



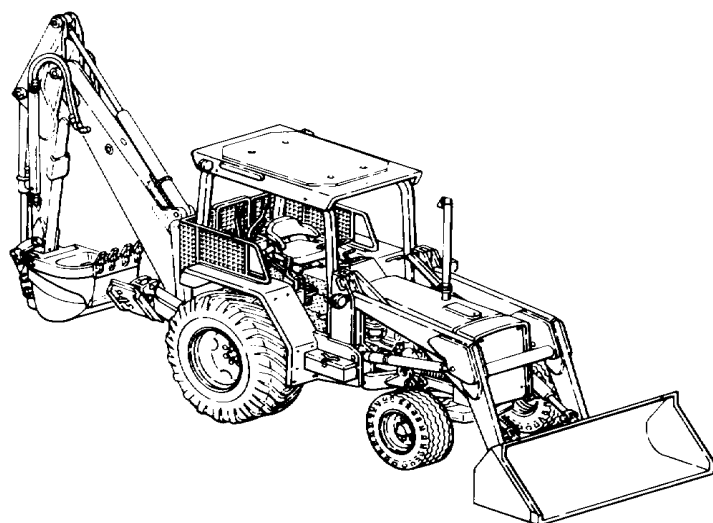
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**TECHNICAL MANUAL
ORGANIZATIONAL MAINTENANCE MANUAL
VOLUME 2 OF 3**



**MAINTENANCE
INSTRUCTIONS -
CONTINUED
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**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)**

1 SEPTEMBER 1987

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HEADQUARTERS, DEPARTMENT OF THE ARMY

CHANGE
NO. 1

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

ORGANIZATIONAL MAINTENANCE MANUAL

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TM 5-2420-222-20-2, 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/(ii blank)
2-899 through 2-902
2-907 and 2-908

Insert Pages

a and b
i/(ii blank)
2-899 through 2-902
2-907 and 2-908

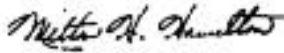
4. File this change sheet in front of the publication for reference purposes.

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Official: Chief of Staff

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Administrative Assistant to the
Secretary of the Army
00770

Distribution:

To be distributed in accordance with DA Form 12-25-E (Block 3692) Unit maintenance requirements for TM 5-2420-222-20-2.

WARNING

Drycleaning solvent P-D680 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

Cleaning compound, trichlorotrifluoroethane, for electrical parts is toxic and flammable, and reacts violently with aluminum, titanium, barium, lithium, samarium, sodium, and potassium. Always wear protective goggles and rubber gloves, and use only in a well-ventilated area. DO NOT wear jewelry while using cleaning compound. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. Cleaning compound fumes or vapors can take the place of air and may become a cancer producing agent. DO NOT use near open flame or excessive heat. The compound's boiling point is 114°F (46°C). If you become dizzy while using cleaning compound, immediately get fresh air and medical help. If compound contacts eyes, immediately wash your eyes with water and get medical aid.

WARNING

Properly installed neutral safety switch prevents loader backhoe engine from starting unless gearshift lever is in neutral. During installation, begin with one aluminum shim regardless of quantity removed. Switch must be tightened to proper torque each time a shim is added or removed to insure proper adjustment and prevent possible injury during engine starting.

WARNING

Make sure that loader bucket and backhoe bucket are lowered to ground, or wheels are blocked, to keep loader backhoe from rolling before performing maintenance on parking brake.

WARNING

Water soluble cleaning compound solvent is flammable and fumes are toxic. Flashpoint is 220°F (104°C). Boiling point is 212°F (100°C). Do not store in temperatures above 150°F (65°C) or below 35°F (2°C). Do not use near open flame or excessive heat. Do not wear jewelry. Wear rubber gloves and goggles, and use only in well ventilated area. Avoid contact with skin, eyes, and clothes, and don't breathe vapors. Avoid contact with acids, aluminium, or zinc; chemical reaction may result. If you become dizzy while using cleaning compound 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

If loader backhoe is to be driven on public roads at night, front lights must be adjusted so they do not shine into eyes of drivers of oncoming vehicles.

