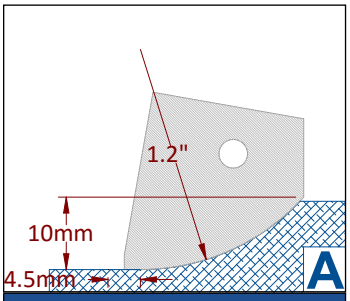
Tool is used primarily when manufacturing MDF door profiles. Single steel body can hold multiple knives shown below. Tool body standard with “A” knives installed. Optional knives are shown below.

PART#	D	s	Z	OA
564RP.050-2W	50mm	3/4	2	3-1/2

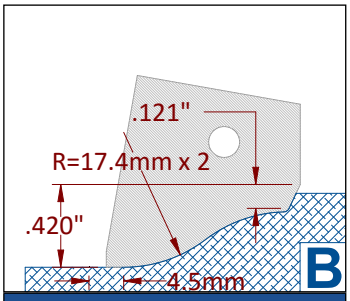
Tool body comes installed with “A” knife

Replacement Parts

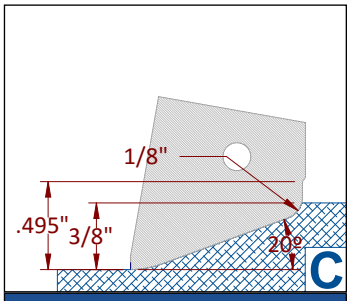
PART#	Description
580.RH-M3505.9	Knife Screws



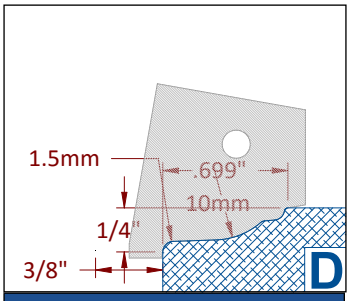
PART#
158-564RP.040-2W-A



PART#
158-564RP.040-2W-B



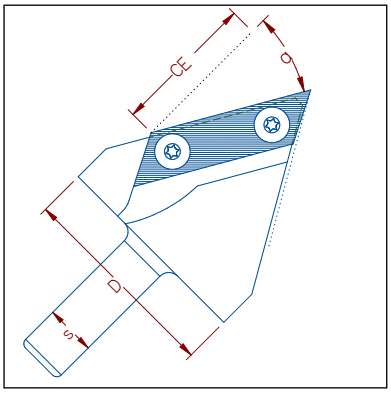
PART#
158-564RP.040-2W-C



PART#
158-564RP.040-2W-D

"V" Groove Router Bits "563V"





Fb Hw Hp Rp

See Material Guide p4

1 and 2 wing insert router with varying cutting angles. Great for doing folding applications on CNC routers in Solid Wood, MDF and Particle Board. 44.75° tool designed to produce 90° corner with a tight close on outside.

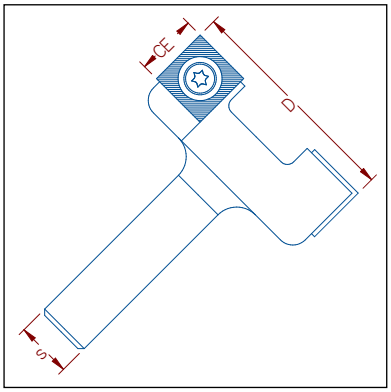
Replacement Parts

PART#	Description
580.RH-M3505.9	Knife Screws

PART#	D	CE	a	s	Z	Knife#
563-V23.060	35mm	1.675"	22.50°	1/2	1	595V-6012R
563-V30.050	52mm	1.420"	30.00°	1/2	1	595V-5012R
563-V45.030	40mm	0.800"	45.00°	1/2	1	595V-3012R
563-V45.050	75mm	1.360"	45.00°	3/4	1	595V-5012R
563-V46.030	40mm	0.800"	44.75°	1/2	1	595V-3012R
563-V46.050	75mm	1.350"	44.75°	3/4	1	595V-5012R
563.V60.030	57mm	0.560"	60.00°	1/2	1	595V-3012R
563-V60.050	90mm	0.960"	60.00°	3/4	1	595V-5012R
563-V65.050	95mm	0.810"	65.00°	3/4	1	595V-5012R
563-V75.030	62mm	0.305"	75.00°	1/2	2	590-0300
563-V75.050	100mm	0.500"	75.00°	3/4	2	590-0500

Spoil Board Insert Surfacing Router Bits "563S"





Fb Hw Hp Rp

See Material Guide p4

Insert surfacing router bits ideal for surfacing table boards and spoil boards on CNC nested based routers. Can be used for pocketing as well. Part numbers with "S" have 8° Upshear.

