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4 Power Relays

See the electrical schematic foldout for fuse and relay locations.

Check Points	Reading	Possible Cause of Bad Reading
Terminal for wire 1E to ground	12 volts	Check the wire between the power relay and the battery (1).
Terminal for wire 10 to ground	Continuity	Bad ground circuit.

NOTE: *Turn the key switch to the ON position.*

Terminal for wire 4 to ground	12 volts	Check the circuit between the power relays and the key switch (7). Check the key switch (7).
Terminal for wire 12A to ground	12 volts	Bad power relay #1.
Terminal for wire 12B to ground	12 volts	Bad power relay #2.
Terminal for wire 12C to ground	12 volts	Bad power relay #3.

5 Fuel Shutoff Solenoid

The fuel shutoff solenoid is located at the fuel injection pump on the left side of the machine.

Check Points	Reading	Possible Cause of Bad Reading
Terminal for wire 30 to ground	Continuity	Bad ground connection.

NOTE: *Have another person hold the key switch in the START position.*

Terminal for wire 2 to ground	12 volts	Check the circuit between the fuel shutoff solenoid and the fuel shutoff relay (6). Check the fuel shutoff relay (6).

NOTE: *Turn the key switch to ON.*

Terminal for wire 3 to ground	12 volts	Check the circuit between the fuel shutoff solenoid and the key switch (7). Check the key switch (7)

NOTE: *If the reading is good, replace the fuel shutoff solenoid.*

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25 Engine Temperature Switch

The engine temperature switch is located at the front top of the engine.

Check Points	Reading	Possible Cause of Bad Reading
Check between the housing of the engine temperature switch and the engine block.	Continuity	Bad ground connection.
NOTE: *Turn the key switch to ON.*		
Terminal for wire 37 to ground	12 volts	Check the circuit between the engine temperature switch and the warning alarm (24). Also check the warning alarm (24).

NOTE: *If the readings are good, replace the engine temperature switch.*

26 Alarm Relay

See the electrical schematic foldout for fuse and relay locations.

Check Points	Reading	Possible Cause of Bad Reading
Terminal for wire 10 to ground	Continuity	Bad ground connection.
NOTE: *Turn the key switch to ON. Move the shift lever to the forward or reverse position.*		
Terminal for wire 52 to ground	12 volts	Check the circuit between the alarm relay and the FNR shift lever. Also check the FNR shift lever. See diode check on page 51 and check the diode in wire 25A or 25B.
NOTE: *Turn the key switch to ON.*		
Terminal for wire 37 to ground	12 volts	Check the circuit between the alarm relay and the warning alarm (24). Also check the warning alarm (24).
Terminal for wire 36R to ground	12 volts	Bad alarm relay.

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Section

4005

INSTRUMENT CLUSTER

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CASE CORPORATION
700 STATE STREET
RACINE, WI 53404 U.S.A.

CASE CANADA CORPORATION
3350 SOUTH SERVICE ROAD
BURLINGTON, ON L7N 3M6 CANADA

Bur 7-49560

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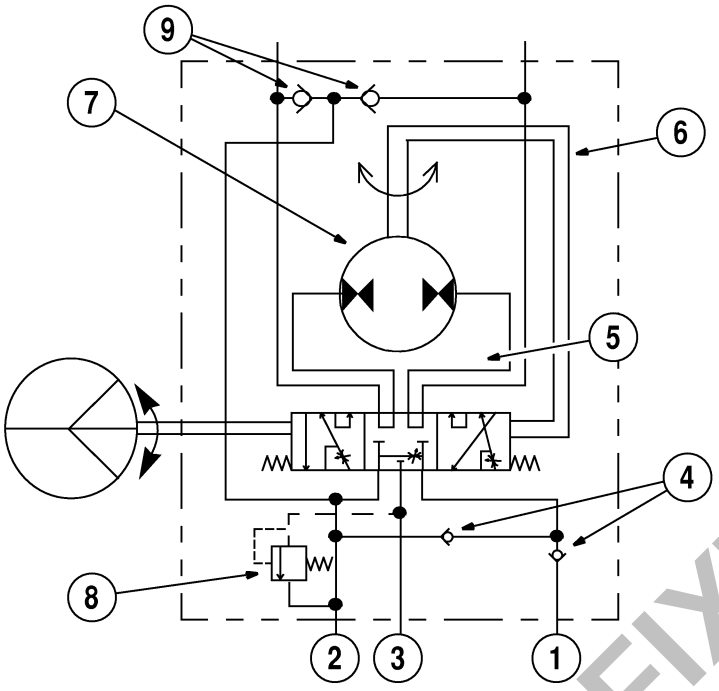
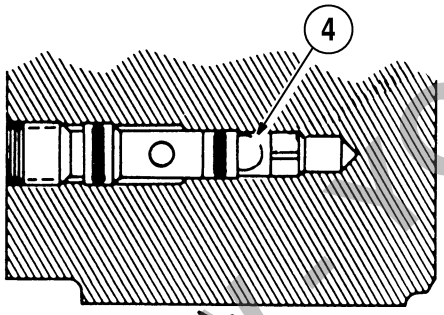
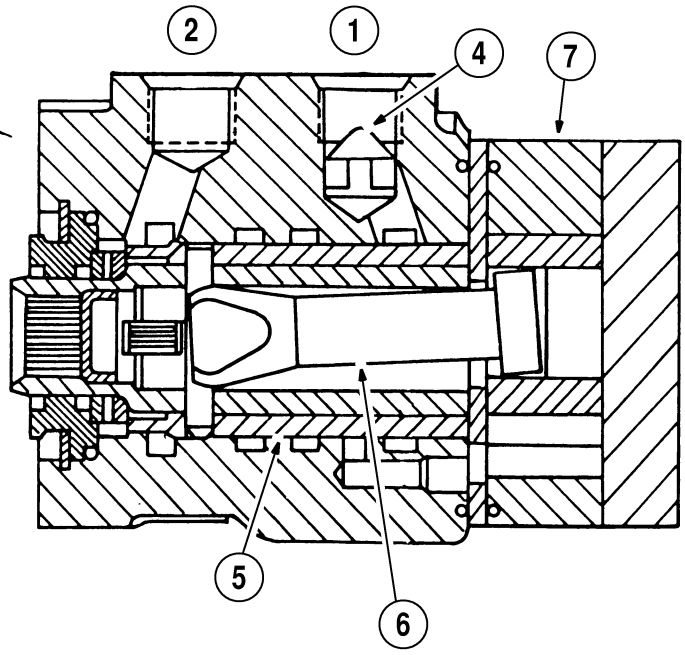
3 STEERING CONTROL VALVE



1. INLET
2. OUTLET
3. PILOT
4. CHECK VALVE
5. SPOOL AND SLEEVE ASSEMBLY
6. DRIVE LINK
7. GEROTOR
8. STEERING RELIEF VALVE
9. ANTI-CAVITATION RELIEF VALVE



Controls oil flow to the steering cylinder.



B9409046J

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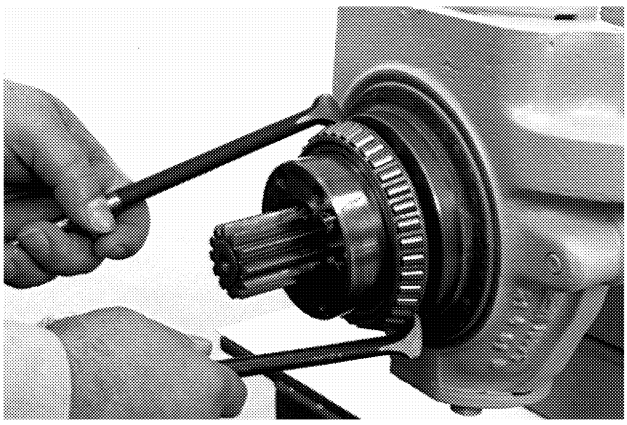
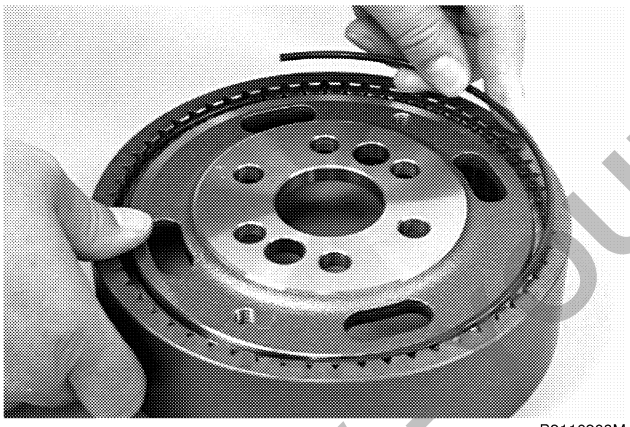
STEP 14



B9110806M

Use prybars to remove the inner wheel bearing from the swivel housing. Be careful so that you do not damage the inner wheel bearing.

STEP 15



B9110908M

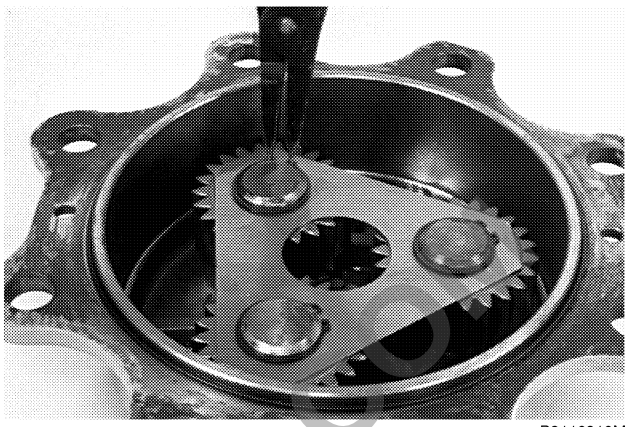
Remove the retaining ring which fastens the hub in the ring gear.

STEP 16

B9110906M

Remove the hub.

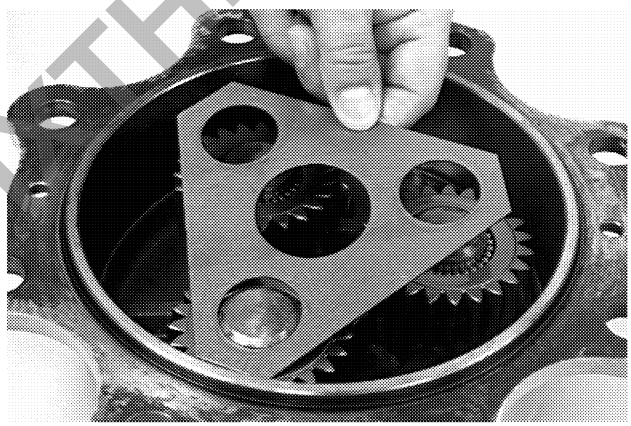
STEP 17



B9110910M

Remove the snap rings.

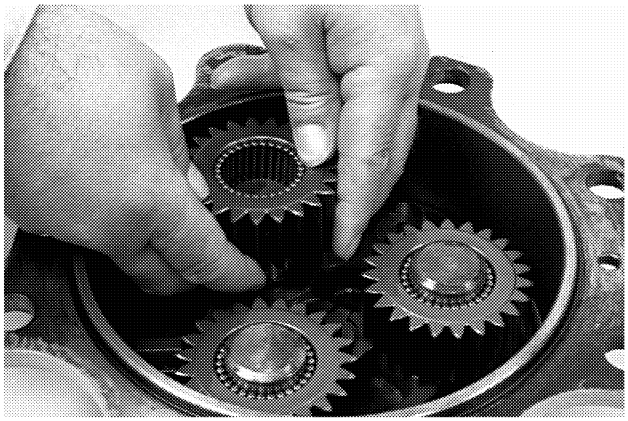
STEP 18



B9110912M

Remove the retainer.

STEP 19



B9110914M

Remove the pinion gears and thrust washers. Be careful so that you do not lose the needles.

