

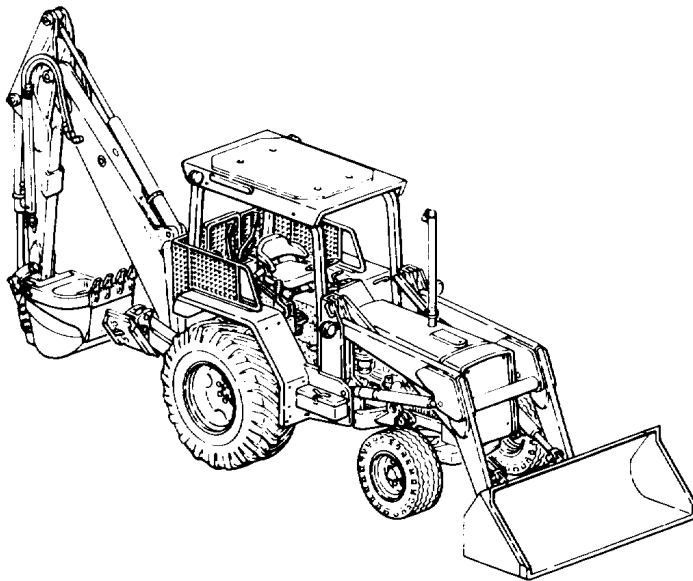


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**TECHNICAL MANUAL**  
**ORGANIZATIONAL MAINTENANCE MANUAL**  
**VOLUME 3 OF 3**



**MAINTENANCE  
INSTRUCTIONS -  
CONTINUED  
PAGE 2-1189**

**MAINTENANCE  
ALLOCATION  
CHART (MAC)  
PAGE B-1**

**INDEX  
PAGE Index-1**

**TRACTOR, WHEELED (DED)  
LOADER BACKHOE  
W/HYDRAULIC IMPACT TOOL AND  
HYDRAULIC EARTH AUGER ATTACHMENT  
JOHN DEERE MODEL JD 410 (CCE)  
WITH BUCKET, IMPACTOR,  
AND EARTH DRILL  
(NSN 2420-00-567-1035)**

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**This copy is a reprint which includes current  
pages from Change 1.**

**Change 1**

**1 SEPTEMBER 1987**

**HEADQUARTERS, DEPARTMENT OF THE ARMY**

**WARNING**

When operating loader backhoe, make sure that all personnel are cleared from vehicle and work area. Failure to observe this precaution could cause injury to personnel.

**WARNING**

Do not operate backhoe controls unless you are in operator's seat facing backhoe. Backhoe boom cylinder may be accidentally bumped, causing backhoe boom to move suddenly. Failure to observe this precaution could cause serious injury.

**WARNING**

Do not attempt to disconnect hydraulic lines and fittings while engine is running or before hydraulic system pressure has been released. When engine is running, hydraulic system is under pressure. Hydraulic system pressure should be 0 psi (0 kPa) before lines are disconnected. A line or fitting disconnected under pressure will blow off with a lot of force and could cause serious injury to personnel.

**WARNING**

Be careful when draining hot fluids. Wear gloves to protect your hands from hot parts and fluids or severe burns could result.

**WARNING**

Drycleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use only in a well ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flashpoint is 100°F to 138°F (38° to 59°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

**WARNING**

Compressed air used for blowing away chips, dirt, etc., must leave nozzle at less than 30 psi (207 kPa) to prevent personal injury. Be certain that nozzle is rated to provide a maximum of 30 psi (207 kPa). Be sure to wear safety goggles when using compressed air. Compressed air and particles moved by compressed air can cause damage to your eyes.

**WARNING**

Be careful of moving parts when working near engine while it is running. Moving parts could catch on tools, clothing, or extremities causing serious injury.

**WARNING**

Keep clear of hydraulic components when raised and not supported. Sudden loss of hydraulic pressure could cause components to drop without warning.

**WARNING**

Surge relief valve plug is under strong spring tension. If plug is not supported, parts may fly off injuring personnel.

**WARNING**

Valve is under strong spring tension. If valve is not supported when mounting bolts are removed, parts may fly off injuring personnel.

