

SECTION

DD

**SERVICING THE
ORBITAL MOTOR
AND
BRAKE VALVE**

ORBITAL MOTOR AND BRAKE VALVE

(Refer to Figure DD-1)

Disassembly

IMPORTANT - Before removing the orbit motor, thoroughly clean the area around the orbit motor to prevent the entry of foreign material. Also make sure the disassembly area is clean.

1. Remove brake valve mounting capscrews (24), lockwashers (23), valve assembly and "O" rings (21).
2. To disassemble brake valve, remove snap ring (25), spool (19) with spool eye (18) and "O" rings (20) from the body (22).

CAUTION If a vise is used, avoid excess pressure which will distort the housing. Clamp across the port area not the housing.

3. Remove the seven capscrews (1) and the

end cap (2). **IMPORTANT** Mark a line across the stator, rotor, motor body and shaft for proper assembly.

4. Remove the spacer (3) stator and rotor assembly (4) & (5) and spacer plate (6).
5. Remove the thrust bearing (7) and coupling shaft (8).
6. Remove mounting flange capscrews (29), washers (28) and flange (10).
7. Remove "O" ring (13), quad ring (12) and oil seal (9) from inside the mounting flange (10).
8. Remove bearing race (14) thrust bearing (15) and motor shaft (16).
9. Remove plug (26) with "O" ring (27).

Inspection

Clean all parts before inspection being careful not to damage any machined surfaces.

Check the thrust bearing for excess wear, scratches and scoring. A polished pattern on the spacer plate and end plate due to rotor action is normal.

Check rotor to stator clearance using narrow feeler gauge (refer to inset A) the

clearance should not exceed .005 inch.

Check rotor to stator thickness (inset B) with a micrometer. If rotor thickness is more than .002" less than the thickness of the stator, replace stator and rotor.

Replace all "O" rings and oil seals during assembly.

Assembly

1. Install the plug (26) with a new "O" ring (27).
2. Install the motor shaft (16) thrust bearing (15) and bearing race (14).
3. Install a new oil seal (9) lip out, quad ring (12) and "O" ring (13) in the mounting flange (10).
4. Install the mounting flange on the motor shaft and secure using capscrews (29) and washers (28). Torque capscrews evenly to 225-275 inch pounds.
5. Install the coupling shaft (8) in the motor shaft. **NOTE** Be sure that the stator, rotor, motor body and shaft are lined up with the mark made during disassembly. If no mark was made, continue these assembly procedures and install the orbital motor. Follow the steps in the installation procedures

to obtain correct motor alignment.

6. Install the thrust bearing (7) and spacer plate (6). Make sure the spacer plate is lined up with the mark made during disassembly.
7. Install the stator-rotor assembly (4) & (5) in alignment with the mark made during disassembly.
8. Install spacer (3), end cover (2) and secure with capscrews (1). Torque capscrews evenly to 175-200 inch pounds.
9. Install "O" rings (20), spool (19) eye end up, spool eye (18), in the body (22) and secure with snap ring (25).
10. Install brake valve assembly "O" rings, (21), capscrews (24) and washers (23).

