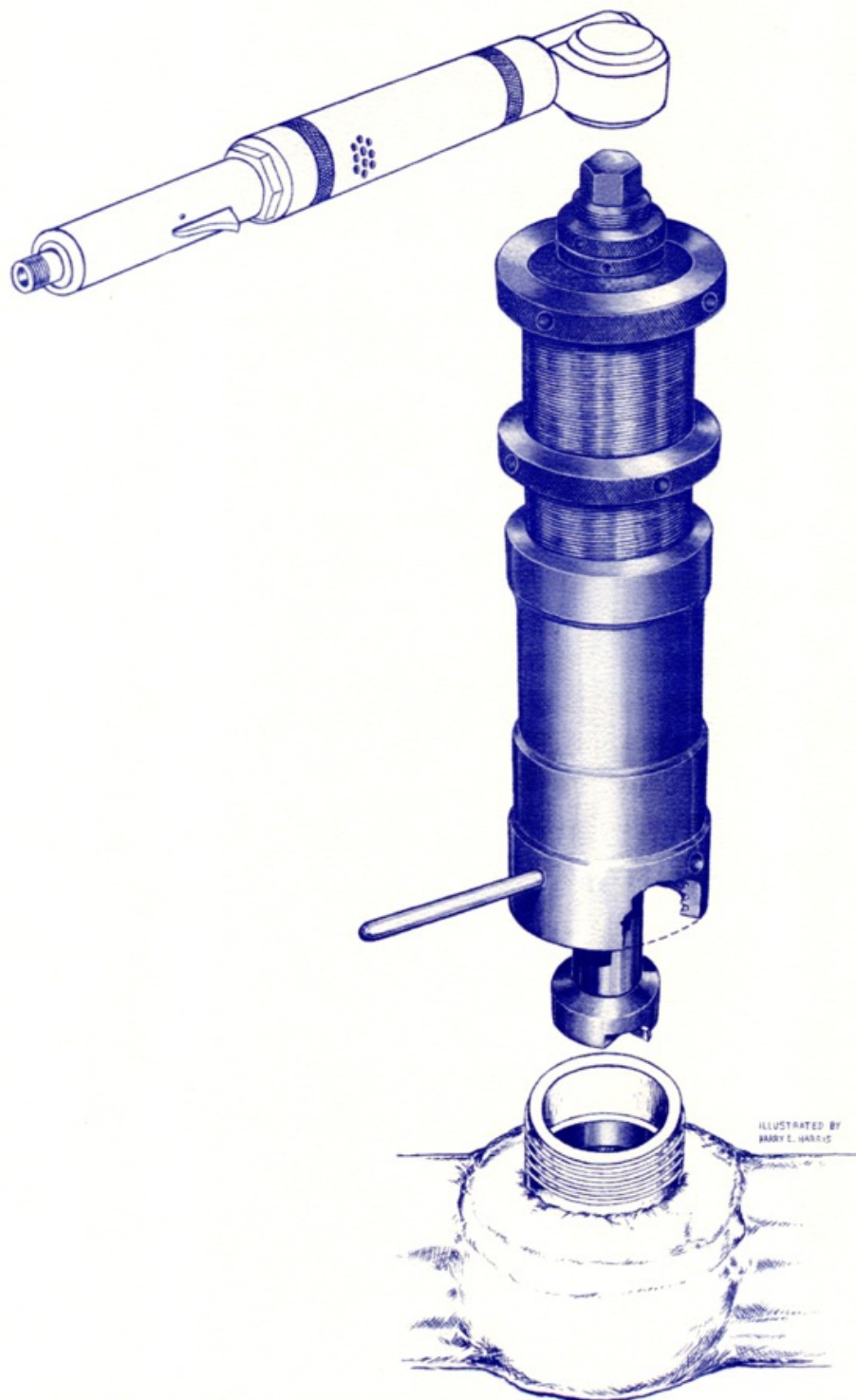


**GRIMSLEY'S PORTABLE BORING BAR
FOR BORING 600 LB., AND UP,
STEAM VALVES, SEALING RING SEATS
MODEL 153 PATENT NO. 4,011,793**



ILLUSTRATED BY
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GRIMSLEY'S HOUSE OF TOOLS, INC.

Specializing in Portable Tools

GRIMSLEY'S PORTABLE BORING BARS
For Boring 600 Lb., and up, High Pressure Steam Valves
Seal Ring Seats In-Line
DESCRIPTION, OPERATION AND MAINTENANCE
Model 153, 1" through 3"

Description

The Grimsley Portable Boring Bars are capable of boring seal ring surfaces in-line in any position or angle, without removing valve from steam line, and it will not be necessary to remove any lagging from pipe or valve.

The Model 153 boring bar is 17½" long and will fit in any space with standard valve operating gear.

The Model 153 bar weighs approximately 37½ lbs., with boring head, tool bit and motor 42½ lbs. (This is set up to bore a 3" valve.)

For larger valve sizes, see our Model 212A Boring Bar.

The recommended pneumatic motor for driving the boring bars: G.H.T. CWL 1609A, 80 RPM, Special Tripple Geared 80-90 p.s.i. air pressure with 125 ft. lbs. of torque.

