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To obtain maximum torque at the wheels, the control levers should be close to the neutral position. This differs from a mechanical drive unit where the operator pushes the control levers as far forward as possible to prevent the clutches from slipping. The positiveness of the hydrostatic drive at low speeds allows the operator to ease the bucket into loads, rather than using the impact loading technique which is so often necessary when using mechanically driven units.

Because of the positive relationship between the hydrostatic pumps and motors, the units work to aid deceleration of the machine when the pump is stroked toward neutral position. This is the automatic braking characteristic of the hydrostatic drive. Infinitely variable speed means a full range from full speed reverse through neutral to full speed forward and any speed in between, with no jumps, jerks, or flat spots. Fast shuttle loading work is accomplished without lost time changing directions. The smooth power application thus gained from the transmissions gives maximum tractive effort on any terrain. The operator can ease the loader into a tough load without breaking traction because he has precise control.

Figure 1-3 shows the hydraulic circuit and components as used on L-780 series loaders. To trace the oil flow through the hydraulic system, start with the chain case reservoir on either side of the loader. A cross tube connects both chain cases and serves as a supply point for oil to the front gear pump.

FIGURE 1-2
6. Remove piston nut, E, Figure 7-8, piston, D, and cylinder head, C, from the piston rod.

7. Remove all seals from piston, D, and cylinder head, C.

**NOTE:** The cylinder head has three seals, Figure 7-9. All seals and a new snap ring are supplied in the repair kit.

**INSPECTION**

1. Remove all nicks and burrs with fine emery cloth.

2. Inspect the inner diameter of the barrel for excessive wear or scoring.

3. Inspect the outer diameter of the piston for excessive wear or scoring.

**REASSEMBLY**

1. Clean and dry all parts. The metal parts should be lightly oiled prior to assembly.

2. Install a new shaft seal, C, wiper seal, B, and O ring, A, Figures 7-9 and 7-10, on the cylinder head.

3. Slide spanner nut, A, Figure 7-7, snap ring, B, and cylinder head, C, onto the piston rod.

4. Install a new wear ring, A, Figure 7-11, and seal, B, on the piston.

**NOTE:** The seal should be clamped with a ring compressor and chilled before being installed in the barrel.

5. Install piston, D, and locknut, E, as shown in Figures 7-7 and 7-8. Torque the locknut to 120 ft. lbs. - 130 ft. lbs. (162 N·m - 176 N·m).
5. The idler assembly consists of right and left brackets that can be separated by removing two 5/16" x ¾" Grade 5 self-locking screws, A, Figure 9-12. On reassembly, torque both screws to 15 ft. lbs.-18 ft. lbs. (20 N·m-24 N·m).

6. Refer to the Service Parts manual for the idler breakdown. The idler gear rotates on needle bearing, C, Figure 9-12, with a single washer at B, on either side of the idler gear. Screw block, D, is also replaceable if the threads are not usable.

7. Check idler pivot forks, A, Figure 9-13, for wear in the pivot slots and sound welds.

IMPORTANT: Be sure the idler is positioned as shown in Figure 9-13 on reinstallation, or the idler assembly may contact the drive gear assembly or chain case wall during operation causing major chain case damage.

GEAR-SPROCKET DRIVE DISASSEMBLY

1. Remove the cotter pin, nut, spacer washer, and outer bearing on drive gear assembly, A, Figure 9-14.

2. Remove gear-sprocket assembly, A, Figure 9-15, as shown. The idler assembly can be moved completely forward so the gear sprocket can be removed without idler removal.
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