Replacement Parts

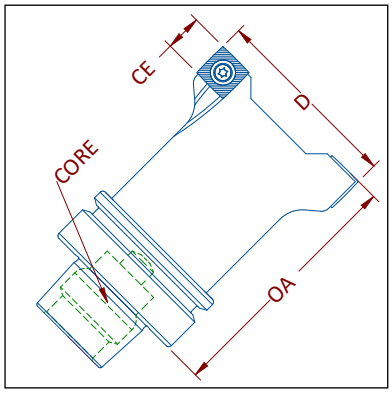
PART#	Description
580.CST-M4067.TX	Knife Screws
592-1414	Knives

PART#	D	CE	s	Z
563S.048.14-753S	1-7/8	.551"	3/4	3
563S.050.14-502	2	.551"	1/2	2
563S.065.14-502S	2-1/2	.551"	1/2	2
563S.100.14-753	4	.551"	3/4	3
563S.100.14-753S	4	.551"	3/4	3

S = 8° Up Shear

Insert Integrated Surfacing Tool “563SI”





Fb Hw Hp Rp

See Material Guide p4

Insert router bit designed for surfacing and pocketing applications. “Integrated” tool design eliminates any run out and deflection generated by collet interface. Extremely rigid tool has radius inserts for improved bottom finish.

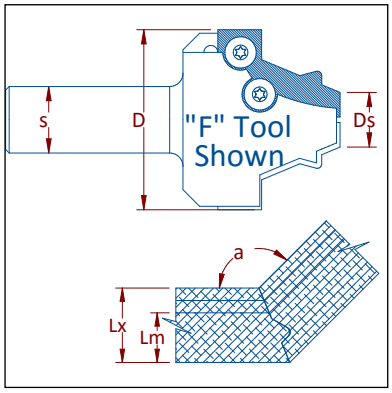
Replacement Parts

PART#	Description
580.CST-M4067.TX	Knife Screws
592-0007	Knives

PART#	D	CE	CORE	OA	Z
563SI.075.14-63F3	3	.551”	HSK63F	100mm	3
563SI.100.14-63F3	4	.590”	HSK63F	100mm	3

Insert Lock Mitre Router Tools “564LM”





Fb Hw Hp Rp

See Material Guide p4

Insert router bit designed machining lock mitre. Great for range hoods or posts, 2 separate tools create joints that can be assembled together. Locking joint helps align edges and create a stronger joint.

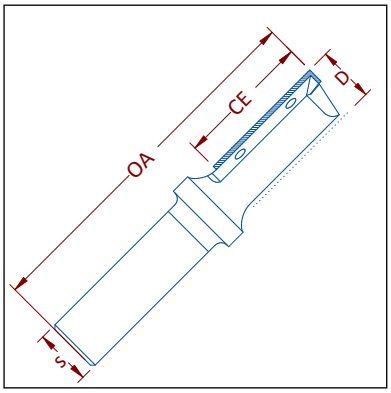
Replacement Parts

PART#	Description
580.RH-M3505.9	Knife Screws

PART#	D	Ds	Lx	Lm	s	a	OA	Z	Knife
564LM.050-023F	2	0.617”	13/16”	1/2”	3/4”	135°	3-3/4	2	158-564LM.050-023F
564LM.050-023M	2	0.617”	13/16”	1/2”	3/4”	135°	3-3/4	2	158-564LM.050-023M
564LM.050-045F	2.4”	1/2	13/16”	1/2”	3/4”	90°	3-3/4	2	158-564LM.050-045F
564LM.050-045M	2.4”	1/2	13/16”	1/2”	3/4”	90°	3-3/4	2	158-564LM.050-045M

Insert Small Diameter Router Bit "565"





Hw Sw Fb Pb Hp Sp

See Material Guide p4

Insert router bit with unique gib design to create a stronger tool at smaller diameters. Knives can be rotated once for a new cutting edge.

Replacement Parts

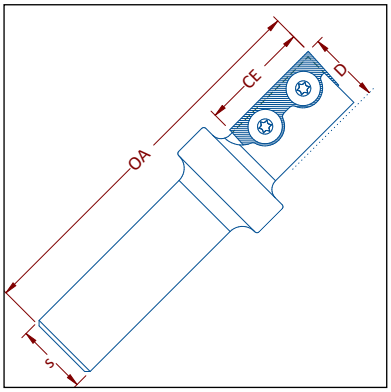
PART#	Description
580.RH-M3007	Knife Screws

PART#	D	CE	s	OA	Z	Knife
565.012.030L	1/2	30mm	1/2	3-1/8	1	595R-3055
565.012.030R	1/2	30mm	1/2	3-1/8	1	595L-3055

L = Left Hand, R = Right Hand

Insert Single Flute Router Bit "566"





Hw Sw Fb Pb Hp Sp

See Material Guide p4

Single flute insert router bit. Knives can be rotated once for a new cutting edge. Good general purpose tool, tool does not have to be re measured after knife changes.

Replacement Parts

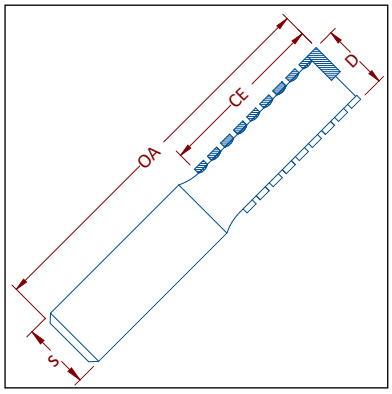
PART#	Description
580.RH-M3505.9	Knife Screws

PART#	D	CE	s	OA	Z	Knife
566-016.030	16mm	30mm	1/2	3-3/8	1	595-3090R
566-016.0502	16mm	50mm	5/8	4-1/2	1	595-5090R
566.019.030R	3/4	30mm	3/4	4	1	595-3012R
566.019.050L	3/4	50mm	3/4	4-3/4	1	595-5012L
566.019.050R	3/4	50mm	3/4	4-3/4	1	595-5012R

L = Left Hand, R = Right Hand

Insert Hogging Rougher Router Bit “567”





Hw Sw Fb Pb

See Material Guide p4

Hogging rouging tool for CNC routers. Cutting pins break up the cutting edge for lower amperage when cutting thru dense hardwoods.