The Grimsley Portable Boring Bars are unique in that two basic units are capable of boring seal ring surfaces in valves from 1" through 12" in-line.

The Model 153 basic unit comes ready to bore a 1", 1¼", 1½", and 2" Walworth Valve. This includes boring heads, adapters, tool bits, necessary tools, and a carrying case. The Model 153, with additional boring heads and adapters can bore up to 3" valves of any styles, such as Crane, Anchor, Velan and other makes.

NOTE: To bore other style valves, specify make and sizes. Furnish drawings and specifications, if available. Normally we will have other styles and sizes in stock.

Operation

1. Make sure steam lines are secure. Remove valve operating mechanism. Insert plugs to keep out foreign matter.
2. Thoroughly clean valve flange, inside of valve, and threads (if any). Remove burs and scale to assure that the boring bar will be perfectly seated and that the alignment points on the bar or adapter mate with the alignment points on the valve to ensure concentricity with valve bore and/or seal ring seat.
3. Inspect and measure seal ring seat to determine condition (out of roundness, taper or scoring) and how much metal to remove to get a good seal.
4. Select adapter and boring head to suit the size of valve.
5. Install boring head and tool bit.

6. Measure diameter of seal ring bore, then measure the diameter of the boring head. One half of the difference between the two is the amount your tool bit will extend, plus one half the amount you wish to bore out of the valve seat.
7. To set tool bit, release the two Allen Head screws that secure the tool bit, set bit as close as practical with outside micrometer, snug holding screws so that tool bit will move only when forced with Allen wrench. Then re-check your outside micrometers, re-check your measurement over the tool bit. If you wish to extend the bit further, tighten the adjusting screw to force the bit out. Each graduation mark on the adjusting screw head is .001 thousandth of an inch and each one thousandth you extend the bit you will remove two thousandths of metal from the bore.
8. Measure down from valve face to determine the setting of (the beginning of the bore at top of cladding) the boring head. Back the feed screw out until there is enough clearance at top of bore to be able to turn the boring head freely before entering the cut.
9. Measure down from top of seal ring cladding to depth you wish to bore. Set stop ring on feed screw and slightly tighten nylon tipped locking screw. When stop ring comes in contact with boring bar housing the necessary depth of bore will be completed.
10. Install boring bar to valve by screwing into valve body. Snug bar tightly to valve with special pins furnished for that purpose located in the packing case.
11. Attach drive motor and turn the bar several times to assure that boring head turns freely. While boring head is turning full speed, 80 RPM's, feed the bar down gradually as the cut is being made. (You normally can tell if you are taking too much or too little, as soon as the tool bit makes the initial contact.) When the depth ring makes contact with the housing, stop feed and after several several full revolutions of the bar, remove the drive motor, and screw the bar out or off of the valve for inspection of the seal ring seat. If smooth and all pits and/or scores are removed, you are ready to make new seal ring and reinstall valve mechanism and test. However, you may need to make another cut to complete clean up of seat. If so, slightly loosen tool bit holding screws, keeping them snug enough to keep bit from moving without tightening adjusting screw. Adjust tool bit, re-tighten holding screws. Back feed screw out to original starting place and repeat the boring process.

NOTE: (1) In case of valve with no internal or external threads the same procedure will be followed except the boring bar and boring head will be held in place with an adapter made for the type of valve (usually held with cap screws adjusted around the outside perimeter of the valve flange). Other than securing the bar to the valve, all other procedures will be the same.

NOTE: (2) It may be necessary to take two or three cuts, i.e., one test cut, roughing and finish cut, however, in the majority of repairs only one cut is necessary.

NOTE: (3) There are two sizes of boring bars, Model 153 for valve sizes 1" through 3", and Model 212A for valve sizes 2" through 12" and larger.

NOTE: (4) When using the G.H. T. CWL-1609A Motor with 90 Lb. Pressure, both size Boring Bars, Model 153 and Model 212A, are capable of taking a cut large enough to remove all cladding with 1 or 2 cuts.

Maintenance

The Allen Head (plugs) screws in the outside of bar housing are adjustable and are there for the purpose of taking up wear slack in the threads if any should occur from long and continued constant use and also to cushion any vibration that may occur. These screws have a nylon button that protects the threaded surface of the feed screw.

Care should be taken to keep threads clean and free from burs or damage caused by dropping tools or other types of metal against the threads.

Bar should be thoroughly cleaned before storing. All cuttings, metal chips, grit, etc., should be removed from feed mechanism and end of bar housing.

A water displacement and rust inhibitor with a preservation lubricant should be used after each use and before storing.

Check bar and bottom nylon bearing periodically for burs and/or scoring. If slight roughness or scoring from chips, etc., should occur, use a very fine abrasive to clean up.

All bearings (top and bottom in the quill) in the feed mechanism are radial thrust sealed bearings prelubricated for extended use and the bearing located in the bottom of the barrel is nylon and needs no lubrication. If the bearings in the quill should become loose after prolonged usage, loosen the lock nut at top end of bar and tighten nut and you are ready for continued accurate boring for another long period of time.

For additional information please contact our office at (757) 399-4438.

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