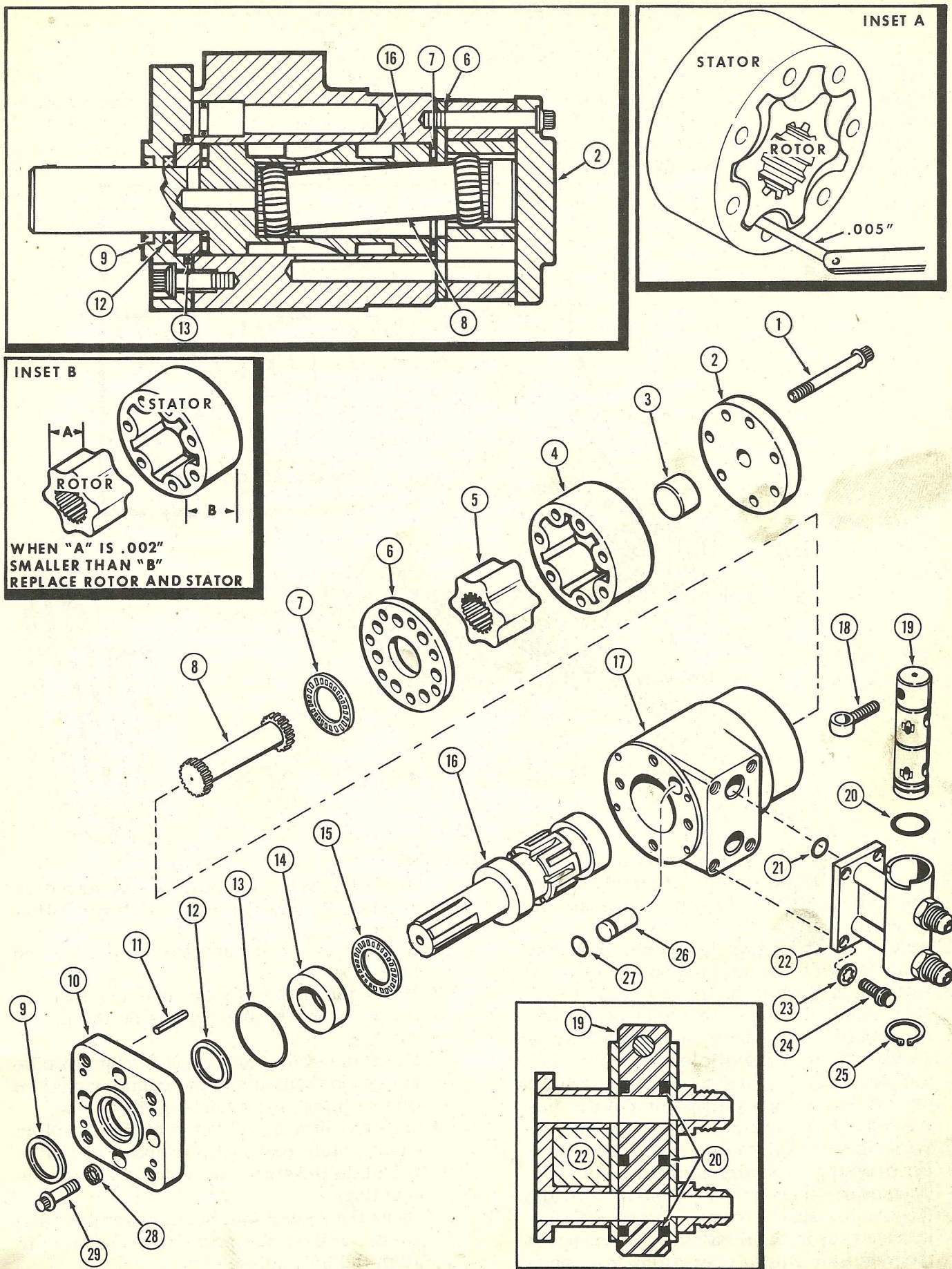


Figure DD-1

ORBITAL MOTOR AND BRAKE VALVE

Removal

1. Drain transmission.
2. Block up transmission and remove rear wheel.
3. Disconnect brake rod and hydraulic tubes. Cap hydraulic tubes to prevent the entry of foreign particles.
4. Remove transmission top cover including seat, fenders and seat support.
5. Remove mounting bolts, brake-motor assembly and gasket.

