DL #5479
243-D

HIGH MAGNIFICATION RAM PACER

INSTALLATION INSTRUCTIONS

60,000# or 120,000# B. T. E. TESTING MACHINE

1 The mounting plate for the transmitter gear case unit and the rack are mounted as indicated in drawing 243-D. The mounting plate should be shimmed as necessary to bring it vertical. Its elevation on the testing machine should be such that at least 2" of the rack protrudes from below the case when the table is in its uppermost position. Within this limitation, the mounting plate should be mounted as low as possible on the frame of the machine, as shown in 243-D.

2 The position of the gear case should be adjusted so that it is level, mounting being made by means of the four 1/4" screws supplied.

3 The rack mounting hole should be located by inserting the rack in the gear case and while holding it in the vertical position noting where the threaded end of the rack touches the table as the rack is raised vertically. A 1/4"-20 tip hole 1/2" deep should be tapped in the base of the machine. Care should be exercised to insure vertical alignment of the hole. The stud on the end of the rack should be screwed into the base of the machine until it bottoms. The lock nut on the opposite end of the stud should then be tightened against the rack proper to secure it square with the gear case.

4 The rack engagement screw should be adjusted so that the rack engages the drive pinion with a minimum of clearance. Several thousandths of an inch clearance, however, should be maintained between the rack engagement screw and the rack throughout the normal stroke of the rack to avoid bottoming of the rack on the pinion teeth and the consequent introduction of friction forces in the drive.

5 A suitably located 110 volt 60 cycle power receptacle is required for the power cable from the control cabinet.

6 Electrical connections between the gear case and the control cabinet are made by the polarized cable supplied with the equipment.

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10/7/54

DL-#5050
#5051

HIGH MAGNIFICATION RAM PACER

OPERATING INSTRUCTIONS

1 The function of the Ram Pacer is to assist the testing machine operator to maintain a constant speed of travel of the testing machine ram at some predetermined rate. The High Magnification Ram Pacer is capable of pacing ram speeds between the limits of 0.002" and 4.0" per minute.

2 The equipment includes a control cabinet and a rack driven transmitter unit. The control cabinet contains a dotted disc which is rotated at synchronous rates corresponding to any value within the above range, stepless adjustment being provided between the disc and the synchronous motor which drives it. An axially mounted pointer driven by a self-synchronous motor actuated by a self-synchronous generator in the transmitter unit indicates travel of the ram. The transmitter unit consists of a rack and a gear case containing two gear-driven self-synchronous generators. The device is operated from an AC power source of 110 volt, 60 cycle rating. Power connections are made by means of a cable attached at the lower left-hand side of the control box. Connections between control box and transmitter unit are made by means of a polarized cable.

3 The control cabinet is mounted at any convenient location, often on a bracket between the indicator cabinet and loading units of the testing machine. The gear case may be mounted on the testing machine base, as shown in the photograph, or may be mounted on the vertical face of the testing machine base, or on a vertical plate attached to the vertical face, or for some machines may be attached to the column of the testing machine. The method of attachment is described in each case in the installation instructions.

4 Rate of rotation of the dotted pacing disc is adjusted by means of combinations of positions of the pointer on the scale marked "Platen Speed In Inches Per Minute", and of the lever above it. It is to be observed that the synchronous motor should be running when the position of the lever is changed, or when the pacing drive speed is changed. The change is accomplished by first releasing the knurled lock nut on the outer end of the knob, then moving the pointer to the new position (by means of the knurled knob), and holding the knob while tightening the lock nut. With the rate switch in "Rate 1" position, and the lever at A, pacing speeds of the disc corresponding to ram speed in the range .002" to 0.04" per minute are obtainable; with the lever at B, the range is 0.020" to 0.40" per minute. With the rate switch in "Rate 2" position, and the lever at A, pacing speeds in the range of 0.02" to 0.40" per minute are obtainable, and the range becomes 0.200" to 4.0" per minute with the lever at B.

then pulling out the knob assembly before changing speed.

5 The pointer which indicates ram movement revolves in proportion to values of ram travel, one revolution corresponding to .025" ram travel (or platen motion) with the rate switch position marked "Rate 1", and one revolution corresponding to 0.250" ram travel with the switch in "Rate 2" position.

6 By proper manipulation of the loading controls of the testing machine, rotation of the pointer may be caused to coincide with rotation of the pacing disc, under which condition synchronous rate of travel of the ram obtains. The pacing disc turns clockwise, so that the pacing device is usable only for upward movement of the ram.

7 Care should be exercised to keep the rack teeth free of dirt or foreign matter that might damage the teeth or cause jerky action of the pointer.

