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TIGHTEN ALL HARDWARE PER SIZE TO GRADE 5 TORQUE (SEE STANDARD TORQUE SPECIFICATIONS FOR BOLTS, SECTION 9) UNLESS OTHERWISE SPECIFIED.

741, 742, 743 & 743DS Bobcat Loader
Service Manual

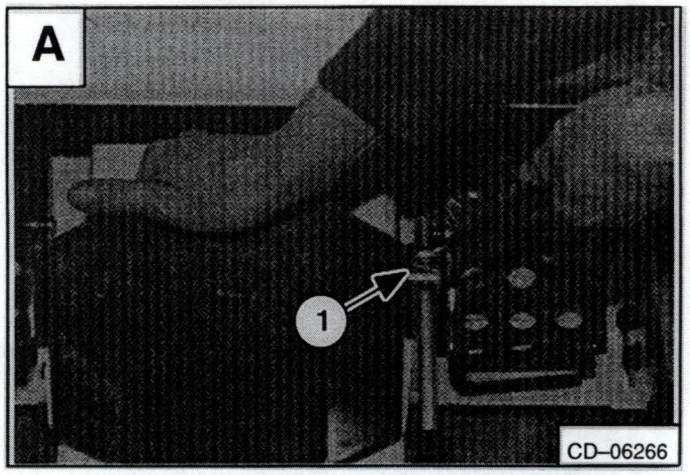
PARKING BRAKE

Adjustment

When the brake is in good condition and adjusted correctly, it will keep the loader from moving when in the engaged position.

Loosen the nut (Item 1) **[A]** and turn the linkage rod to adjust the brake. There must be 1/4 inch (6,35 mm) free play under the rear edge of the pedal.

NOTE: If the correct adjustment cannot be reached by turning the linkage rod, the brake lever must be adjusted.



Remove the brake lever (Item 1) **[B]**.

Turn the cam pin (Item 2) **[B]** counterclockwise until the brake pucks (Item 3) **[B]** make contact with the brake discs (Item 4) **[B]**.

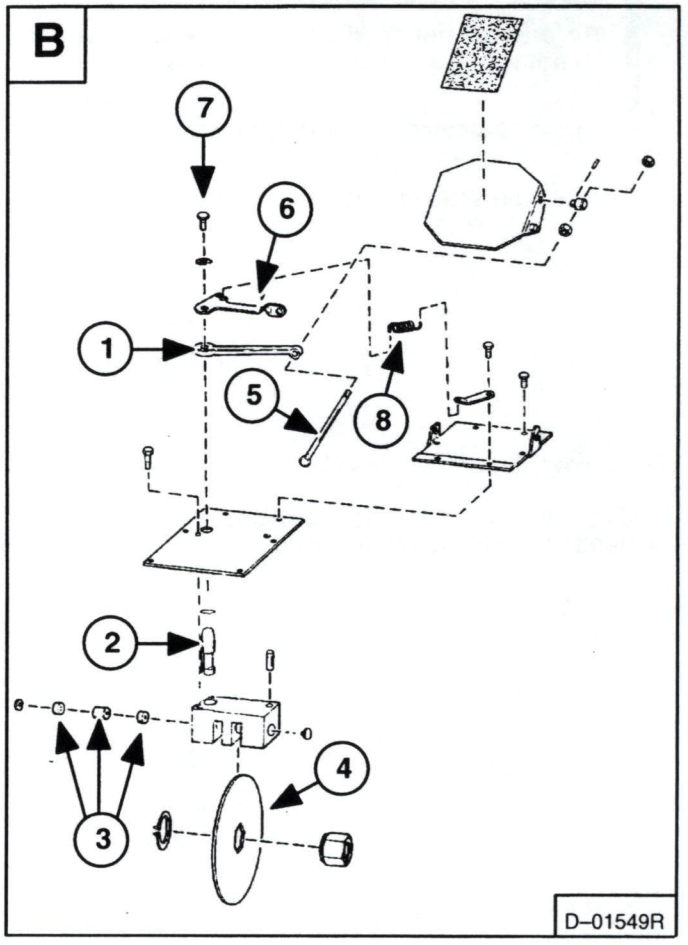
Put the brake linkage rod (Item 5) **[B]** into the brake lever. Install the linkage rod into the brake pedal.

When there is 1 inch (25,4 mm) of threads through the brake pedal install the brake lever on the cam pin. the brake pucks must still be making contact with the brake discs.

Install the lever (if so equipped) (Item 6) **[B]** and bolt (item 7) **[B]** on the cam pin and tighten to 65–70 ft.–lbs. (88–95 Nm) torque.

Install the spring (Item 8) **[B]**

Adjust the brake as described above.



PARKING BRAKE (Cont'd)

Removal and Installation

Remove the seat assembly.

remove the control shields, steering levers and linkage.

Remove the transmission covers and the brake block **[A]**.

Installation: Align the brake discs so they are centered between the brake pucks.

IMPORTANT

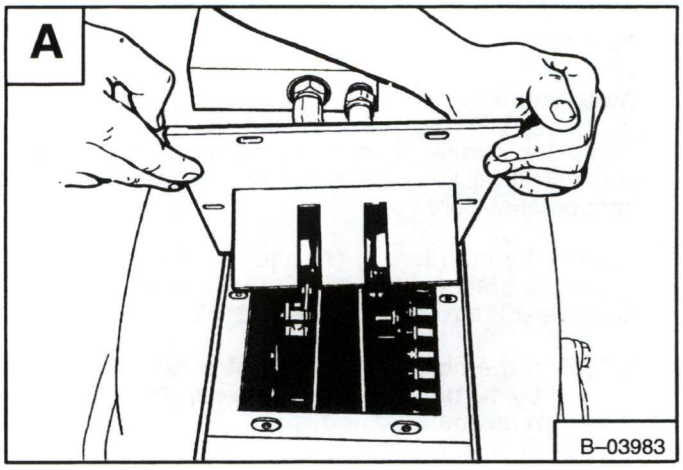
Be careful not to damage the gasket when removing the transmission covers.

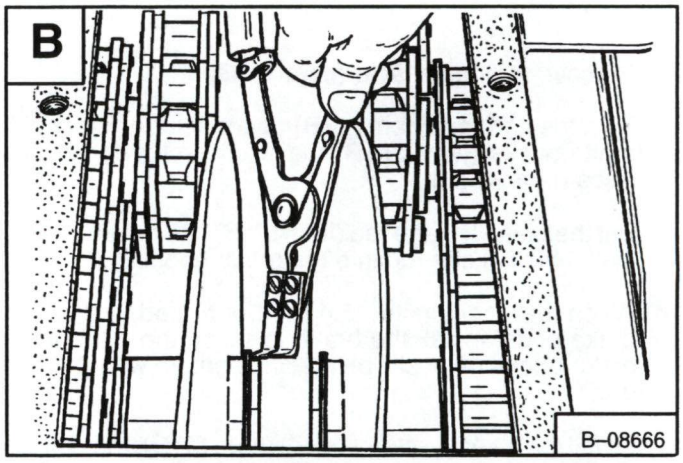
I–2118–1196

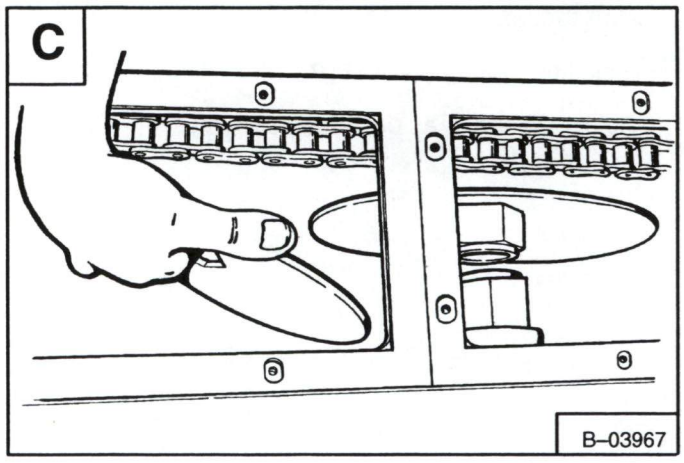
Remove the snap ring at the discs **[B]**.

Remove the brake discs **[C]**.

Check the brake discs for damage. Replace the discs as needed. Do not grind the discs.





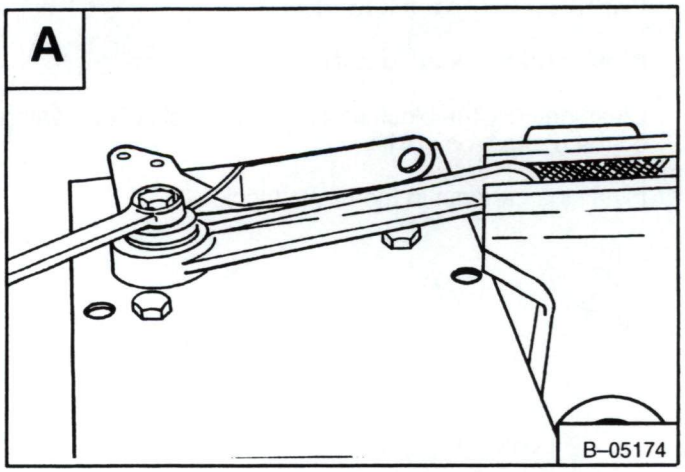


PARKING BRAKE (Cont'd)

Block and Pucks

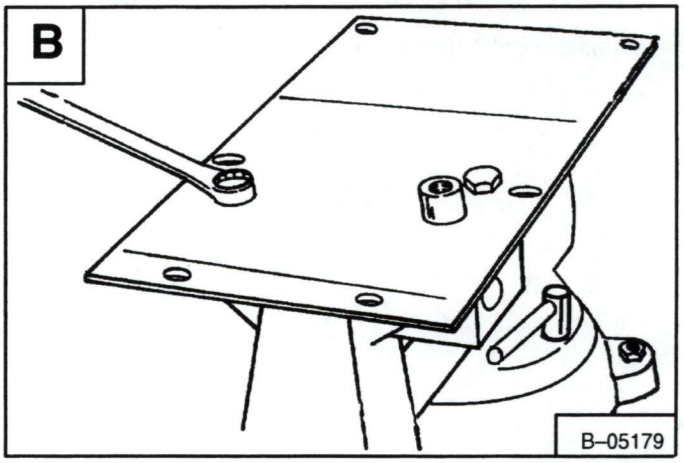
Remove the brake lever **[A]**.

Installation: Tighten the bolt to 65–70 ft.–lbs. (88–95 Nm) torque.



Remove the bolts which fasten the brake block to the transmission cover **[B]**.