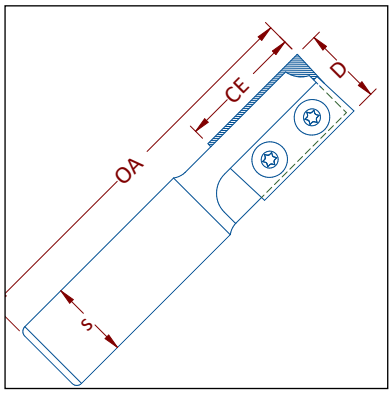
PART#	D	CE	s	OA	Z
567.019.048	3/4	60mm	3/4	4-5/8	1+1+1

Replacement Parts

PART#	Description
580.CST-M3055.TX	Knife Screws
595C-10050-0	Straight Cutting Inserts
595C-10050-R	Plunge Tip

Insert Double Flute Router Bit “568”





Hw Sw Fb Pb Hp Sp

See Material Guide p4

Double flute insert router bit. Knives can be rotated once for a new cutting edge. Good general purpose tool, tool does not have to be re measured after knife changes. Tools that are 5/8” diameter are held with screws from the back of the knife.

Replacement Parts

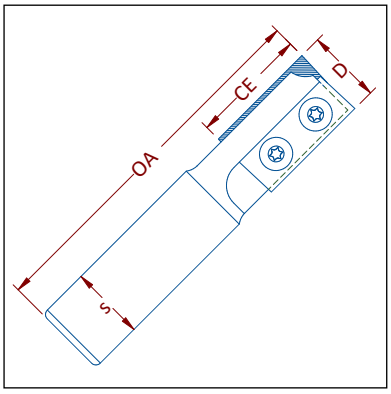
PART#	Description
580.RH-M3505.9	Knife Screws

PART#	D	CE	s	OA	Z	Knife
568.16.030*	5/8	30mm	5/8	3-1/2	2	595-3090R
568.19.030	3/4	30mm	3/4	3-5/8	2	595-3012R
568.19.030L	3/4	30mm	3/4	3-5/8	2	595-3012L
568.19.040	3/4	40mm	3/4	4	2	595-4012R
568.19.050	3/4	50mm	3/4	4-3/8	2	595-5012R
568.19.050-LH	3/4	50mm	3/4	4-3/8	2	595-5012L
568.019.060	3/4	60mm	3/4	4-3/4	2	595-6012R
568.25.030	1	30mm	3/4	3-1/2	2	595-3012R
568.25.050	1	50mm	3/4	4-3/8	2	595-5012R
568.25.050-LH	1	50mm	3/4	4-3/8	2	595-5012L

* Uses knife screw # 580.RH-M3505.6
L & LH = Left Hand

Insert Single Flute Router Bit “566”





Hw Sw Fb Pb Hp Sp

See Material Guide p4

Single flute insert router bit. Knives can be rotated once for a new cutting edge. Good general purpose tool, tool does not have to be re measured after knife change. Tool has plunge point to allow straight plunging. 3/4” tools and under have knives held with screws on the back.

PART#	D	CE	s	OA	Z	Knife
569.16.030-1/2	5/8	30mm	1/2	3-1/2	1	591-3090R
569.19.030	3/4	30mm	3/4	3-1/2	1	591-3012
569.19.030-LH	3/4	30mm	3/4	3-1/2	1	591-3012L
569.19.050	3/4	55mm	3/4	4-1/2	1+1	591-3012
569.25.050	1	55mm	3/4	4-3/4	1+1	591-3012

LH = Left Hand

Replacement Parts

PART#	Description
580.RH-M3505.9	Knife Screws
580.RH-M3506.3	Plunge Screws
590-0075	Plunge Knife

Explanation of Toolholders

Every tool holder is made up of 3 main parts as outlined below. Depending on the machine interface, the retention knob may or may not be needed. Royce Ayr strives to carry and stay up to date with the most common ones, however numerous combinations are available.

Retention Knob (Pull Stud)

This is the device that the spindle "fingers" will actually clamp down on to hold the taper tight in the spindle. These are not needed in HSK tapers.



Machine Interface

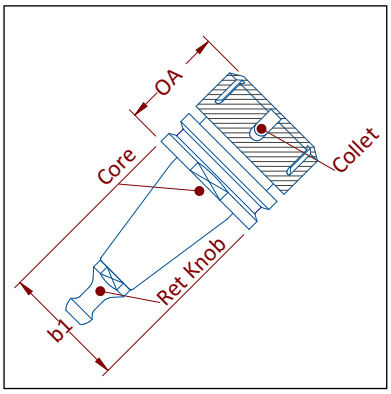
Also dependant on the machine make, these can vary from HSK63F, Thermwood 30, HSK63A, ISO30, and BT30 are just a few.

