

9935 Cotton Picker

For complete service information also see:

6068 Engine CTM104
Engine Fuel Injection CTM68
Starting Motors and Alternators CTM77

John Deere Des Moines Works
TM1613 (18SEP01)

LITHO IN U.S.A.
ENGLISH

Introduction

FOREWORD

This manual is written for an experienced technician. Essential tools required in performing certain service work are identified in this manual and are recommended for use.

Live with safety: Read the safety messages in the introduction of this manual and the cautions presented throughout the text of the manual.



This is the safety-alert symbol. When you see this symbol on the machine or in this manual, be alert to the potential for personal injury.

Technical manuals are divided in two parts: repair and operation and tests. Repair sections tell how to repair the components. Operation and tests sections help you identify the majority of routine failures quickly.

Information is organized in groups for the various components requiring service instruction. At the beginning of each group are summary listings of all applicable essential tools, service equipment and tools, other materials needed to do the job, service parts kits, specifications, wear tolerances, and torque values.

Technical Manuals are concise guides for specific machines. They are on-the-job guides containing only the vital information needed for diagnosis, analysis, testing, and repair.

Fundamental service information is available from other sources covering basic theory of operation, fundamentals of troubleshooting, general maintenance, and basic type of failures and their causes.

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FOLLOW SAFE PROCEDURES

Unsafe work practices are dangerous. Understand service procedure before doing work; do not attempt shortcuts.



TS231 -19-07OCT88

TX,05,FF1611 -19-14JUN90

HANDLE FLUIDS SAFELY—AVOID FIRES

When you work around fuel, do not smoke or work near heaters or other fire hazards.

Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.

Make sure machine is clean of trash, grease, and debris.

Do not store oily rags; they can ignite and burn spontaneously.



TS227 -UN-23AUG88

DX,FLAME -19-04JUN90

PREVENT BATTERY EXPLOSIONS

Keep sparks, lighted matches, and open flame away from the top of battery. Battery gas can explode.

Never check battery charge by placing a metal object across the posts. Use a volt-meter or hydrometer.

Do not charge a frozen battery; it may explode. Warm battery to 16°C (60°F).



TS204 -UN-23AUG88

DX,SPARKS -19-03MAR93

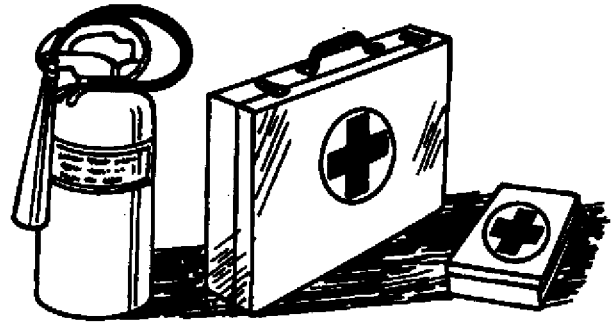
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PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



TS291
-JUN-23AUG88

DX,FIRE2 -19-03MAR93

PREVENT ACID BURNS

Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.

Avoid the hazard by:

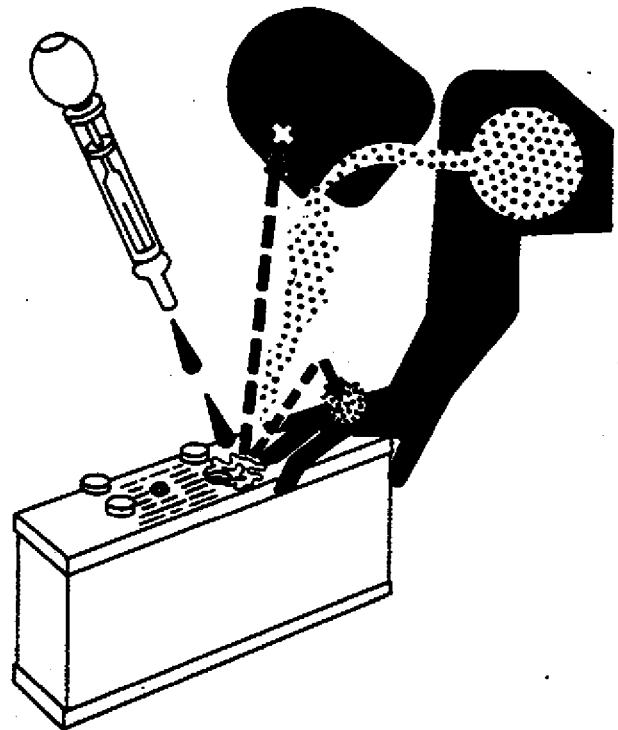
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

If you spill acid on yourself:

1. Flush your skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush your eyes with water for 15—30 minutes. Get medical attention immediately.

If acid is swallowed:

1. Do not induce vomiting.
2. Drink large amounts of water or milk, but do not exceed 2 L (2 quarts).
3. Get medical attention immediately.



TS203
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DX,POISON -19-21APR93

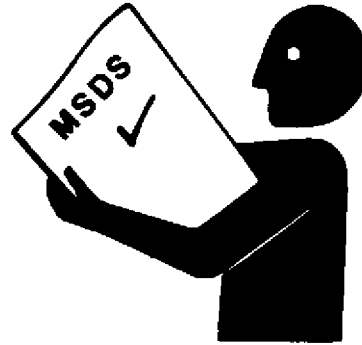
HANDLE CHEMICAL PRODUCTS SAFELY

Direct exposure to hazardous chemicals can cause serious injury. Potentially hazardous chemicals used with John Deere equipment include such items as lubricants, coolants, paints, and adhesives.