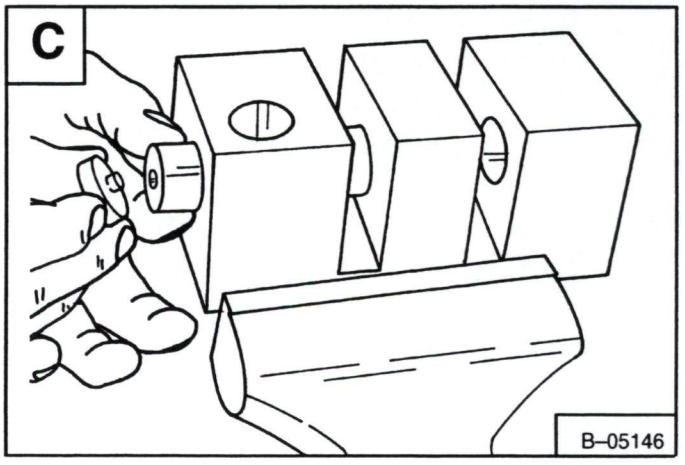
Installation: Put thread sealant on the bolts and tighten to 65–70 ft.–lbs. (88–95 Nm) torque.



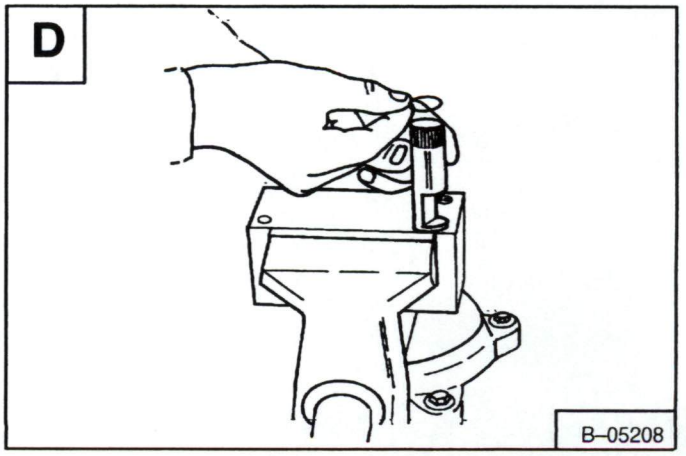
Remove the pucks from the block **[C]**.

Check the pucks for wear or damage. The pucks can be turned 180° and used again.

Check for a good fit between the pucks and the block bore. They must slide in and out freely.



Install the new O–ring on the cam pin **[D]**.

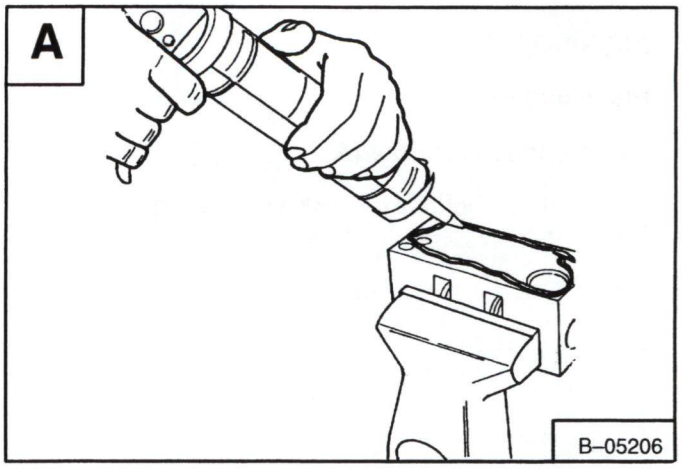


PARKING BRAKE (Cont'd)

Block and Pucks (Cont'd)

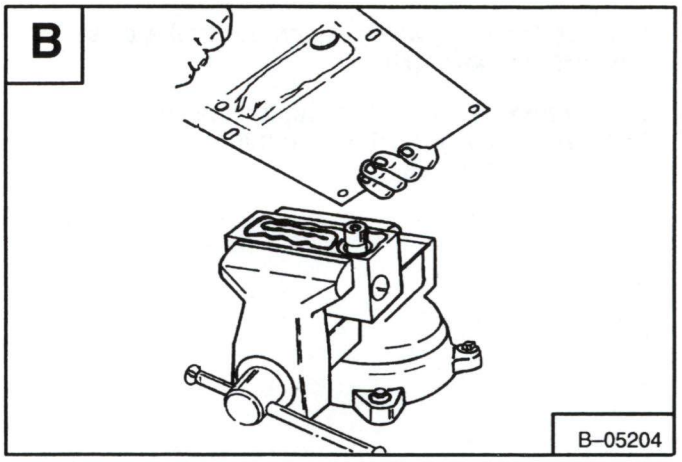
Clean and dry the block and put a bead of R.T.V. sealant on the brake block **[A]**.

Install the cam pin in the brake block.



Install the center cover on the brake block **[B]**.

Install the bolts and tighten.



AXLES, SEALS AND BEARINGS

Removal

The tools listed will be needed to do the following procedure:

MEL1202B – Axle Bearing Service Set

Slide Hammer (Fabricate locally)

Lift and block the loader.

Remove the seat assembly.

Remove the wheel and tire assembly.

Remove the steering levers.

Remove the chaincase covers and brake assembly. (See Page 4–2.)

Loosen the gearcase mounting bolts to allow clearance to remove the sprocket.

Installation: Tighten the bolts to 220–245 ft.–lbs. (300–330 Nm) torque.

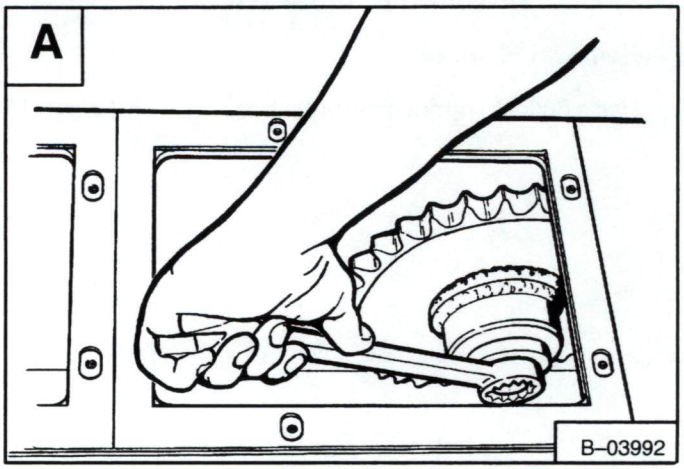
Loosen the bolt in the end of the axle by turning the axle hub **[A]**.

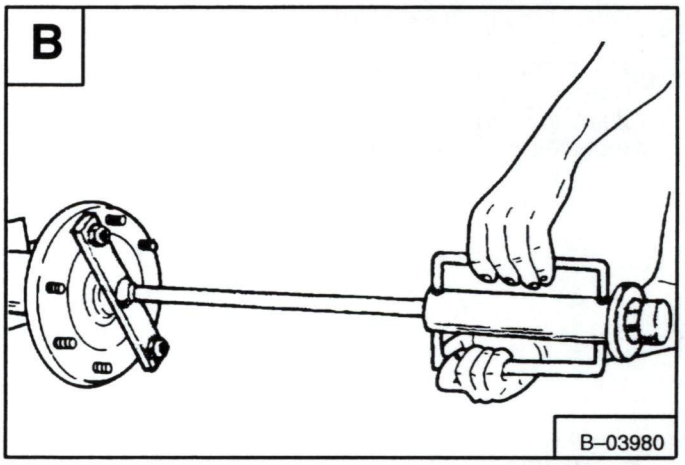
Installation: Put LOCTITE #242 on the bolt threads and tighten to 475–515 ft.–lbs. (644–712 Nm) torque.

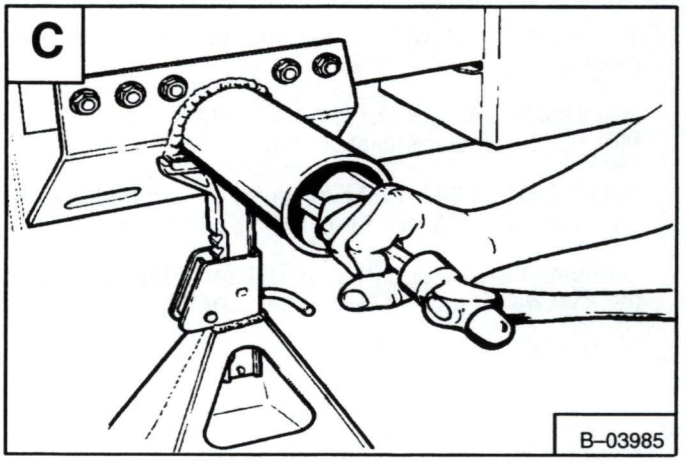
Use a slide hammer to remove the axle from the inner bearing **[B]**.

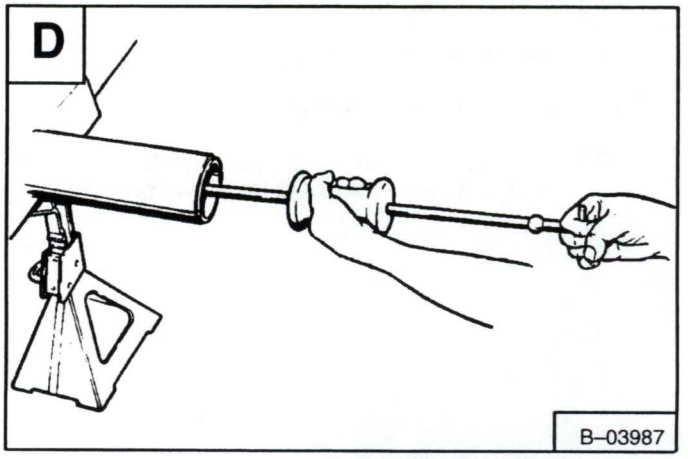
Move the sprocket away from the inner axle bearing and remove the inside bearing cup using a long punch **[C]**.

Use a bearing puller tool and slide hammer to remove the outer bearing cup **[D]**.