Tool Interface

The tool holder interface is what fastens the tool into the tool holder. Many different interfaces exsist, but the main ones listed from the most rigid to least rigid are... Monobody Tool, Shrink Fit, Hydraulic, and Conventioal collet.

Precision ISO30 Tool Holders for CNC Machines





Na

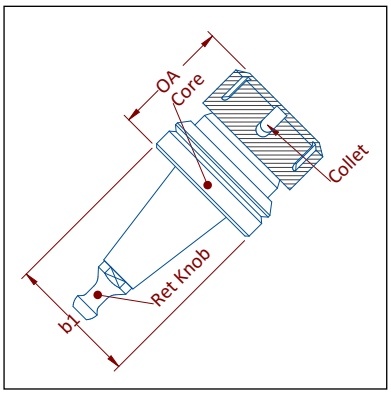
See Material Guide p4

High precision tool holders for a variety of different CNC machines. Tool holder includes nut but does not include collet. Fits most common CNC machines, including AXYZ, Biesse, MultiCam and more. Retention knob for HSD spindle comes included with holder.

PART#	b1	OA	Core	Collet	Ret Knob
PRC-225-50.R BIESSE	50mm	42mm	ISO 30	ER32	HSD Spindle

Tool Holders for Thermwood 30 taper Machines





Na

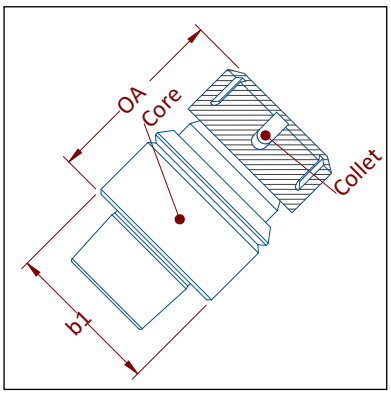
See Material Guide p4

High precision tool holders for Thermwood CNC machines with 30 taper. Tool holder includes nut but does not include collet. Retention knob for HSD spindle comes included with holder.

PART#	b1	OA	Core	Collet	Ret Knob
PRC-225-50.R THERMWD	2-1/4	2	Thermwood 30	ER32	HSK Spindle

Tool Holders for Thermwood HSK Machines





Na

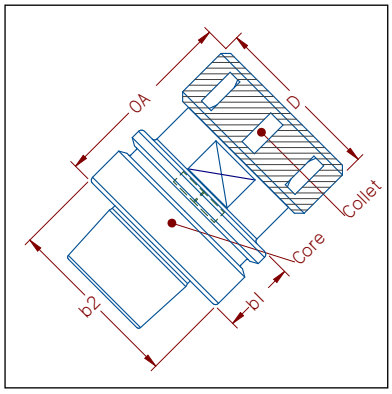
See Material Guide p4

High precision tool holders designed to fit on Thermwood CNC machines with the HSK63 taper. Tool holders include nut. Collets are sold separately.

PART#	b1	OA	Collet	Core
PRC-HSK63TH-ER32	2-1/4	2-5/8	ER32	HSK-Thermwood

Precision HSK63F Tool Holders for CNC Machines





Na

See Material Guide p4

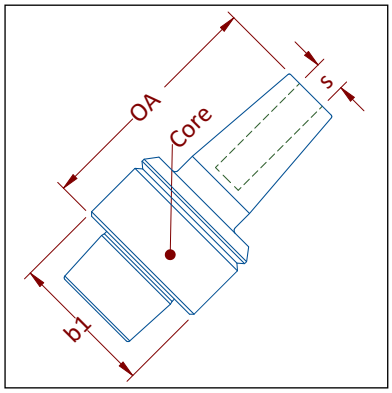
High precision tool holders for a variety of different CNC machines. Tool holders include nut but do not include collet.

PART#	D	OA	b1	b2	Core	Collet	Nut
PRC-HSK63F-16(ER32)	50mm	73mm	26mm	63mm	HSK63F	ER32	Coated
PRC-HSK63F-16(ER32)L	50mm	73mm	26mm	63mm	HSK63F	ER32	Coated
PRC-HSK63F-16(ER40)	63mm	77mm	26mm	63mm	HSK63F	ER40	Coated
PRC-HSK63F-20 LH	63mm	77mm	26mm	63mm	HSK63F	ER40	Coated
PRC-HSK63F-38 (ORT25)	58mm	73mm	26mm	63mm	HSK63F	ORT25 (SYOZ25)	Bearing
PRC-HSK63F-38L (ORT25)	58mm	73mm	26mm	63mm	HSK63F	ORT25 (SYOZ25)	Bearing

LH & L = Left Hand

Shrink Fit Holders with Thermwood 63 Taper





Na

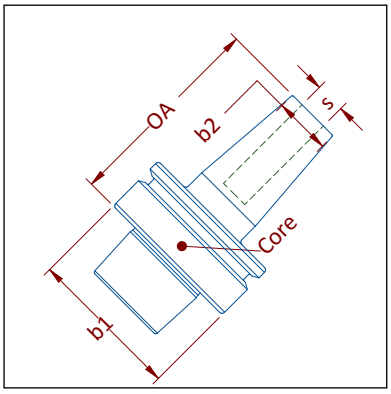
See Material Guide p4

Shrink fit tool holders designed to fit on Thermwood CNC machines with the HSK63 taper. Shrink fit provides superior clamping pressure and minimizes tool run out and vibration. Tool must be installed and removed using special heat shrink equipment.