**WARNING**

Some parts are heavy. Be careful when handling them. Lifting equipment is needed when parts weigh over 50 pounds (23 kg) for a single person lift, over 100 pounds (45 kg) for a two person lift, and over 150 pounds (68 kg) for a three or more person lift. Do not try to handle heavy parts without lifting equipment. Keep clear of heavy parts supported only by lifting equipment. Failure to observe this precaution could cause serious injury or death of personnel.

Change 1 b

CHANGE

NO. 1

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
Washington D.C., 8 April 1992

**ORGANIZATIONAL MAINTENANCE MANUAL**

**TRACTOR, WHEELED,  
DED, LOADER BACKHOE:  
WITH HYDRAULIC IMPACT TOOL AND  
WITH HYDRAULIC EARTH AUGER ATTACHMENT  
JOHN DEERE MODEL JD410 (CCE)  
WITH BUCKET, IMPACTOR,  
AND EARTH DRILL  
(NSN 2420-00-567-0135)**

TM 5-2420-222-20-3, 1 September 1987, is changed as follows:

1. Cover. The manual title is changed to read as shown above.
2. Remove old pages and insert new pages.
3. New or changed material is indicated by a vertical bar in the margin or by a vertical bar adjacent to the TA number.

**Remove Pages**

*a and b  
i and ii  
A-1 and A-2  
Appendix B (in its entirety)  
C-3 and C-4  
Cover 1 and 2*

**Insert Pages**

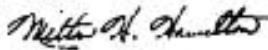
*a and b  
i and ii  
A-1 and A-2  
Appendix B (in its entirety)  
C-3 and C-4  
Cover 1 and 2*

4. File this change sheet in front of the publication for reference purposes.

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By Order of the Secretary of the Army:

Official



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*Administrative Assistant to the  
Secretary of the Army*  
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*General, United States Army  
Chief of Staff*

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TECHNICAL MANUAL

NO. 5-2420-222-20-3

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
WASHINGTON, D.C., 1 September 1987

ORGANIZATIONAL MAINTENANCE MANUAL

TRACTOR, WHEELED,  
DED, LOADER BACKHOE:  
WITH HYDRAULIC IMPACT TOOL AND  
WITH HYDRAULIC EARTH AUGER ATTACHMENT  
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AND EARTH DRILL  
(NSN 2420-00-567-0135)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 20282 located in the back of this manual direct to: Commander, US Army Tank-Automotive Command, ATTN: AMSTA-MB, Warren, MI 48397-5000. A reply will be sent to you.

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\*This manual supersedes Organizational portion of TM 5-2420-222-14&P1 and TM 5-2420-222-14&P2 dated October 1982, including all changes.

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**HYDRAULIC SYSTEM PRESSURE RELEASE**

---

This task covers:

Hydraulic System Pressure Release (page 2-1191)

---

**INITIAL SETUP**

Personnel Required

One

---

LOCATION	ITEM	ACTION	REMARKS
----------	------	--------	---------

---

**HYDRAULIC SYSTEM PRESSURE RELEASE**

**NOTE**

**Hydraulic system pressure must be released before disconnecting hydraulic lines and fittings. A line or fitting disconnected under pressure will blow off with a lot of force and could cause injury to personnel.**

**When engine is running, hydraulic system is under pressure. In order to release hydraulic system pressure, engine must be shut down.**

**There are three ways to release hydraulic system pressure. Perform any one of the following three steps to release hydraulic system pressure.**

## HYDRAULIC SYSTEM PRESSURE RELEASE - CONTINUED

LOCATION	ITEM	ACTION	REMARKS
----------	------	--------	---------

## HYDRAULIC SYSTEM PRESSURE RELEASE - CONTINUED

- |               |                                   |  |  |
|---------------|-----------------------------------|--|--|
| 1. Operator's | Steering wheel (1)<br>compartment | Turn from side to side until steering is hard. |  |
|---------------|-----------------------------------|--|--|

**WARNING**

**When operating loader backhoe, make sure that all personnel are cleared from vehicle and work area. Failure to observe this precaution could cause injury to personnel.**

