



## SPROCKET DRIVE

## 10. REASSEMBLY AND INSTALLATION

## Regular Tread

NOTE: Use all new oil seals, gaskets and oil seal rings in the reassembly. Also, on the old "6" SERIES, if the inner housing was removed, install a new "O" ring seal on the pivot shaft next to the main frame (Illust. 28), before installing the inner housing to the main frame.

1. If the pinion shaft was removed, insert the pinion shaft into position through the steering clutch compartment and install the steering clutch and brake as outlined in Section 7. Use a jack through the bottom opening in the main frame to support the weight of the clutch, also to help center the pinion shaft in the bore of main frame to facilitate the installation of the inner housing to the main frame.

2. Reassemble the parts of the pinion inner bearing in the reverse order of their disassembly, and install assembly to the inner housing. (Refer to Illust. 11, parts 2 through 7; or Illust. 12, parts 2 through 6.) Install a new oil soaked seal (4) in the bearing retainer so that the lip side of the seal faces outward toward the bearing.

NOTE: On the 6, 6(61) AND 6 (62) SERIES having roller bearings, install the outer race of the pinion inner bearing into the bearing cage so that the identification groove around the outer race will be toward the flange side of bearing cage when installed. Drive or press in the outer race until it is flush with the bearing cage surface opposite the flange.

On the older 6 SERIES, press the pinion inner bearing into the bearing cage until it is flush with the cage surface opposite the flange side.

On 9, 9 (91) AND 9 (92) SERIES, press the pinion inner bearing into the bore of inner housing until it is flush with the pinion side of the housing.

3. Install the inner housing to the main frame. See that the pinion inner bearing retainer (2) fits evenly around the shoulder of the pinion shaft. Drive the inner housing against the main frame and secure with nuts and cap screws.

4. Install the inner bearing (15) into the sprocket drive gear. 6, 6 (61) AND 6 (62) SERIES with roller bearings, install the outer race into the drive gear so that the identification groove will be TOWARD the tractor; install the inner race on the pivot shaft to butt against the inner housing.

9, 9 (91) AND 9 (92) SERIES with roller bearings, install the outer race in the sprocket drive gear so that the identification groove will be AWAY FROM the tractor; install the inner race on the pivot shaft so as to butt against the inner housing.

5. Install the sprocket drive gear onto the pivot shaft and add the bearing spacer (16) to help align the bearing with the pivot shaft during the final installation when seating against the inner housing.

6. Install the pinion onto the pinion shaft to engage the splines and to mesh the teeth with the sprocket drive gear. However, before installing the pinion on the 6, 6(61) and 6(62) SERIES, drive the inner race of the pinion inner roller bearing into position on the pinion shaft. Place the pinion on the pinion shaft, then drive the inner race of the pinion outer roller bearing onto the end of pinion shaft. The bevel edge of the inner race should face away from the pinion to receive the outer race when the outer housing is installed.

On the 9, 9(91), 9(92) and old 6 SERIES, drive in the pinion to seat the shoulder into the ball bearing previously installed in the inner housing.

7. Install the pinion outer bearing in the outer housing.

6 (61) AND 6 (62) SERIES: Drive the outer race into the bore of the outer housing. The identification groove around the outer race should be toward the bearing cap, when the race is installed.

OLDER 6 SERIES: Install the outer race into the bore of the outer housing, using the two piece ring retainers to hold it in position.

9, 9(91) AND 9(92) SERIES: Press the pinion outer ball bearing into the outer housing until it is seated in the bore.

8. Install the outer housing with a new gasket in place, by passing it over the pivot shaft and, aligning the pinion outer bearing with the pinion, drive the housing evenly to seat the pinion

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SPROCKET DRIVE

10. REASSEMBLY AND INSTALLATION - Continued

Regular Tread - Continued

outer ball bearing on the shoulder of the pinion for the 9, 9 (91) AND 9 (92) SERIES. Roller type bearings should assemble easily, providing the outer housing is forced into position evenly to prevent binding. Secure the outer housing to the inner housing with nuts and cap screws.

9, 6, 6 (61) AND 6 (62) SERIES: Install the pinion outer bearing retainer nut on the pinion shaft and tighten the nut to specified torque. (Refer to Par. 2, "SPECIFICATIONS.") Use a new nut lock, run on the lock nut and tighten, then bend the lips of nut lock against both nuts. Also install the "O" ring and bearing cap.