WARNING

No open flames, welding, grinding, smoking, or use of heat producing devices permitted near fuel tank and fuel lines during maintenance unless the fuel tank has been cleaned and purged of all flammable liquids and vapors. Fuel burns easily and fumes are explosive. Keep battery disconnected. Failure to observe these precautions could cause serious injury.

WARNING

Do not smoke, use open flame, or allow sparks near batteries. The mixture of oxygen and hydrogen gases released from batteries is highly flammable and can explode causing serious injury or death.

WARNING

Electrolyte and battery corrosion can cause injury. Wear safety goggles and gloves. If for any reason electrolyte or battery corrosion contacts the eyes, skin, or clothing, flush immediately with large amounts of cool water and seek medical attention immediately.

WARNING

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

WARNING

Lift loader backhoe on level ground or it may become unstable. Place wood blocks in front of and behind rear tires to keep loader backhoe from rolling in either direction. Do not get under loader backhoe or place feet or hands under wheels when wheels are off ground unless loader backhoe is securely in place on trestles or severe injury may result. Do not support more than two wheels off ground at one time or loader backhoe may become unstable.

WARNING

Lift loader backhoe on level ground or it may become unstable. Place wood blocks in front of and behind front tires to keep loader backhoe from rolling in either direction. Do not get under loader backhoe or place feet or hands under wheels when wheels are off ground unless loader backhoe is securely in place on trestles or severe injury may result. Do not support more than two wheels off ground at one time or loader backhoe may become unstable.

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.

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 removing radiator cap. If engine is hot, escaping steam could burn you. Use a rag to cover radiator cap to protect your hand. Unscrew cap just enough to allow any built-up steam to escape. When all pressure has been relieved, unscrew cap the rest of the way, and take it off of radiator.

WARNING

Shock absorber is under strong spring tension. Release tension slowly to avoid injury.

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TECHNICAL MANUAL

NO. 5-2420-222-20-2

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC 1 September 1987

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)

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 2028-2 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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AC GENERATOR

This task covers:

- a. Removal (page 2-436)
 - b. Disassembly (page 2-439)
 - c. Cleaning (page 2-439)
 - d. Inspection/Replacement (page 2-440)
 - e. Assembly (page 2-441)
 - f. Installation (page 2-441)
-

INITIAL SETUP:

Tools

Handle, ratchet, 3/8-inch drive
 Screwdriver, flat-tip, 3/16-inch
 Socket, 3/8-inch drive, 1/2-inch
 Socket, 3/8-inch drive, 9/16-inch
 Wrench, open-end, 7/16-inch
 (two required)
 Wrench, box, 9/16-inch

Materials/Parts

Lockwasher, ac generator adjusting
 strap screw
 Lockwasher, ac generator plate
 terminal nut
 Lockwasher, ac generator mounting
 screw nut

Materials/Parts - Continued

Rags, wiping (item 21, Appendix C)
 Solvent, drycleaning (item 28, Appendix C)
 Tags, marking (item 30, Appendix C)

Personnel Required

One

Equipment Condition

1. Battery ground cable disconnected
 (page 2-696)
2. Hood removed (page 1025)

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

NOTE

Loader backhoes have two configurations of ac generators. Both are maintained the same way. Ac generator for loader backhoes with Serial Numbers 319995 thru 342573 shown.

REMOVAL

- | | | | |
|----|-------------------------------|--|--|
| 1. | Connector (1) | Connector (2) | <ol style="list-style-type: none"> a. Tag (page 2-137). b. Using 3/16-inch flat-tip screwdriver, lift up lock tab. c. Unplug. |
| 2. | Terminal (3) and terminal (4) | Nut (5), lockwashers (6), and insulator washer (7) | <ol style="list-style-type: none"> a. Using two 7/16-inch open-end wrenches, unscrew and take off. b. Get rid of lockwasher (6). |

AC GENERATOR - CONTINUED

LOCATION	ITEM	ACTION	REMARKS
3. Terminal (4)	Terminal (3)	a. Tag (page 2-137). b. Take off.	