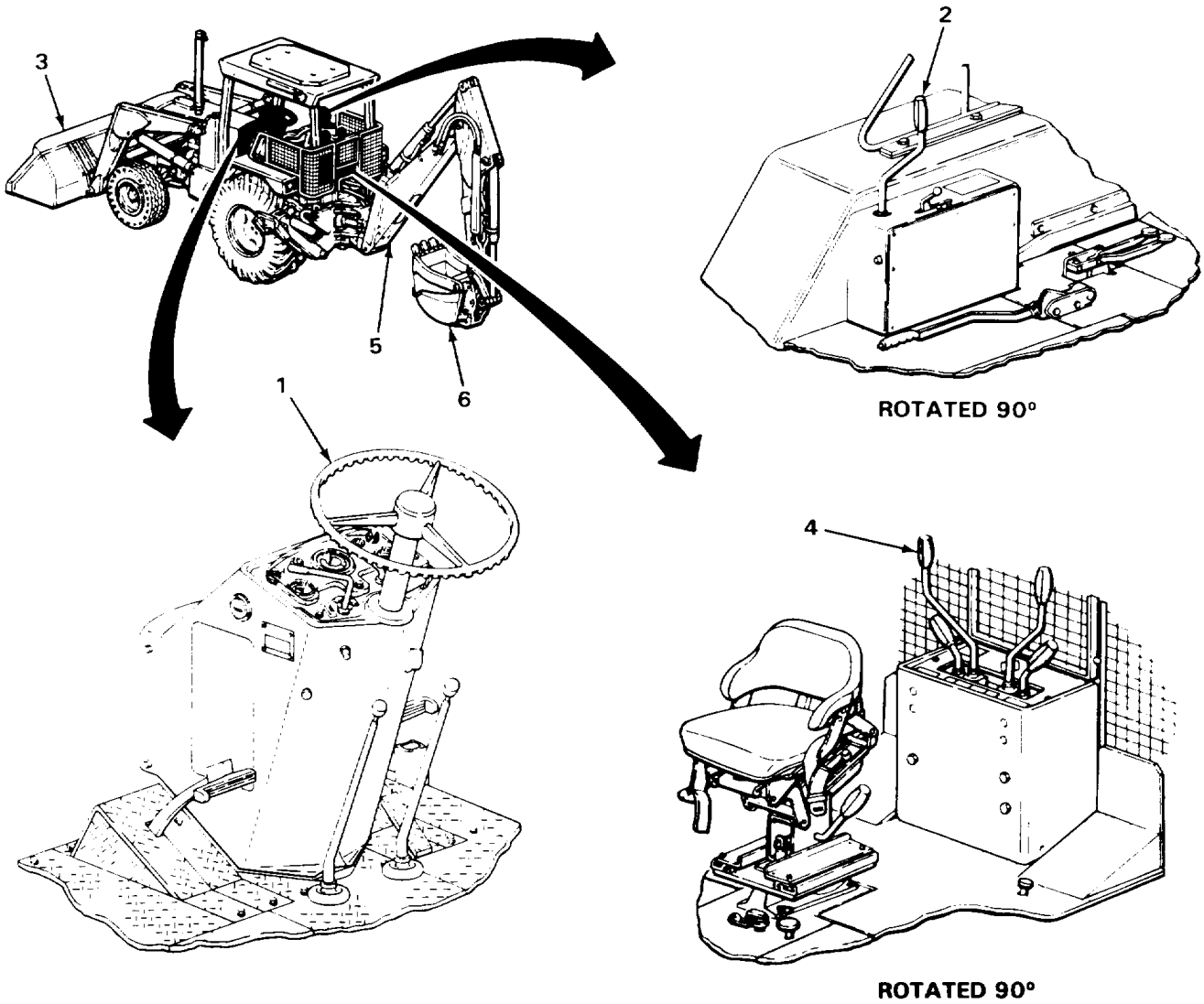
- |    |                                    |   |  |
|----|------------------------------------|---|--|
| 2. | Loader bucket<br>control lever (2) | a. Pull back until loader bucket (3) stops raising.<br><br>b. Push forward until loader bucket (3) rests on ground. |  |
|----|------------------------------------|---|--|

**WARNING**

**Do not operate backhoe controls unless you are in operator's seat facing backhoe. Backhoe boom cylinder may be accidentally bumped, causing backhoe boom to move suddenly. Failure to observe this precaution could cause serious injury.**

