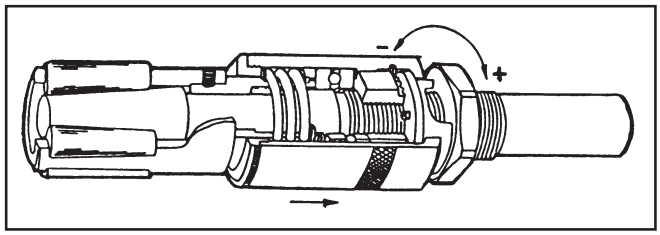


Setting the Burnishing Tool

Loosen the lock nut. Pull back the spring-loaded housing. Turn it to the left to *increase* the diameter and to the right to *decrease* the diameter.

Gradually increase the diameter of the tool, while sliding the tool into (or onto) the work-piece. When the rolls contact the surface to be burnished, resistance to the sliding motion will increase. Burnish a sample work-piece and measure the size and finish. When the desired size and finish is accomplished, tighten the lock nut.

Caring for the Roller Burnishing Tool

Lubrication: A continuous stream of clean lubricant, in sufficient volume to flush and clean the tool and work-piece, should be provided during operation.

Use any standard grade of lightweight, low-viscosity lubricating oil for most metals. For aluminum or magnesium alloys, highly refined paraffin base oil of low viscosity will work well. Water-soluble lubricants are also acceptable.

Any sulfur, mineral or soluble oil that is recommended for achieving a fine finish may be used, provided it is compatible with the metal or alloy being roller burnished.

Filtration: All lubricants should be filtered. Without filtration, chip particles flushed into the area to be burnished can distort the bore and mar the fine finish.

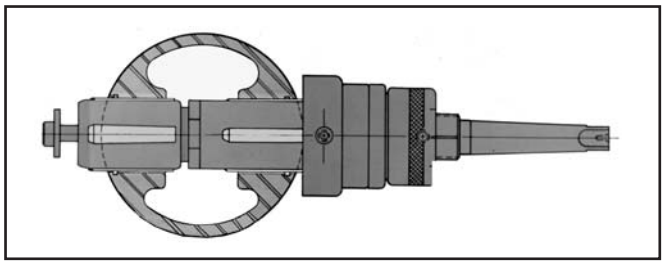
Maintenance: When properly used, the roller burnishing tool requires only routine maintenance. Rolls, cages and mandrels should be examined at regular intervals and replaced when necessary. Always replace a complete set of rolls since there will be some sacrifice of tolerance and finish quality if new and used rolls are run simultaneously.

Tool Alignment: A minimal misalignment of .003" to .004" will not adversely affect the tool or the surface finish. However, if the tool alignment deviates more than .005" from the axis of the work-piece, bending stresses can occur. This could lead to fatigue failure of the mandrel tip. Tool whip is more likely than work-piece whip. Correct alignment is more important when the tool rotates.

Axial Movement: During the release cycle, axial movement is prevented by rigidly mounting the tool shank in the spindle. This is particularly important in the case of large, heavy tools that work in a vertical position.

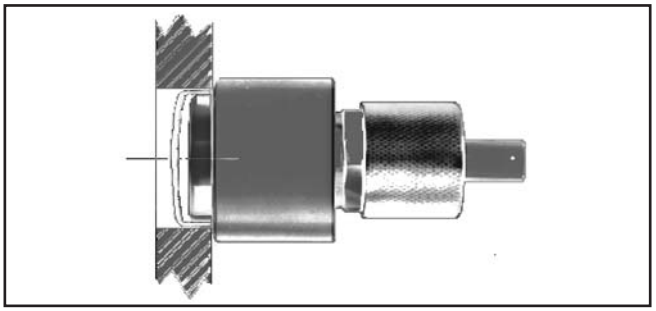
Multiple-Spindle Automatics: The roller burnishing tool should be mounted in a top position to minimize chip contamination from the other metal-cutting operations.

Override Adapters: These are recommended on burnishing tools which require an external force to produce the burnish pressure. These tools reduce the risk of over-rolling and flaking the surface.



Multiple Surface Tools

In long production runs, this tool is used to an advantage for the simultaneous finishing of two or three diameters or surfaces with large interruptions. Diameters and flat faces or angles can be burnished simultaneously. Internal and external combination burnishing tools are also used.



Cup Plug Expander

The tool shown above is used to install cups in motor blocks, heads and other similar assemblies. The cup plug expander offers substantial savings over the pipe or welch plug. It can be used to expand rings or sleeves inside any bore diameters.