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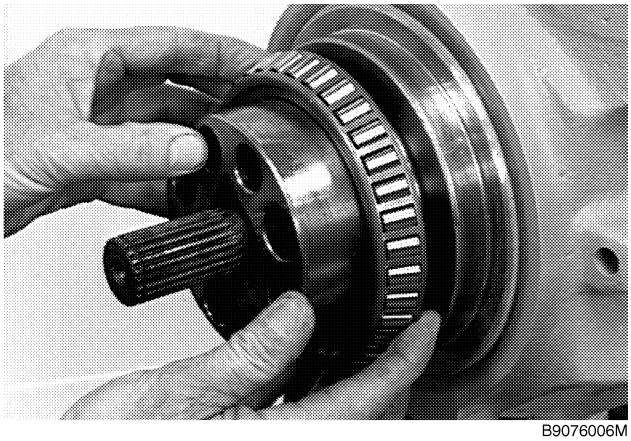
REMOVAL AND DISASSEMBLY OF SWIVEL HOUSING

STEP 47
Do the necessary steps under Disassembly of Planetary for access to the swivel housing.

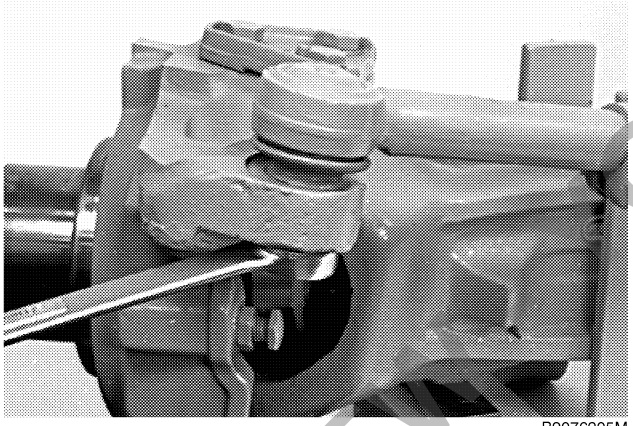
STEP 48



B9076006M

Slide the inner wheel bearing off the swivel housing.

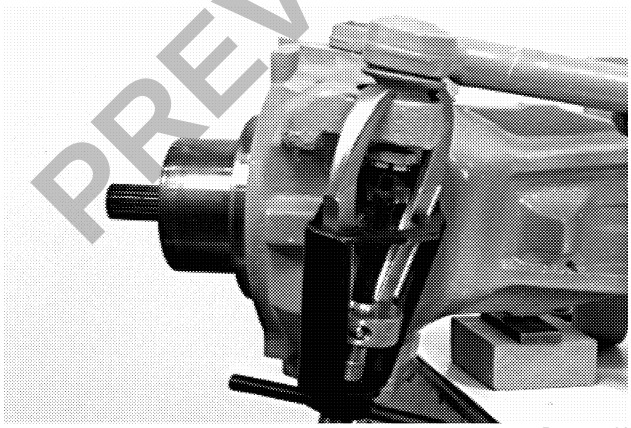
STEP 49



B9076205M

Loosen but do not remove the tie rod nut.

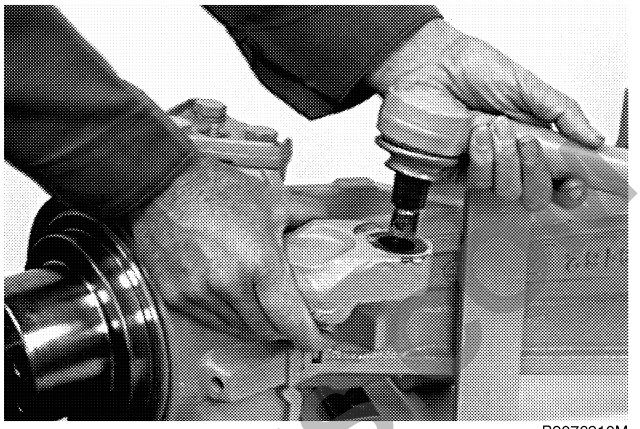
STEP 50



B9076206M

Use the CAS-10468 puller to loosen the ball joint.

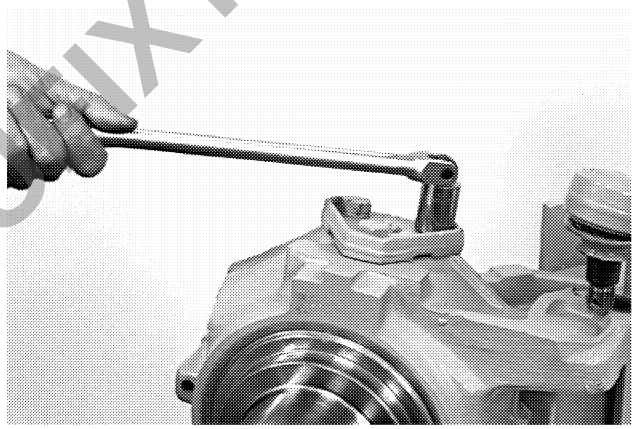
STEP 51



B9076210M

Remove the nut and remove the ball joint from the swivel housing.

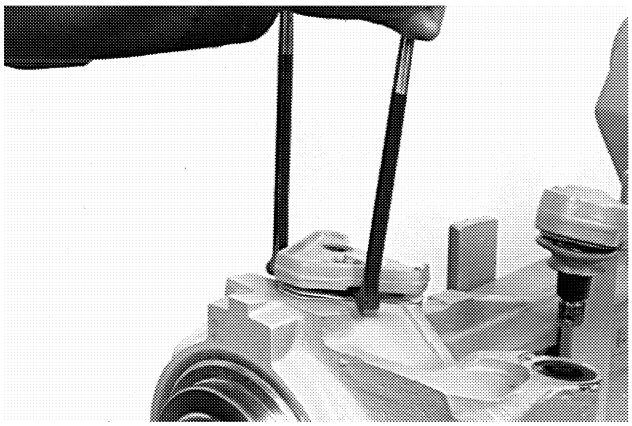
STEP 52



B9076216M

Loosen and remove the self-locking cap screws that hold the top king pin.

STEP 53



B9076220M

Remove the top king pin.

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TABLE OF CONTENTS

SPECIFICATIONS 2

REMOVAL OF THE TRANSMISSION 3

INSTALLATION OF THE TRANSMISSION 6

SPECIFICATIONS

Special Torques

Cap screws for the rear drive shaft ..... 33 to 39 Nm (24 to 29 pound-feet)
Cap screws for the front drive shaft ..... 33 to 39 Nm (24 to 29 pound-feet)

Wheel nuts for the rear wheels ..... 129 to 143 Nm (95 to 105 pound-feet)
Then turn the nut an additional 55 to 65 degrees.

Nuts for mounting the transmission ..... 174 to 220 Nm (132 to 161 pound-feet)

Cap screws for mounting transmission to the engine flywheel housing ..... 52 to 57 Nm (38 to 42 pound-feet)

Cap screws for mounting the torque converter to the flywheel ..... 52 to 57 Nm (38 to 42 pound-feet)

Mounting bolts for the driveshaft guard ..... 50 to 90 Nm (36.6 to 66 pound-feet)

Fluid Capacities

Transmission ..... Elfmatic G-3, Pennzoil ATF, Shell DoNax TA
2 Wheel Drive
Total system ..... 18.5 liters (19.5 U.S. quarts)
Refill capacity with or without filter change ..... 16.0 liters (16.9 U.S. quarts)
4 Wheel Drive
Total system ..... 21.0 liters (22.0 U.S. quarts)
Refill capacity with or without filter change ..... 18.5 liters (19.5 U.S. quarts)

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Input or Directional Clutches

The turbine shaft driven from the turbine transmits power to the forward (20, 21) or reverse (19) clutches.

These clutches consists of a drum with splines and a bore to receive a hydraulic actuated piston. The piston is oil tight by the use of sealing rings. A steel disc with external splines is inserted into the drum and rests against the piston. Next, a friction disc with splines at the inner diameter is inserted. Discs are alternated until the required total is achieved.

A back up plate is then inserted and secured with a span ring. A hub with outer diameter splines is inserted into the splines of discs with teeth on the inner diameter. The discs and hub are free to increase in speed or rotate in the opposite direction as long as no pressure is present in that specific clutch.

To engage the clutch, the control valve which is fitted on the side of the transmission will direct oil under pressure through tubes and passages to the selected clutch shafts.

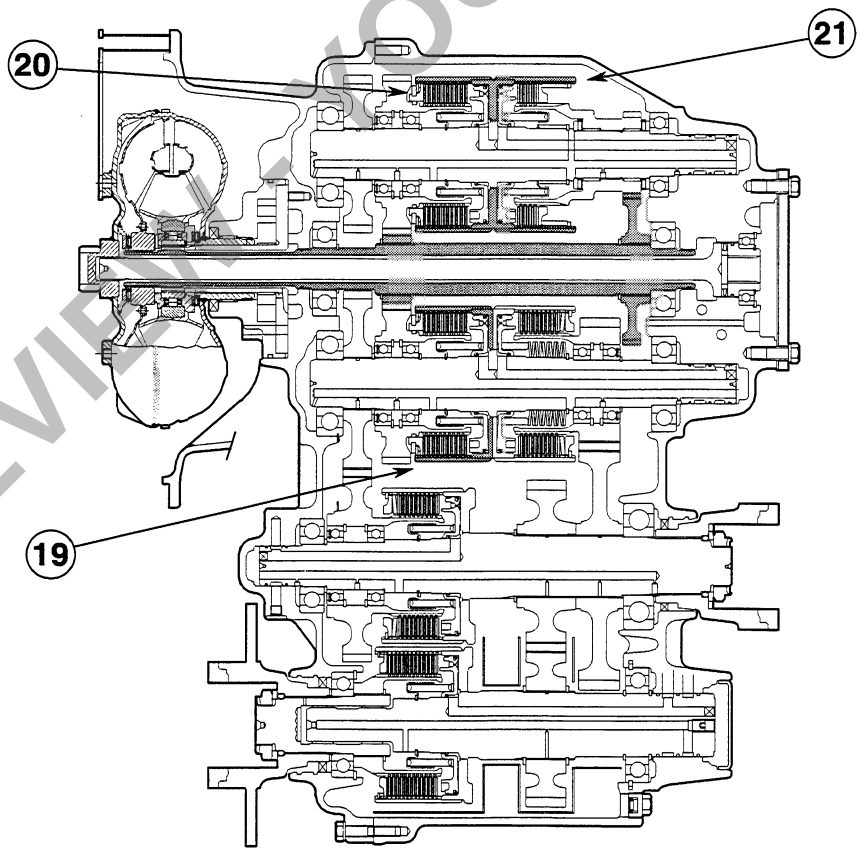
Oil sealings are located on the clutch shafts. These rings direct the oil through a drilled passage in the shaft to the desired clutch.

Pressure of the oil forces the piston and discs against the back up plate. The discs with splines on the outer diameter clamping against discs with teeth on the inner diameter enables the drum and hub to be locked together and allows them to drive as one unit.

When the clutch is released, a return spring will push the piston back and oil will drain back via the control valve into the transmission sump.

The T16000 transmission has one reverse clutch (19) and two forward clutches (forward low (20) and forward high (21). This, in combination with the two range clutches, result in the transmission having 4 forward speeds and 2 reverse speeds.

The engagement of the directional clutches is modulated; which means that clutch pressure is built up gradually. This will enable the unit to make forward, reverse shifts while the vehicle is still moving and will allow smooth engagement of drive. The modulation is controlled electronically in the control valve.