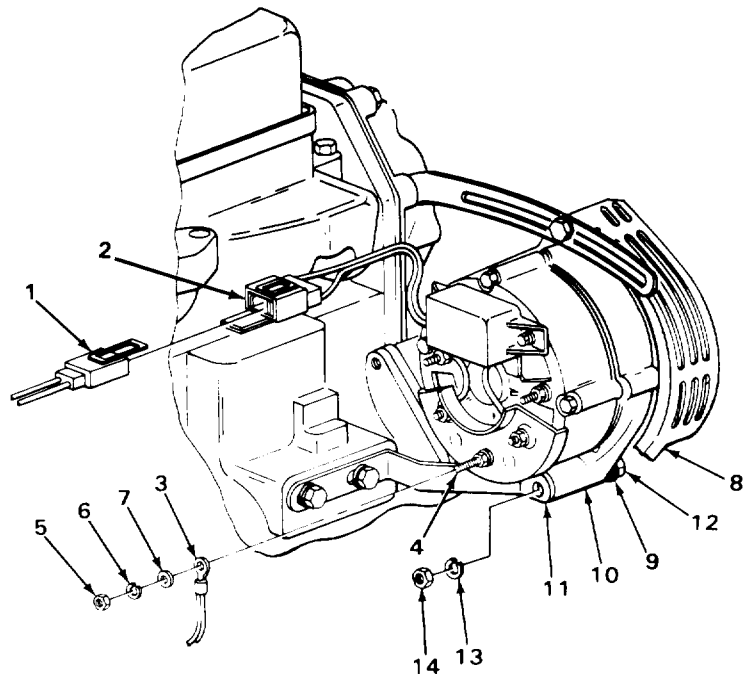
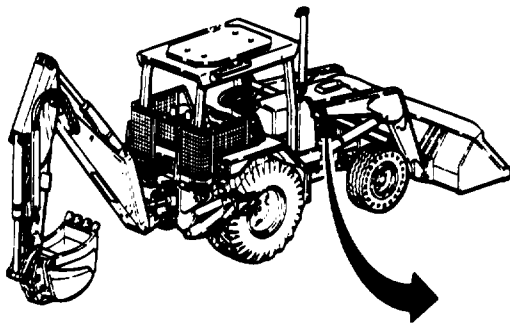
NOTE

Some loader backhoes have ac generator fan and belt guard, some do not.

4. Belt guard (8) if present, engine accessory bracket (9), ac generator (10) and double angle bracket (11)

Screw (12), lock-washer (13), and nut (14)

Using 9/16-inch box wrench, 9/16-inch, 3/8-inch drive socket, and ratchet handle, loosen.



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AC GENERATOR - CONTINUED

LOCATION	ITEM	ACTION REMARKS
REMOVAL - CONTINUED		
5. Ac generator adjusting strap (1), belt guard (2), if present, and ac generator (3)	Screw (4), lockwasher (5), and washer (6)	a. Using 1/2-inch, 3/8-inch drive socket and ratchet handle, unscrew and take out. b. Get rid of lockwasher (5).
6. Ac generator adjusting strap (1) and water pump (7)	Screw (8)	Using 9/16-inch, 3/8-inch drive socket and ratchet handle, loosen.
7. Ac generator (3) and water pump (7)	Ac generator adjusting strap (1)	Push up out of the way.
8. Engine accessory bracket (9) and double angle bracket (10)	Ac generator (3)	Push toward engine.
9. Ac generator pulley (11)	V-belt (12)	Take off.
10. Belt guard (2) if present, engine accessory bracket (9), ac generator (3), and double angle bracket (10)	Screw (13), nut (14), and lockwasher (15)	a. Unscrew and take out. b. Get rid of lockwasher (15).
11. Ac generator (3) and engine accessory bracket (9)	Belt guard (2)	If present, take off.
12. Engine accessory bracket (9) and double angle bracket (10)	Ac generator (3)	Take off.