A Material Safety Data Sheet (MSDS) provides specific details on chemical products: physical and health hazards, safety procedures, and emergency response techniques.

Check the MSDS before you start any job using a hazardous chemical. That way you will know exactly what the risks are and how to do the job safely. Then follow procedures and recommended equipment.

(See your John Deere dealer for MSDS's on chemical products used with John Deere equipment.)



DX,MSDS,NA -19-03MAR93

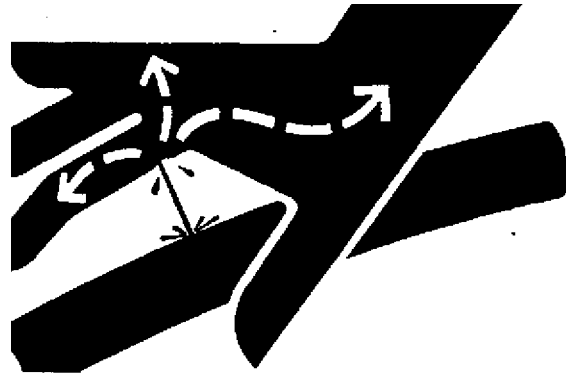
AVOID HIGH-PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A.



DX,FLUID -19-03MAR93

CLEAN HYDROSTATIC DRIVE COMPONENT

Whether working on a hydrostatic motor or pump, cleanliness is essential when servicing hydrostatic components. Always use clean tools and keep open surfaces free of dirt and foreign materials and chemicals. Protect all exposed sealing surfaces and open cavities from damage. Clean parts by using a solvent wash and dry using compressed air.

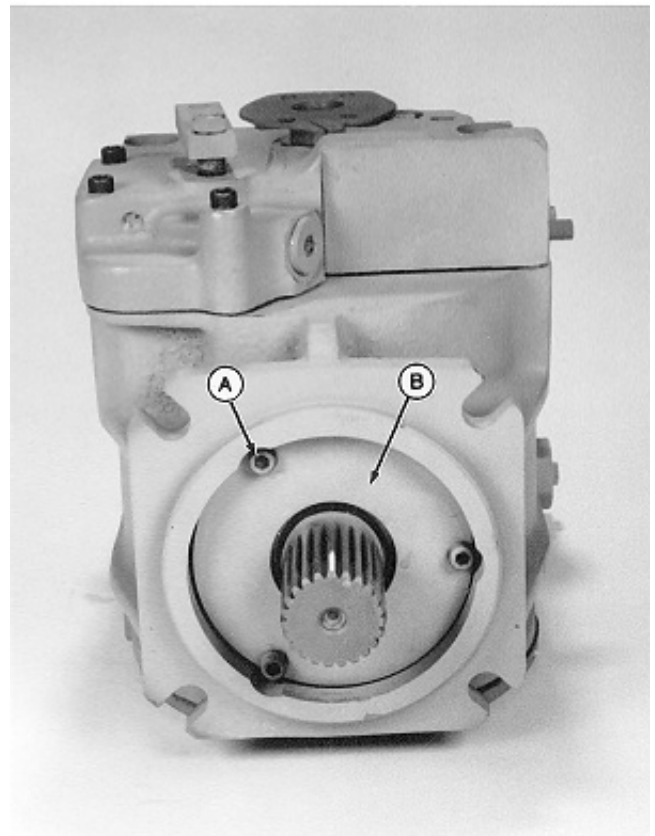
Replace all gasket and O-rings during repair. Clean gasket sealing surfaces prior to installing a new gasket. Lightly lubricate all O-rings with clean petroleum jelly prior to assembly.

NX1586,5006,C -19-27APR95

REMOVE AND INSTALL SHAFT SEAL

NOTE: Shaft seal replacement procedure is the same for both the hydrostatic motor and pump. Even though pump repair is illustrated, use this procedure to replace a motor seal.

1. Clean shaft seal area using a spray lubricant or solvent, such as SCOTCH 3M No. 1606 Electrical Contact Cleaner. DO NOT use a cloth or brush.
2. Remove three retainer plate screws (A) using a 5 mm hex wrench.
3. Remove retainer plate (B).



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NX1586,5006,D -19-17MAR97

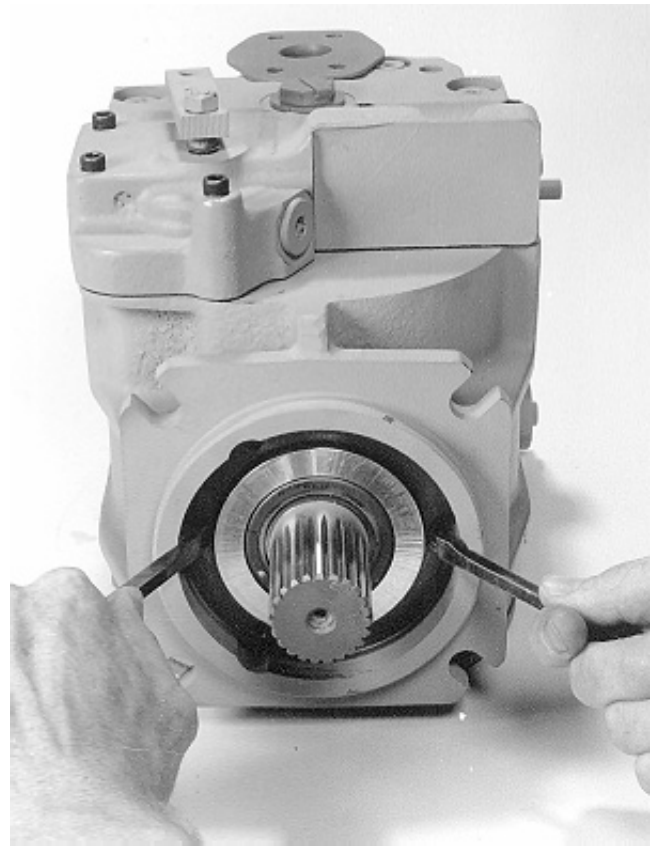
IMPORTANT: Shaft and seal assembly may be free in housing once seal carrier is removed. Do not remove shaft. If shaft is removed it may be difficult to install because of internal part movement.