The input or directional clutches

B_97K302

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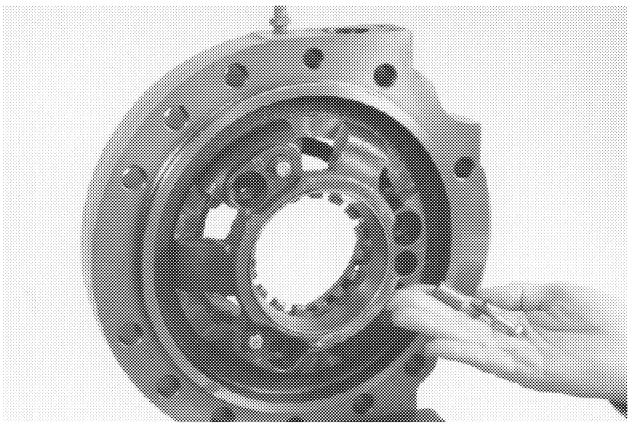
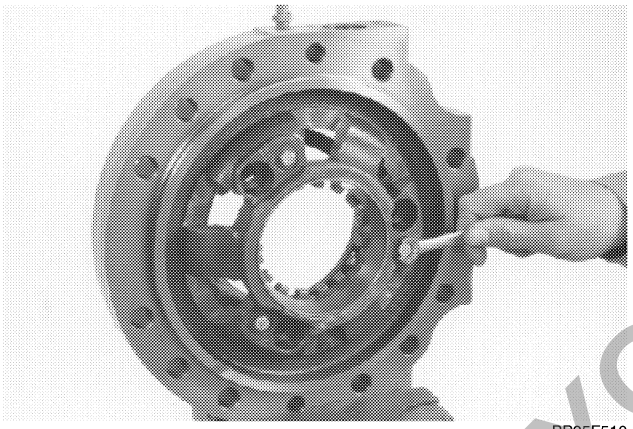
STEP 191



BP95F511

Install the center bushings, washers, and cap screws.

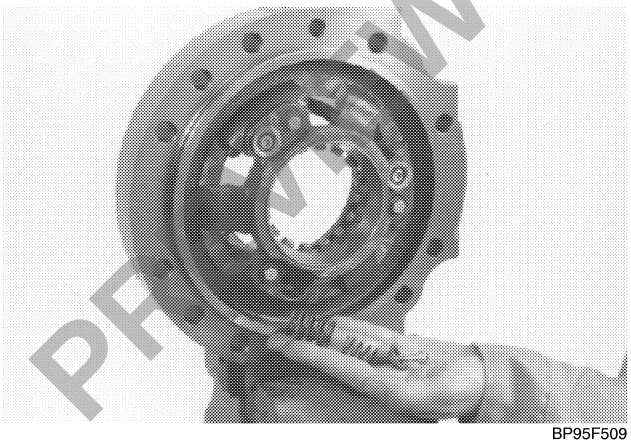
STEP 192



BP95F510

Tighten the cap screws to a torque of 10 Nm (88 pound-inches)

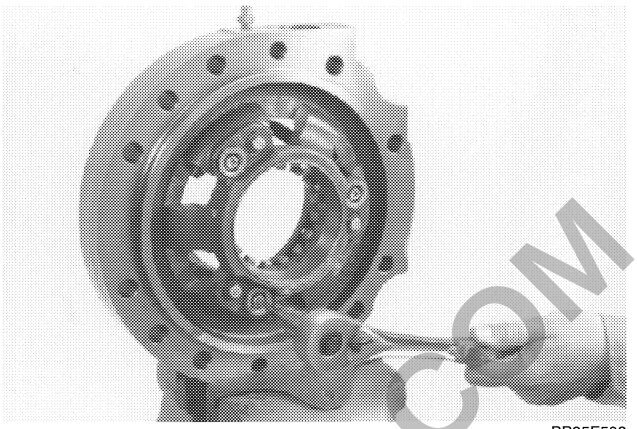
STEP 193



BP95F509

Install the inner and outer springs, spring retainers, and Allen head cap screws.

STEP 194



BP95F508

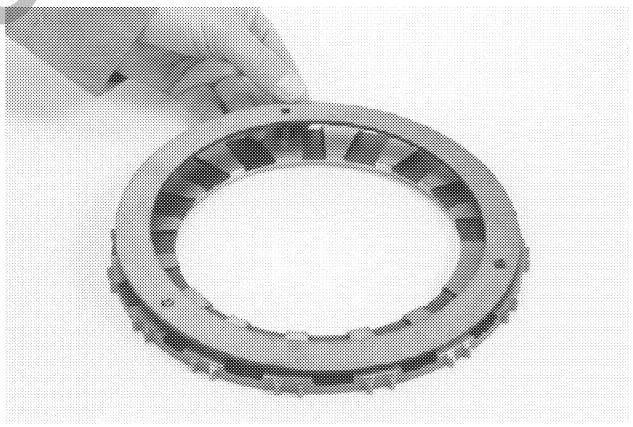
Tighten the Allen head cap screws to a torque of 10 Nm (88 pound-inches).

STEP 195

If the pins were removed during disassembly or if new parts are being used, install the pins in the inner reaction plate.

NOTE: *Some of the photos on the following pages may appear different than the model you are working on. The procedure is the same.*

STEP 196



BP95F529

Install the isolator ring on the reaction plate.

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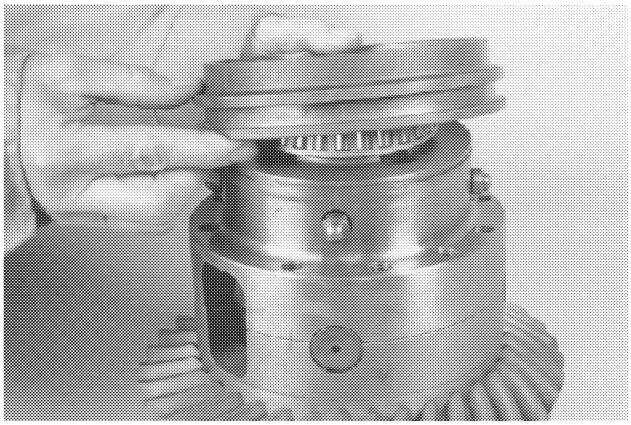
STEP 148



BP95F439

Put the differential lock ring in position on the differential housing as shown.

STEP 149

BP95F465

Hold the pins in and lower the differential lock ring into position. Push the differential lock ring all the way down to get access to the groove for the snap ring. If it is difficult to push down, reach through the housing and rotate the spider gears until the differential lock ring will go down.

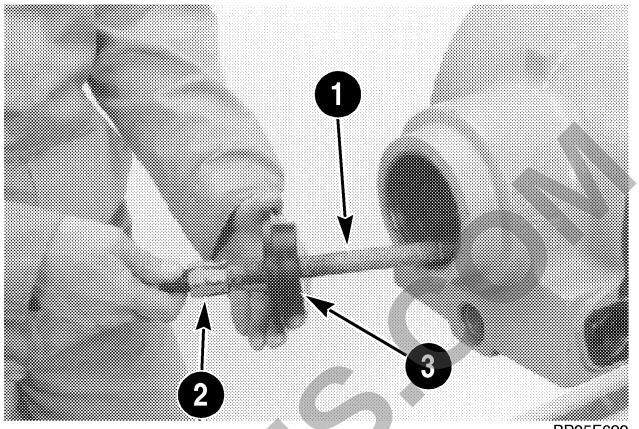
STEP 150

BP95F438

Install the snap ring.

Center Section

STEP 151

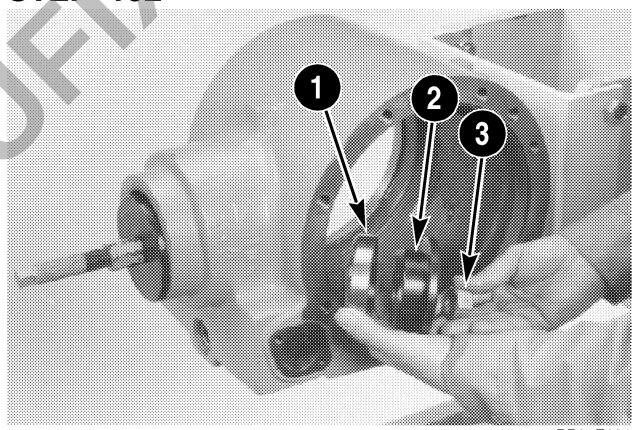


BP95F629

1. CAS24835, FORCING SCREW
2. 24836, SPECIAL NUT
3. CAS1940, DRIVER PLATE

Put the forcing screw, special nut, and driver plate in position on the front of the center section.

STEP 152



BP95F631

1. REAR BEARING RACE
2. CAS2371, INSTALLER PLATE
3. 22301, 3/4 - 16 UNF HEX NUT

Assemble the rear bearing race, the installer plate, and the hex nut on the forcing screw.

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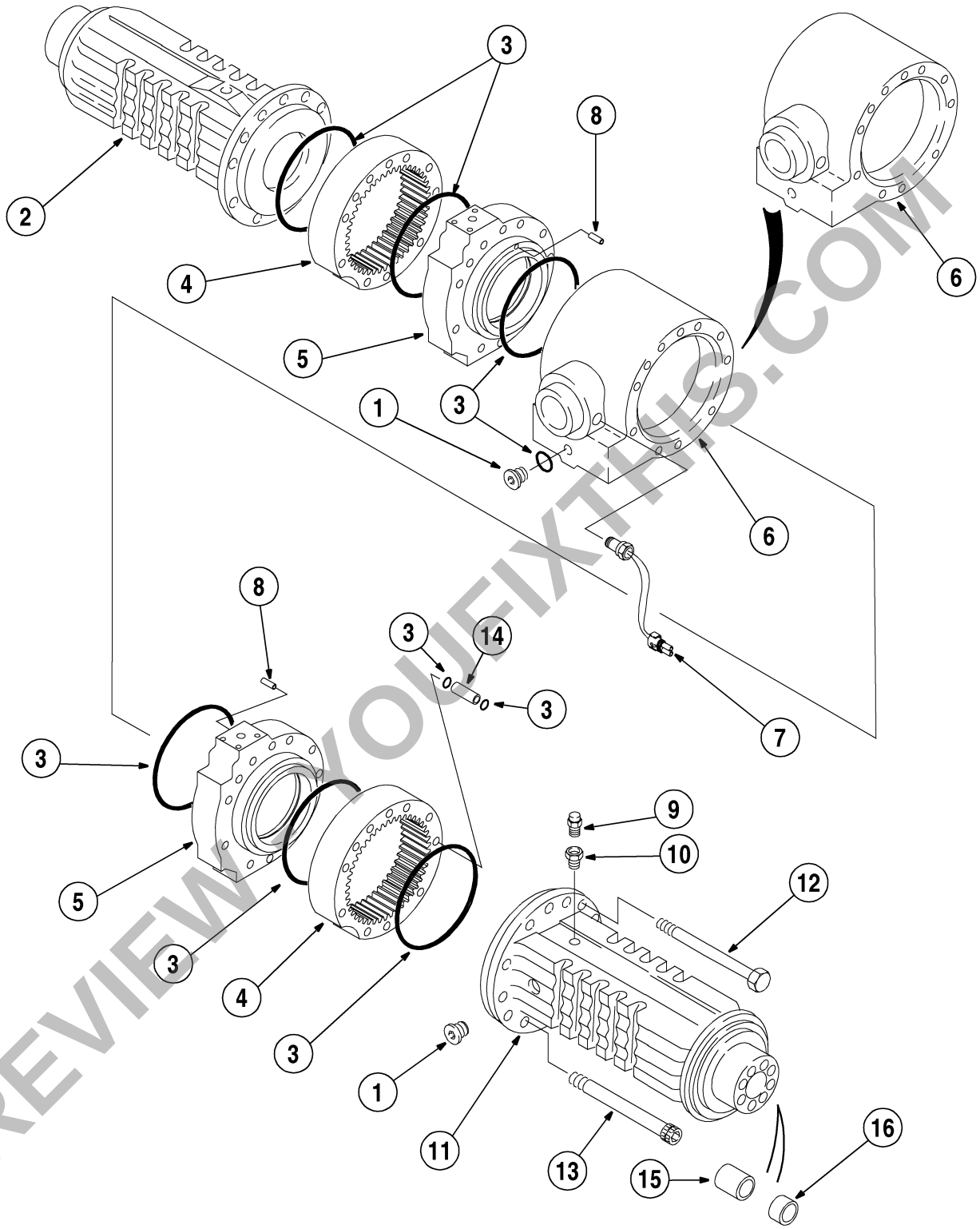

