

OPERATION AND MAINTENANCE MANUAL

and

PARTS CATALOG

**HIGHWAY MODEL "HD"
EARTH BORING MACHINE**



Manufactured by

**HIGHWAY
TRAILER CO.**

Edgerton, Wis.

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MANUAL**

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GENERAL DESCRIPTION "HD" EARTH BORING MACHINE

The Model HD - Earth Boring Machine is designed and built to dig holes 16" to 20" in diameter, and to a depth of seven feet in practically any soil condition except solid rock.

The earth boring unit consists of a double train of gears, controlled by two multiple disc clutches and brakes. One train of gears (drive gears) rotates the auger by power, the other train of gears (feed gears) furnishes the power to force the auger into the ground while rotating and raises the auger out of the ground. All gears and clutches are enclosed and operate in oil.

The boring head and intermediate cases are equipped with leveling mechanisms that permit quick adjustment to dig holes straight down, regardless of the position of the truck, or to dig holes at any angle up to 90 degrees at right angles to truck. Power is applied to the leveling mechanism that raises the auger bar from traveling position to working or vertical position.

When power leveling mechanism is used, Control levers are arranged to permit the operator to stand on truck platform where he has easy access to the power leveling device, and where he has clear vision of the auger.

The digging controls are always in neutral position, until pressure is applied on either lever or both. The operator may bring the digging operation to a complete stop by merely opening his hands and releasing the levers.

Power is furnished to the Earth Boring Machine by the same engine that operates the motor truck, thru a power take-off.

The machine is secured to the truck platform by first riveting brackets to steel cross members of the body and then anchoring the boring machine to the brackets using 4 large cap screws.



OPERATION SECTION

PREPARATION OF MACHINE FOR INITIAL OPERATION

Check the Boring Head Case, Intermediate Case, and Clutch Case to be sure that they contain the proper quantity and quality of lubricant in accordance with the Lubrication Chart, Page 11. Also check oil fittings and other points requiring lubricants as indicated on the Lubrication Chart.

After applying lubricant as required the next step in preparing the Earth Boring Unit is to install the Auger Rack Bar (long bar with teeth cut on one side) and the Guide Tube (steel tube over rack bar) and the Auger. This is easily accomplished by adhering to the following instructions.

Using the leveling worm wrench, turn boring head as far as possible with top of boring head to the right, looking at machine from rear of truck. See Illustration No. 1.

Clean and grease upper end of bar with heavy lubricant. (See Lubrication Chart, Pages 11-12). Push upper end of bar in lower end of boring head, making sure that teeth on bar are on same side of boring head as the pinion that can be seen in the opening before bar is started through. When bar strikes pinion, start the engine and shift transmission and power take-off into low speed. See Illustration No. 1.