4. Remove seal carrier.

NOTE: Seal may have been pushed outward by internal spring pressure. If necessary, pry seal from its bore as shown and/or lightly tap on shaft end using a soft mallet.

5. Remove O-ring from outside edge of seal carrier.

6. Repair seal. (See Repair Shaft Seal in this group.)



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7. Inspect sealing area on shaft for rust, wear or contamination.

8. Wrap spline of shaft with plastic film to prevent damage to sealing lip on seal during installation.

9. Lubricate new seal carrier outside edge O-ring and seal I.D. with petroleum jelly.

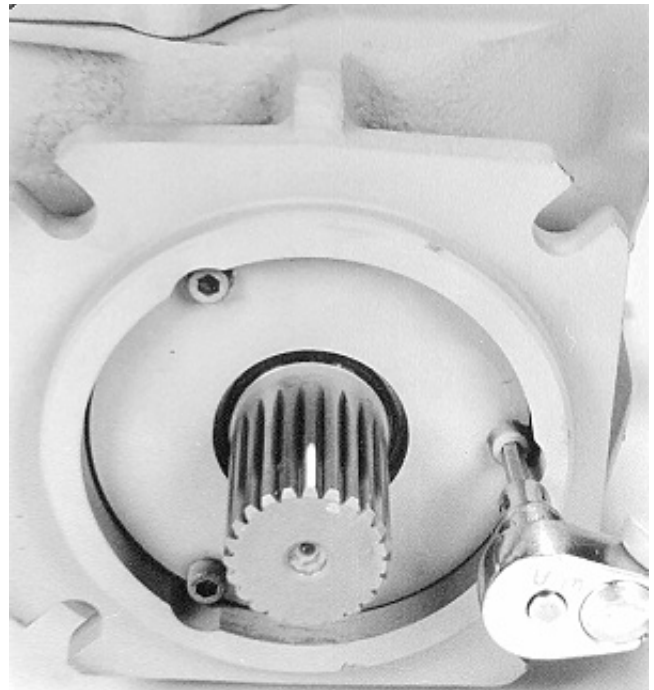
10. Place seal carrier assembly over shaft and into housing bore.



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11. Install retainer plate.
12. Install retainer screws. Tighten to 16 N-m (12 lb-ft).



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REPAIR SHAFT SEAL

1. Press old seal out of seal carrier.
2. Inspect seal carrier, new seal and O-Ring for damage or nicks.

NOTE: Outside diameter of seal can be lightly coated with a sealant (such as LOCTITE High Performance Sealant No. 59231) prior to installation. This will aid in preventing leaks caused by damage to seal bore in the carrier.

3. Press new seal into carrier. Be careful not to damage seal during installation.



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-UN-14MAR95

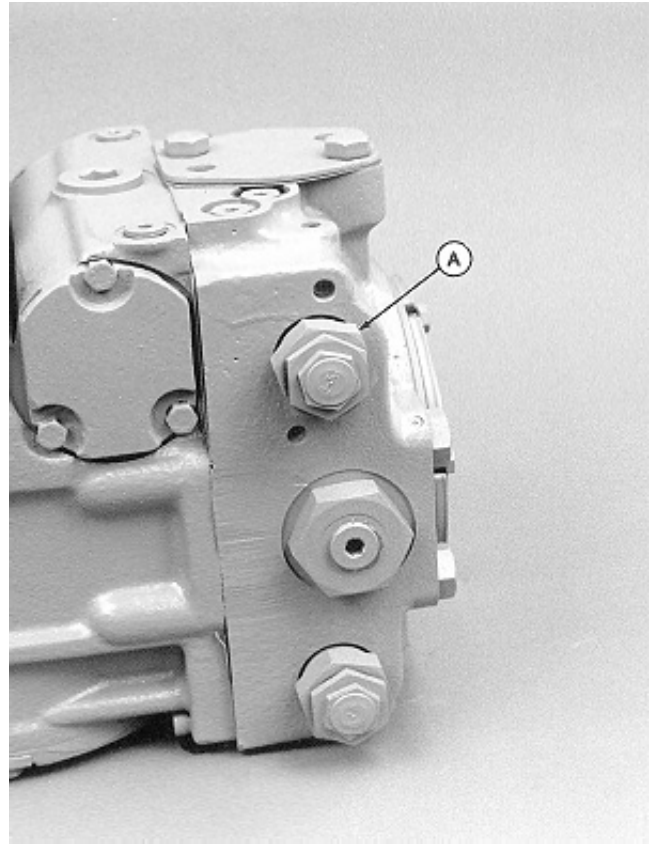
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REPLACE HYDROSTATIC PUMP CARTRIDGE VALVES

1. Remove cartridge valve (A). Apply wrench pressure on largest hex of valve.
2. Inspect cartridge for damage to parts and O-rings.
3. Replace valve or O-rings.

IMPORTANT: Do not over-tighten cartridge valves.