BS98M221

1. PLUG
2. AXLE HOUSING, RIGHT- SIDE
3. O-RING
4. CARRIER HOUSING
5. BRAKE SECTION
6. CENTER SECTION
7. TEMPERATURE SWITCH
8. PIN
9. BREATHER
10. STAND PIPE
11. AXLE HOUSING, LEFT-SIDE
12. CAP SCREW
13. ALLEN HEAD SCREW
14. *LUBRICATION TUBE
15. BUSHING
16. SEAL

NOTE: ***Shown for machines equipped with standard (Carraro) transmission. Located on the opposite side of the center section for machine equipped with the Power Shift (Clark) transmission.***

ILLUSTRATION OF AXLE HOUSING

FOR 580 Super L MACHINE ONLY

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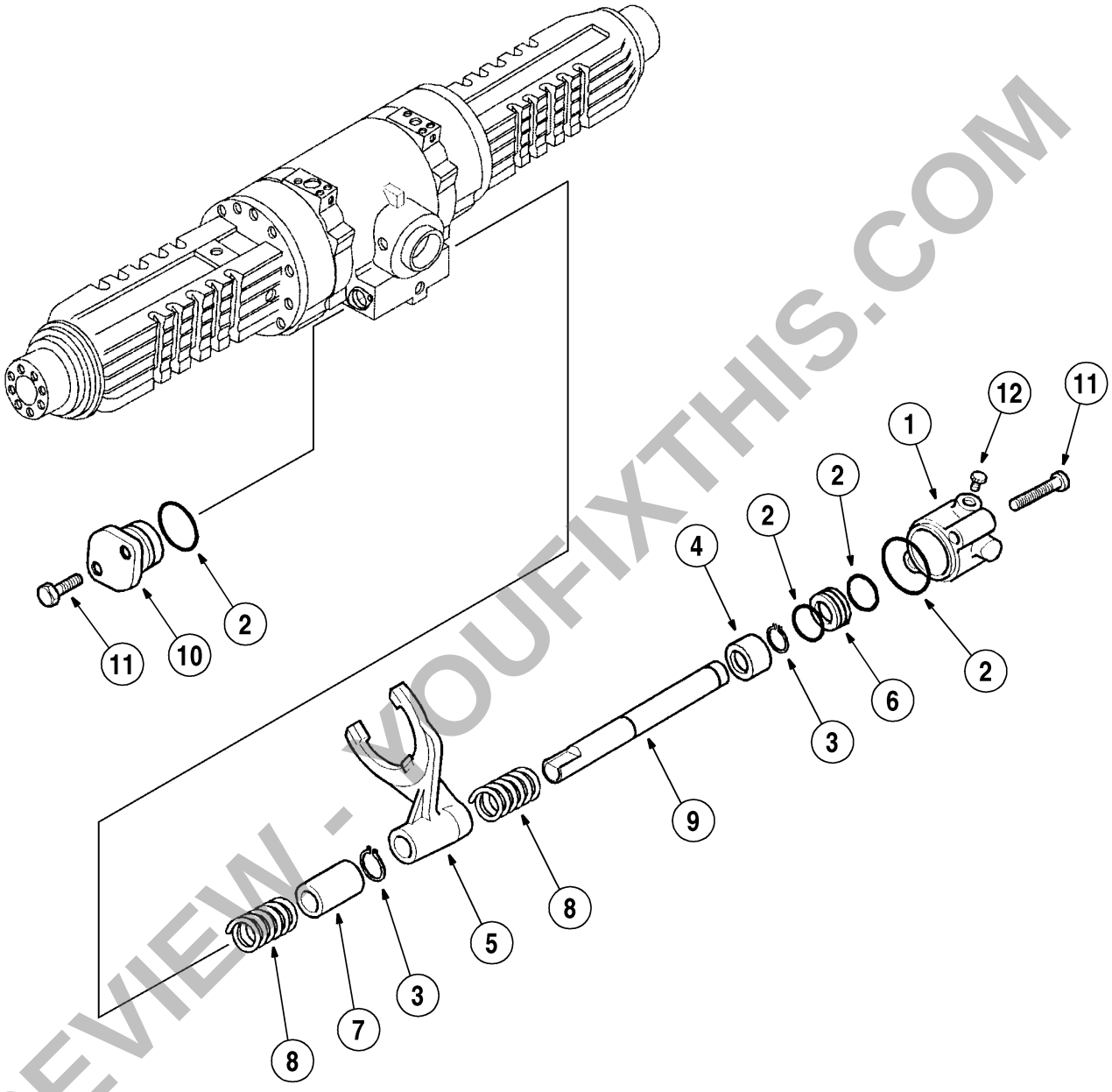

BS00B311

1. HOUSING
2. O-RING
3. SNAP RING
4. SPACER
5. DIFFERENTIAL LOCK FORK
6. PISTON
7. COLLAR
8. SPRING
9. SHAFT
10. COVER
11. CAP SCREW
12. PLUG

ILLUSTRATION OF DIFFERENTIAL LOCK - MACHINES WITH POWER SHIFT (CLARK) TRANSMISSION

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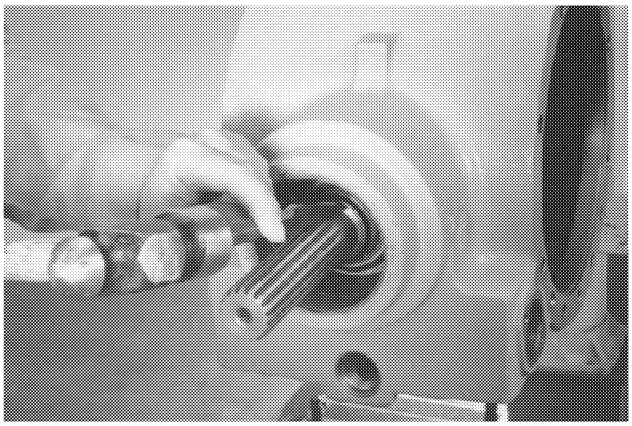
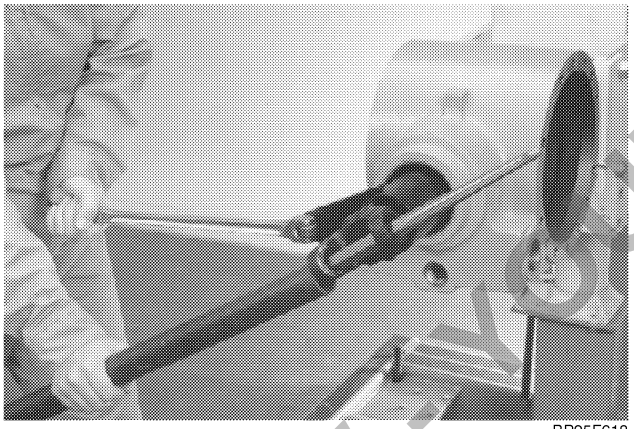
STEP 123



BP95F615

Use a chisel to push the peened area of the pinion nut out of contact with the groove in the shaft for the pinion gear.

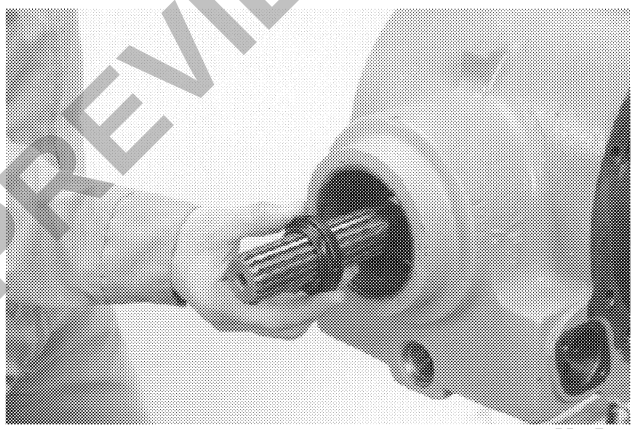
STEP 124



BP95F618

Use the 144279A1 Yoke and the CAS1965 Spanner Wrench to loosen the pinion nut.

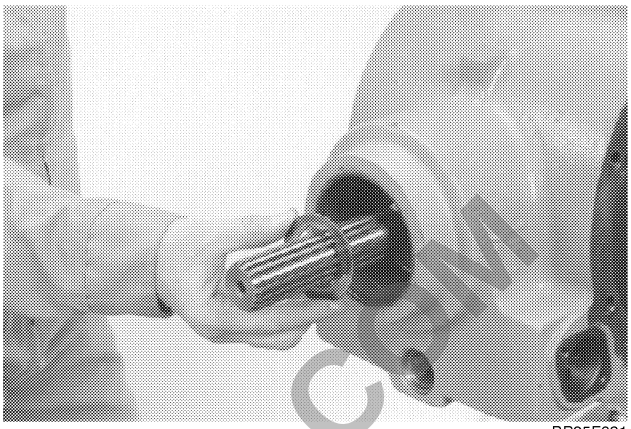
STEP 125



BP95F620

Remove the pinion nut.

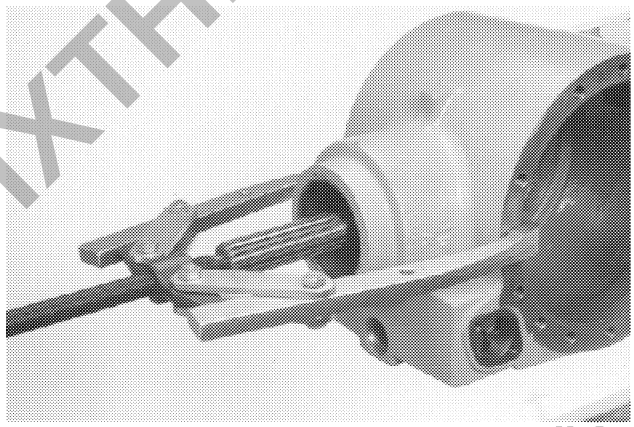
STEP 126



BP95F621

Remove the special washer.

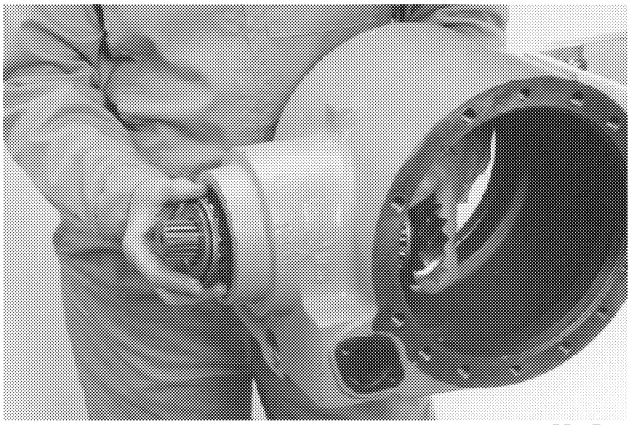
STEP 127



BP95F622

Install a puller on the shaft for pinion gear and center housing as shown. Tighten the screw on the puller to loosen the pinion gear assembly in the center section.

STEP 128



BP95F623

Remove the bearing from the front of the pinion shaft assembly .

