

## Special Tools And Modified Standards

### Tooling

These special tools are designed to produce a complex hole shape in a single pass. They can incorporate as many steps, tapers, radii or contours as necessary. They are manufactured in sizes ranging from less than 1/8 inch in diameter to over four inches. They can usually be produced in either steel or carbide, and may be reground many times for extended service.

### Modified Standard

Standard rotary tools can be customized in a variety of ways to better solve specific cutting applications. Special material removal requirements, nonstandard tooth pitches or cuts; meeting special material requirements or machine speeds . . . special shanks; extra long, threaded, flatted, over or under sized can be supplied. Even flexible shafts for deburring impossible-to-reach surfaces, have been created. Tools that are cataloged only in high speed steel can usually be supplied in carbide or titanium nitride coated, to extend tool life.

Severance has the advanced technology to solve most tooling requirements.

### If It Can Be Machined With A Rotary Tool. Severance Can Provide The Tool To Do It.

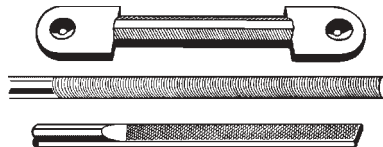
Just send us your customer's special tool problem for prompt engineering analysis, recommendation and quotation via **FAX (989)-777-0602**. We'll respond with a solution that will be cost effective for your customer and profitable for you.

## Some examples of specials and their uses



REF. # 53999

A Special Severance Flex-Shank Midget Mill®. Flexible shanks are used for those hard to reach inside deburring applications. Flex-Shanks are available in several diameters.



REF. # 55375

Special Severance Hand and Die Files. Special files for different customer applications. Available in carbide, high speed steel, diamond (DCF), or borazon (CBN).



REF. # 51916

Special Severance Deburring Tools. Special deburring tool with special cuts to meet customer needs.



REF. # 50766

A Special Severance Radius Countersink. Radius Countersinks are used to round off the edge of holes.



REF. # 55376

Special Severance Stop Countersinks. Special designs such as special number of flutes, special angles, special pilots, and special diameters.



REF. # 55374

Special Severance Chamfering Tools. Special inside and outside chamfering tool that is spring loaded to meet customer requirements.



REF. # 53260

A Special Severance Taper Reamer. Taper reamers for reaming pipe.



REF. # 51564

Here is a special threaded milling cutter.



REF. # 55377

A Special Severance Milling Cutter. Used to mill watchcases and backs without chatter and without collapsing the case is the feat performed by this tool.



REF. # 55378

Severance can do either small or large runs on special tools. Such as these Midget Mills® with a special cut.

**These are considered special items and are not returnable for credit**

## Some examples of specials and their uses



REF. # 55337

This extra large Midget Mill® has a 4" diameter and was 8" long.



REF. # 55338

This special Severance tool was put on the end of a handle and used to change light bulbs in high hard to reach places. Bulb Snatcher.



REF. # 55339

This special Severance Midget Mill® was designed with a guard on each end.



REF. # 55340

This special outside chamfer mill with a guide on it was designed to put a sharp angle on a customers part. Such as grounding rods.



REF. # 55341

These Special Pencil Mills are used for milling teeth on oil and water rotary drilling bits (rock bits).



REF. # 55342

Here is a special piloted counterbore.



REF. # 55343

Here is a special designed piloted milling cutter made for a customers special needs.



REF. # 50766

These Tools are used to deburr holes in automotive crank shafts. These tools can also be made to deburr a variety of hole applications.



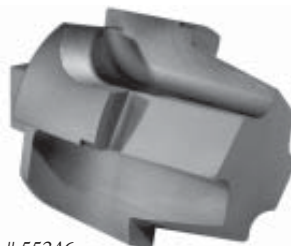
REF. # 55344

This tool was used to polish the inside of the old flash bulb shields on older cameras.



REF. # 55345

This special pipe forming tool was use on the end of a pipe threader to form the end of a certain size pipe.



REF. # 55346

Here is an example of a larger pipe forming cutter like the one seen to the left.



REF. # 55347

This tool was used to radius the corner of a special part, This tool has a ring around the outside so that the cutter will only go so deep and is used as a stop.

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## Some examples of specials and their uses



REF. # 55348

A Special Severance Tough-Sink™. This countersink has 3 flats on the shank to prevent spinning in a drill chuck.



REF. # 55349

Special Severance ball shaped deburring tool.



REF. # 55350

Special Severance chatterless™ ball seat reamers. These tools are used on steering gears, ball pin sockets, fuel injector plungers, valve push rod caps, gear shift lever seats, molds, and many other applications.



REF. # 70502

Special Severance carbide metric chatterless-Countersink™ with a morse taper shank.



REF. # 51926

Special Flute geometry is used on this cutter to cut wafered cardboard.



REF. # 55351

A Special Fish Tail Severance Carbo-Routs™. For drilling and Contouring in fiberglass composite.



REF. # 55396

Severance Wheel Dresser. Used for dressing wheels



REF. # 51213

These special Severance crowning tools are used by the military for guns.

REF. # 55353



REF. # 51342

REF. # 51965

Special Severance Valve Seat Tools. These tools are used to form angles on pressure seating valves. Available in both inside and outside styles.



REF. # 55355

Special Severance carbide and H.S.S. disc and milling cutters can be provided for many applications.



REF. # 55356

Special drill point countersinks can be provided in a variety of angles and sizes.