4. Install valve. Tighten to 89 N·m (66 lb·ft) torque.



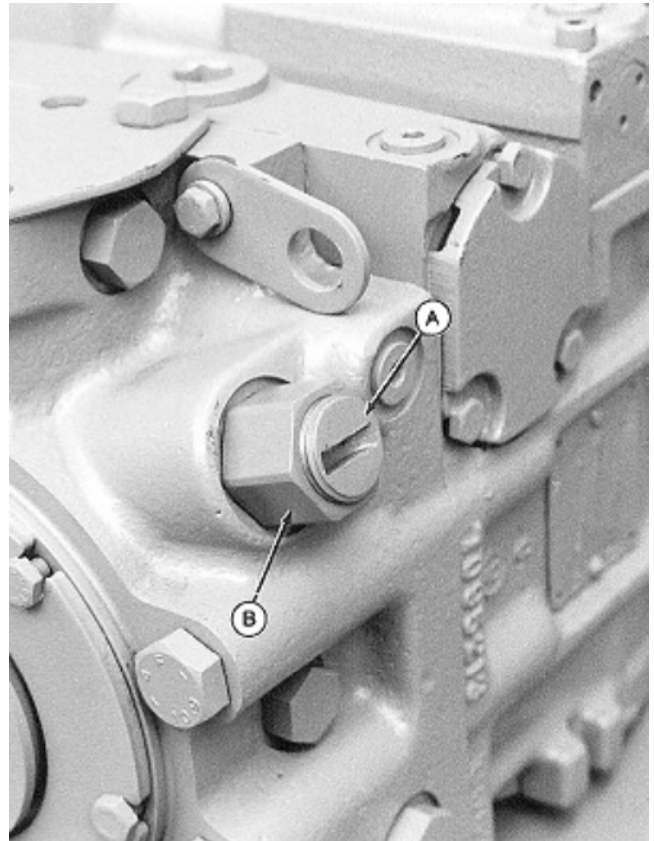
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REPLACE HYDROSTATIC PUMP CHARGE PRESSURE RELIEF VALVE

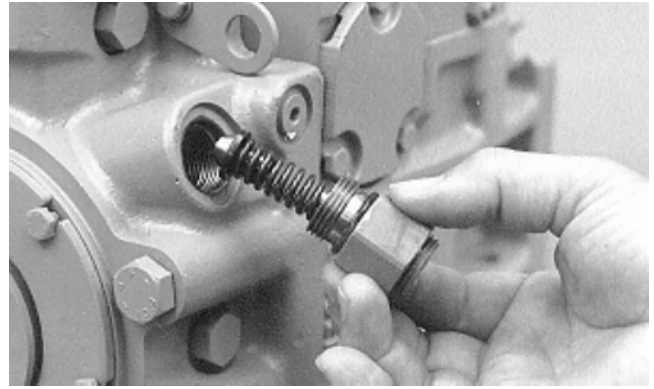
1. Scribe a line across the plug, lock nut and housing. This will approximate the original adjustment of relief valve during assembly.
2. While holding plug (A) with a large screwdriver, loosen lock nut (B).
3. Unscrew plug.
4. Remove spring and relief poppet valve.
5. Inspect poppet and seat in end cap for damage or foreign material.



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N48483 -UN-14MAR95

6. Install poppet and spring.
7. Install plug with lock nut. Align marks made prior to removal.
8. Tighten lock nut to 52 N-m (38 lb-ft) torque.
9. Check and adjust, if necessary, charge pressure. (See Charge Pressure Testing in Section 250.)

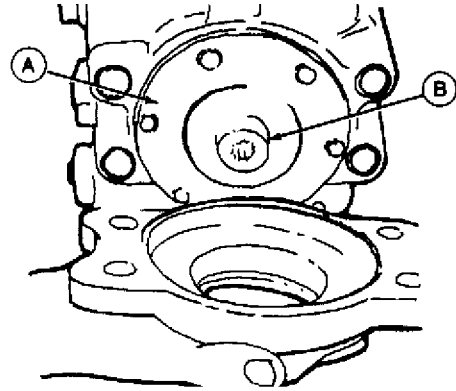


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REPAIR CHARGE PUMP

1. Remove four screw attaching auxiliary mounting pad to pump end cap.
2. Remove auxiliary mounting pad.
3. Using a 10 mm hex wrench, remove six retainer screws.
4. Remove cover retainer (A).
5. Remove auxiliary drive coupling (B).

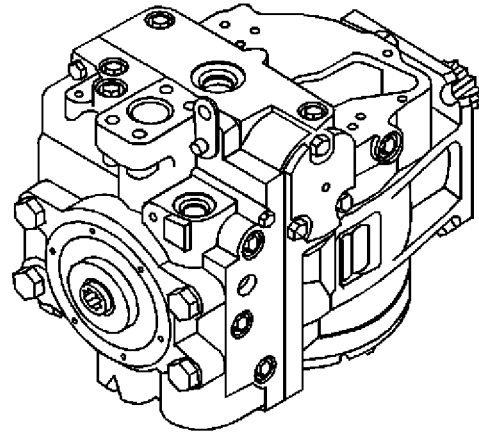


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6. Remove charge pump cover.