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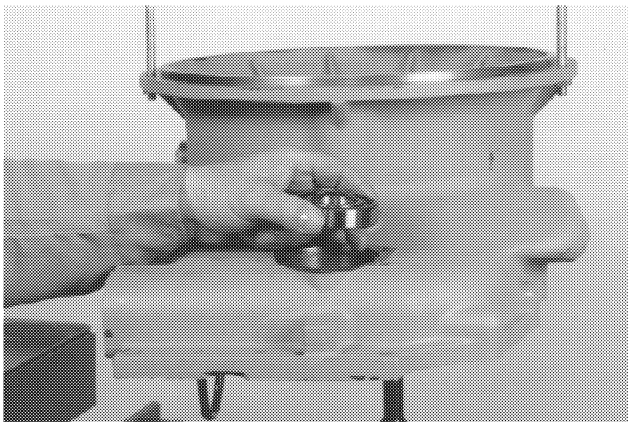
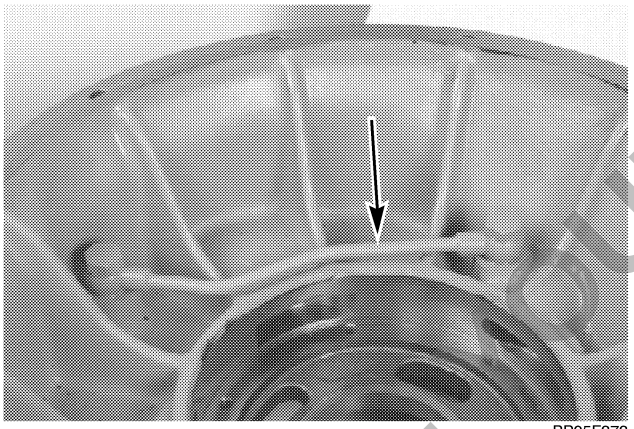
STEP 42



BP95F047

On machines with four-wheel drive, remove the four-wheel drive shaft bearing from the front housing.

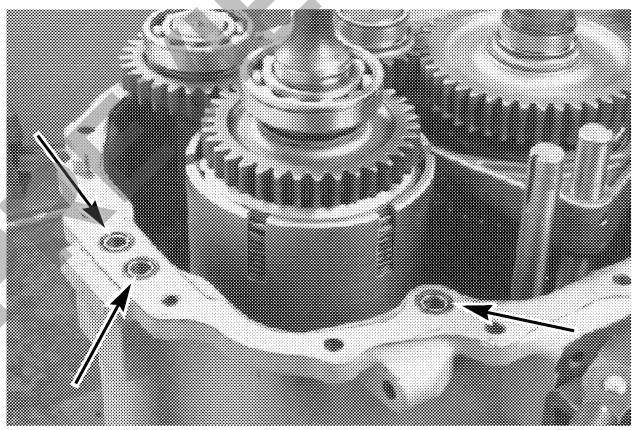
STEP 43



BP95F373

Remove the tube from the front housing only if the tube is damaged or leaking.

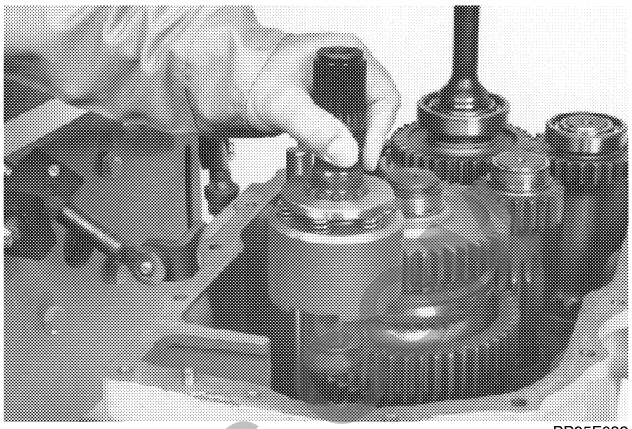
STEP 44



BP95F081

Remove the three O-rings from the flange of the rear housing.

STEP 45



BP95F082

On machines with four-wheel drive, remove the four-wheel drive shaft.

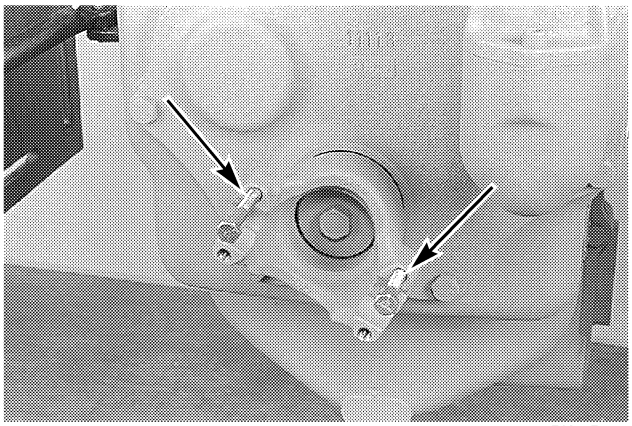
STEP 46

BP95F083

Remove the input shaft and the reverse shaft together.

NOTE: *Make a mark on the top end of the reverse shaft so that you can install the reverse shaft with the same end up during Assembly.*

STEP 47



BK98D061

Install two cap screws in the output flange as shown.

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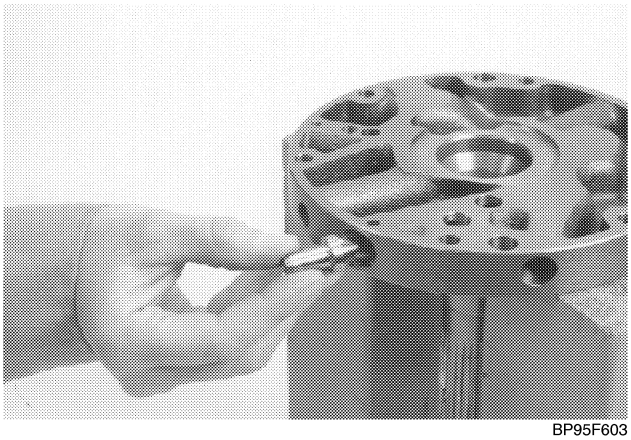
ASSEMBLY OF THE OIL PUMP

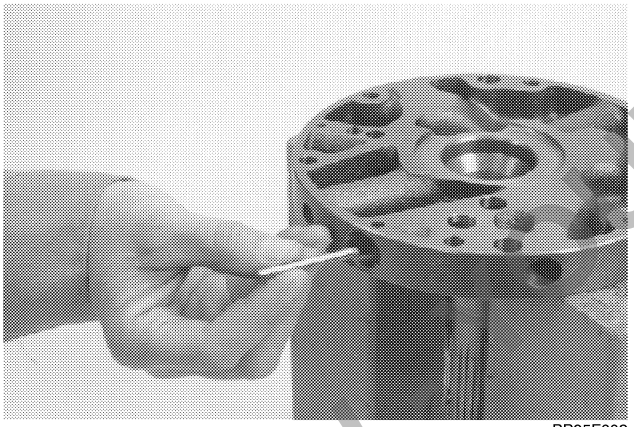
STEP 320



BP95F603

Install the plunger for the oil pump relief valve.

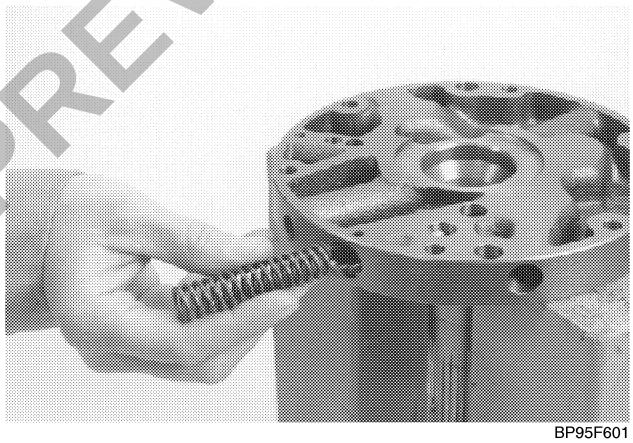
STEP 321



BP95F602

Install the pin for the oil pump relief valve. The machined end of the pin must be toward the plunger. Make sure that the pin goes into the bore of the plunger.

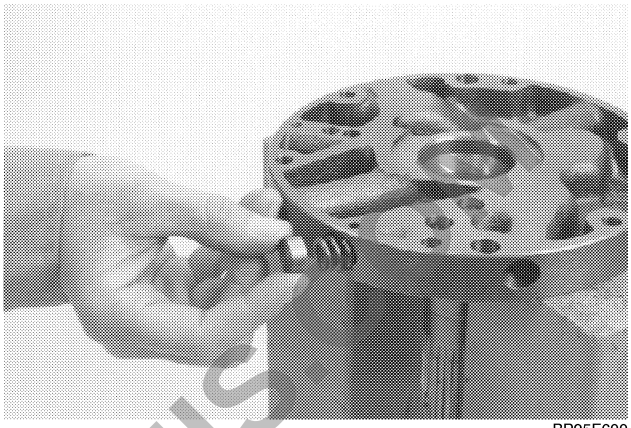
STEP 322



BP95F601

Install the spring.

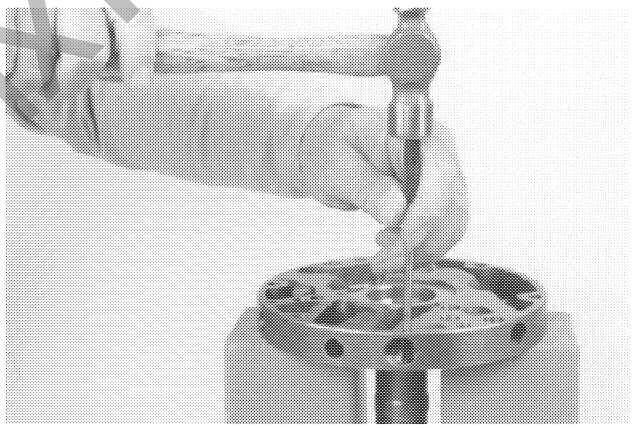
STEP 323



BP95F600

Install the plug.

STEP 324



BP95F269

This step will be difficult because the spring will be under heavy tension. Push the plug in until the plug is to the inside of the hole for the roll pin. Install the roll pin.

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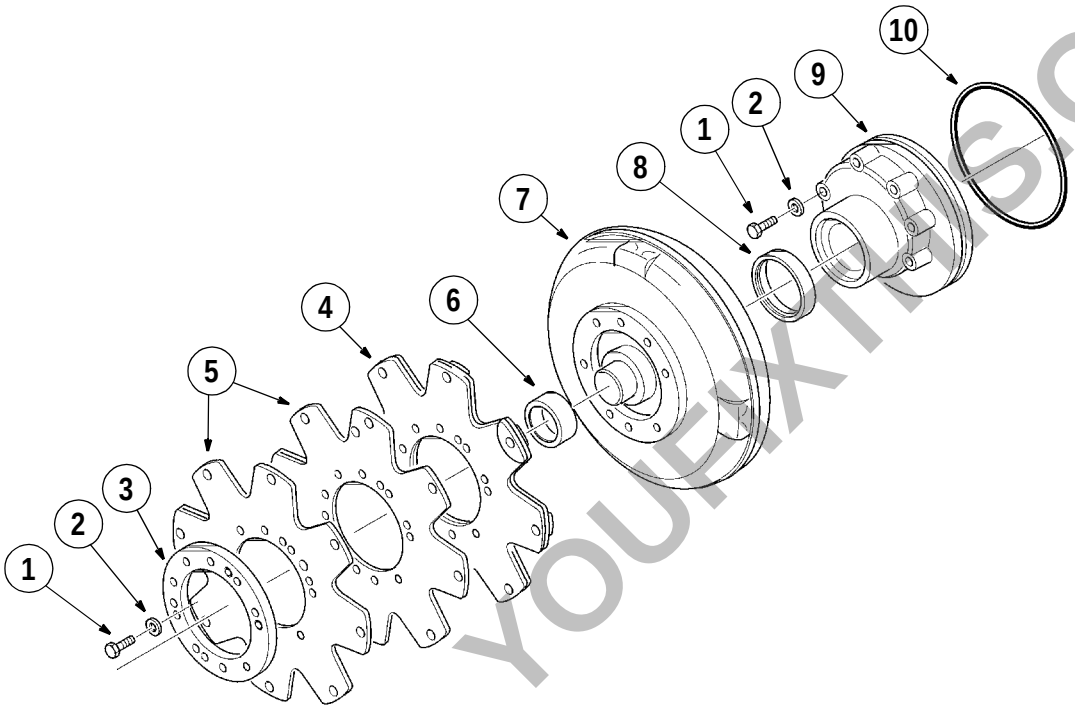