9, 9 (91) AND 9 (92) SERIES: Install the pinion outer bearing retainer washer and secure with two lock washers and cap screws. Tighten the cap screws to specified torque. (Refer to Par. 2, "SPECIFICATIONS.") Install the "O" ring and outer bearing cap.

10. Place a new gasket on the peg side of oil seal 22 or 23, Illust. 11 or 12). Dip the surface of sealing washer in oil and install the oil seal by inserting the pegs into the holes in the outer housing. Attach the oil seal guard to the outer housing with lock washers and cap screws.

11. Install the sprocket carrier (with dirt deflector attached) to the drive gear carrier, using care when passing the sprocket carrier hub through the diaphragm type oil seal installed to the outer housing. Tap the carrier with a soft hammer to seat it properly. Add the nut lock and nut to the drive gear carrier threads, and using a special socket wrench SE-1184-1 (Illust. 15), tighten the nut to specified torque. (Refer to Par. 2, "SPECIFICATIONS.") Bend the lips of the nut lock against the nut.

12. Install the drive gear outer bearing and cage against the sprocket carrier. Be sure the "O" ring is in place around the bearing, if bearing was removed from the cage. Install the drive gear outer bearing retainer and pivot oil seal dirt deflector over the bearing cage and secure all three to the sprocket carrier with lock washers and cap screws.

NOTE: If the sprocket was removed from the sprocket carrier during disassembly, install the sprocket to the sprocket carrier before attaching the pivot oil seal dirt deflector.

13. Complete the installation of the remaining parts, from and including the pivot oil seal (56 or 57) to the sprocket shield (65 or 64, Illust. 11 or 12), as outlined under Par. 6, "SPROCKET INSTALLATION."

14. Refill the sprocket drive with the recommended grade and quantity of lubricant. (Refer to the Operator's Manual.)

11. REASSEMBLY AND INSTALLATION

Wide Tread

6, 6 (61), 9, 9 (91) AND 9 (92) SERIES: The installation procedure for the wide tread tractors is the same as that for the regular tread outlined in the preceding Par. 10, except for the reassembly and installation of the pinion shaft, pinion, and the sprocket drive carrier, Illust. 11 or 12. To install the carrier assembly, proceed as follows:

1. Reassemble the steering clutch support bearing parts to the pinion shaft in the reverse order of their disassembly (Illust. 25). (Refer to parts 29 to 34, Illust. 11, or parts 30 to 41, Illust. 12.) Install a new oil soaked seal (32 or 33) in the bearing retainer so that the lip side of the seal faces outward toward the bearing.

Tighten the bearing nuts (34, Illust. 11 or (40, Illust. 12) to specified torque (refer to Par. 2, "SPECIFICATIONS") and bend the lips of nut lock to lock both nuts. The use of a new nut lock is recommended.

6 (62) SERIES ONLY (Illust. 11): Install the steering clutch bearing support assembly to the sprocket drive carrier. Press ball bearing (33) into bearing cage (37). Install the cage into the bore of drive so the oil passage in the cage is at the bottom when the bolt holes are aligned. Place a new gasket (36) on the bearing cage. Install the bearing retainer (31) to match the slot with the oil passage in the bearing cage, and secure the assembly to the drive carrier with the cap screws and lock washers.

2. NOT 6 (62) SERIES: Install the pinion inner bearing (38 or 45) into bearing cage (39 or 46). Pass the assembly through the larger upper bore in sprocket drive carrier for installation in the smaller opposite bore. Secure the flange of the bearing cage to the inside of the outer wall with lock washers and cap screws. See NOTE, as the procedure varies.



NOTE: 61 AND LATER 6 SERIES with roller bearings. Install the outer race into the bearing cage to seat against the shoulder. The identification groove around the race should be toward the flange side of cage. Then install the assembly to the carrier as above.

OLDER 6 SERIES with ball bearings. Press the bearing into the bearing cage to seat against the shoulder. Then press the bearing assembly onto the splined end of pinion so bearing cage flange is toward the spline. Then install the pinion and bearing assembly as above, but use a new gasket between the bearing cage and the carrier if a gasket was removed during disassembly.