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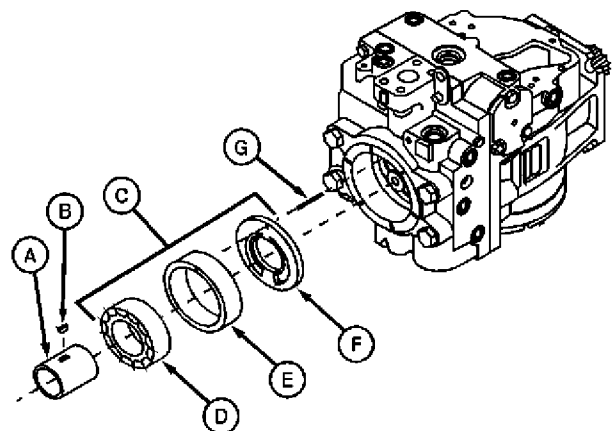
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7. Remove shaft (A) and key (B).

8. Remove gerotor (D), eccentric ring (E), port plate (F) and alignment pin (G).

9. Inspect parts for abnormal wear, damage or foreign material. Replace parts as needed.

- A—Shaft
- B—Key
- C—Charge Pump
- D—Gerotor
- E—Eccentric Ring
- F—Port Plate
- G—Alignment Pin



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10. Install port plate (F) and eccentric ring (E).

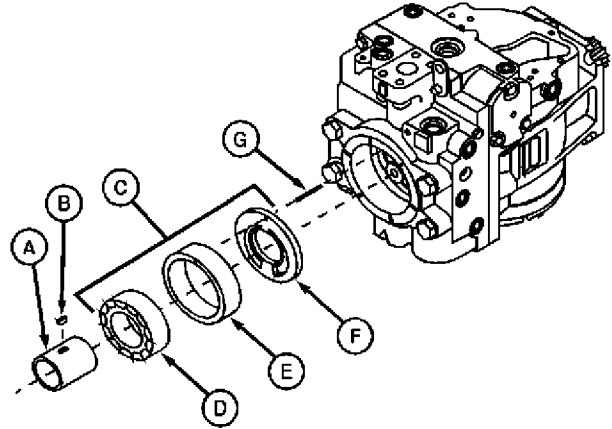
NOTE: The charge pump rotation is determined by the orientation of the gerotor assembly outer eccentric ring and location of alignment pin in the end cap.

11. Install alignment pin (G) to properly orientate the port plates and outer eccentric ring.

12. Apply a small quantity of petroleum jelly to I.D., O.D. and side faces of gerotor (D).

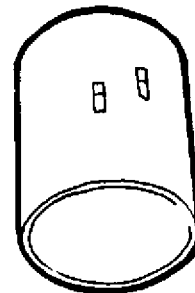
13. Install gerotor assembly.

- A—Shaft
- B—Key
- C—Charge Pump
- D—Gerotor
- E—Eccentric Ring
- F—Port Plate
- G—Alignment Pin



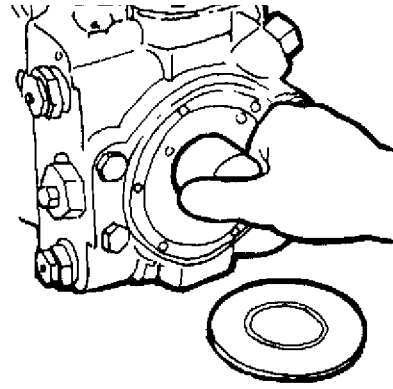
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14. Install drive key into the rear keyway (with identifier groove) of charge pump shaft.



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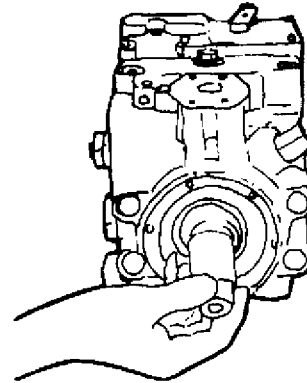
15. Install charge pump shaft. The internally splined end of shaft must engage main pump shaft.



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16. Install auxiliary drive coupling onto pump drive shaft spline (small outer diameter of coupling must be toward rear of pump).

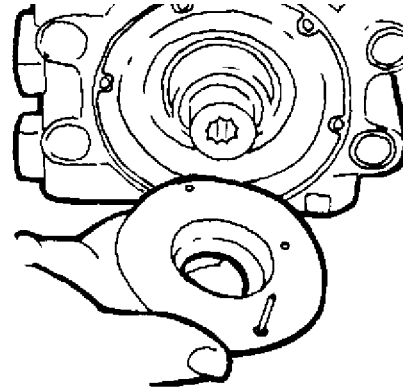


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17. Carefully remove alignment pin from charge pump parts.

18. Apply petroleum jelly to pin and then install in charge pump cover, then align with charge pump parts.



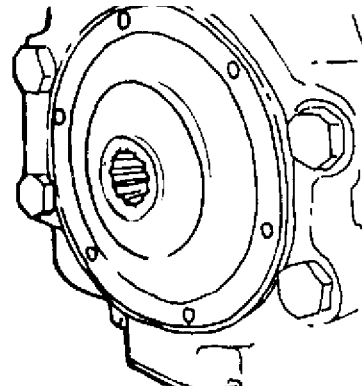
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N48495 -UN-05APR95

19. Apply petroleum jelly to O-ring and install around pump cover.

IMPORTANT: Charge pump cover can be installed two ways. Always install cover with small through hole oriented towards the charge inlet port. Failure to do so will result in loss of charge pressure.

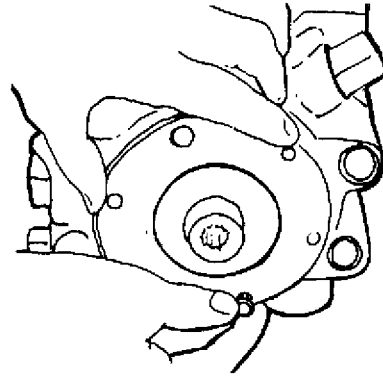
20. Install cover, aligning pin with hole in valve plate.