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BS99D150

1. CAP SCREW
2. LOCK WASHER
3. BUSHING PLATE
4. DRIVE PLATE ASSEMBLY
5. FACE PLATE
6. BUSHING
7. TORQUE CONVERTER ASSEMBLY
8. SEAL
9. CHARGE PUMP ASSEMBLY
10. PUMP SEAL

Exploded View of Torque Converter - Drive Plate - and Internal Charge Pump

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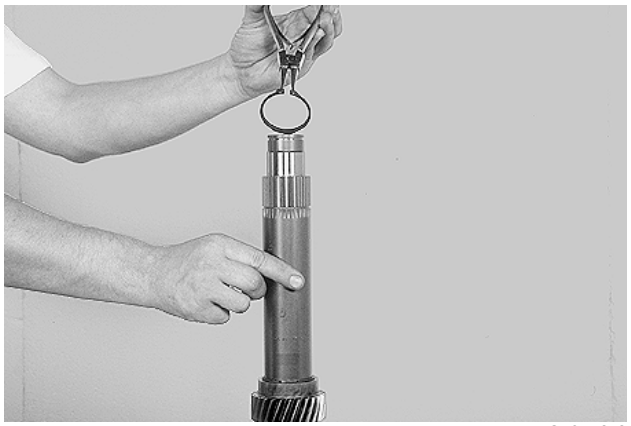
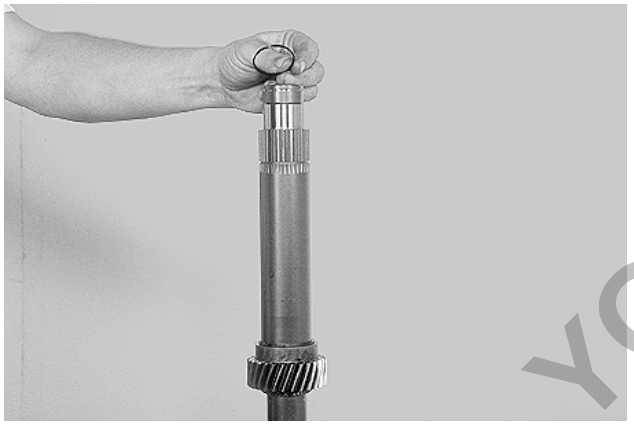
STEP 334



CK97D342

Turn the shaft and install the input shaft forward high gear retaining ring.

STEP 335

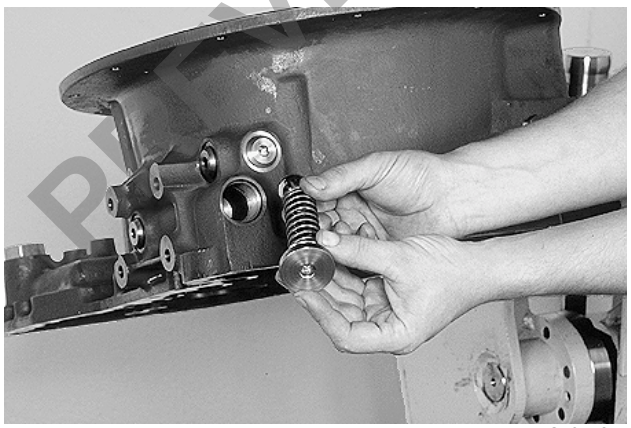


CK97D343

Install the input shaft rear sealing ring.

Reassembly Converter Housing

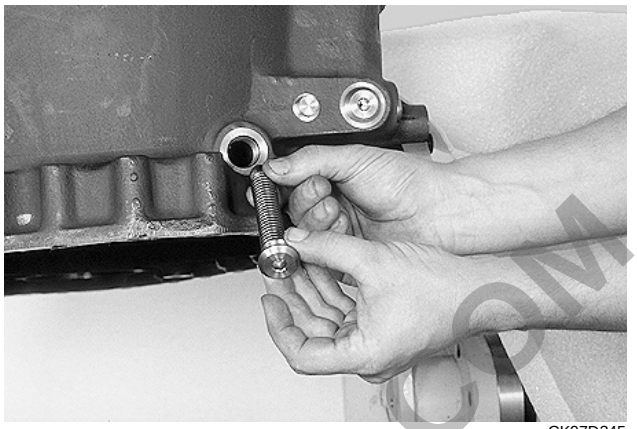
STEP 336



CK97D344

Install the safety valve ball spring and plug.

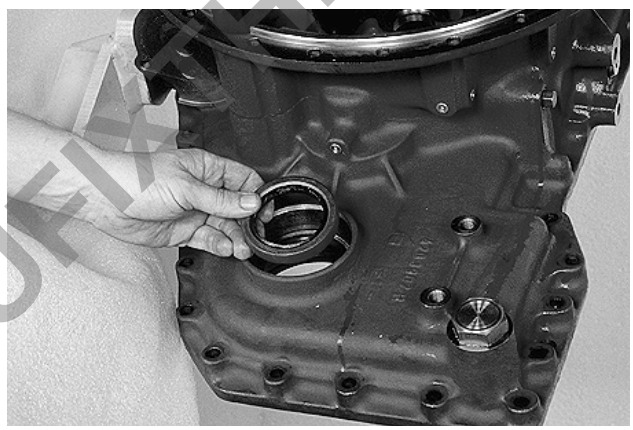
STEP 337



CK97D345

Install the by-pass valve ball spring and plug.

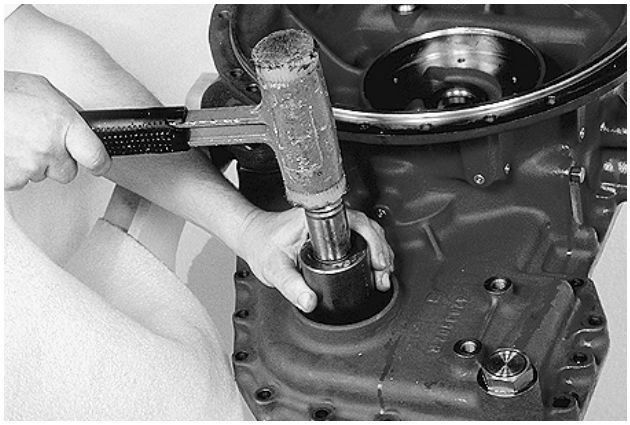
STEP 338



CK97D346

Install the output shaft front oil seal.

STEP 339



CK97D347

Use acceptable tools and drive the seal into place.

NOTE: *Using caution as not to damage any of the shaft sealing rings.*

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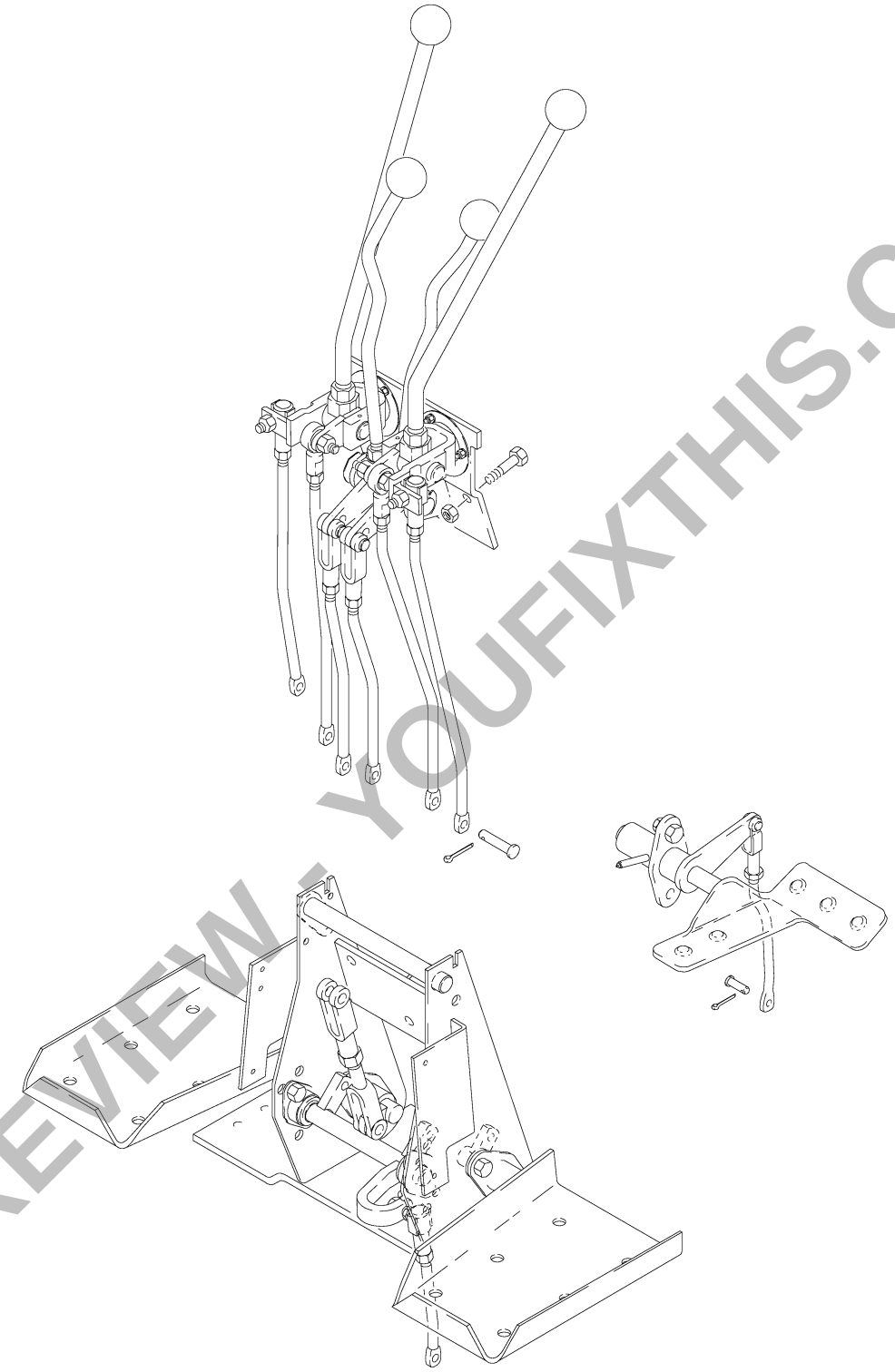

BT95K117

Backhoe Controls with Hand Swing and Extendahoe

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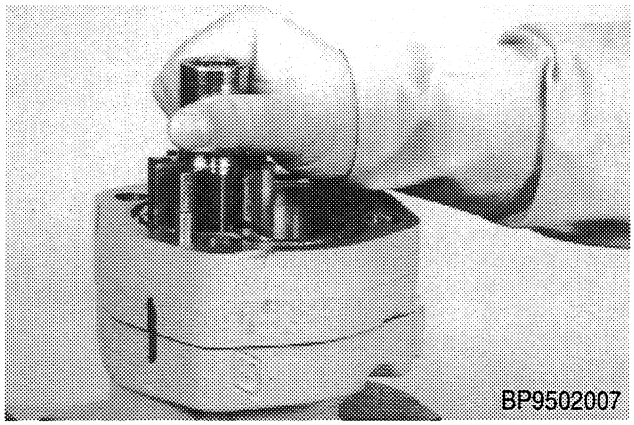
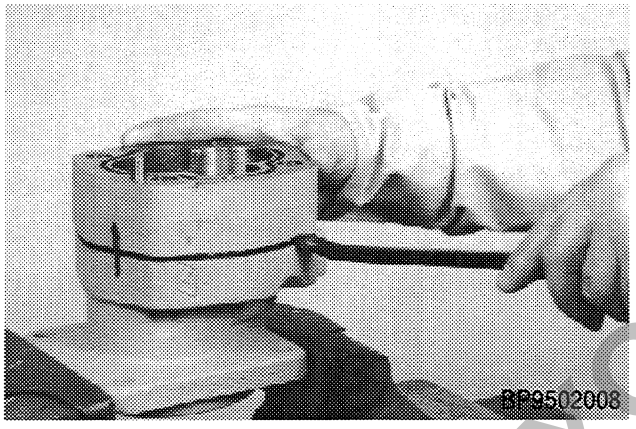
STEP 7



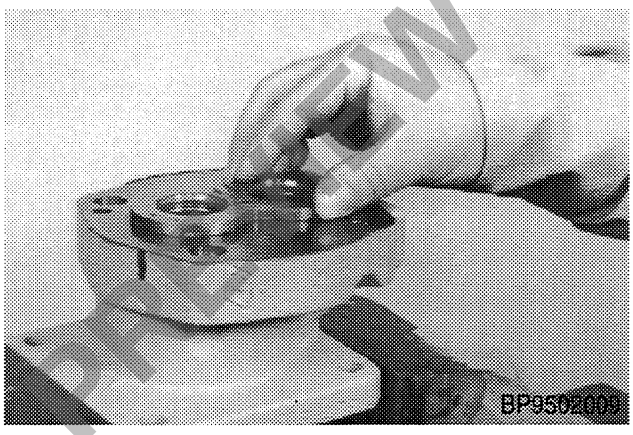
Remove the drive gear.