- |    |                                   |   |  |
|----|-----------------------------------|---|--|
| 3. | Backhoe boom<br>control lever (4) | a. Pull back until boom (5) stops raising.<br><br>b. Push forward until backhoe bucket (6) rests on ground. |  |
|----|-----------------------------------|---|--|

HYDRAULIC SYSTEM PRESSURE RELEASE - CONTINUED



TASK ENDS HERE

TA243304

## HYDRAULIC ACCUMULATOR CHARGING

This task covers:

Charging (page 2-1194)

### INITIAL SETUP

**Tools**

Charging kit, accumulator,  
Nudie ND-925-0 (-W)  
Connector, John Deere R40617  
Hose, John Deere AR47753  
Knife, pocket  
Wrench, box, 5/8-inch

**Materials/Parts**

Nitrogen, technical (item 17, Appendix C)  
Packing, plug

**Personnel Required**

One

LOCATION	ITEM	ACTION	REMARKS
----------	------	--------	---------

### CHARGING

1	Accumulator (1)	Plug (2) with assembled packing (3)	Using 5/8-inch box wrench, unscrew and take out.
2	Plug (2)	Packing (3)	a Using pocket knife, take off. b Get rid of.

### CAUTION

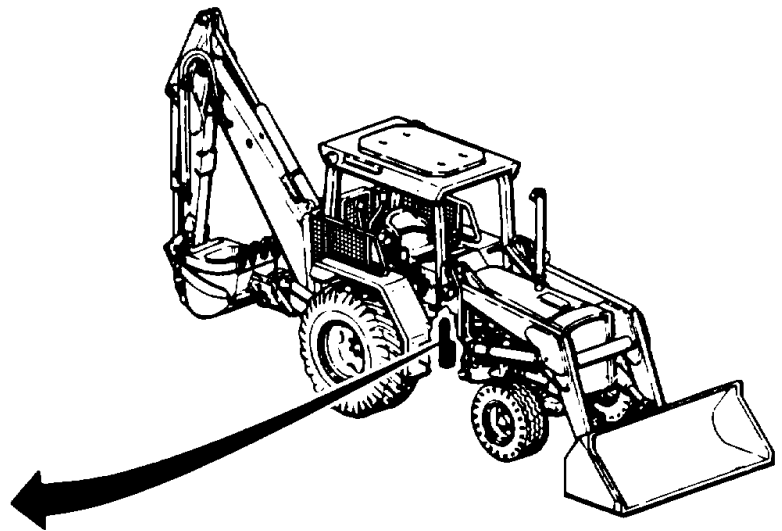
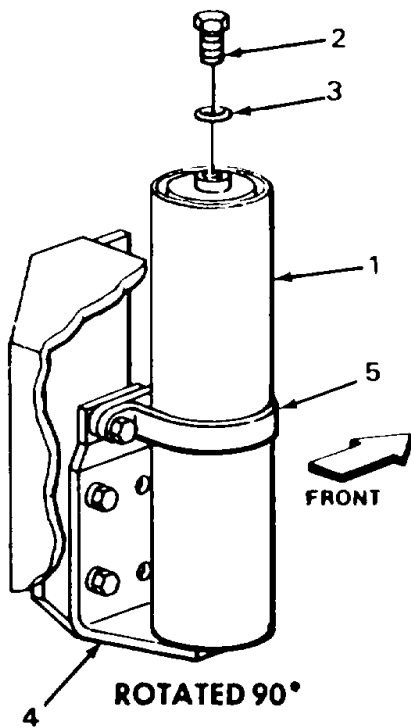
**Use only dry nitrogen to charge hydraulic accumulator. Using air or any combustible gas may cause damage to internal parts.**

**When charging accumulator, be careful not to exceed specified pressure or damage to internal parts may occur.**

3	Bracket (4) and clamp (5)	Accumulator (1)	a Using Nuday ND925-0 (-W) accumulator charging kit, John Deere R40617 connector, and John Deere AR47753 hose connected to charging port, charge. <b>Accumulator is charged when gage on charging kit reads 475 to 525 psi (3275 to 3620 kPa).</b> b. If overcharged, use Nuday ND925-0 (-W) accumulator charging kit with gage and valve disconnected from technical nitrogen tank to bleed off any excess pressure.
---	---------------------------	-----------------	---