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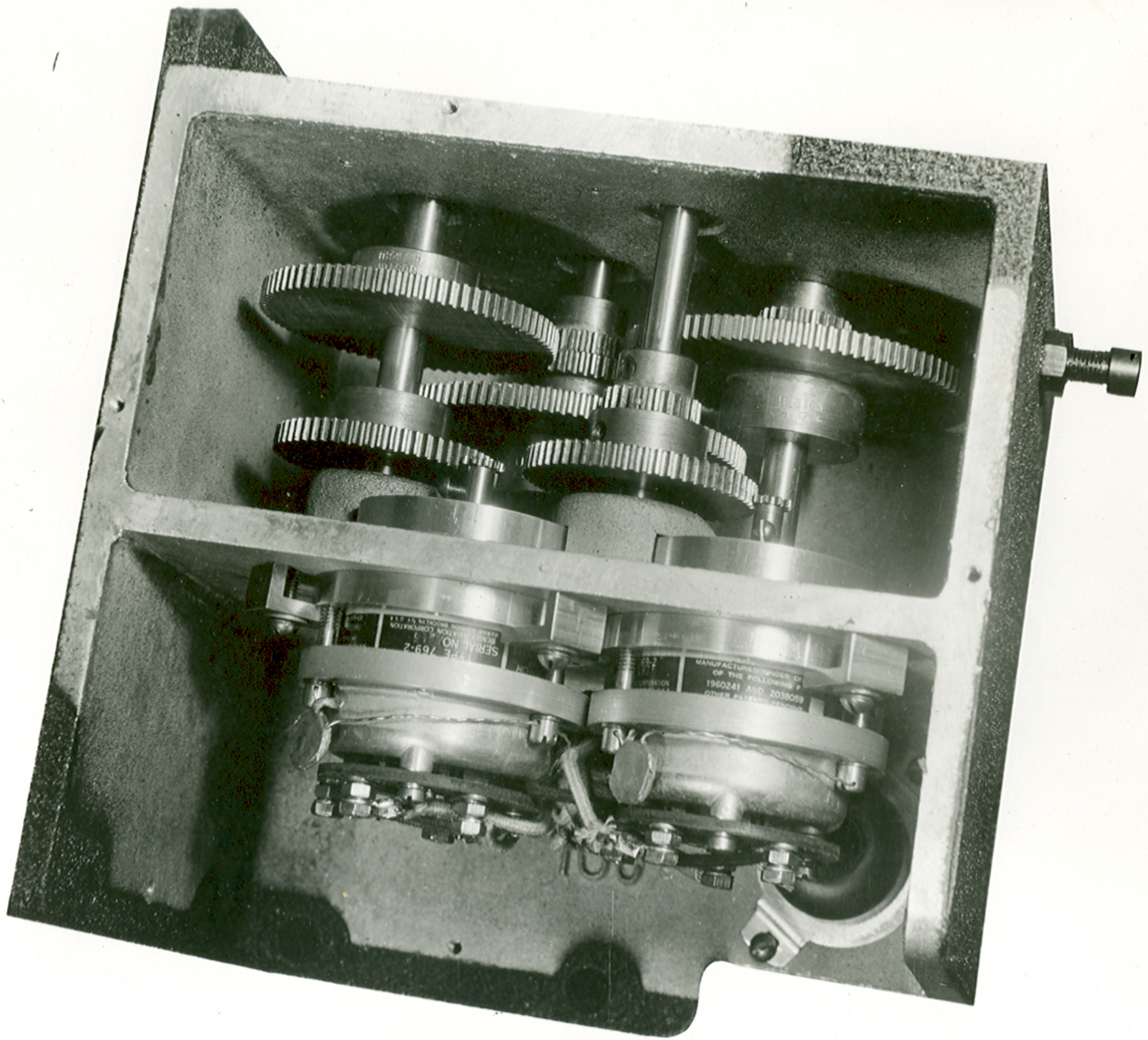
5/54



3930-5

HIGH MAGNIFICATION PACING HEAD
TRANSMITTER UNIT

March 28, 1966

Lubrication of High Magnification Ram Pacer

If a screeching noise in the pacer motor assembly develops, it means that the motor bearings and/or the small gearbox connected to the motor need lubrication.

Access to the pacer motor is by disconnecting the power cord from the testing machine and also the cord connecting the pacer sending unit to the motor unit. After these connections are removed, the back of the pacer is removed by undoing the sheet metal screws around its margin.

Motor lubrication:

There are two small holes on the top of the small synchronous motor, one ~~at either~~ hole at either end of the shaft. A few drops of light sewing machine oil in each hole will suffice.

(It may take a few hours for the oil to saturate the felt wicks inside. Noise should stop after wicks are saturated.)

Gearbox lubrication:

One tablespoon of medium grade low pourtest oil should be added to this gearbox at intervals.

1 tablespoon = 14.786 cc.

Any good SAE 30 non-detergent oil will do for the medium grade low pourtest oil specified. (Advice of Baldwin serviceman 3/28/66.)