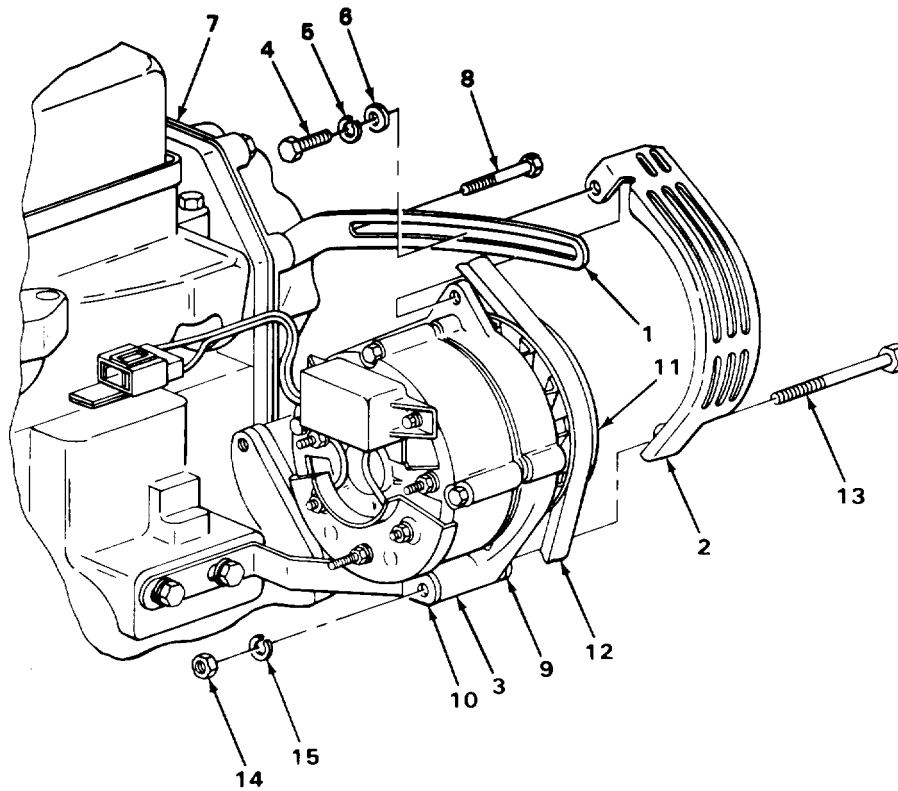
AC GENERATOR - CONTINUED

LOCATION	ITEM	ACTION	REMARKS
DISASSEMBLY			
13.	Ac generator	Remove (page 2-452).	
14.	Ac generator pulley	Remove (page 2-448).	

CLEANING

NOTE

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



TA242924

AC GENERATOR - CONTINUED

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

CLEANING - CONTINUED

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 1000F to 138°F (380 to 590C). 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.

- | | | | |
|-----|-----------------------|---|--|
| 15. | Ac generator (1) | a. Using clean rag dampened in dry-cleaning solvent, wipe outside clean.
b. Using clean, dry rags, wipe dry. | |
| 16. | All other metal parts | a. Clean in drycleaning solvent.
b. Using clean, dry rags, wipe dry. | |

INSPECTION/REPLACEMENT

NOTE

For more information on how to inspect parts, go to General Maintenance Instructions (page 2-VI-1).

Replace defective parts as needed.