HYDRAULIC ACCUMULATOR CHARGING - CONTINUED

LOCATION	ITEM	ACTION	REMARKS
4 Plug (2)	New packing (3)	Place in position.	c Disconnect Nuday ND925-0 (-W) accumulator charging kit, John Deere R40617 connector, and John Deere AR47753 hose.
5 Accumulator (1)	Plug (2) with assembled packing (3)	Screw in and tighten using 5/8-inch box wrench.	



TASK ENDS HERE

TA243305

**PUMP STROKE CONTROL VALVE FILTER ELEMENT**

---

This task covers:

- a. Removal (page 2-1196)
  - b. Cleaning (page 2-1197)
  - c. Inspection/Replacement (page 2-1198)
  - d. Installation (page 2-1198)
- 

**INITIAL SETUP**

**Tools**

- Knife, pocket
- Pan, drain
- Screwdriver, flat-tip, 1/8-inch
- Wrench, box and open-end, combination, 1 1/4 - inch

**Materials/Parts**

- Filter element
- Packing, filter element (two required)
- Packing, filter plug

**Materials/Parts - Continued**

- Rags, wiping (item 21, Appendix C)
- Solvent, drycleaning (item 28, Appendix C)

**Personnel Required**

Two

**Equipment Condition**

1. Hydraulic system pressure released (page 2-1191)
  2. Right side grille removed (TM 5-2420-222-10)
- 

LOCATION	ITEM	ACTION	REMARKS
----------	------	--------	---------

---

**REMOVAL**

**WARNING**


**Do not attempt to disconnect hydraulic lines and fittings while engine is running or before hydraulic system pressure has been released. When engine is running, hydraulic system is under pressure. Hydraulic system pressure should be 0 psi (0 kPa) before lines are disconnected. A line or fitting disconnected under pressure will blow off with a lot of force and could cause serious injury to personnel.**

**Be careful when draining hot fluids. Wear gloves to protect your hands from hot parts and fluids or severe burns could result.**

- |                |                                     |  |
|----------------|-------------------------------------|--|
| 1. Housing (1) | Plug (2) with assembled packing (3) | <ul style="list-style-type: none"> <li>a. Place drain pan underneath to catch draining fluid.</li> <li>b. Using 1 1/4-inch combination box and open-end wrench, unscrew and take out.</li> </ul> |
|----------------|-------------------------------------|--|



**PUMP STROKE CONTROL VALVE FILTER ELEMENT - CONTINUED**

LOCATION	ITEM	ACTION	REMARKS
2.	Filter element (4) and two packings (5)	a. Using 1/8-inch flat-tip screwdriver, take out. b. Get rid of packing (5). c. Plug housing (1) (page 2-137). d. Get rid of drained fluid (page 2-137).	
3. Plug (2)	Packing (3)	a. Using pocket knife, take off. b. Get rid of.	