STEP 8



Remove the gear housing.

STEP 9

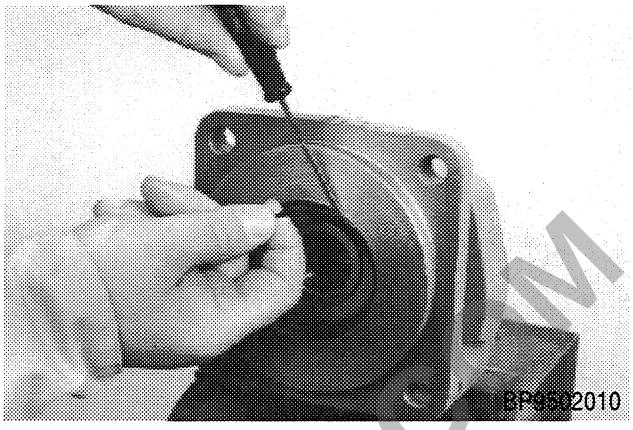


If the thrust plate stayed with the shaft end cover, remove the thrust plate.

STEP 10

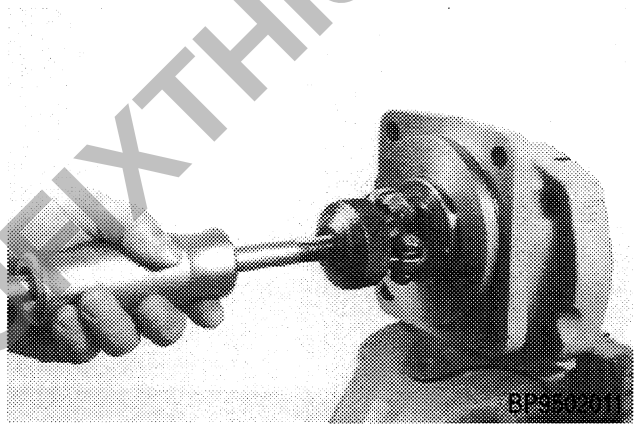
Remove the quad ring from the bottom of the gear housing.

STEP 11



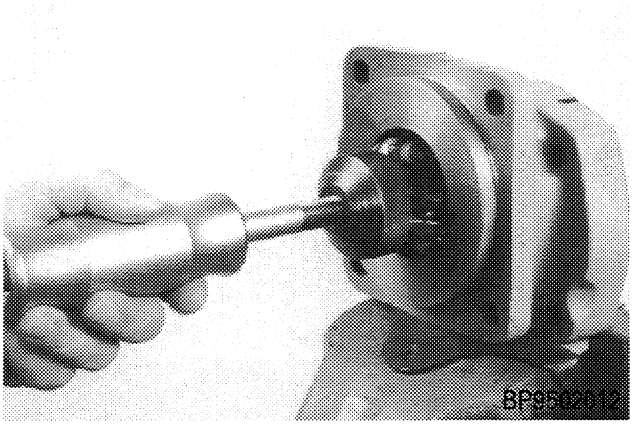
Remove the snap ring from the shaft end cover.

STEP 12



Remove the bearing from the shaft end cover.

STEP 13



Remove the seal from the shaft end cover.

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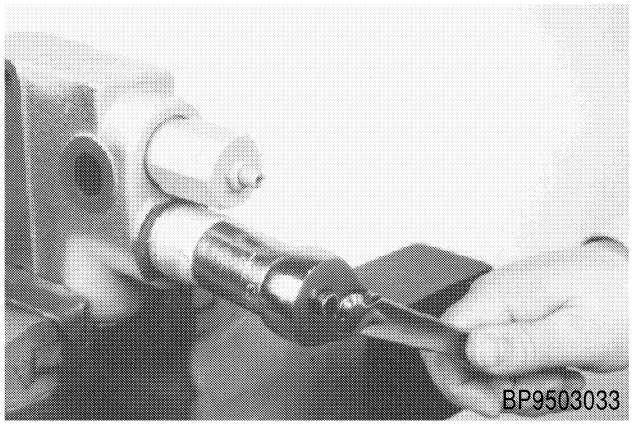
BOOM SECTION

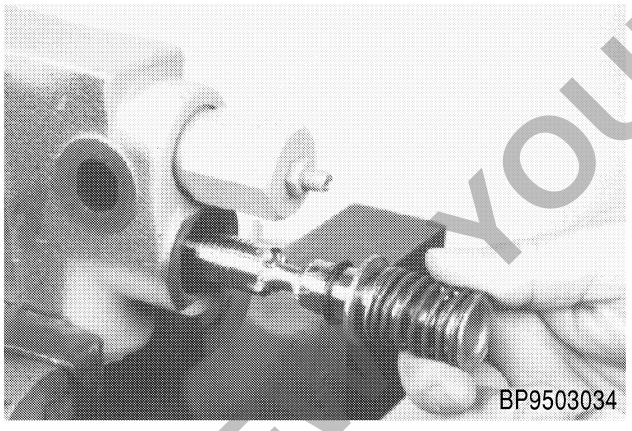
Disassembly

STEP 209



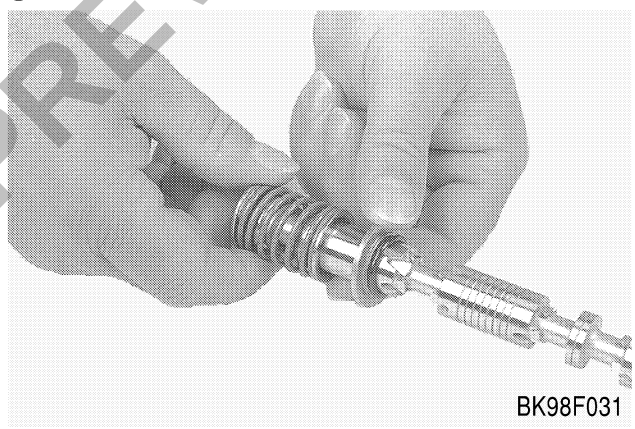
Fasten the boom section in the vise with soft jaws. Remove the cap.

STEP 210



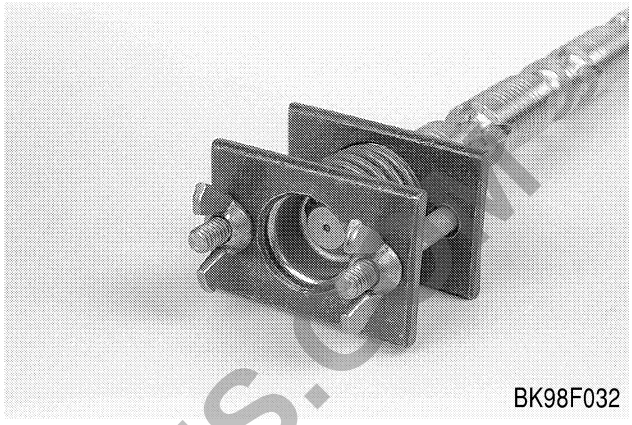
Pull the spool, the retainer, and the O-ring from the body.

STEP 211



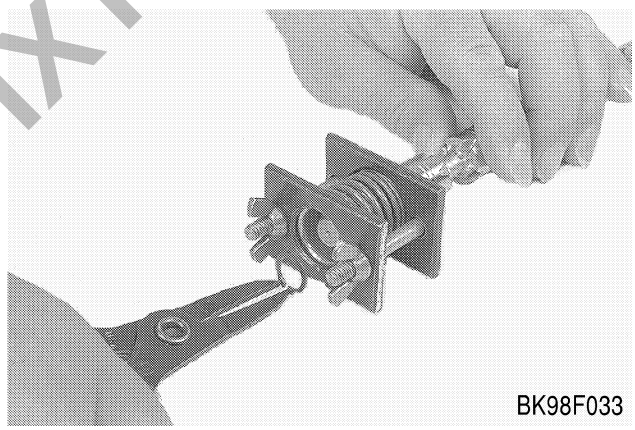
Remove the O-ring and the retainer from the spool.

STEP 212



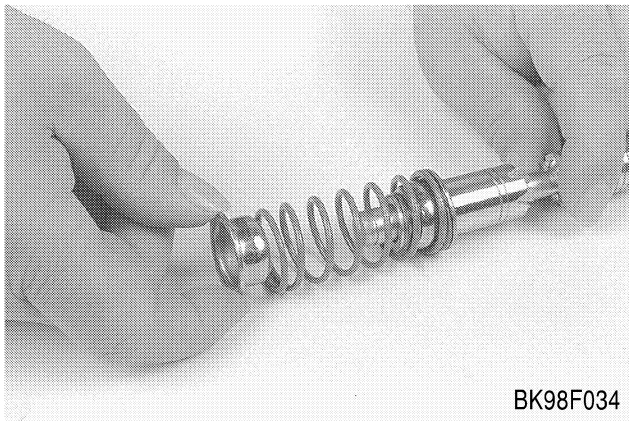
Use the spring compressing plates shown on page 3 to compress the spring.

STEP 213



Remove the snap ring from the spool. Release the spring tension and remove the spring compressing plates.

STEP 214



Remove the spring seat.