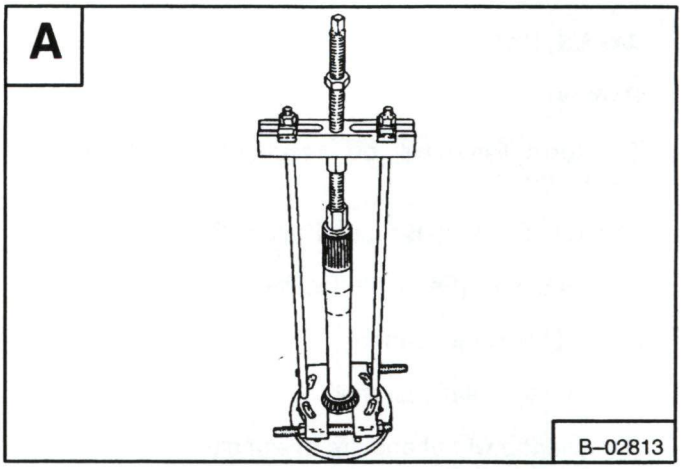






Removal (Cont'd)

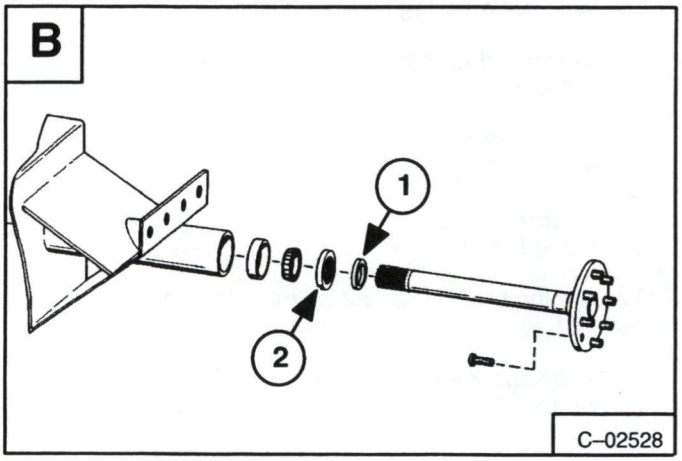
Use a puller to remove the outer bearing from the axle **[A]**.



Using a hammer and chisel, remove the wear sleeve (Item 1) **[B]** from the axle.

Do not damage the axle bearing surface.

Clean and check all the parts for wear and damage. Replace the parts as needed.



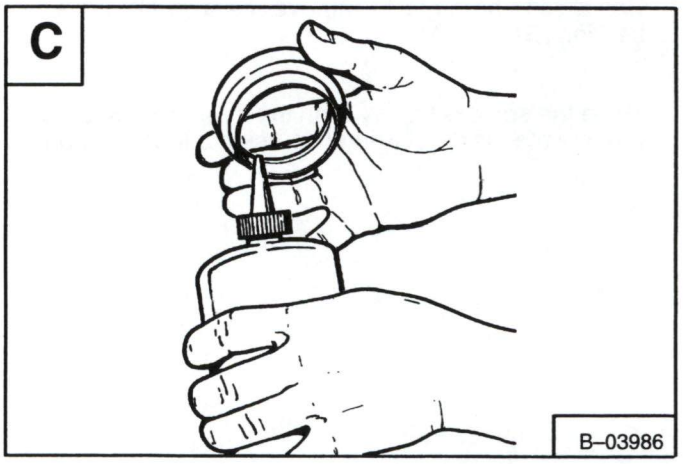
Installation

The tools listed will be needed to do the following procedure:

MEL1202B – Axle Bearing Service Set
MEL1052 – Seal Installation Tool

Put LOCTITE #242 on the inside of the wear sleeve **[C]**. Install the wear sleeve (Item 1) **[B]** on the axle.

Lubricate the axle sea (Item 2) **[B]** and install the seal on the axle with the open side toward the chain case.

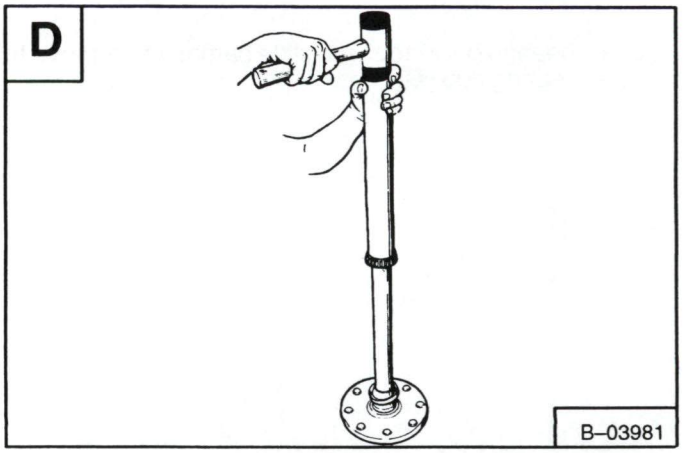


Using a arbor, install the outer bearing on the axle **[D]**.

Make sure the bearing seats correctly on the axle **[D]**.

Press only on the inner race of the bearing.

NOTE: When the bearing is installed, it will also position the wear ring in its correct position.



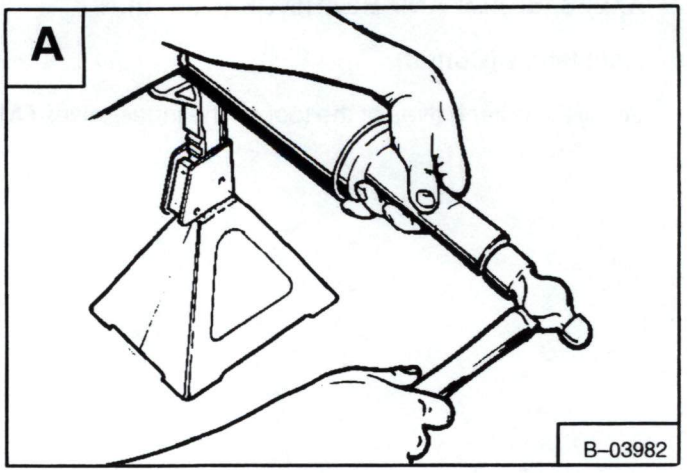
Installation (Cont'd)

Install the outer bearing cup using the correct size bushing drive **[A]**.

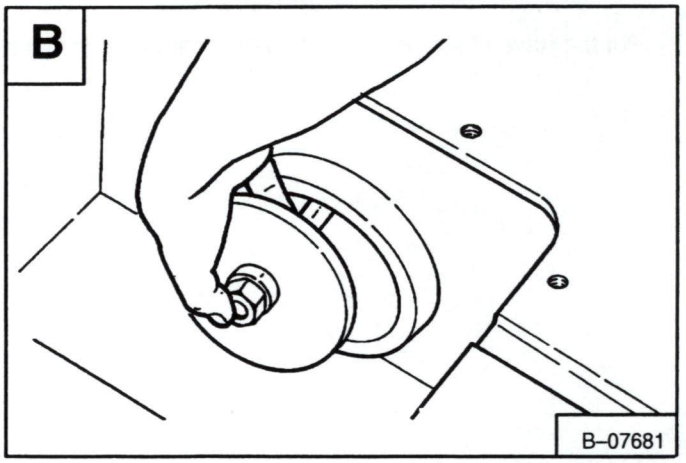
Install a long threaded bolt into the axle tube.

Install the correct size cup driver.

Install a washer and nut.



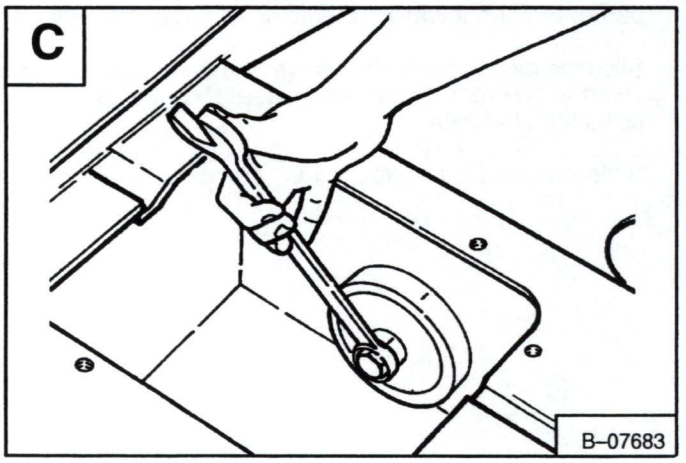
Inside the chaincase, install the new bearing cups, the bearing cup driver took washer and nut **[B]**.



Have a second person hold the wrench on the nut in the chaincase **[C]**.

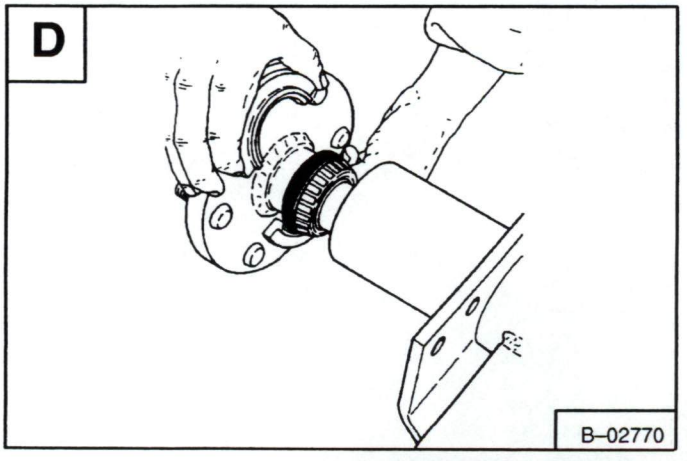
Turn the nut on the outside of the axle tube until the inner bearing cup is on its seat.

NOTE: Pack the inner and outer axle bearing with grease before installing the axle assembly.



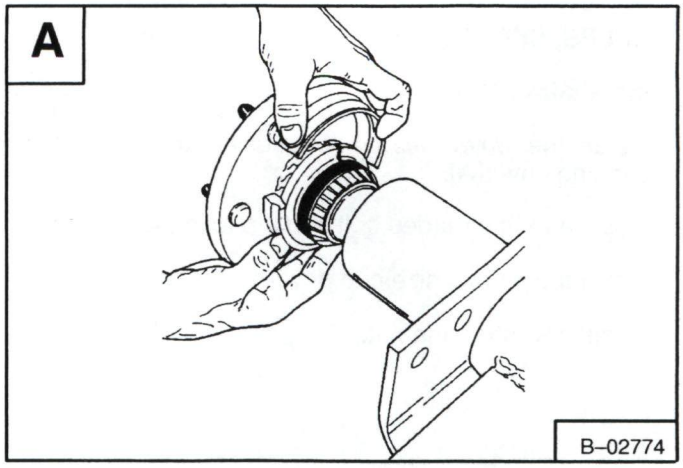
Install the inner halves of the installation tool behind the axle seal **[D]**.

MEL1052 – Seal Installation Tool



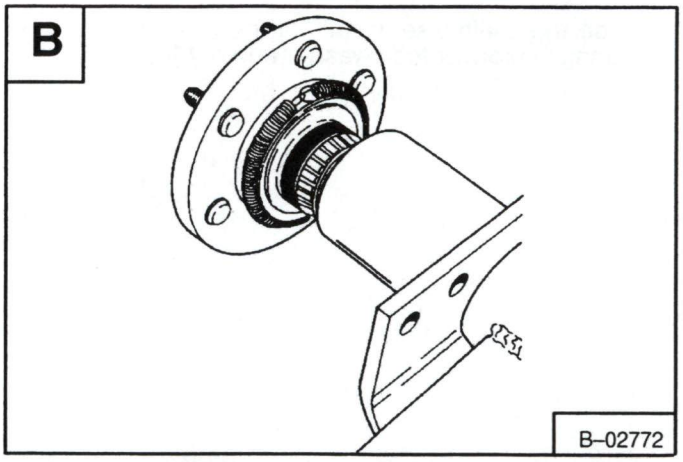
Installation (Cont'd)

Install the outer halves of the tool on the inner halves **[A]**.