9 (91) AND 9 (92) SERIES: Press the bearing into the bearing cage to seat against the shoulder. Press the bearing assembly onto the splined end of pinion so the bearing cage flange is toward the spline. Then install the pinion and bearing assembly as above, using a new gasket between the bearing cage and the carrier if a gasket was removed during disassembly. Add bearing retainer (44, Illust. 12) and secure the retainer (44) with the bearing cage flange to the carrier as above.

6 (62) SERIES ONLY (Illust. 11): Install the sprocket drive carrier to the main frame, but first insert the bearing cage (39) only, into its bore in the inner wall to keep it in position during the installation of the sprocket drive carrier. Raise the drive carrier (41) and pass it over the pivot shaft (60), then the assembled bearing support onto the pinion shaft (29). Use the bearing cage flange OD to pilot the drive carrier into position against the main frame. Install the cap screws, nuts and lock washers and tighten evenly to draw up and secure the drive carrier to the main frame.

3. 6, 6(61), 9, 9(91) AND 9(92) SERIES (Illust. 12): Press the bearing cage (37 or 42), with gasket, into the sprocket drive carrier, be sure that the oil hole in the cage will be at the bottom and that the cap screw holes line up.

6 (62) SERIES ONLY (Illust. 11): Arrange to suspend the bearing cage (39) inside the drive carrier within reach of the opening when the

bearing cage is removed from its bore. Remove the bearing cage (39) from its bore, insert spacer (33A) through the opening and onto the pinion shaft (29). Install bearing retainer nut (34) through the opening and onto the pinion shaft, then tighten to the special torque shown in Par. 2, "SPECIFICATIONS." Install a new nut lock (35) and jam nut (34) and bend the lug to lock into position.

4. 6, 6(61) 9, 9(91) AND 9(92) SERIES: Position the sprocket drive carrier on the pivot shaft, align the cap screw holes and force the carrier against the main frame. Install the attaching bolts and nuts, tightening them evenly. Be sure to install the cap screws between the webs on the inside of the carrier.

6 (62) SERIES ONLY (Illust. 11): Raise the bearing cage (39) and pull it into its bore. Install the cap screws and lock washers to secure the bearing cage to the inner wall of the sprocket drive carrier.

5. 6, 6(61), 9, (91) AND 9(92) SERIES: Install the pinion shaft assembly through the steering clutch compartment with a new gasket (35 or 36) in position. See that the oil passage of the bearing retainer is at the bottom to line up with oil hole in bearing cage when the cap screw holes are aligned. Push the pinion shaft in to engage the splines of the pinion previously installed as outlined in step 2 for the "9" and older "6" SERIES. Drive the pinion shaft, using a soft hammer around the flange bore, to start the bearing into the bearing cage positioned in the carrier. The attaching cap screws may be used to pull the assemblies together. Refer to Illust. 24 for removal. Install and tighten the cap screws evenly through the access holes in the pinion shaft flange.

6 (62) SERIES ONLY (Illust. 11): Install roller bearing outer race (38) until it bottoms on shoulder of the bearing cage (39). The identification groove around the race should be toward the flange side of the cage.

6. 6, 6(61), 9, 9(91) AND 9(92) SERIES: Reinstall the steering clutch and brake. (Refer to Section 7.)

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**11. REASSEMBLY AND INSTALLATION-Wide Tread-Continued**

6 (62) SERIES ONLY (Illust. 11): Install the sprocket drive pinion (40) with bearing inner races (38 and 9) installed at each side of pinion gear. If new bearings are required the inner races should be pressed on each shoulder of the pinion gear so the bevel surface of the races face away from the gear teeth. Insert the splined shaft of the pinion gear (40) through the outer race of inner bearing (38) to engage the splines of pinion shaft (29).

7. 6, 6(61), 9, 9(91) AND 9(92) SERIES: Complete the installation of the pinion, pinion outer bearing, outer housing and sprocket assembly as outlined under "Regular Tread."

6 (62) SERIES ONLY (Illust. 11): If a new pinion gear outer bearing (9) is required, press the outer race into the bore of outer housing (10) so the identification groove around the race will be at the cap end. Install new "O" ring (12) and the bearing cap (13) to the outer housing.