PART#	s	OA	b1	Core
PRC-HSK-THERMWOOD-50	1/2	3-3/4	2-1/4	63 Thermwood
PRC-HSK-THERMWOOD-75	3/4	3-3/4	2-1/4	63 Thermwood

Shrink Fit Tool Holders HSK63F for CNC Routers





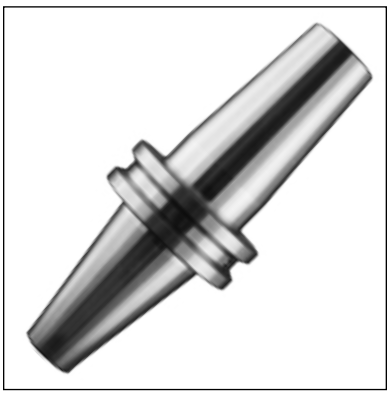
Na

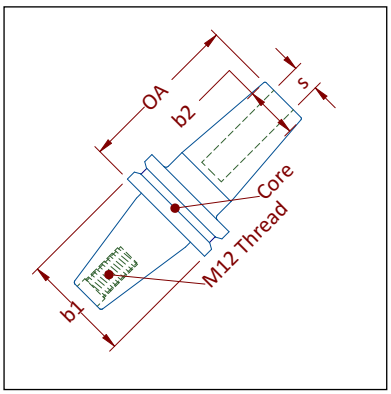
See Material Guide p4

Shrink fit tool holders designed to fit on variety of CNC machines with the HSK63F taper. Shrink fit provides superior clamping pressure and minimizes tool run out and vibration. Tool must be installed and removed using special heat shrink equipment.

PART#	s	b1	b2	OA	Core
PRC-SHRINK-HSK.1/4	1/4	63mm	0.71"	80mm	HSK63F
PRC-SHRINK-HSK.3/8	3/8	63mm	0.94"	95mm	HSK63F
PRC-SHRINK-HSK.1/2	1/2	63mm	1.10"	95mm	HSK63F
PRC-SHRINK-HSK.5/8	5/8	63mm	1.06"	95mm	HSK63F
PRC-SHRINK-HSK.3/4	3/4	63mm	1.26"	100mm	HSK63F
PRC-SHRINK-HSK.1	1	63mm	1.42"	115mm	HSK63F

Shrink Fit Tool Holders ISO30 for CNC Routers





Na

See Material Guide p4

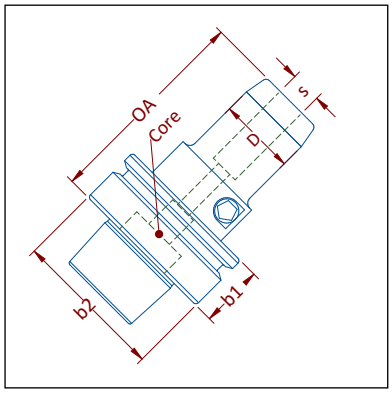
Shrink fit tool holders designed to fit on variety of CNC machines with the HSK63F taper. Shrink fit provides superior clamping pressure and minimizes tool run out and vibration. Tool must be installed and removed using special heat shrink equipment.

RETENTION KNOB NOT INCLUDED

PART#	s	b1	b2	OA	Core
PRC-SHRINK-ISO.1/4	1/4"	50mm	18mm	80mm	ISO30
PRC-SHRINK-ISO.3/8	3/8"	50mm	24mm	80mm	ISO30
PRC-SHRINK-ISO.1/2	1/2"	50mm	28mm	80mm	ISO30
PRC-SHRINK-ISO.5/8	5/8"	50mm	28mm	80mm	ISO30
PRC-SHRINK-ISO.3/4	3/4"	50mm	41mm	80mm	ISO30

Hydraulic Tool Holders for CNC Machines





Na

See Material Guide p4

High precision hydraulic tool holders for a variety of different CNC machines. Hydraulic tool holders provide more rigidity and improved accuracy over conventional collet. Can provide up to 25% increase in tool life in optimum applications.

Imperial Sizes

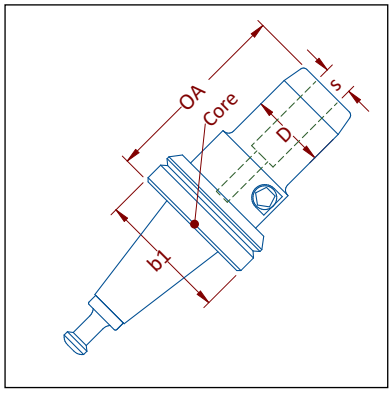
PART#	s	D	OA	b1	b2	Core
PRC-ETP.G2-3/8-HSK36F	3/8	32mm	43mm	26mm	63mm	HSK63F
PRC-ETP.G2-1/2-HSK36F	1/2	32mm	43mm	26mm	63mm	HSK63F
PRC-ETP.G2-5/8-HSK36F	5/8	38mm	43mm	26mm	63mm	HSK63F
PRC-ETP.G2-3/4-HSK36F	3/4	40mm	55mm	26mm	63mm	HSK63F
PRC-ETP.G2-1-HSK36F	1	45mm	59mm	26mm	63mm	HSK63F