Install the spring on the tool halves **[B]**.

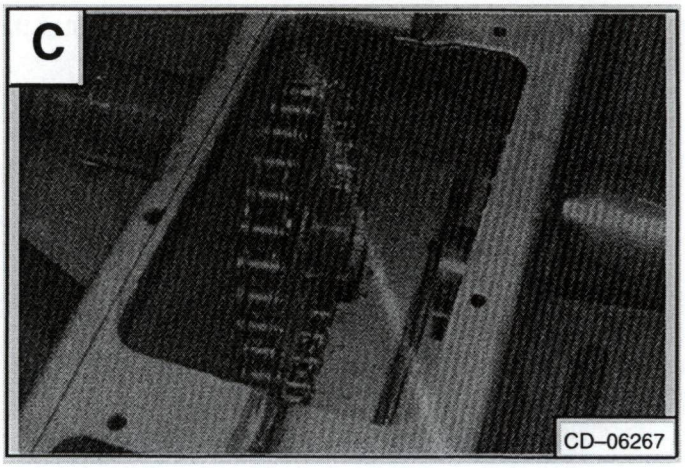
Put the drive chain on the reduction gear case sprocket.



Put the rear sprockets in the rear drive chain with the side part of the hub toward the outside of the chaincase **[C]**.

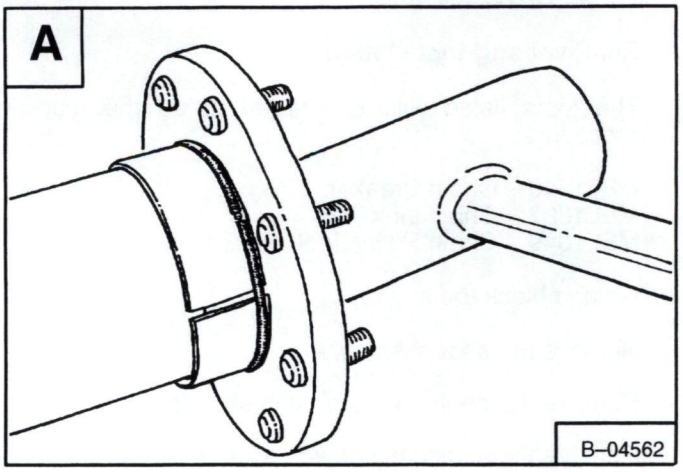
Slide the axle into the chaincase, move the sprocket and chain to the rear of the chaincase and align it with the splines on the axle.

Slide the sprocket on the axle.



Installation (Cont'd)

Using a large hammer, hit the axle hub until it is in the correct position. The tool will control the position of the axle and the seal will be in the correct location in the housing **[A]**.

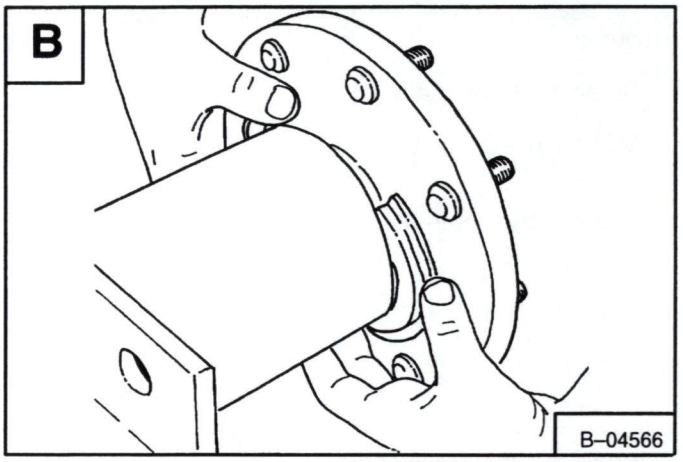


Remove the spring from the tool. Remove the outer halves of the tool. Remove the inner halves from the axle **[B]**.

Use the same procedure to install the front axle.

Install the washer and bolt (inside the chaincase) on the axle.

Tighten the sprocket bolt to 300 ft.–lbs. (409 Nm) torque.



Center the reduction gearcase between the front and rear drive chains. Tighten the bolts to 220–245 ft.–lbs. (300–330 Nm) torque **[C]**.

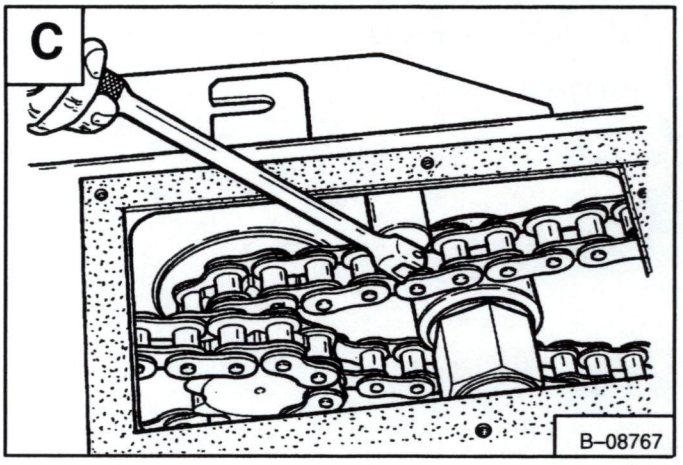
Check the axle end play. It must not exceed 0.013 inch (0,33 mm).

If end play is not correct replace the washer at the sprocket bolt to get the correct end play. (See Parts Microfiche.)

Install the transmission covers. (See Page 4–2.)

Install the brake linkage.

Install the center steering controls and linkages.



FINAL DRIVE CHAIN

Removal and Installation

The tools listed will be needed to do the following procedure:

MEL1046 – Chain Breaker
MEL1037 – Chain Link Tool
MEL1049 – Chain Puller Tool

Lift and block the loader.

Remove the seat assembly.

Remove the center transmission shields.

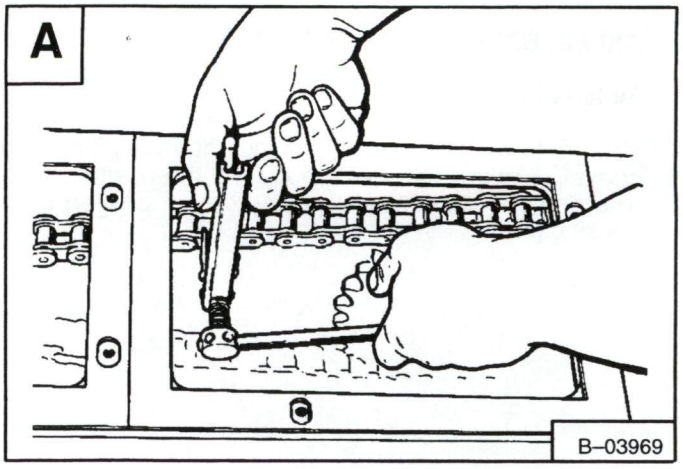
Remove the chaincase covers. (See Page 4–2.)

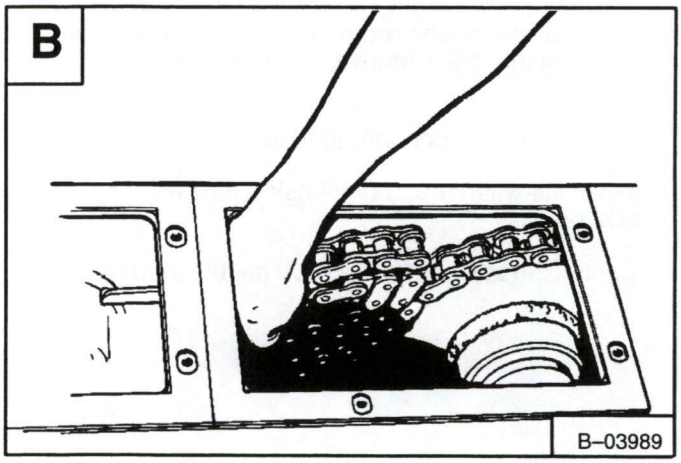
Remove the fluid from the chaincase using a transfer pump.

Break the front chain **[A]**.

MEL1046 – Chain Breaker

Remove the chain **[B]**.

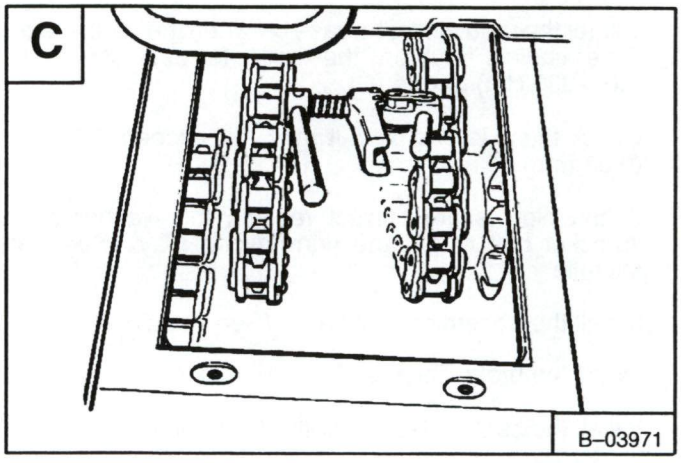




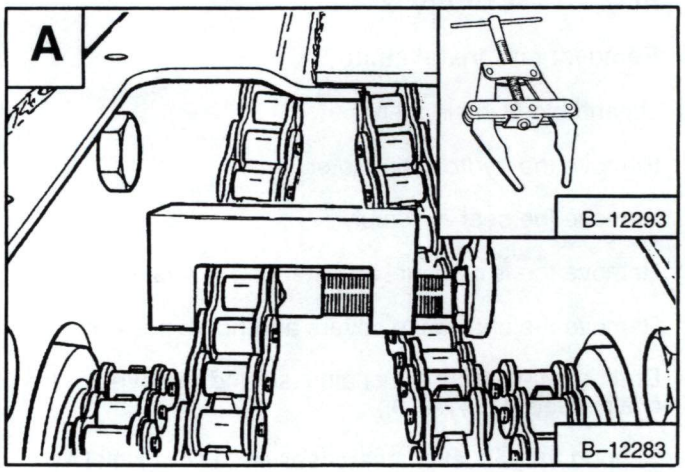
Break the rear drive chain **[C]**.

MEL1046 – Chain Breaker

Remove the chain.