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21. Install cover retainer and six screws. Tighten screws to 14 N·m (10 lb-ft).

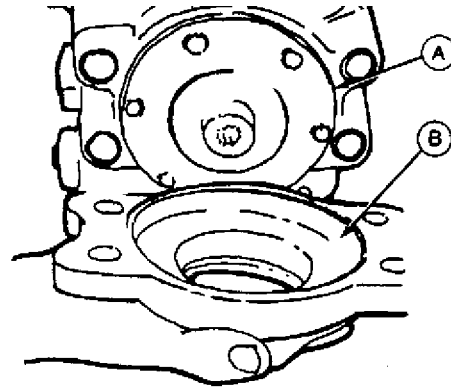


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22. Apply petroleum jelly to new O-ring (A) and install around cover retainer.

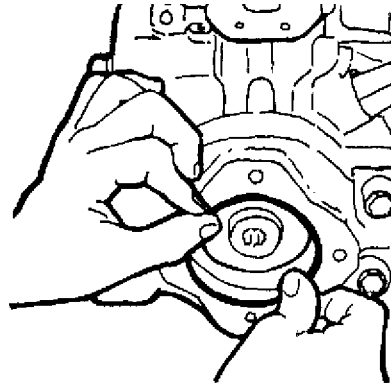
23. Install mounting pad adapter (B). Tighten mounting screws to 258 N·m (190 lb-ft).



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24. Apply petroleum jelly to new O-ring and install inside mounting.



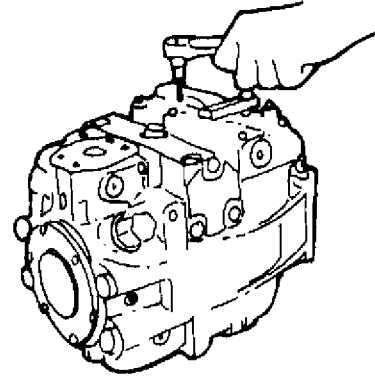
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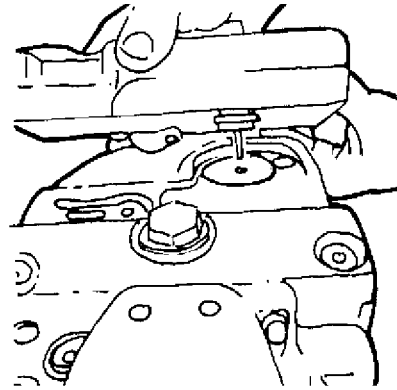
REMOVE AND INSTALL HYDROSTATIC PUMP CONTROL VALVE

1. Thoroughly clean external surfaces prior to removing control valve.
2. Remove eight mounting screws using 5 mm hex wrench.
3. Remove control valve and gasket from pump housing.
4. Replace control valve.



NX1586.5006.AB -19-27APR95

5. Install a new gasket on pump housing.
 6. Make sure control valve orifice check valve and spring are in their proper positions.
 7. Engage control linkage pin with mating hole in swashplate link.
 8. Set control valve in place on pump housing.
 9. Check control valve pin engagement by moving the control valve lever in both directions.
- Proper engagement will be indicated by centering torque as lever is moved from neutral position.
 - Non-engagement is indicated by lack of centering torque as lever is moved. If this condition exists, remove control valve and repeat Steps 7 through 9.



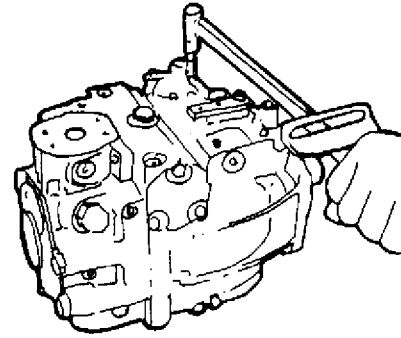
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10. Align control valve and gasket with mounting holes.
11. Install eight screws. Tighten to 16 N·m (12 lb-ft) torque.
12. Adjust the neutral start switch. (See Adjust Hydrostatic Safety Start Switch in Section 250.)



NX1613,5006,AD1-19-14JUL97

N48502 -UN-05APR95

REMOVE AND INSTALL CONTROL VALVE NEUTRAL START SWITCH

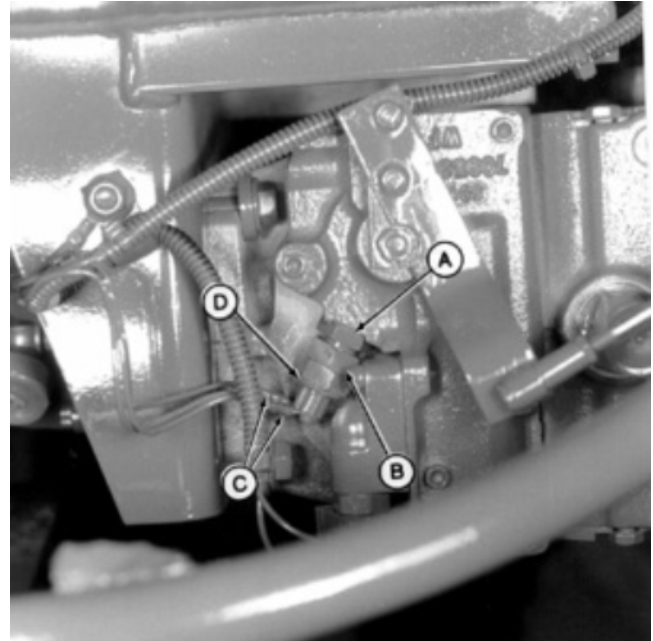
NOTE: Neutral start switch replacement can be made with pump mounted on machine.