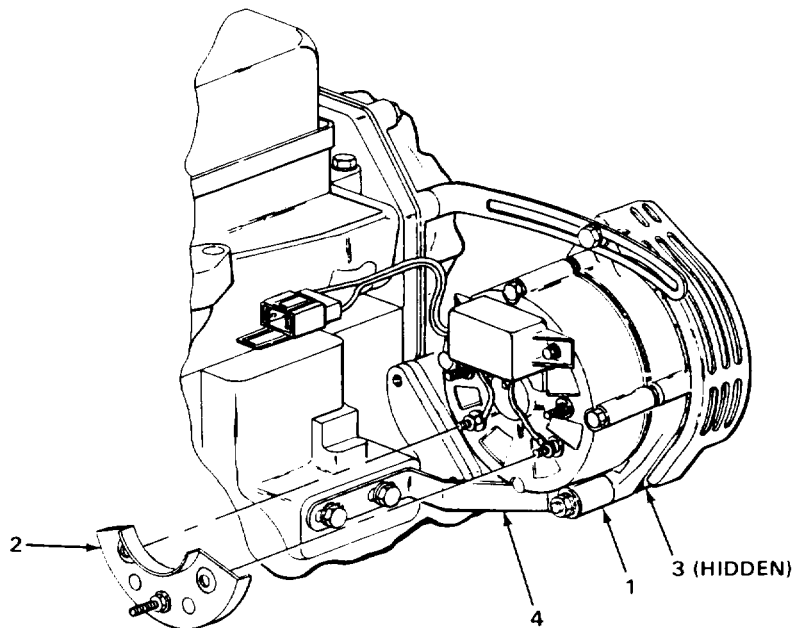
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|-----|---------------------------------|--|--|
| 17. | Ac generator (1) | a. Look for cracks and breaks in housing.
b. Look for broken terminals.
c. Turn rotor shaft.
Rotor should turn freely with some drag from brushes, but no binding. | |
| 18. | Ac generator plate assembly (2) | a. Look for cracks, breaks, and abnormal bends.
b. Look for corroded terminal.
c. Look for burned diode. | |
| 19. | All other metal parts | Look for cracks, breaks, and abnormal bends. | |
| 20. | All threaded parts | Look for damaged threads. | |

AC GENERATOR - CONTINUED

LOCATION	ITEM	ACTION	REMARKS
ASSEMBLY			
21. Ac generator	Ac generator pulley	Install (page 2-448).	
22.	Voltage regulator	Install (page 2-452).	
INSTALLATION			
23. Engine accessory bracket (3) and double angle bracket (4)	Ac generator (1)	Put in place and support.	

NOTE

Some loader backhoes may not have belt guard.