Removal and Installation (Cont'd)



⚠ WARNING

Wear safety glasses to prevent eye injury when any of the following conditions exist:

- **When fluids are under pressure.**
- **Flying debris or loose material is present.**
- **Engine is running.**
- **Tools are being used.**

W–2019–1285

Install the replacement chain over the rear sprocket.

Use the chain puller tool (Inset) to install the connector link in the chain **[A]**.

MEL1049 – Chain Puller Tool

⚠ WARNING

DO NOT exceed the recommended torque of 130 ft.–lbs. (176 Nm). The tool may fail under too much torque. Put cloth around the tool to protect yourself from flying debris.

W–2233–0296

Use the chain link press to crimp the connector link into position **[A]**.

MEL1037 – Chain Link Tool

Be sure to use the adapter to #80 chain.

Use a large wrench to hold the tool while pressing the chain link.

Use the same procedure to install the front drive chain.

REDUCTION GEARCASE

Removal and Installation

Lift and block the loader.

Remove the hydrostatic motor.

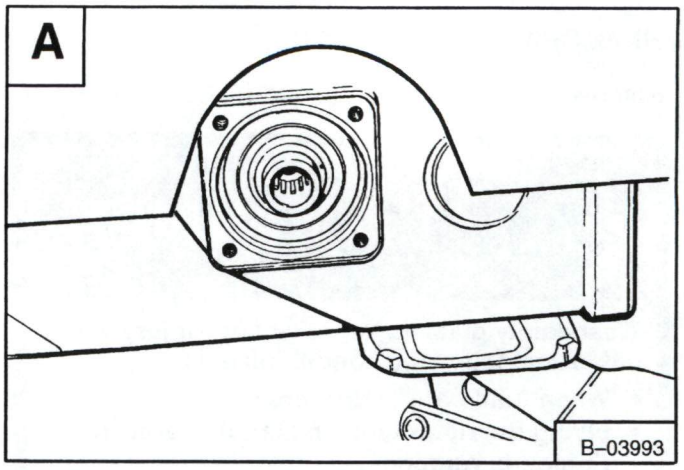
Remove the seat assembly.

Remove the front panel and steering levers.

Remove the chaincase covers and brake assembly.

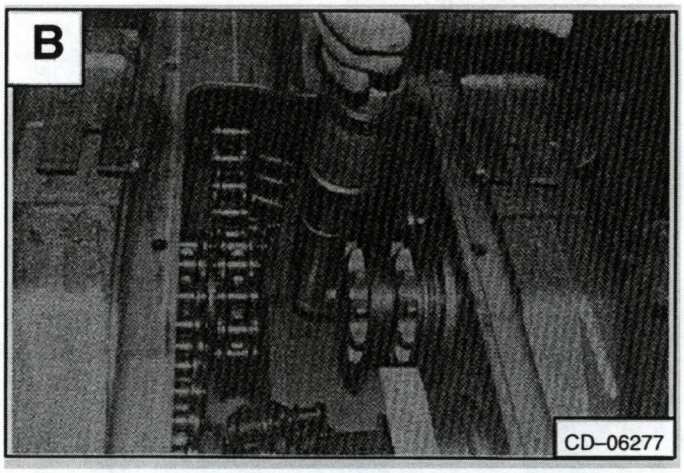
Drain the fluid from the chaincase and remove the front chain. (See Page 4–10.)

Support the reduction gearcase with a floor jack **[A]**.



Remove the gearcase mounting bolts **[B]**.

Installation: Tighten the bolts to 220–245 ft.–lbs. (300–330 Nm) torque.



Remove the bolt (Item 1) **[C]** and washer (Item 2) **[C]**. Drive the sprocket (Item 3) **[C]** through the gearcase into the chaincase so it clears the bearing (item 4) **[C]**.

Remove the rear chain from the sprocket and lower the gearcase to the floor.

Installation: When reassembly of the gearcase is complete, replace the bolt (Item 1) **[C]** with a 1 inch (25,4 mm) longer bolt.

Install the longer bolt and washer (Item 2) **[C]** in the gearcase.

Lift the gearcase into position, angle the sprocket and install the rear drive chain on the sprocket.

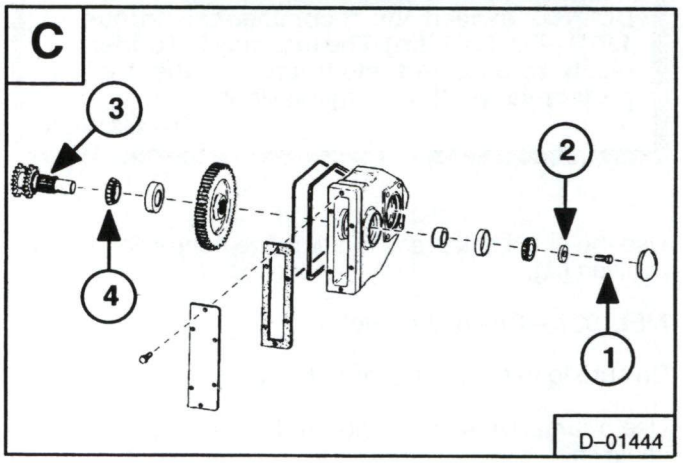
Drive the sprocket inward until it clears the bearing (Item 4) **[C]**. Do not damage the 1 inch longer bolt.

Pull the gearcase sprocket into position with the longer bolt and remove the bolt.

Put thread sealant on the original bolt (Item 1) **[C]** and install as shown.

Tighten the bolt to 210–235 ft.–lbs. (285–305 Nm) torque.

Install the front chain. (See Page 4–11.)

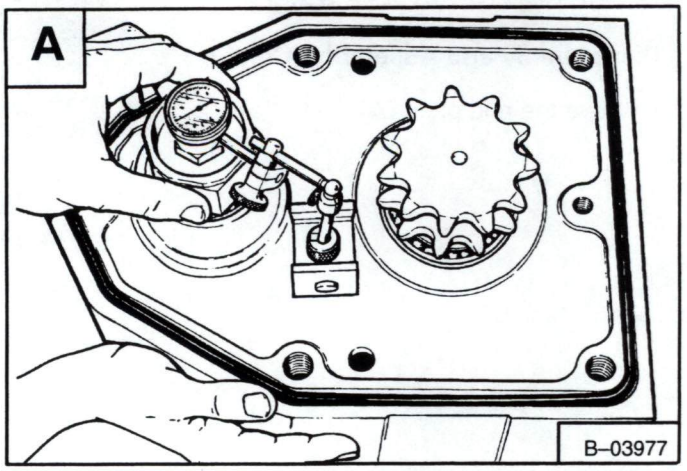


REDUCTION GEARCASE (Cont'd)

Checking Reduction Gearcase

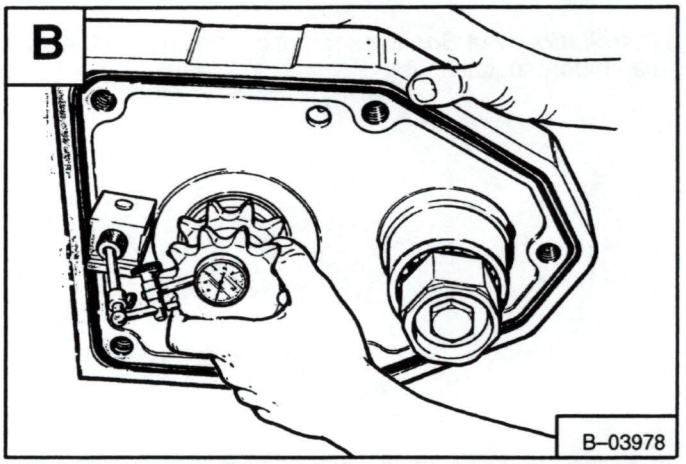
Before disassembly of the gearcase do the following checks:

Install a dial indicator on the input shaft **[A]**. The end play must be between 0.00–0.010 inch (0,0254 mm). If not, the following parts may need replacing: Bearing, bearing cups, gear or gearcase housing.



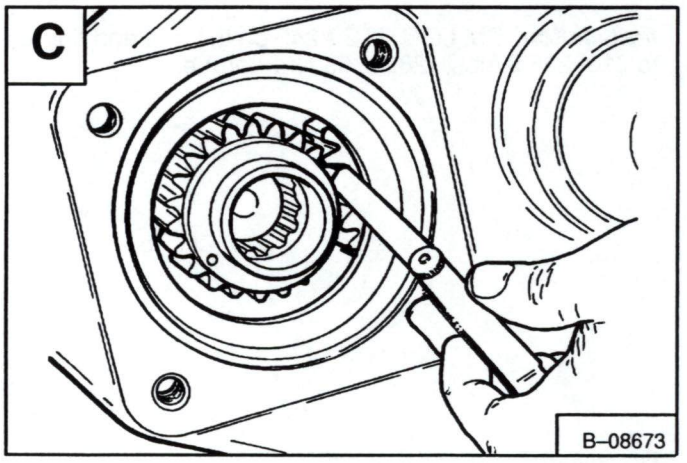
Install the dial indicator on the output shaft **[B]**. The end play must be between 0.00–0.010 inch (0,0254 mm). If not, the following parts may need replacing: Bearing, bearing cups, gear or gearcase housing.

Remove the seal.



Install a feeler gauge between the teeth of the gears **[C]**.

The back lash must be between 0.003–0.009 inch (0,076–0,228 mm). If not, the following parts may need replacing: Large gear or the shaft.



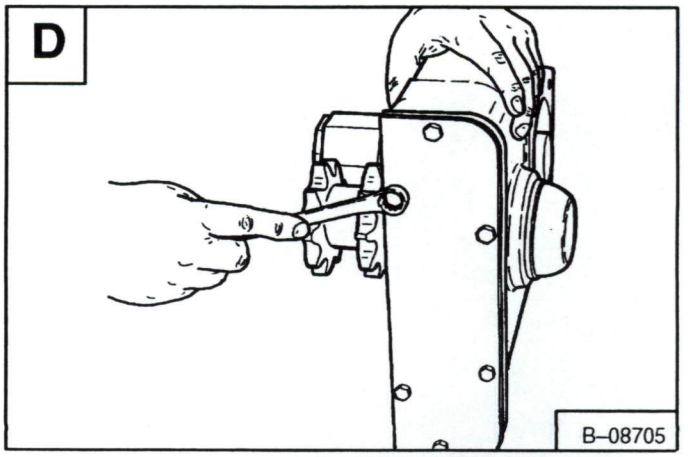
Disassembly and Assembly

The tool listed will be needed to do the following procedure:

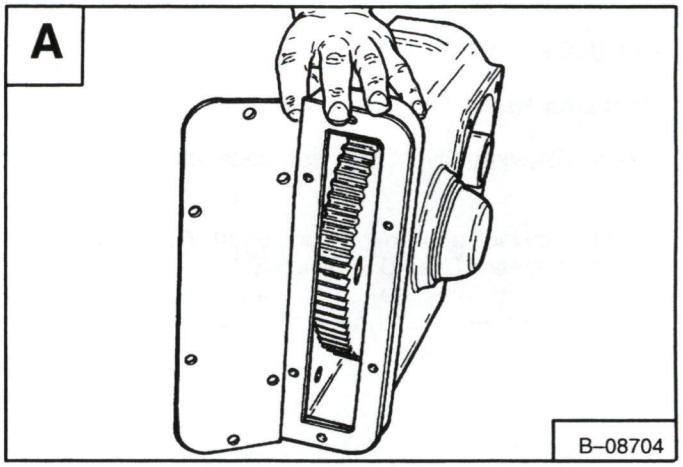
MEL1047 – Seal Installation Tool

Remove the bolts from the end plate **[D]**.