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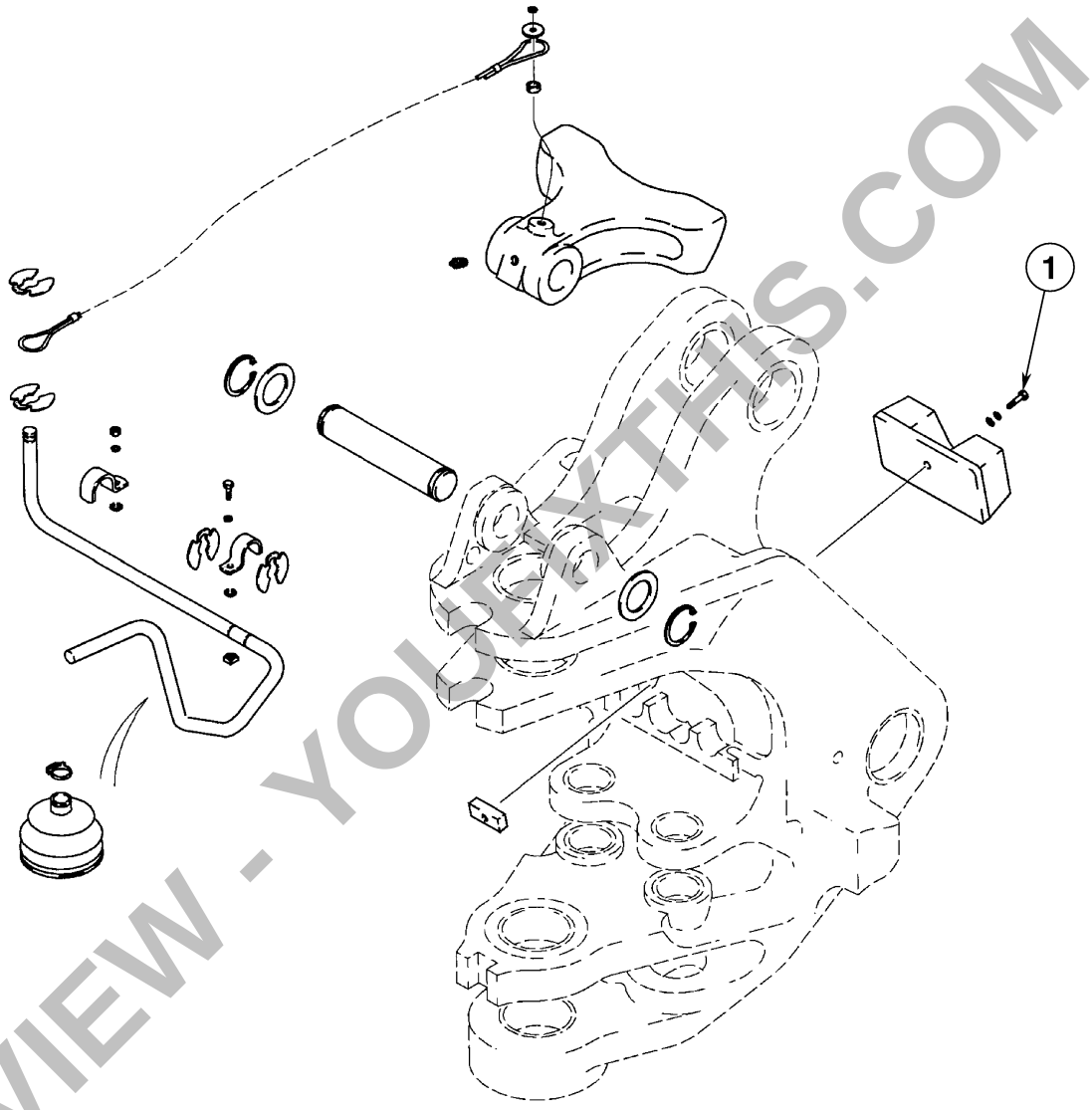

GS99J914

1. CAP SCREW. TIGHTEN TO A TORQUE OF 31 TO 36 NM (274 TO 318 POUND-INCHES)

BOOM LATCH INSTALLATION

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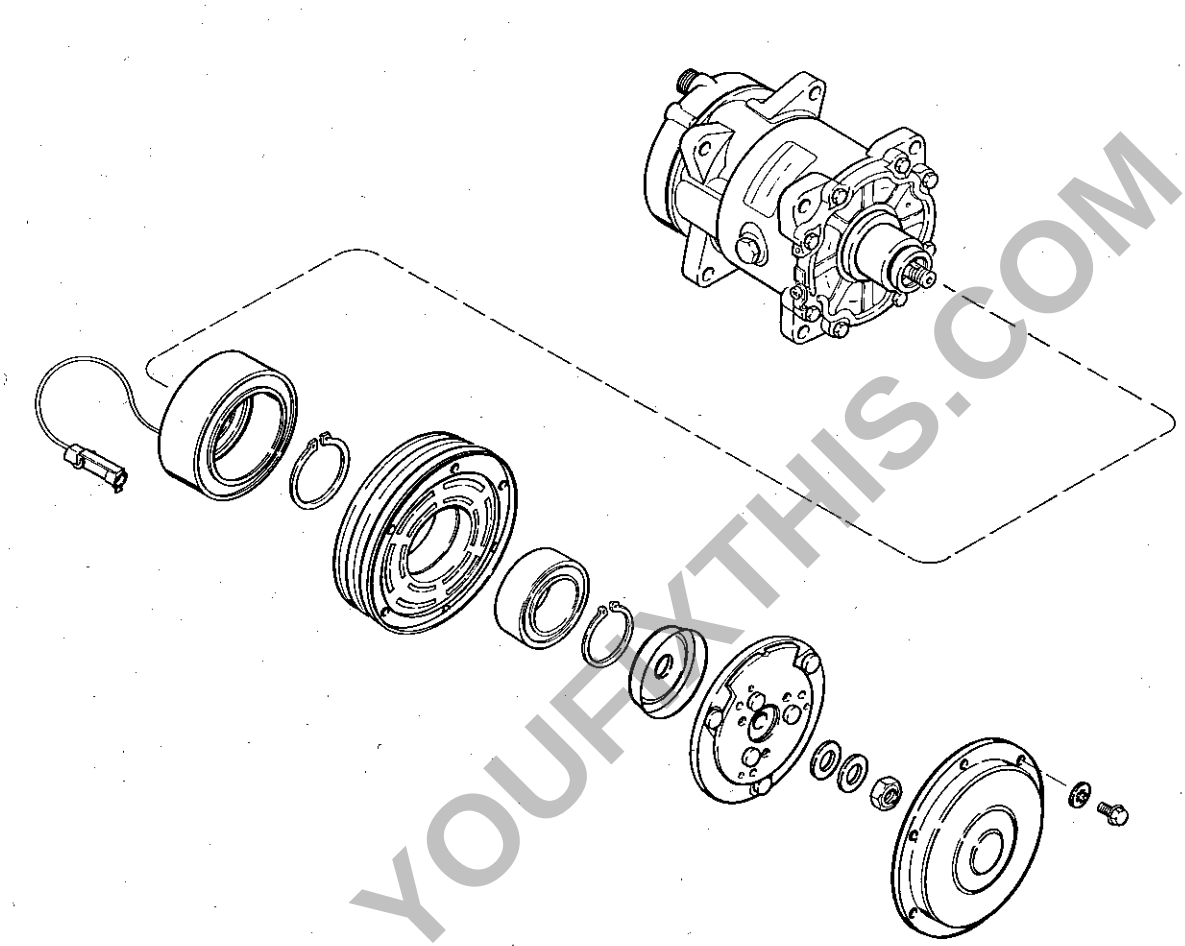
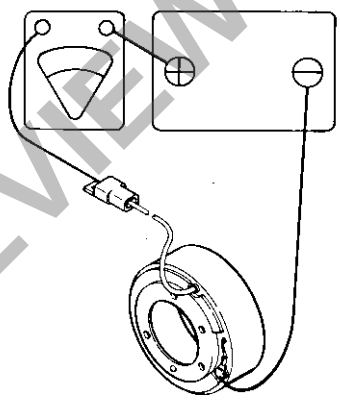
Clutch Assembly



1016L93

STEP 27



102L7

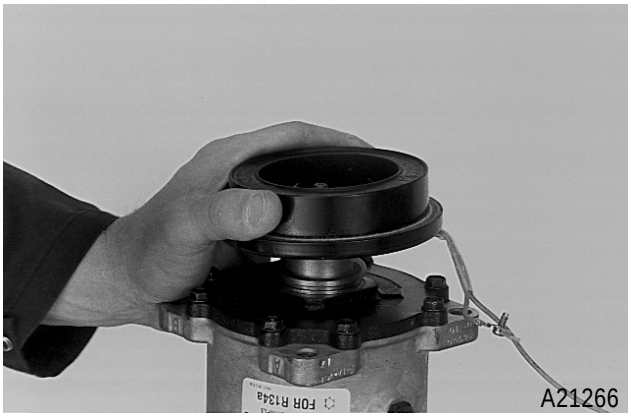
Use an ammeter, voltmeter, and a 12 volt battery to check the amperage of the clutch coil. The current draw must be 3.6 to 4.2 amperes at 12 volts.

A reading of more than 4.2 amperes indicates a short within the coil.

No amperage reading indicates an open circuit in the coil.

Replace the clutch coil if the amperage reading is not correct.

STEP 28



A21266

Install the clutch coil assembly. Align the detent ball and socket on the coil and housing.

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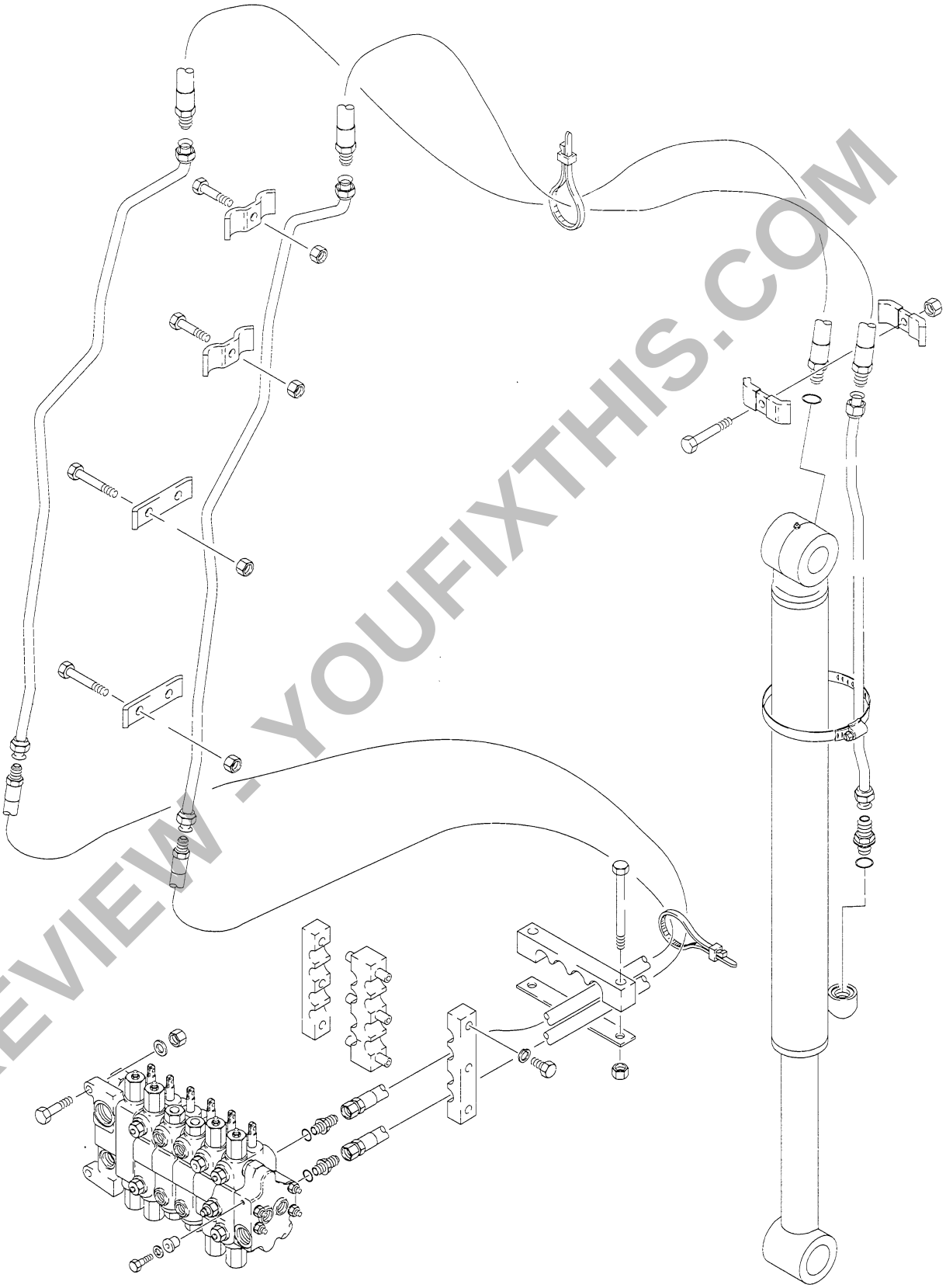

BT95M066

Bucket Cylinder Hydraulic Installation Without Extendable Dipper - 590 Super L

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