REF. # 55357

here is an example of a special Severance forming tools. Used to form the mouthpiece on a coronet musical instrument.

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## Some examples of specials and their uses



REF. # 51813

This is a midget mill made with straight teeth and chipbreakers to meet a customers needs. This design was used for surgical.



REF. # 50935

This special surgical burrs were made out of stainless steel for the medical industry.



REF. # 55359

Severance can grind the teeth on customer hip rasps for surgical applications.



REF. # 50656

Special Severance finning cutters are used for deburring in confined areas that are hard to reach.



REF. # 50600

Special grooving tools are available for a variety of grooving applications.



REF. # 55358

Special Severance end mills and counterbores can be supplied. Can be supplied with pilots on the end also.



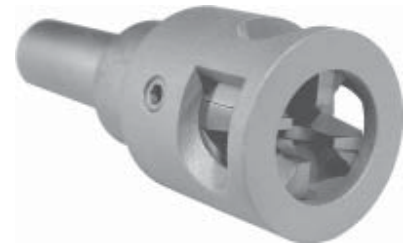
REF. # 55360

Special hole saws can be provided for an array of applications



REF. # 55361

Severance can make special hollow mills to fit customer applications.



REF. # 55362

Here is an example of a special carbide insert rod end forming cutter made by Severance tool to fill a customers needs.



REF. # 54443

This special Severance inside chamfer mill was used for deburring holes on a fiberglass boat.



REF. # 55363

This special cutter was used to cut Jean material for a fabric producer.



REF. # 52210

This tool was made to mill a groove in blocks of brick for kilns. The groove is used for heat coils.

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## Some examples of specials and their uses



REF. # 55365

This is a Wood Burr with a coarse cut, double cut, and a large radius in the bottom of the flutes for removing chips when working on wood.



REF. # 55365

Solid finish ground rod can be ordered special with square unfinished ends with tolerances  $+.0000/-0.0005$ . Used for locating pins and special tools.



REF. # 55366

Solid finish ground rod can be ordered special with split both ends with tolerances  $+.0000/-0.0005$  diameters and split of  $.001/.000$  above centerline. Used for quick custom lathe tools, burring tools, and other types of special tools.



REF. # 55367

This special radius formed milling cutter was used to radius the edge of a customers part.



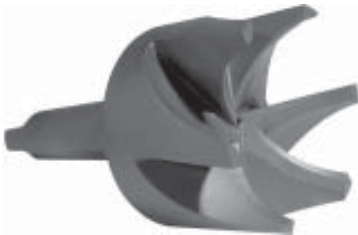
REF. # 55368

Here is another example of a special radius cutter to form a customers part.



REF. # 50530

Here is a special rivet shaver use in the aircraft industry for removing old rivets off aircrafts.



REF. # 53690

This large special end hollow mill was use to form a part for a plastic injection mold machine.



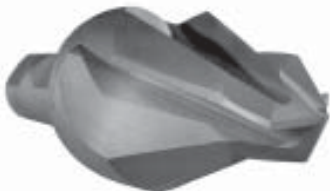
REF. # 50148

This special router-bit was made to put a special form on the edge of a customers part.



REF. # 51585

Slotting cutters can be made in a variety of diameters and widths to fit special needs.



REF. # 55369

Specialty countersinks can be made to do an array of countersinking needs. Can be made for sizing and chamfering special wheel bolt holes and lug nuts.



REF. # 54479

This specialty cutter was used by the military for a special gun lug applications and gun sights. A larger tool was used for cruise control arm lever hole.



REF. # 50661

This is a special spiraled end mill made for the oil drilling Industry.

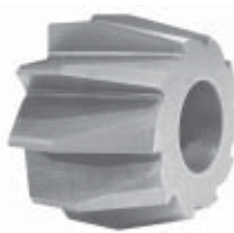
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## Some examples of specials and their uses



REF. # 55370

Special stop-countersinks can be ordered in a variety of diameters, angles, pilot sizes, and thread sizes.



REF. # 52012

Here is a shell mill made by Severance to a customers print.



REF. # 55371

Milling cutters can be made with both special sizes and special flute configurations to meet customers needs,



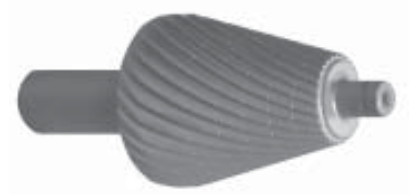
REF. # 53260

Here is an example of a special taper reamers to taper the inside of a hole. Used on spindles and torches.



REF. # 50916

Here is an example of a special router bit with a bearing on the end in a router made for deburring the inside of plastic pipe.



REF. # 50916

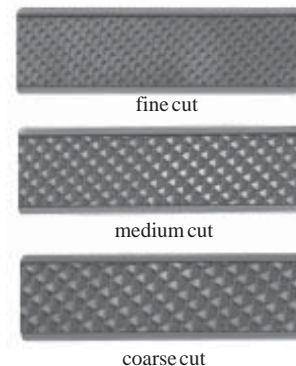
Here is the cutter used in the router to the left. A bearing is put on the end of this cutter to use as a guide. The tool bevels the inside of PVC tubing.

### WB-Wood Burrs™



REF. #54884

Severance Tool developed **WB-Wood Burrs™** that are Midget Mills® made with a special cut for the carving of wood. Different shapes and sizes can be made with this style of cut.



REF. # 53260

Severance has even made float files for equestrian use on horse teeth. The blades go into a float handle to be used to file down uneven horse teeth.



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