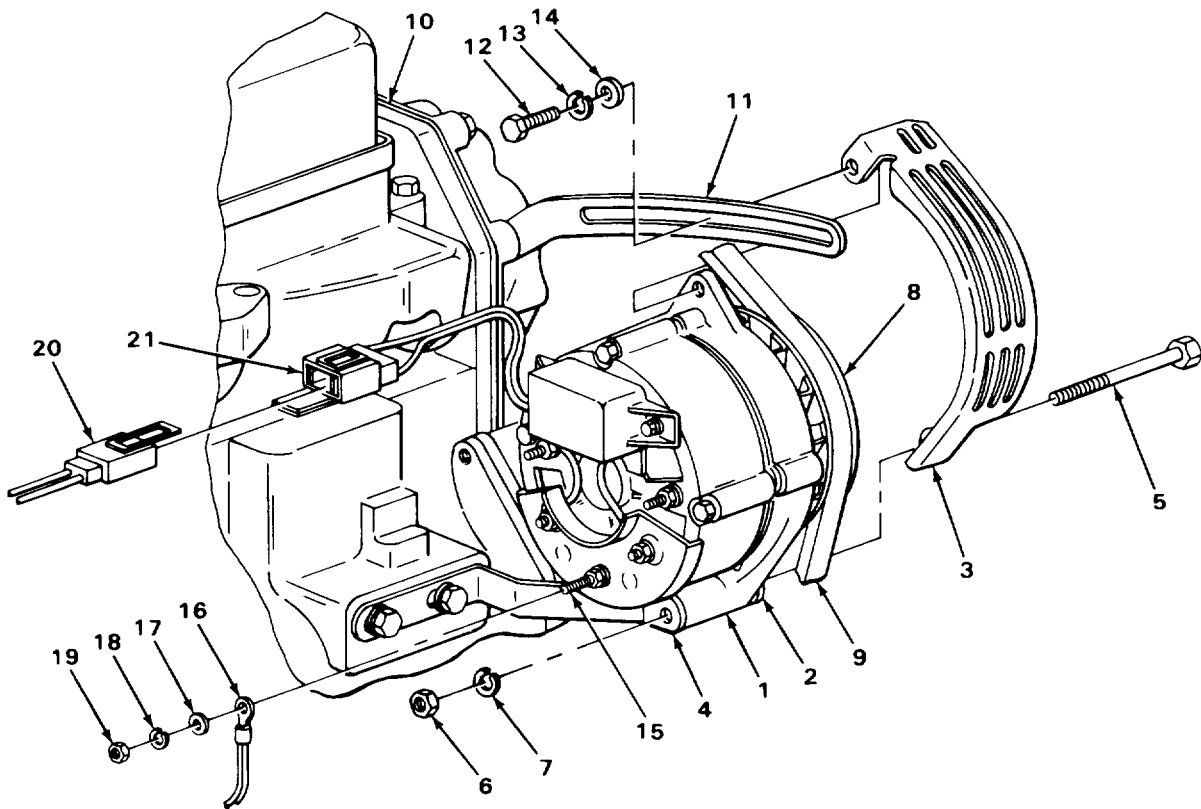


TA242925

AC GENERATOR - CONTINUED

LOCATION	ITEM	ACTION	REMARKS
INSTALLATION - CONTINUED			
24.	Ac generator (1) and engine accessory bracket (2)	Belt guard (3)	If present, put in place and support.
25.	Belt guard (3) if present, engine accessory bracket (2), ac generator (1), and double angle bracket (4)	Screw (5), nut (6) and new lock-washer (7)	Screw together until snug.
26.	Ac generator pulley (8)	V-belt (9)	Put on.
27.	Water pump (10) and ac generator (1)	Ac generator adjusting strap (11)	Move down into place.
28.	Ac generator adjusting strap (11), belt guard (3) if present, and ac generator (1)	Screw (12), new lockwasher (13), and washer (14)	Screw in until snug.
29.	Terminal (15)	Terminal (16)	a. Put on. b. Take off tags.
30.	Terminal (15) and terminal (16)	Insulator washer (17), new lockwasher (18), and nut (19)	Screw on and tighten, using two 7/16-inch open-end wrenches.
31.	Connector(20)	Connector (21)	a. Plug in. b. Take off tags.

AC GENERATOR - CONTINUED



NOTE

FOLLOW-ON MAINTENANCE:

1. Adjust V-belt (page 2-427).
2. Install hood (page 2-1025).
3. Connect battery ground cable (page 2-696).

TASK ENDS HERE

TA242926

AC GENERATOR MOUNTING BRACKETS

This task covers:

- a. Removal (page 2-444)
- b. Cleaning (page 2-445)
- c. Inspection/Replacement (page 2-446)
- d. Installation (page 2-446)

INITIAL SETUP:

Tools

Wrench, box, 9/16-inch

Materials/Parts

Solvent, drycleaning (item 28, Appendix C)

Materials/Parts

Lockwasher, adjusting strap
 Lockwasher, double angle bracket screw
 (two required)
 Lockwasher, engine accessory bracket
 screw (two required)
 Rags, wiping (item 21, Appendix C)

Personnel Required

One

Equipment Condition

Ac generator removed (page 2-436)

LOCATION	ITEM	ACTION REMARKS
REMOVAL		
1. Ac generator adjusting strap (1) and water pump (2)	Screw (3), lockwasher (4) and washer (5)	a. Unscrew and take out. b. Get rid of lockwasher (4).
2. Water pump (2)	Ac generator adjusting strap (1)	Take off.
3. Engine accessory bracket (6), two spacers (7), timing gear cover (8) and engine block (9)	Two screws (10) lockwashers (11), and washers (12)	a. Using 9/16-inch box wrench, unscrew and take out. b. Get rid of lockwashers (11).
4. Timing gear cover (8)	Engine accessory bracket (6) and two spacers (7)	Take off.