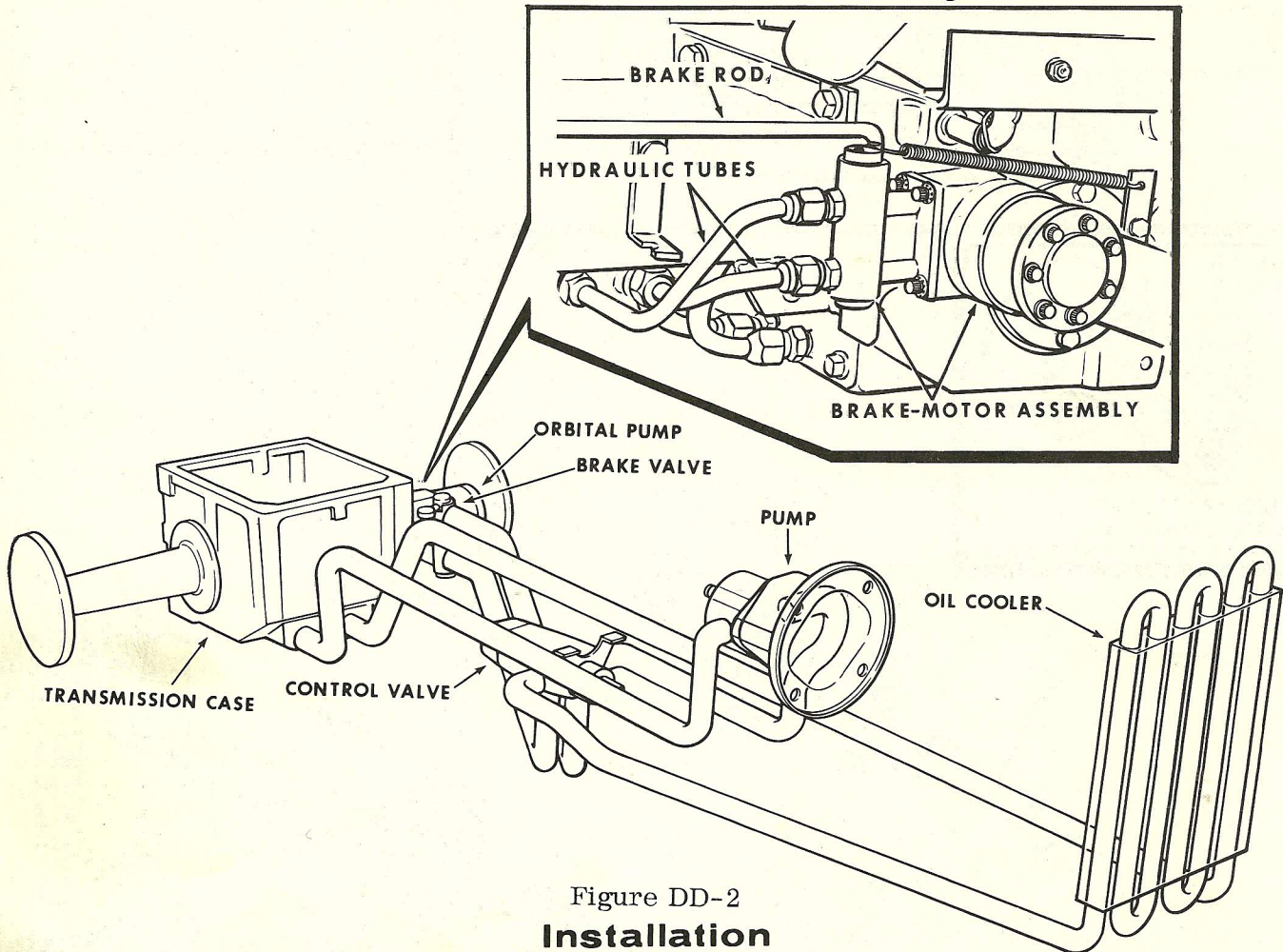


Figure DD-2

Installation

1. Mount the brake-motor assembly to the transmission using a new gasket and mounting bolts.
2. Install transmission top cover including seat, fenders and seat support.
3. Connect hydraulic tubes and brake lines.
4. Fill transmission with clean oil to one inch below top cover using SAE 5W20 Motor Oil in winter (Below 32°F.) or SAE 20W40 Motor Oil in summer. Use only MS or DM Service Classification Oil that has passed AMA Test Sequence I, II and III.
5. With the orbital motor installed, check for proper motor alignment by placing the transmission in gear. When in forward, the tractor should drive forward and when in reverse, it should drive in reverse. If the results of these operations are opposite, the orbital motor is not properly aligned. To correct this condition, follow steps 6 thru 10.
6. Remove the seven capscrews and the end cap.
7. Mark the stator to the housing and the rotor to one of the splines on the motor shaft.
8. Move the stator and rotor enough to take the spacer out; mark the coupling shaft in line with the mark made on the rotor.
9. Slide the stator and rotor off the coupling shaft, rotate one tooth in either direction and slide the stator and rotor back onto the coupling.
10. Now the motor may be re-assembled and the cap and spacer moved as necessary to align the bolt holes.