

## Severance® REGRIND SERVICES

Severance Tool Industries, Inc. was founded in 1930, as a tool sharpening service for the automotive plants in the Saginaw area. Grinding techniques developed by Mr. Severance proved so successful that his reconditioned tools significantly outperformed the original cutters. After nearly six decades, Severance has become a leading manufacturer of rotary cutting tools, but is still the nation's largest regrinding service.

**EXPERIENCE PAYS ...** The Severance Regrind Department is staffed by the company's most experienced personnel because restoration is a more exacting task than original manufacture. The first challenge is to correctly identify incoming tools as to their brand, size, shape and catalog number (or drawing number in the case of specials). Then, the degree of damage is evaluated for each tool to determine the processing steps needed to restore it to original specifications.

### **ATTENTION TO DETAIL ...**

Severance receives many tools for regrinding that are neither cataloged items (ours or other brands) nor Severance-manufactured specials. If these tools are not accompanied by a description or drawing, they go to our inspection department. Engineering prepares a drawing, based on identifiable dimensions and features of the tool. The customer may be called to resolve any remaining questions. A print is then retained in the incoming inspection file against future appearances of the tool.

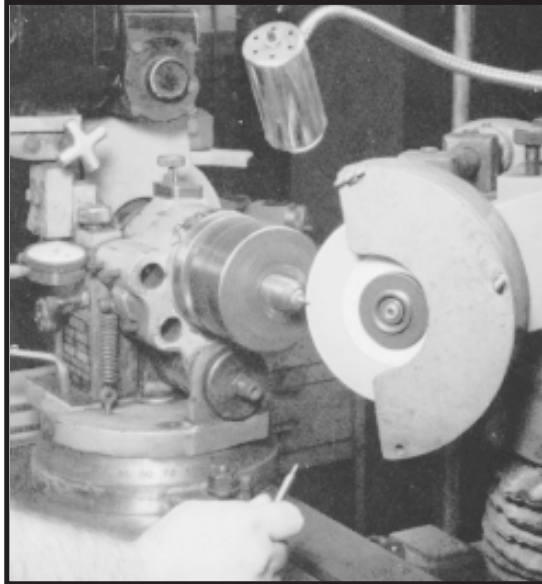
### **ESTABLISHING SHAPE ...**

Tools that need anything more than a light sharpening cut go to the machine grinding department. Here, the basic shape of the tool is re-established by removing enough material to get rid of dull edges and chips. After repeated regrindings, or when major damage is involved, the tool may need refluting. This operation is also done in the machine regrinding department.

**THE CUTTING EDGE ...** The final step in the reconditioning of a cutting tool is "backing off" the cutting edge. This hand grinding operation removes material behind the edge at a specified angle, leaving a thin land to support the cutting edge. Final cutting tooth geometry determines the performance and durability of the tool, so our craftsmen adhere very closely to established specifications.



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**REGRINDING ...** The photo at the right shows a six-flute countersink which has become dull in service and was returned to Severance for restoration. It will receive our basic regrind service to the price listed in the current Price Supplement. After grinding, the tool will be slightly shorter than its original length, but will be functionally the same as new. When side-cutting tools, such as Midget Mills®, router bits, milling cutters and saws, are reground, their working diameters are necessarily reduced.



**RECUTTING ...** This carbide counter-sink, identical when new to the one above, has been chipped rather badly. It is salvageable by grinding the teeth down to a point below the chips, then backing off the edges. As the amount of material that must be removed becomes larger, each tooth becomes thicker and the central diameter becomes larger. At some point, the flutes will have to be recut to preserve the working range of the tool. Recutting the flutes adds to the cost of reconditioning the tool. This expense can't be standardized, but it will be quoted on request.



**RECONDITIONING ...** The countersink pictured here has experienced a real disaster. The damage extends so deeply into the carbide that there's not enough material left to re flute and regrind. This tool will require extra work and will be priced accordingly. We will provide a quotation before any work is done if requested to do so by the customer. Tools that are beyond repair will be returned at no charge, with no work done.

Some regrind customers request that a quotation be provided before work is begun on their orders. This can be done by telephone, telefax or correspondence, per your request. Most customers who have worked with Severance on a regular basis simply leave the regrind/recut/reconditio decisions to us, knowing that they will get the best possible service at the most reasonable price.