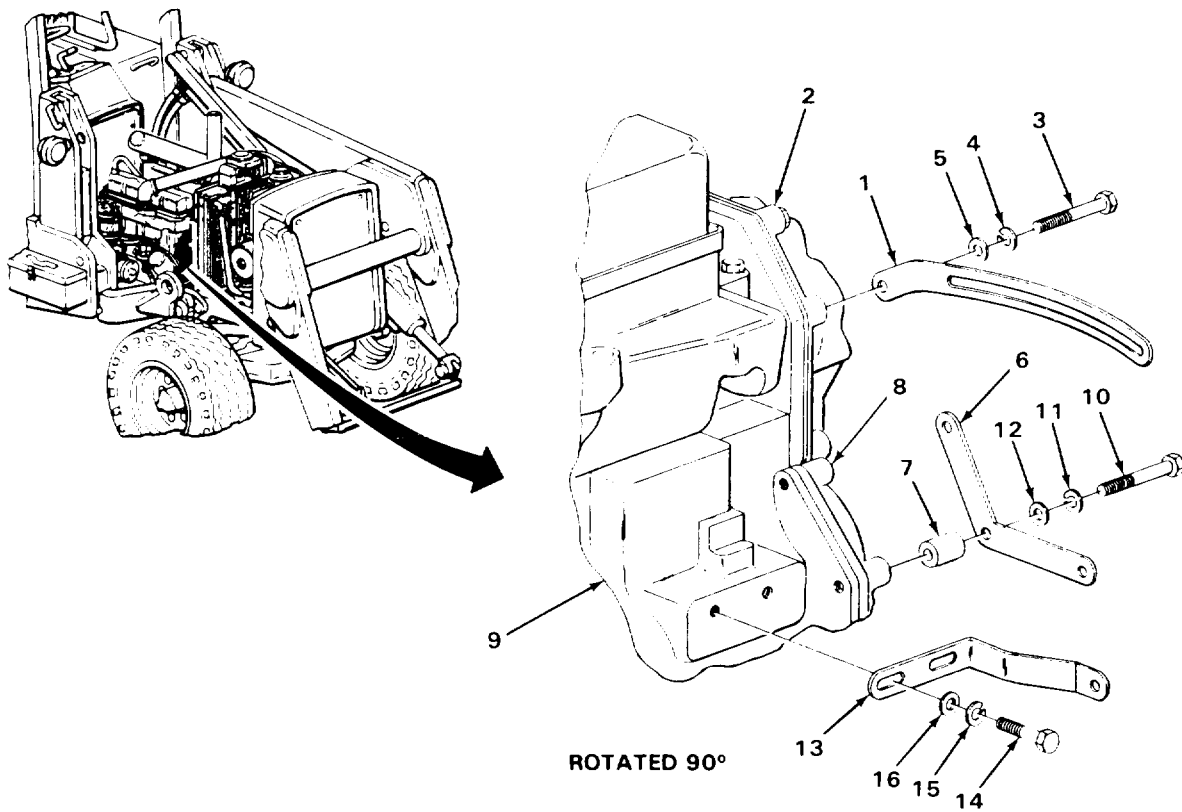
AC GENERATOR MOUNTING BRACKETS - CONTINUED

LOCATION	ITEM	ACTION	REMARKS
5.	Double angle bracket (13) and engine block (9)	a. Using 9/16-inch box wrench, unscrew and take off. b. Get rid of lockwashers (15) and washers (16).	
6.	Engine block (9)	Take off.	

CLEANING

NOTE

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



TA242927

AC GENERATOR MOUNTING BRACKETS - CONTINUED

LOCATION	ITEM	ACTION	REMARKS
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CLEANING - CONTINUED

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 1380F (380 to 590C). 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.

- | | | |
|----|-----------------|---|
| 7. | All metal parts | a. Clean in drycleaning solvent.
b. Using clean, dry rags, wipe dry. |
|----|-----------------|---|

INSPECTION/REPLACEMENT

NOTE

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

Replace defective parts as needed.

- | | | |
|----|--------------------|---|
| 8. | All metal parts | Look for cracks, abnormal bends and breaks. |
| 9. | All threaded parts | Look for damaged threads. |

INSTALLATION

- | | | | |
|-----|---|---|---|
| 10. | Engine block (1) | Double angle bracket (2) | Put in place. |
| 11. | Double angle bracket (2) and engine block (1) | Two screws (3), new lockwashers (4) and washers (5) | Screw in and alternately tighten, using 9/16-inch box wrench. |
| 12. | Timing gear cover (6) bracket (8) | Two spacers (7) and engine accessory | Put in place. |