Installation: Tighten the bolts to 13–14 ft.-lbs. (16–18 Nm) torque.

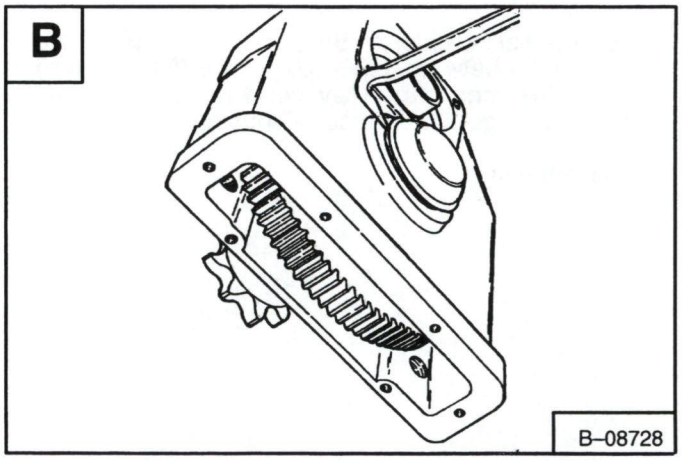


Remove the end plate **[A]**.



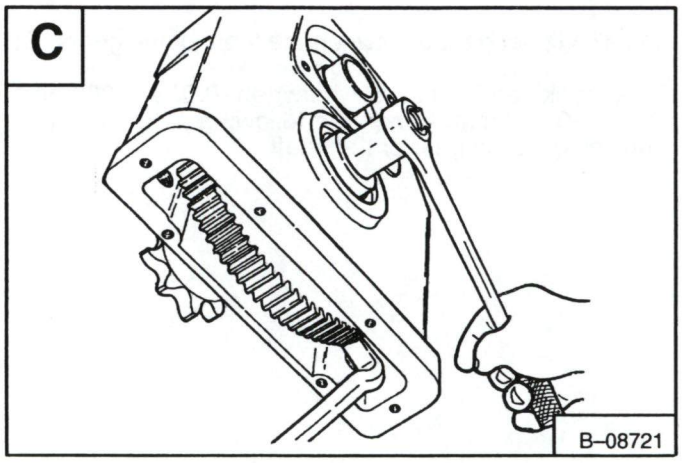
Remove the dust cap **[B]**.

Installation: Put *Boretite* sealant on the edge of the dust cap before installing it.

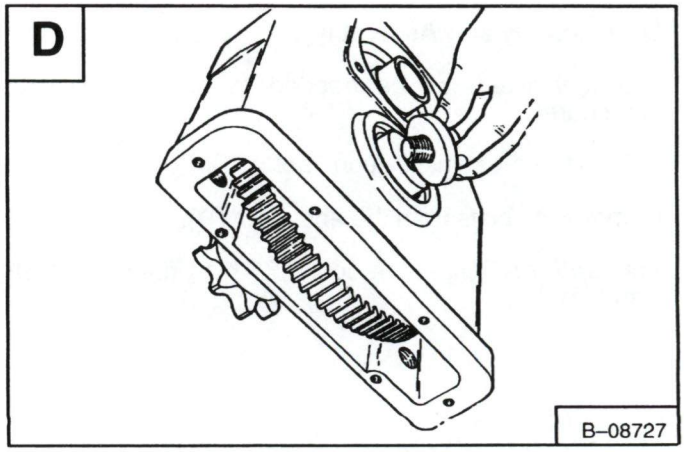


Remove the bolt from the output shaft **[C]**.

Installation: Put LOCTITE #242 on the bolt and tighten to 210–235 ft.–lbs. (285–305 Nm) torque.



Remove the bolt and washer **[D]**.

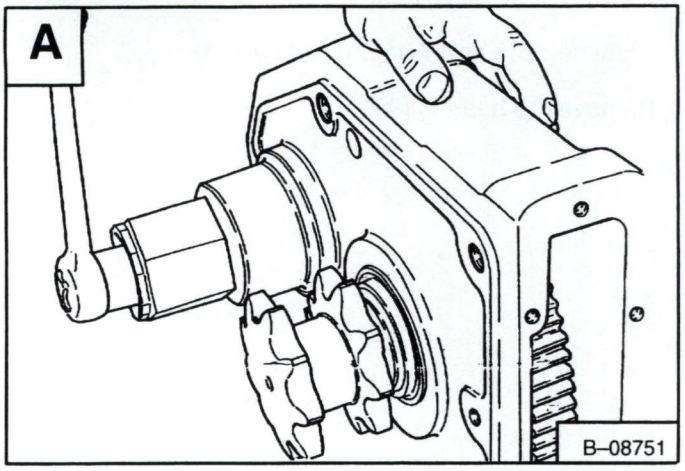


REDUCTION GEARCASE (Cont'd)

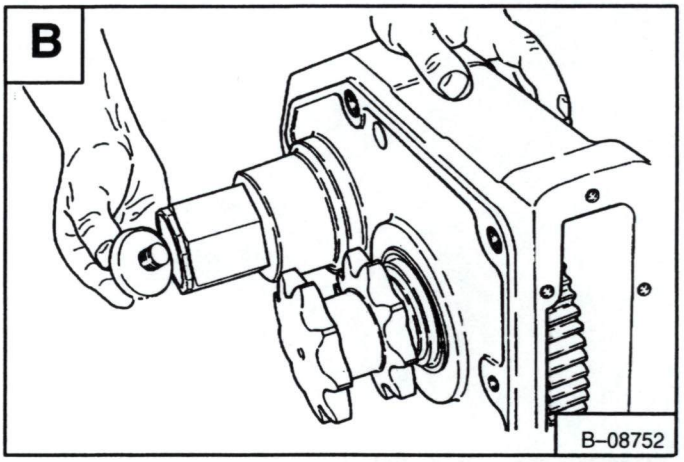
Disassembly and Assembly (Cont'd)

Remove the bolt at the disc hub **[A]**.

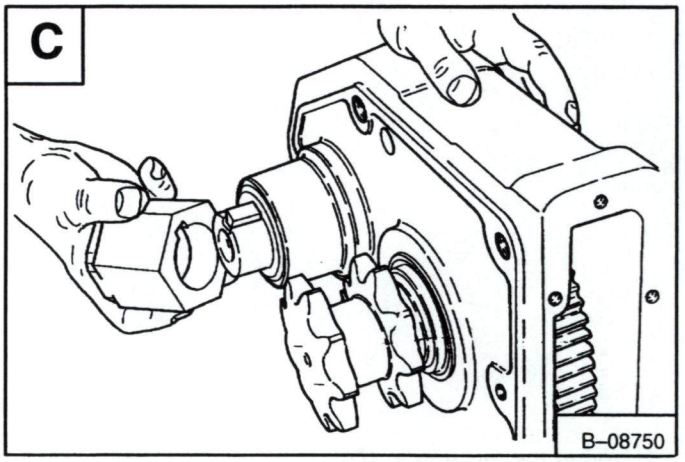
Installation: Put LOCTITE #242 on the bolt and tighten to 210–235 ft.–lbs. (285–305 Nm) torque.



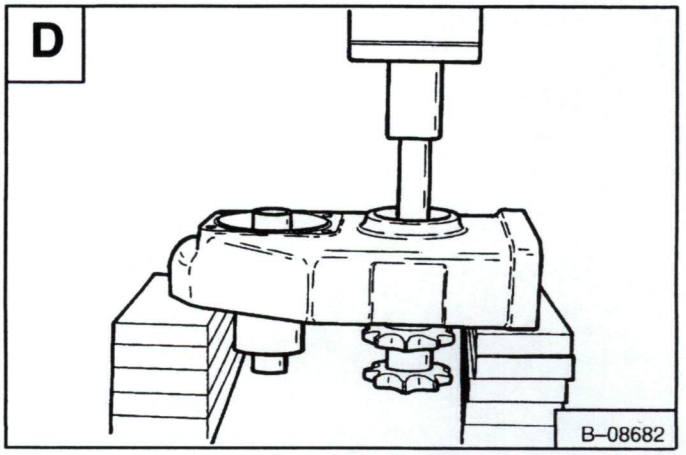
Remove the bolt and washer **[B]**.



Remove the disc hub and key **[C]**.

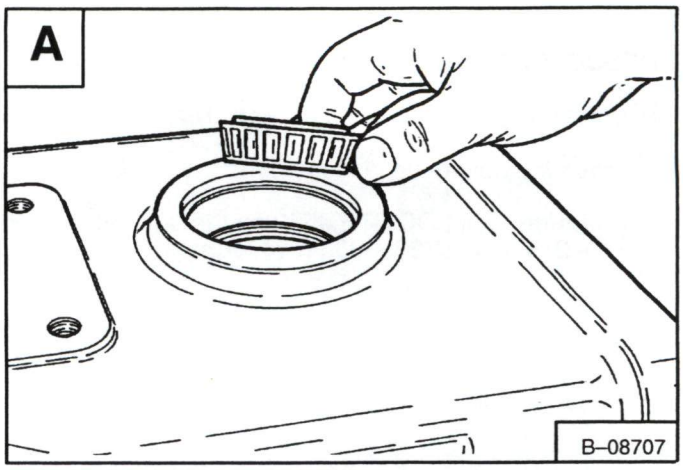


Put the gearcase housing in the press and remove the output shaft **[D]**.