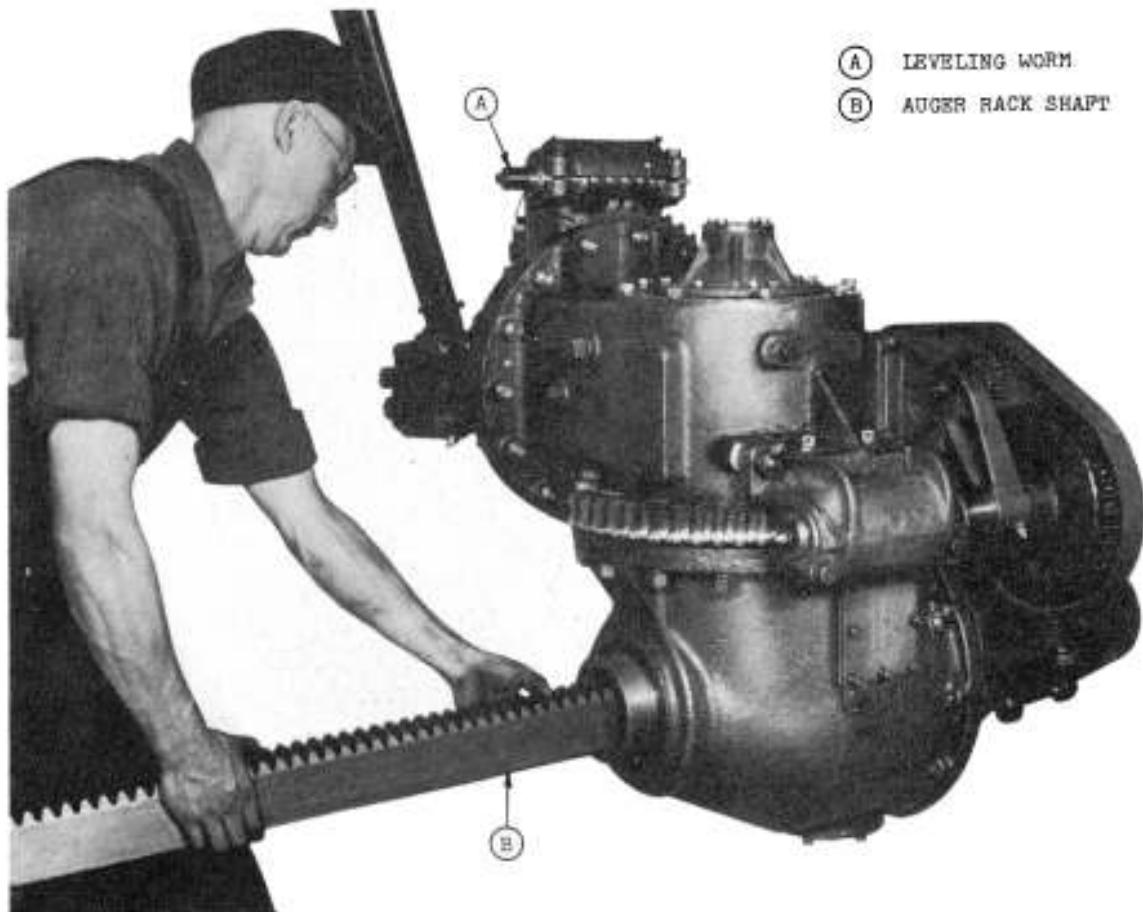


ILLUSTRATION NO. 1. INSTALLING AUGER RACK BAR

PREPARATION OF MACHINE FOR INITIAL OPERATION (Continued)

Place rack lock handle (See Illustration No. 2) in lowest position of slot. Pull up slowly on right hand lever while pushing down on left hand lever at the same time that the bar is being pushed into machine by hand. When pinion starts to take bar through by power, be sure to grease remainder of bar thoroughly with heavy lubricant.

When bar is through top of machine, release digging control levers.

Attach auger rack bar guide, Part No. EA-2488, to top of bar and fasten in place with pin, EA-2484, and screw, EA-2483, see figure 4 page 21.

Assemble derrick head in top of derrick tubing and mount tubing over auger rack bar, clamping it into derrick tube base. Turn holes in tubing toward boring machine levers so operator can see auger rack bar while working and note when top of bar is getting to low danger point. Run all but about 1 foot of bar on through boring head. Push rack lock handle into highest position, thus locking rack bar in position.

Thread winch cable through sheave attached to body near boring head and on through sheave on top of derrick.

Turn boring head (with leveling worm) until derrick is vertical. Slide bumper spring, Part No. EA-2447, (see figure 5, page 20) on bar and mount auger.

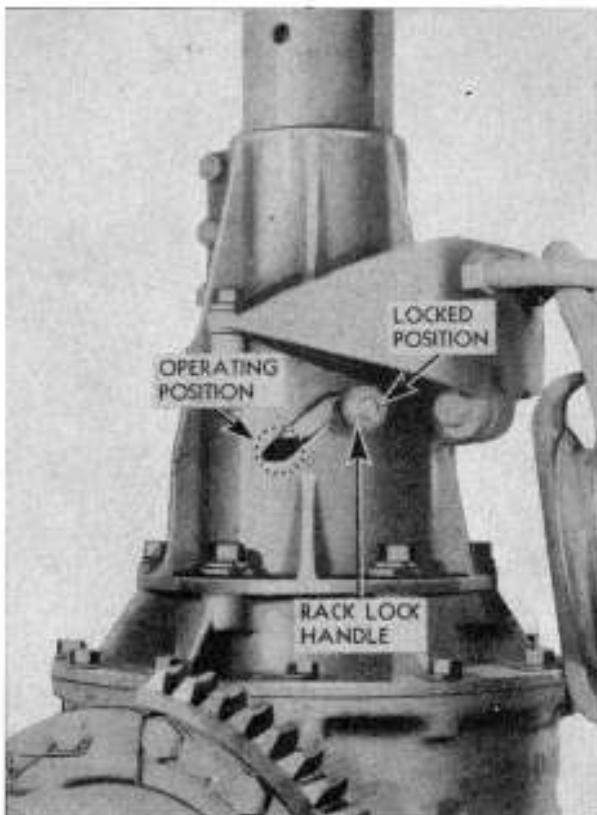


ILLUSTRATION NO. 2. RACK BAR LOCK SHOWING LOCKED AND OPERATING POSITIONS

OPERATION OF POWER LEVELING MECHANISM



ILLUSTRATION "A"

The power leveling device (See Illustration "A") is provided to facilitate raising the auger rack bar from traveling to digging position or lowering it from the digging to the traveling position.

To raise the auger rack bar from traveling position (See Illustration "A") to vertical or digging position, place truck transmission in reverse. Operate motor slowly. Lift up on power leveler shift lever (See Illustration "A") until clutch jaws are engaged. If clutch does not readily engage, continue upward pressure on the shift lever and at the same time apply momentarily light pressure to boring machine drive control lever (R.H. lever, see Illustration "A").



ILLUSTRATION "B"

When clutch is properly engaged, apply the necessary pressure to the boring machine drive control lever (R.H. lever) to raise the auger rack bar while at the same time applying sufficient pressure to the feed control lever (L.H. lever) to release feed brake, but not enough to engage feed clutch. (See Illustration "B").