Metric Sizes

PART#	s	D	OA	b1	b2	Core
PRC-ETP.G2-12-HSK36F	12mm	32mm	43mm	26mm	63mm	HSK63F
PRC-ETP.G2-20-HSK36F	20mm	40mm	55mm	26mm	63mm	HSK63F
PRC-ETP.G2-25-HSK36F	25mm	45mm	59mm	26mm	63mm	HSK63F

Hydraulic Tool Holders for Thermwood Machines





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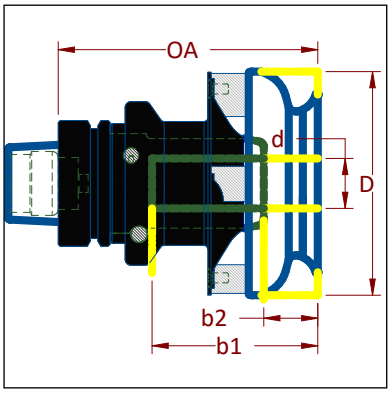
See Material Guide p4

High precision hydraulic tool holders for Thermwood machines with 30 taper. Comes with Retention knob for HSD spindle. Hydraulic tool holders provide more rigidity and improved accuracy over conventional collet. Can provide up to 25% increase in tool life in optimum applications.

PART#	s	D	OA	b1	Core
PRC-ETP.G2T-3/8-TH30	3/8	32mm	3-1/4	2-1/4	TH30
PRC-ETP.G2T-1/2-TH30	1/2	32mm	3-1/4	2-1/4	TH30
PRC-ETP.G2T-3/4-TH30	3/4	40mm	3-3/4	2-1/4	TH30
PRC-ETP.G2T-SET-TH30	Includes PRC-ETP.G2T-1/2-TH30, PRC-ETP.G2T-3/4-TH30, & reduction sleeves for 3/8", and 1/4" shank				

TurboTec Dust Extraction Unit





Na **TurboTec**

See Material Guide p4

Turbotec dust extraction unit. Can be run on a variety of CNC machines. Hydraulic core can accept multiple tools and provides increased rigidity and accuracy for longer tool life.

PART#	D	d	b1	b2	OA
PRC-TURBO080-3/8	80mm	3/8	57mm	17mm	103.5mm
PRC-TURBO080-1/2	80mm	1/2	57mm	17mm	103.5mm
PRC-TURBO112-3/8	112mm	3/8	57mm	17mm	103.5mm
PRC-TURBO112-1/2	112mm	1/2	57mm	17mm	103.5mm
PRC-TURBO112-3/4	112mm	3/4	80mm	27.5mm	126mm
PRC-TURBO112-1	112mm	1	83mm	27.5mm	130mm

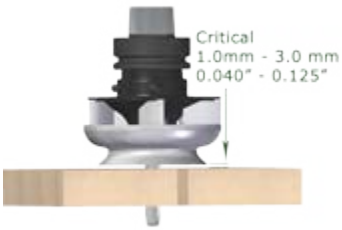
Critical Considerations when Running TurboTec



Due to the large diameter of the unit care must be taken to avoid collisions in tool carisol.



Large amounts of air being moved by the Turbotec can create excess noise levels.



In order to maximize the amount of dust collected the Turbotec should be run 1-3mm above the material



Small or inadequately held parts may be picked up by the Turbotec causing damage to the unit.



Tool Setting Guide Included

Tool Length Selection Guide

		5/8" (16mm) shank and lower		3/4" (20mm) shank and higher	
Depth of Cut		Tool Overall Length		Tool Overall Length	
mm	Inch	Min	Max	Min	Max
6.35	1/4	2	2-1/2	2-3/8	3-1/2
9.50	3/8	2	2-5/8	2-1/2	3-1/2
12.70	1/2	2-1/8	2-3/4	2-5/8	3-3/4
15.88	5/8	2-3/8	3	2-3/4	3-7/8
19.05	3/4	2-1/2	3	2-7/8	4
22.23	7/8	2-1/2	3-1/8	3	4-1/8
25.40	1	2-5/8	3-1/4	3	4-1/4

Replacement Collet Nuts



Na

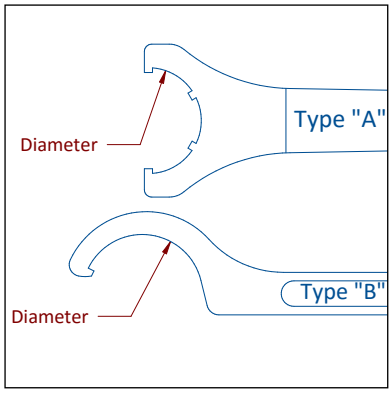
See Material Guide p4

Replacement collet nut for common toolholders. Most common type is a coated collet nut. Coated collet nuts reduce friction and allow for greater tightening forces. Bearing nuts have even less friction to allow for even higher tightening forces.