The following steps 8 through 16 for 6 (62) series (Illust. 11):

8. Install drive gear (17) on the pivot shaft (60). If the inner bearing (15) was removed, install a new outer race in the gear so the identification groove around the race is toward the tractor. Press the bearing outer race into the gear hub and a new bearing race on the pivot shaft to butt against the main frame.

9. Pass the bearing spacer (16) over the pivot shaft and into the long hub of the drive gear until the spacer bottoms against the bearing in the short hub.

10. Install a new gasket (18) onto the sprocket drive carrier (41). Install the outer housing (19) on the sprocket drive carrier to align with the dowel pins. Install all cap screws, nuts and lock washers, and tighten alternately to draw the sections together evenly.

11. Place a new gasket (22) on the pin side of oil seal (23). Dip the surface of sealing washer in oil and install the oil seal by inserting the pins into the holes of the sprocket drive carrier. Attach the oil seal guard (21) to the carrier with lock washers and cap screws, if it was removed.

12. Install the sprocket carrier (47), with the dirt deflector (25) and all bolts (24) assembled, to the long hub side, to engage the splines of drive gear (17). Install the nut lock (48) and carrier nut (49) on the hub of drive gear (17). Tighten the nut to the required torque shown in Par. 2, "SPECIFICATIONS" and bend the lugs on nut lock.

13. Press ball bearing (52) into bearing cage (51) until seated against the shoulder, if it was removed. Install "O" ring (50) to the groove around the bearing cage, and "O" ring (53) into the recess in bearing cage around the edge of installed bearing (52). Pass this bearing assembly over the pivot shaft, insert the cage into sprocket carrier (47) and the bearing onto the pivot shaft shoulder as far as possible without forcing.

14. Install bearing retainer (54), recess toward the outer bearing, and dirt deflector (55) over the pivot shaft and against the bearing cage (51). Line up the bolt holes, install the lock washers and cap screws. Alternately tighten the cap screws to draw up the assembly evenly to the sprocket carrier hub (47).

15. Install the sprocket (46) onto the bolts extending through the hub of the sprocket carrier, add the external tooth washers and nuts. Tighten the hub bolt nuts to the torque shown in Par. 2, "SPECIFICATIONS."

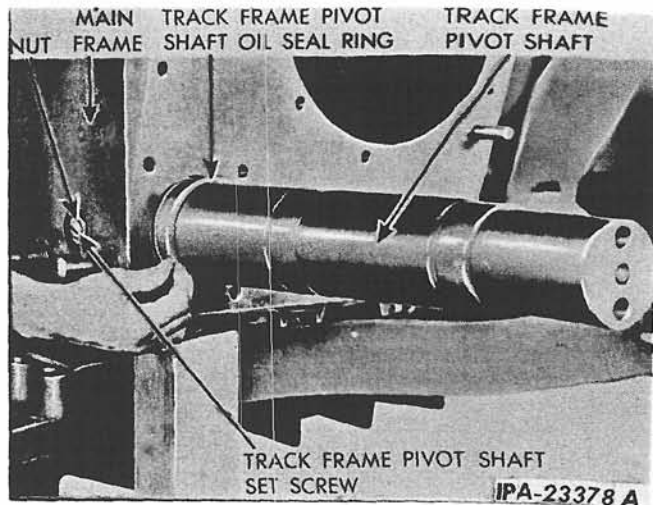
16. Complete the installation of the remaining parts as outlined under Par. 6, "SPROCKET INSTALLATION."



## 12. PIVOT SHAFT REPLACEMENT

The pivot shaft is pressed through the main frame and supports the sprocket drive gears and the rear end of the track frames (Illust. 28). The shaft is positioned and held from turning by set screws and lock nuts at the rear of the main frame.

If necessary to replace, the shaft must be pulled out of the main frame. This requires a complete disassembly of both sprocket drives. The pivot shaft can be removed or installed most easily with pivot shaft removing and installing set, number Y-3100-C6 for all "6" SERIES or Y-3100-D for all "9" SERIES Crawler Tractors. Refer to "SERVICE TOOLS" manual, ISS-1002 for descriptions and instructions for the use of this tool.



Illust. 28 - Pivot Shaft Replacement