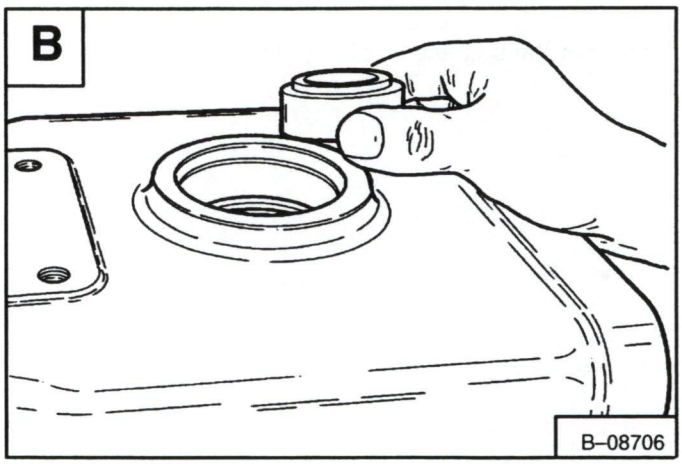


Disassembly and Assembly (Cont'd)

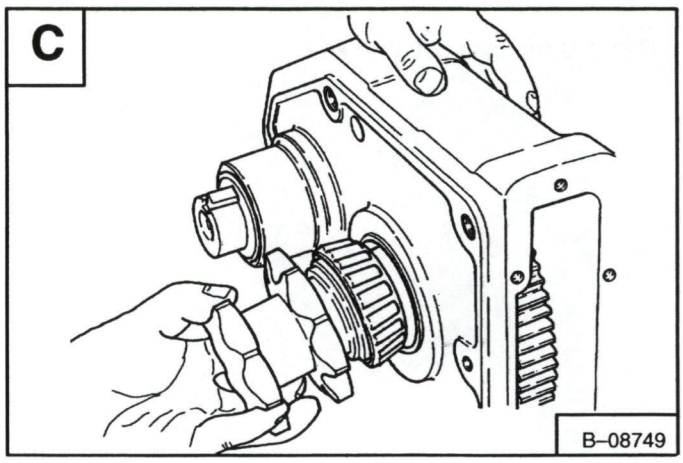
Remove the bearing **[A]**.



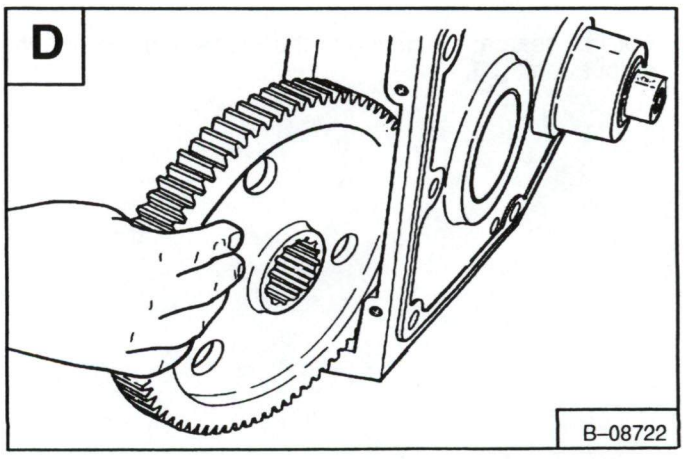
Remove the spacer **[B]**.



Remove the output shaft **[C]**.

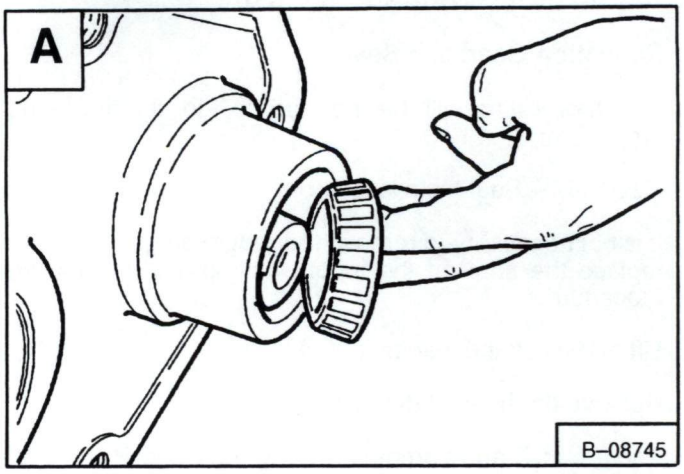


Remove the large gear **[D]**.

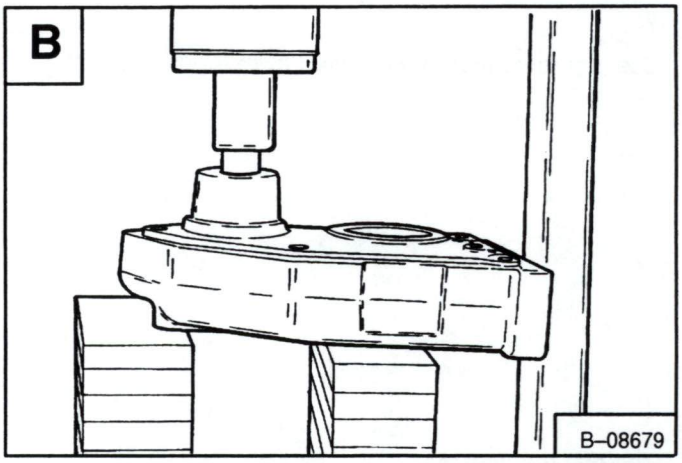


Disassembly and Assembly (Cont'd)

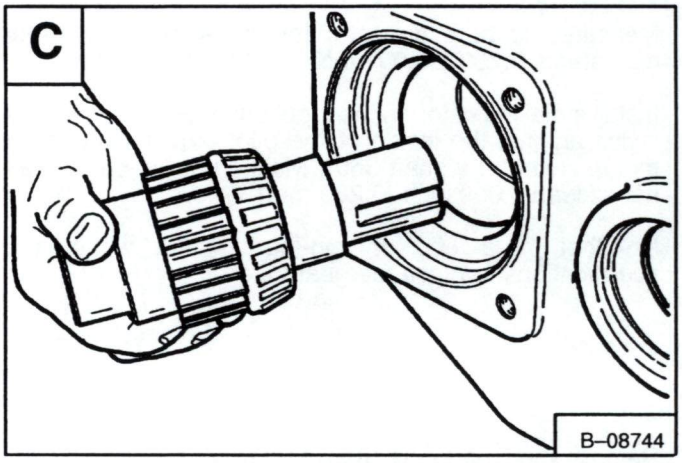
Remove the bearing from the input shaft end **[A]**.



Use a press and remove the input shaft **[B]**.

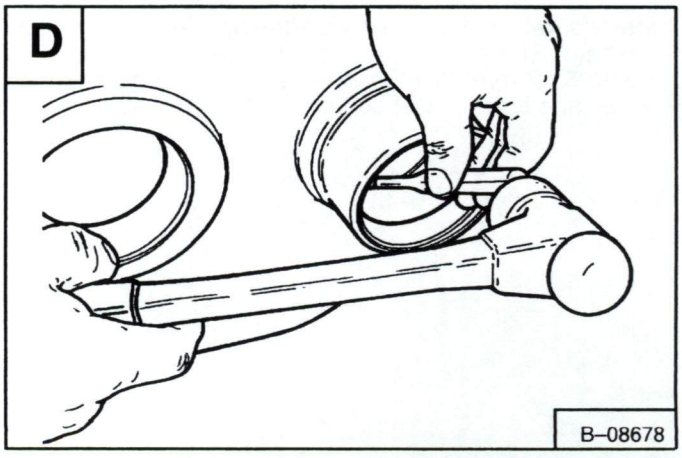


Remove the input shaft assembly from the housing **[C]**.



Use a punch and hammer and remove the bearing cups as needed **[D]**.

Installation: Use a press and bearing cup driver to install the bearing cup.



REDUCTION GEARCASE (Cont'd)

Reduction Gearcase Seal

The tool listed will be needed to do the following procedure:

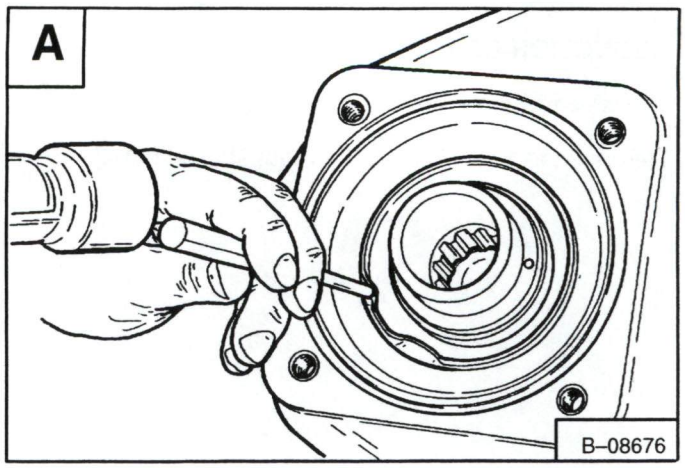
MEL1047 – Seal Installation Tool

It is not necessary to remove the reduction gearcase. To replace the seal on the input shaft, use the following procedure.

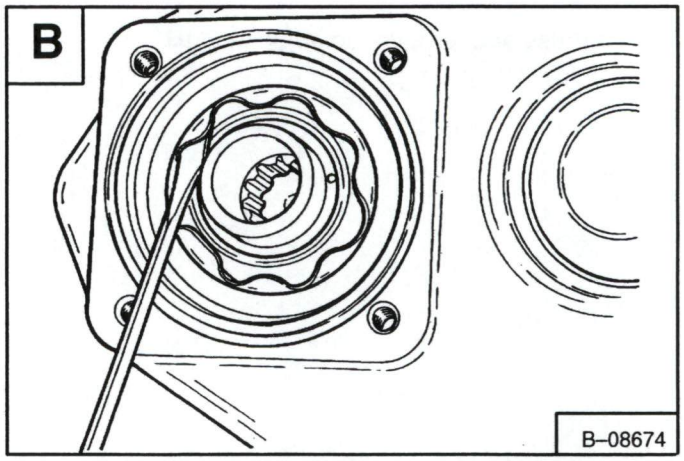
Lift and block the loader.

Remove the hydrostatic motor.

Use a punch and hammer to bend the edge of the seal inward **[A]**.



Use a screwdriver, pry the seal from the housing **[B]**.

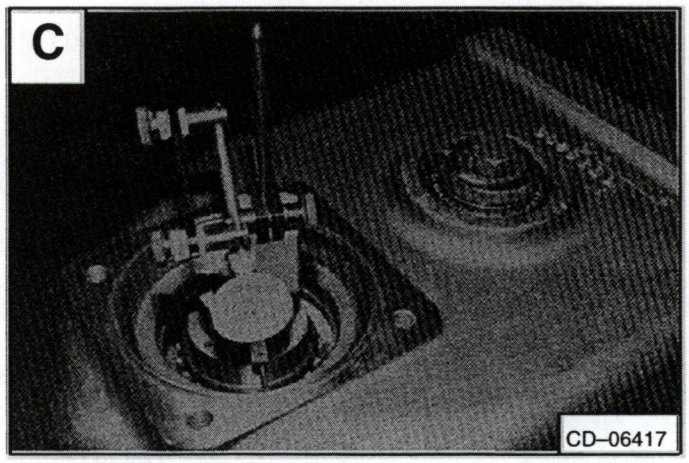


Remove the washer.