PART#	Collet	Type	Rotation
PRC-475.ER32.C	ER32	Coated	Righ Hand
PRC-475.ER40.C	ER40	Coated	Righ Hand
PRC-475.SY0Z25.C	SY0Z25 (ORT25)	Coated	Righ Hand
PRC-475.SY0Z25.B	SY0Z25 (ORT25)	Bearing	Righ Hand

Spanner Wrenches for Toolholders





Na

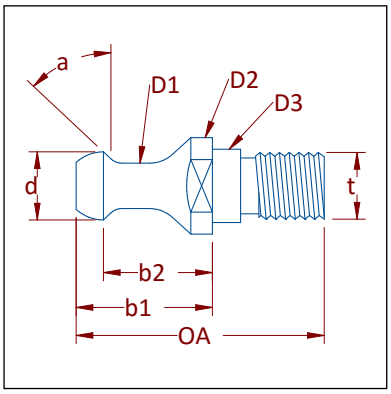
See Material Guide p4

Spanner wrenches for tightening various collets.

PART#	Collet	Overall	Diameter	Type
PRC-500.ER32	ER32	9-3/4”	2”	A
PRC-500.ER40	ER40	11”	2-1/2”	A
PRC-500.SY0Z25	SY0Z25 (ORT25)	9-1/2”	2-3/8”	B

Retention Knobs for Toolholders





Na

See Material Guide p4

Retention knobs, or pull studs. Each retention knob is unique to a specific make of spindle.

PART#	OA	t	d	a	b1	b2	D1	D2	D3
PRC-425.HSD	44mm	m12	12mm	Radius	23.9mm	20mm	8mm	17mm	13mm
PRC-425.COLUM	44mm	m12	13mm	15°	24mm	19mm	9mm	17mm	13mm

Precision SYOZ Collet



Na

See Material Guide p4

All collets conform to DIN 6388 standards. Collet should be snapped into the nut before screwing the nut onto the tool holder.

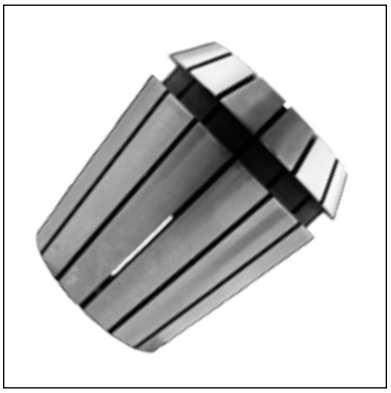
Imperial

SIZE	SYOZ 25
1/8”	PRC-400.0125
3/16”	PRC-400.0188
1/4”	PRC-400.0250
5/16”	PRC-400.0313
3/8”	PRC-400.0375
7/16”	*PRC-400.0438*
1/2”	PRC-400.0500
9/16”	*PRC-400.0563*
5/8”	PRC-400.0625
3/4”	PRC-400.0750
7/8”	*PRC-400.0875*
1”	PRC-400.1000

Metric

SIZE	SYOZ 25
3mm	*PRC-400.M030*
4mm	*PRC-400.M040*
5mm	PRC-400.M050
6mm	PRC-400.M060
8mm	*PRC-400.M080*
9mm	*PRC-400.M090*
10mm	PRC-400.M100
12mm	PRC-400.M120
13mm	*PRC-400.M130*
14mm	*PRC-400.M140*
16mm	PRC-400.M160
19mm	*PRC-400.M190*
20mm	PRC-400.M200
25mm	PRC-400.M250

Precision ER Collet



Na

See Material Guide p4

All collets conform to DIN 6388 standards. Collet should be snapped into the nut before screwing the nut onto the tool holder.

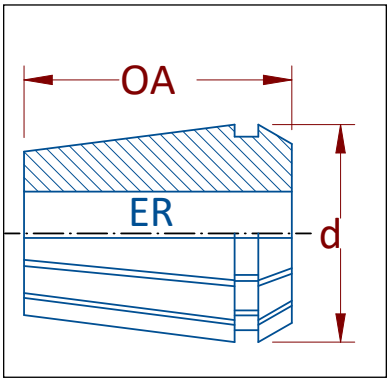
Imperial Sizes

SIZE	ER11	ER16	ER20	ER25	ER32	ER40
1/32"	*PRC-310.0031*					
1/16"	*PRC-310.0063*	PRC-320.0063	PRC-330.0063	*PRC-340.0063*	*PRC-350.0063*	
1/8"	*PRC-310.0125*	PRC-320.0125	PRC-330.0125	PRC-340.0125	PRC-350.0125	PRC-375.0125
3/16"	*PRC-310.0188*	PRC-320.0188	PRC-330.0188	PRC-340.0188	PRC-350.0188	PRC-375.0188
1/4"		PRC-320.0250	PRC-330.0250	PRC-340.0250	PRC-350.0250	PRC-375.0250
5/16"		*PRC-320.0313*	*PRC-330.0313*	PRC-340.0313	PRC-350.0313	PRC-375.0313
3/8"		PRC-320.0375	PRC-330.0375	PRC-340.0375	PRC-350.0375	PRC-375.0375
7/16"			*PRC-330.0438*	*PRC-340.0438*	PRC-350.0438	PRC-375.0438
1/2"			PRC-330.0500	PRC-340.0500	PRC-350.0500	PRC-375.0500
9/16"				*PRC-340.0563*	PRC-350.0563	PRC-375.0563
5/8"				PRC-340.0625	PRC-350.0625	PRC-375.0625
3/4"				*PRC-340.0750*	PRC-350.0750	PRC-375.0750
7/8"						PRC-375.0875
1"						PRC-375.1000