IMPORTANT: Do not disturb any locknuts or adjustments on the neutral start switch other than those described. Disturbing other components may result in the machine starting when hydrostatic pump is out of neutral position.

1. Disconnect wires (C) from neutral start switch.

IMPORTANT: Do not allow the special lock nut (A) on eccentric plug to turn when loosening the switch lock nut. Turning these parts may change other critical switch adjustments.

2. Using two wrenches, hold switch stationary while loosening the lock nut (B).
3. Remove switch (D).
4. Install new switch into special lock nut finger tight. Leave switch lock nut loose.
5. Adjust neutral start switch. (See Adjust Hydrostatic Safety Start Switch in Section 250.)



- A—Special Lock Nut
- B—Lock Nut
- C—Wires
- D—Switch

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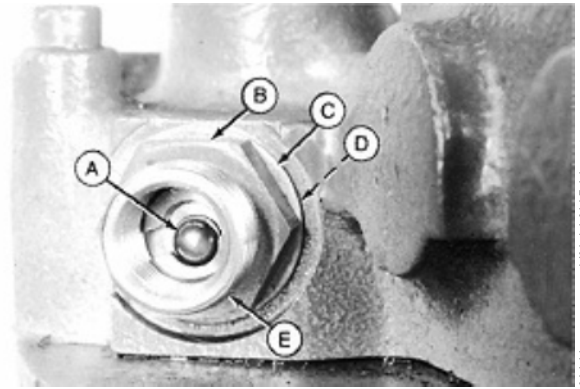
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ADJUST CONTROL VALVE ECCENTRIC PLUG

NOTE: Eccentric plug needs adjustment if the neutral start switch cannot be adjusted.

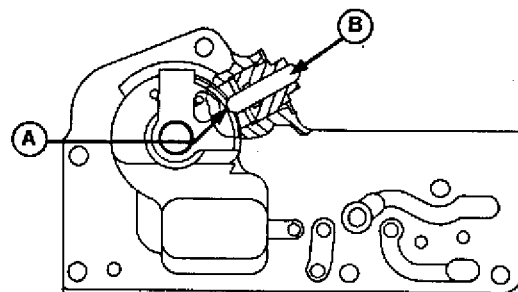
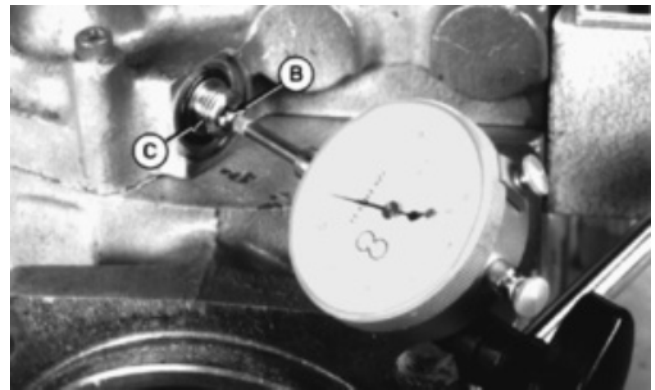
1. Remove neutral start switch. (See Remove and Install Control Valve Neutral Start Switch in this group.)
2. Remove locknut (B) and washer (C).
3. Remove eccentric plug (E) and O-ring (D).
4. Remove neutral start switch pin (A).
5. Inspect parts for damage. Replace as necessary.



A—Neutral Start Switch Pin
 B—Locknut
 C—Washer
 D—O-Ring
 E—Eccentric Plug

NX1688,5010,Q -19-14JUL97

6. Install plug approximately six turns into housing.
7. Move control lever (C) to neutral position. Push pin (B) into cam slot (A).
8. Install dial indicator on pin end with pin fully seated.
9. Rotate control lever. Note reading of dial indicator.
10. Turn plug (in or out) a small amount. Note reading of dial indicator with pin fully seated.
11. Continue adjusting plug until the greatest amount of lift is recorded on the dial indicator.
12. Remove dial indicator.



NX1688,5010,1A -19-24JUN97

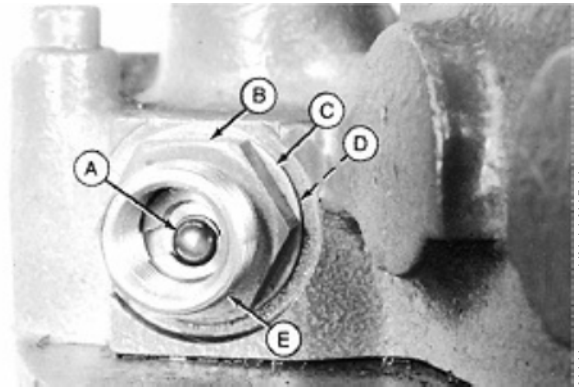
13. Install a new O-ring (D), washer (C) and lock nut (B). Check that washer is seated on plug shoulder.

NOTE: For complete information on making fabricated tool, see procedure in Section 399.