Measure the bore diameter for the seal **[C]**. Correct diameter is 3.750 ± 0.001 inch (95,25 ± 0,025 mm).

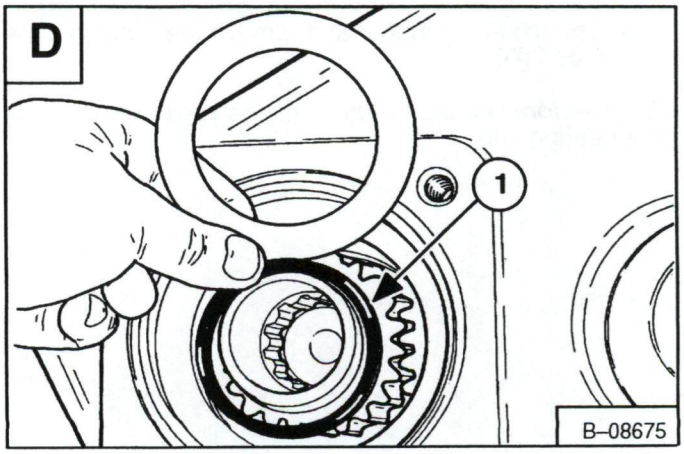
Install a dial indicator on the input shaft. Set the indicator stylus against the inside of the pilot bore for the drive motor. Rotate the shaft 360°. Maximum run–out should not exceed 0.009 inch (0,229 mm).

If either bore I.D. or run–out is not within the specifications, replace the gearcase.



Remove the Quad–ring (Item 1) **[D]**.

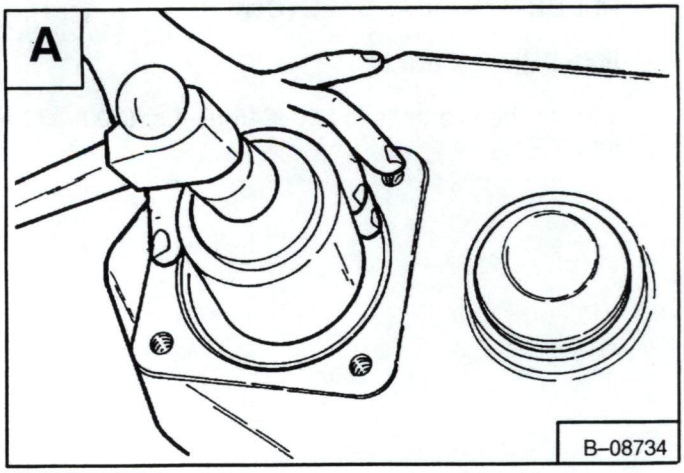
Installation: Install a new Quad–ring. Measure the new washer O.D. before installing it. Maximum O.D. is 3.745 inch (95,12 mm). The washer should be free of rough edges and burrs and slide into the bore freely.



Installation

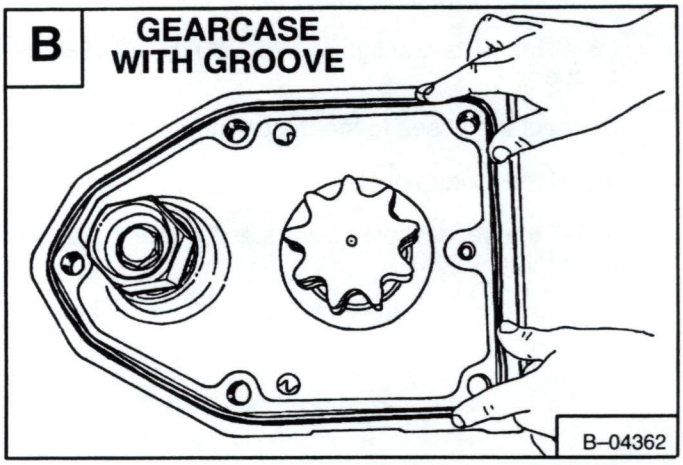
Put *Boretite* sealant around the new seal.

Install the new seal using the seal installation tool (MEL1074) **[A]**.



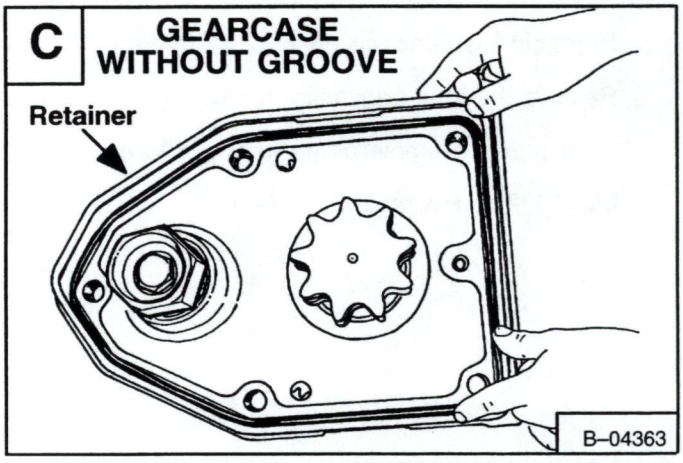
NOTE: Always use new O–rings when installing the reduction gearcase.

Put grease on the O–ring and install it on the outside of the gearcase **[B]** & **[C]**.



NOTE: There are two different types of gearcase housings used, some later units used a retaining ring instead of a groove [C].

Install the retainer. Some later type uses sealant to hold the retainer ring.

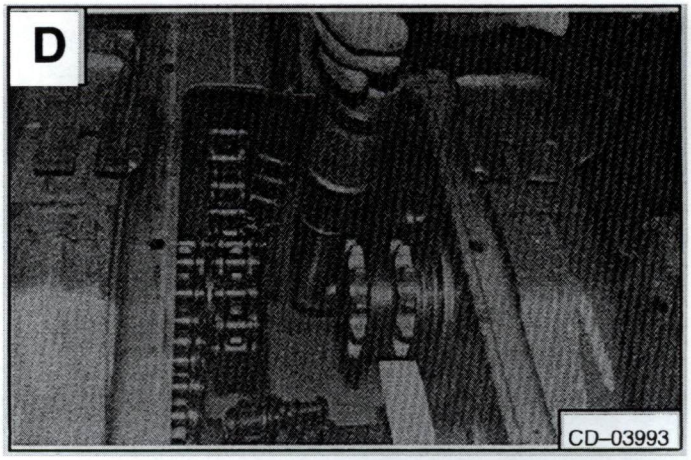


Put the reduction gearcase on a jack and lift it into position **[D]**.

Install the five bolts inside the chaincase. Do not tighten.

Install the final drive chains. (See Page 4–10.)

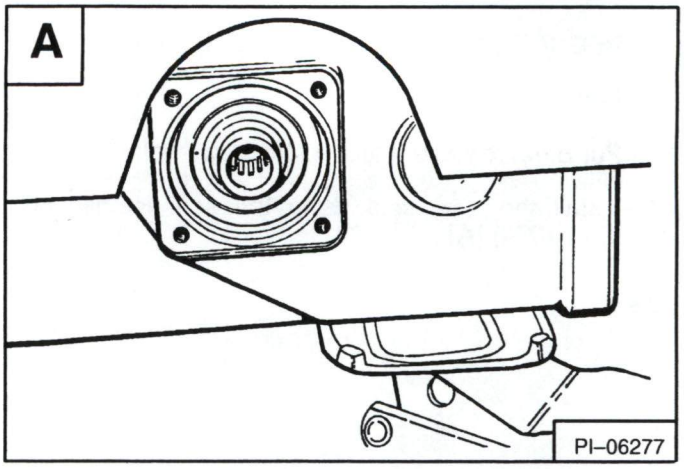
Move the reduction gearcase backward or forward to get the same amount of chain play and equal tension on both chains.



REDUCTION GEARCASE (Cont'd)

Installation (Cont'd)

Tighten the five bolts to 220–245 ft.–lbs. (300–330 Nm) torque.



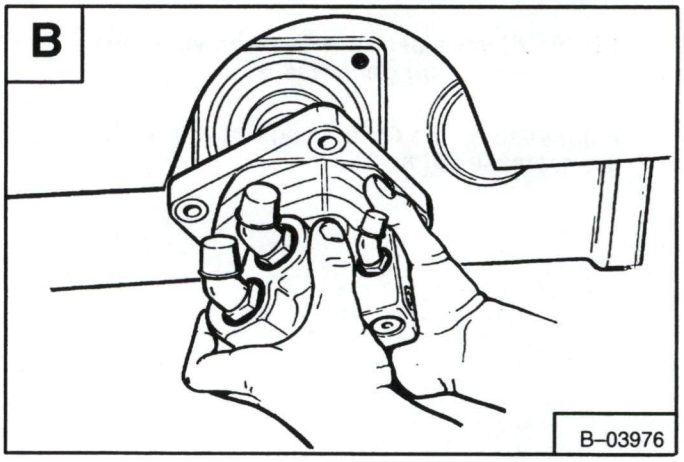
Install the hydrostatic motor **[B]**.

Install the bolts and tighten to 65–70 ft.–lbs. (88–95 Nm) torque.

Connect the hoses to the motor and tighten.

Install the motor cover.

Install the transmission covers and the brake assembly. (See Page 4–12.)



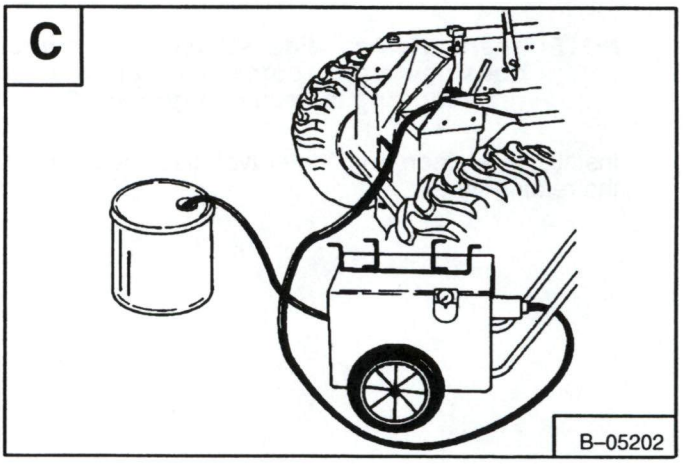
CHAINCASE FLUID

Replacing Chaincase Fluid

Remove the front transmission cover. (See Page 4–2.)

Use a pump to remove all the fluid from the chaincase **[C]**.

MEL10628 – Hydraulic Transfer Pump



Use clean rags to remove any fluid that the pump did not remove and to clean the chaincase **[D]**.

Use only recommended replacement fluid. Bobcat Fluid (P/N 6563328) or 10W–30 or 10W–40 Class SE Motor Oil to fill the chaincase with 9 gals. (34 L) of fluid.

Install the front transmission cover. (See Page 4–2.)