Metric Sizes

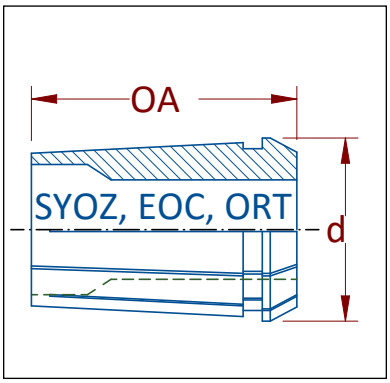
SIZE	ER11	ER16	ER20	ER25	ER32	ER40
3mm	*PRC-310.M030*	*PRC-320.M030*	*PRC-330.M030*	*PRC-340.M030*	PRC-350.M030	
4mm	*PRC-310.M040*	*PRC-320.M040*	*PRC-330.M040*	*PRC-340.M040*	PRC-350.M040	*PRC-375.M040*
6mm	*PRC-310.M060*	*PRC-320.M060*	*PRC-330.M060*	*PRC-340.M060*	PRC-350.M060	*PRC-375.M060*
8mm		*PRC-320.M080*	*PRC-330.M080*	*PRC-340.M080*	*PRC-350.M080*	*PRC-375.M080*
9mm		*PRC-320.M090*	*PRC-330.M090*	*PRC-340.M090*	PRC-350.M090	*PRC-375.M090*
10mm		*PRC-320.M100*	*PRC-330.M100*	*PRC-340.M100*	PRC-350.M100	*PRC-375.M100*
12mm			*PRC-330.M120*	*PRC-340.M120*	PRC-350.M120	*PRC-375.M120*
13mm				*PRC-340.M130*	PRC-350.M130	*PRC-375.M130*
14mm				*PRC-340.M140*	*PRC-350.M140*	*PRC-375.M140*
16mm					PRC-350.M160	*PRC-375.M160*
19mm					*PRC-350.M190*	*PRC-375.M190*
20mm					PRC-350.M200	PRC-375.M200
25mm						PRC-375.M250

Guide for Identifying Collet



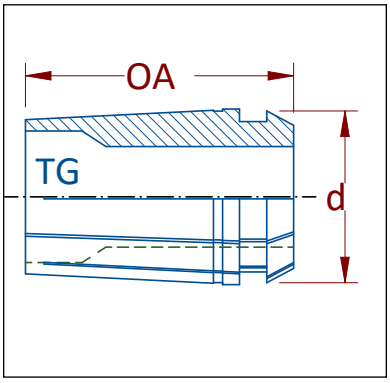
ER Collet

Type	OA	d
ER8	13mm (0.510”)	8.5mm (0.33”)
ER11	18mm (0.708”)	11.5mm (0.45”)
ER16	27.5mm (1.08”)	17mm (0.67”)
ER20	31.5mm (1.24”)	21mm (0.83”)
ER25	34mm (1.34”)	26mm (1.02”)
ER32	40mm (1.57”)	33mm (1.30”)
ER40	46mm (1.81”)	41mm (1.61”)
ER50	52mm (2.05”)	52mm (2.05”)



SYOZ (ORT), EOC

Type	OA	d
EOC8	26mm (1.026”)	14.4mm (0.567”)
SYOZ20 (ORT20)	34mm (1.34”)	20mm (0.780”)
SYOZ25 (ORT25)	52mm (1.57”)	35mm (1.380”)
EOC32	60mm (2.36”)	43.7mm (1.720”)



TG Collet

Type	OA	d
TG75	47mm (1.85”)	8.5mm (0.33”)
TG100	18mm (0.708”)	11.5mm (0.45”)
TG150	27.5mm (1.08”)	17mm (0.67”)

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Didn't find what you are looking for? We can produce a custom tool to meet your needs. Over 30% of our products are custom tooling. One of our sales representatives would be more than happy to discuss your needs, and utilize our experienced technical application specialists. Brazed Carbide, Insertable Carbide or Polycrystalline Diamond (PCD), the proccess is simple.

1) Contact you Royce Ayr represntative to discuss your need.
2) A quotation will be sent as soon as possible for you to review.
2) If the quotation is approved, provide any drawings or samples required for the order.
3) A drawing will be sent within 2-5 business days depending on the complexity.
4) Once drawing is finalized and we have received your approval we will proceed with production.



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Limited Warranty

All items in the Royce Ayr catalogue, unless otherwise noted, are warranted for 90 days against defects in workmanship and materials. Normal wear or misuse of a tool is not covered by this warranty. Merchandise may be returned within the 90 day period to Royce Ayr for assessment and if a defect is found the tool will either be replaced, repaired, or refunded at our discretion. In no way will Royce Ayr be responsible for any incidental or consequential damages resulting from use of our products. Stock items being returned free of defect must be within the 90 day period and may be subject to a 15% restocking fee.

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If you have a problem with an order placed, or with the ordering experience please call us. We want you to be satisfied with our products and services and will do our best possible to make sure that happens.

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