**CLEANING**

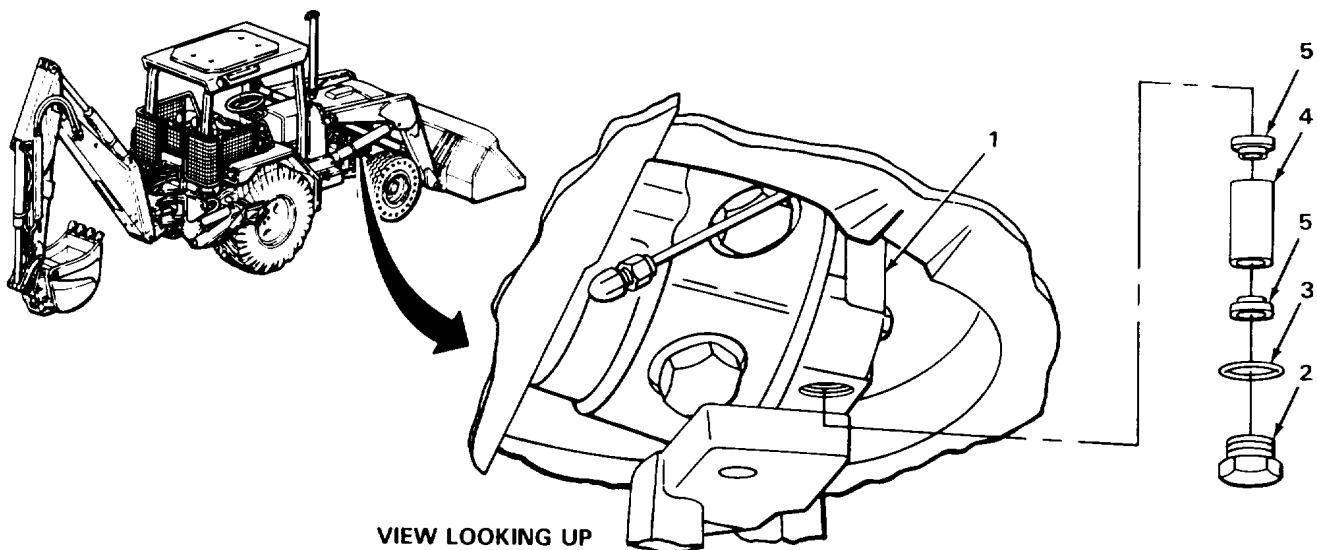
**NOTE**

For more information on how to clean parts, go to **General Maintenance Instructions (page 2-137)**.

**WARNING**

Drycleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use only in a well ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flashpoint is 100°F to 138°F (38° to 59°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

- |    |                                    |   |
|----|------------------------------------|---|
| 4. | Plug (2) and<br>filter element (4) | a. Clean in drycleaning solvent.<br>b. Using clean, dry rags, wipe dry. |
|----|------------------------------------|---|