14. Use DFNX65-A1 Eccentric Plug Adjustment Tool to hold plug (E) while tightening lock nut to 27 N·m (20 lb-ft).

15. Check pin (A) lift using dial indicator to verify plug did not move while tightening lock nut.

16. Install neutral start switch. (See Remove and Install Control Valve Neutral Start Switch in this group.)



A—Pin
B—Lock Nut
C—Washer
D—O-Ring
E—Plug

NX1613,25020,7A-19-14JUL97

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DISASSEMBLE HYDROSTATIC DRIVE PUMP

NOTE: Prior to beginning repair, remove the following items (see instructions in this group):

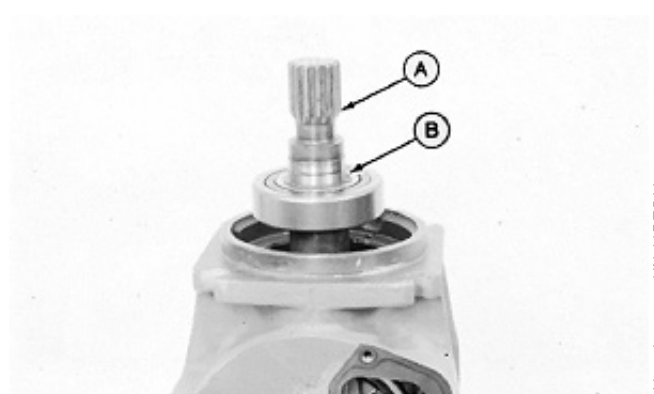
- Auxiliary mounting pad
- Charge pump
- Control valve
- Filter and mounting
- Cartridge valves
- Shaft seal

NX1688,5010,6 -19-10FEB97

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NOTE: Bearing O.D. is slip fit in housing bore. If shaft and bearing stick in housing, lightly tap end of shaft with a soft mallet to free bearing.

1. Remove shaft and bearing assembly (A).
2. Remove snap ring (B) and press shaft out of bearing.



NX1688,5010,7 -19-10FEB97

N45552 -UN-13DEC93



Suggest:

If the above button click is invalid.

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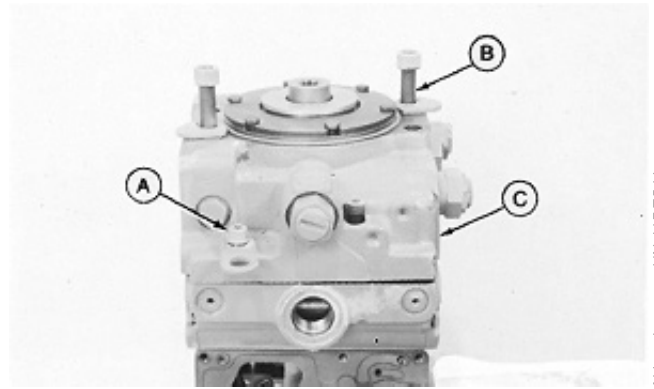
first, and then click the above link

to download the complete manual.

Thank you so much for reading

⚠ CAUTION: End cap assembly is under spring pressure. Hold assembly in place when removing cap screws to avoid injury.

3. Temporarily install two of the large end cap screws to hold end cap against spring pressure while small screws are removed.
4. Place pump on work surface with end cap up.
5. Remove small cap screws (A).
6. Remove large cap screws (B).
7. Remove end cap (C).

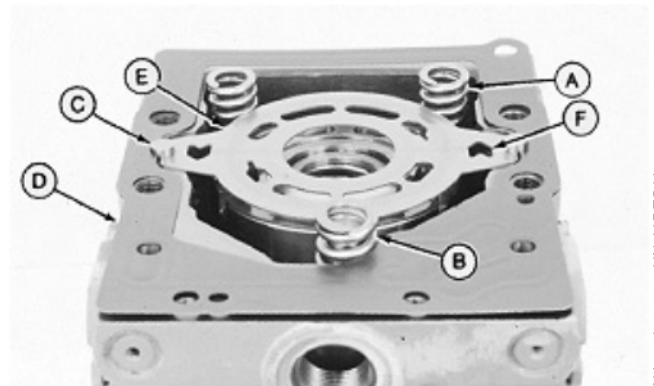


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NX1688,5010,8 -19-24JUN97

8. Remove swashplate leveler spring shims from spring pockets in end cap.
9. Remove dual swashplate leveler springs (A).
10. Remove swashplate hold down spring (B).
11. Remove gasket (D), alignment pins (C), and valve plate (E), noting direction of arrows (F).

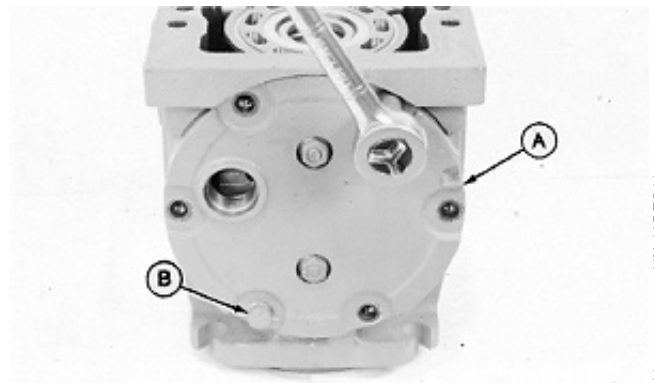
- A—Leveler Spring (2 Used)
- B—Hold Down Spring
- C—Alignment Pin (2 Used)
- D—Gasket
- E—Valve Plate
- F—Arrow



N45554 -UN-13DEC93

NX1688,5010,9 -19-10FEB97

12. Put an alignment mark across side cover (A) and housing to aid in assembly.
13. Remove six cap screws (B) and cover.



N45555 -UN-13DEC93

NX1688,5010,10 -19-24JUN97

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