DEPARTMENT OF THE ARMY TECHNICAL MANUAL

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OPERATOR'S MANUAL

BORING MACHINE, ENGINE CYLINDER

(ROTTLER BORING BAR CO., MODEL DA-4)

(4910-223-9734)

This copy is a reprint which includes current pages from Changes 1.

HEADQUARTERS, DEPARTMENT OF THE ARMY

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DESCRIPTION

The Model DA-4 bar is a portable precision boring unit. The automotive model is complete with single point tooling and accessories for standard engine reboring work. The industrial model is equipped with a flange spindle nose and precision ball bearing spindle for a wide variety of work. All feeds and traverses are power operated and controlled from the upper gear housing unit. An auxiliary hand travel is located at the base of the feed screw. Power is furnished by end mounted AC single phase 110-220 Volt General Electric motor of 1/2 to 1-1/2 HP depending upon spindle speeds required. 3 phase motor is also available. A quick change lever selects two spindle speeds.

Gear housings are aluminum alloy in order to incorporate the lightest possible weight without sacrificing rigidity.

NOTE: When bar is shipped from factory the machined surfaces are protected with rust veto. After uncrating use clean cloth dampened with kerosene and remove the protective oil.

CONTROLS

We suggest, before attempting to bore, you clamp the bar over an open area and actuate the controls to become familiar with them.

1. Feed lever is latching lever on side of bar. Press down until lever latches to engage cutting feed. To disengage press (3) feed release arm which will unlatch lever and allow it to return to neutral position. Lift feet lever (2) until it latches to engage rapid return travel. Bar will automatically return to neutral upon reaching top of travel. If you wish to return bar to neutral while it is in rapid up travel, again press (3) feed release which will unlatch lever and allow it to return to neutral position.

You will note stop rod that is held in base casting by thumb screw has a cone shaped and which will release cutting feed when it contacts lever. This is most conveniently raised up and locked by thumb screw in proper position on completion of first bore cut. This rod should not be used to hold close tolerance shoulders. Optional equipment for this is available.

2. The fast down travel lever is located next to feed lever. Check feed lever to see that it is in neutral position before actuating. lever should be pulled down quickly and firmly and not allowed to ratchet. Control is spring loaded and will release when you release pressure. This control should be used on slow speed only on automotive and high RPM machines.

3. Spindle clutch control is located opposite side of feed lever. A rapid down movement will engage spindle rotation and a reverse action will disengage. In that this is a jaw clutch we recommend stopping the motor or jogging the motor to engage clutch on the high RPM of the higher speed machines. Standard procedure is to throw out clutch upon completion of the bore. Align marks by turning spindle knob, then reverse travel.

The small knob on top of the upper housing may be used for manually turning spindle when necessary. On the automotive type units this knob is also used for centering.

4. 2-1/2" manual travel is actuated by rotating handle attached to spline at top of base. This travel should always be left in full up position after using bar. Normal procedure is to rapid travel or feed bar to point requiring manual travel. If back feeding is necessary run band travel down first and then rapid travel down to where tool can be inserted.

5. Speed control is operated by pulling knob at motor gear housing and raising for low speed and lowering for high. These may be changed when bar is running although it is desirable to jog motor when changing from low to high on higher speed machines.