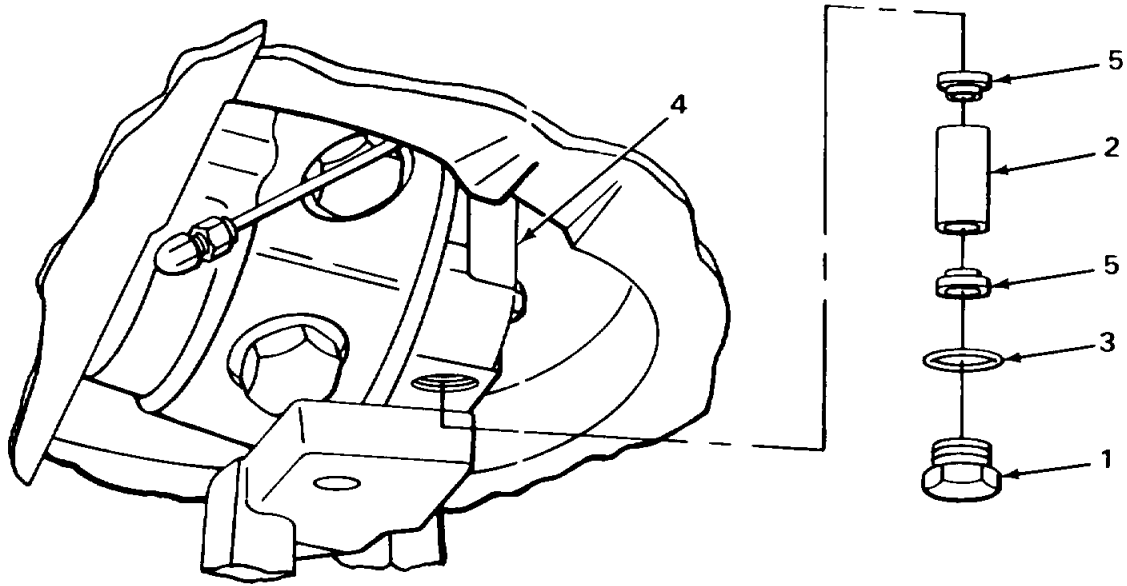


TA243306

## PUMP STROKE CONTROL VALVE FILTER ELEMENT - CONTINUED

LOCATION	ITEM	ACTION	REMARKS
INSPECTION/REPLACEMENT			
<b>NOTE</b>			
For more information on how to inspect parts, go to General Maintenance Instructions (page 2-137).			
Replace defective parts as needed.			
5.	Plug (1)	a. Look for cracks and breaks. b. Look for damaged threads.	
6.	Filter element (2) dents.	a. Look for cracks, breaks, bends, and b. Look for plugged wire mesh which cannot be cleaned. c. Look for enlarged holes in wire mesh.	
INSTALLATION			
7.	Plug (1)	New packing (3)	Place in position.
8.	Housing (4)	Filter element (2) and two new packings (5)	a. Unplug housing (4). b. Place in position.
9.		Plug (1) with assembled packing (3)	Screw in and tighten using 1 1/4-inch combination box and open-end wrench.
10.	Loader backhoe	Transmission	Check fluid level and add proper amount and grade (TM 5-2420-222-10).
11.		Engine	Start and run at high idle (TM 5-2420-222-10).
12.	Housing (4)	Plug (1)	a. Check for leaks. b. If leaking, tighten using 1 1/4-inch combination box and open-end wrench. c. If leaking does not stop, shut down engine (TM 5-2420-222-10) and replace defective packing or plug as outlined in this task. d. If found leaking, repeat steps 10 thru 12.
13.	Loader backhoe	Engine	If still running, shut down (TM 5-2420-222-10).

PUMP STROKE CONTROL VALVE FILTER ELEMENT - CONTINUED



VIEW FROM UNDERNEATH

NOTE

FOLLOW-ON MAINTENANCE: Install right side grille (TM 5-2420-222-10).

TASK ENDS HERE

TA 243307

**PRESSURE CONTROL VALVE**

This task covers:

- |  |                               |
|--|-------------------------------|
| a. Removal (page 2-1200)               | e. Repair (page 2-1206)       |
| b. Disassembly (page 2-1202)           | f. Assembly (page 2-1206)     |
| c. Cleaning (page 2-1204)              | g. Installation (page 2-1208) |
| d. Inspection/Replacement(page 2-1205) | h. Adjustment (page 2-1210)   |

**INITIAL SETUP****Tools**

Caliper, micrometer, outside,  
0 to 1-inch  
Caps, vise jaw (pair)  
Compressor, reciprocating air  
Extension, 3/8-inch drive, 5-inch  
Fitting kit, tube and pipe  
Gage, multi-range, pressure  
Gun, air blow  
Handle, ratchet, 3/8-inch drive  
Hose, air compressor  
Knife, pocket  
Pan, drain  
Pliers, long roundnose  
Press, arbor  
Remover and installer, 0.250-inch  
outside diameter  
Socket, 3/8-inch drive, 1/2-inch  
Socket, 3/8-inch drive, 9/16-inch  
Tester, spring, 4 to 400-pound  
capacity  
Thread set, pipe  
Vise, machinist's  
Universal-joint, 3/8-inch drive  
Wrench, open-end, 9/16-inch  
Wrench, open-end, 7/8-inch  
Wrench, open-end, 1-inch  
Wrench, open-end, 1 1/16-inch

**Tools - Continued**

Wrench, open-end, 1 1/4-inch (two required)  
Wrench, open-end, 1 3/8-inch  
Wrench, torque, 1/2-inch drive,  
0 to 150 foot-pound capacity

**Materials/Parts**

Lockwasher, valve screw (three required)  
Packing, adapter union-to-valve  
Packing, connector-to-valve  
Packing, elbow-to-valve  
Packing, plug-to-pump  
Packing, plug-to-valve  
Packing, plug-to-valve  
Packing, valve-to-transmission case  
Packing, valve-to-transmission case  
Solvent, drycleaning (item 28, Appendix C)  
Tags, marking (item 30, Appendix C)

**Personnel Required**

Two

**Equipment Condition**

Right side grille removed  
(TM 5-2420-222-10)

LOCATION	ITEM	ACTION	REMARKS
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**REMOVAL**

- |                   |                                   |                       |
|-------------------|-----------------------------------|-----------------------|
| 1. Loader backhoe | Hydraulic oil filter relief valve | Remove (page 2-1217). |
|-------------------|-----------------------------------|-----------------------|