

6205 and 6505 Tractors Repair

For complete service information also see:

6205 and 6505 Tractors

Operation and Tests	TM4608
Front Wheel Drive Axles	CTM4509
POWERTECH® Engines	CTM104
Alternators and Starting Motors	CTM77

**John Deere Werke Mannheim
TM4612 (01JUL99)**

Printed in Germany
ENGLISCH

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.

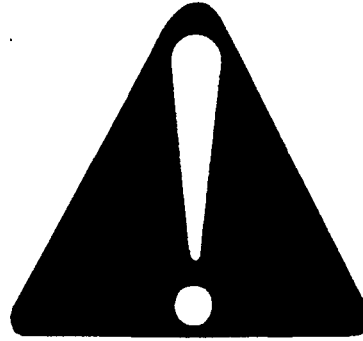
Technical Manuals are concise guides for specific machines. They are on-the-job guides containing only the vital information needed for diagnosis, analysis, testing, and repair.

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.

RECOGNIZE SAFETY INFORMATION

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

Follow recommended precautions and safe operating practices.



DX,ALERT -19-29SEP98

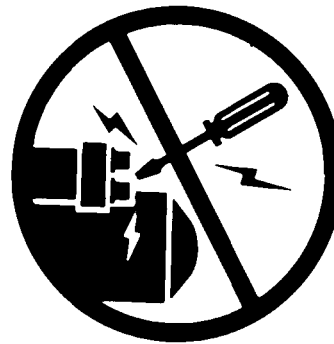
T81389 -JUN07DEC88

PREVENT MACHINE RUNAWAY

Avoid possible injury or death from machinery runaway.

Do not start engine by shorting across starter terminals. Machine will start in gear if normal circuitry is bypassed.

NEVER start engine while standing on ground. Start engine only from operator's seat, with transmission in neutral or park.



DX,BYPAS1 -19-29SEP98

TS177 -JUN11JAN89

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.



DX,FLAME -19-29SEP98

TS227 -JUN23AUG88

<https://www.ebooklibonline.com>

Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

<https://www.ebooklibonline.com>

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).



DX,SPARKS -19-03MAR93

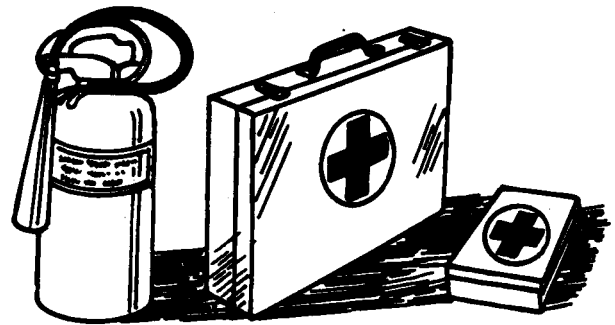
TS204 -JUN-23AUG88

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.



DX,FIRE2 -19-03MAR93

TS291 -JUN-23AUG88

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:

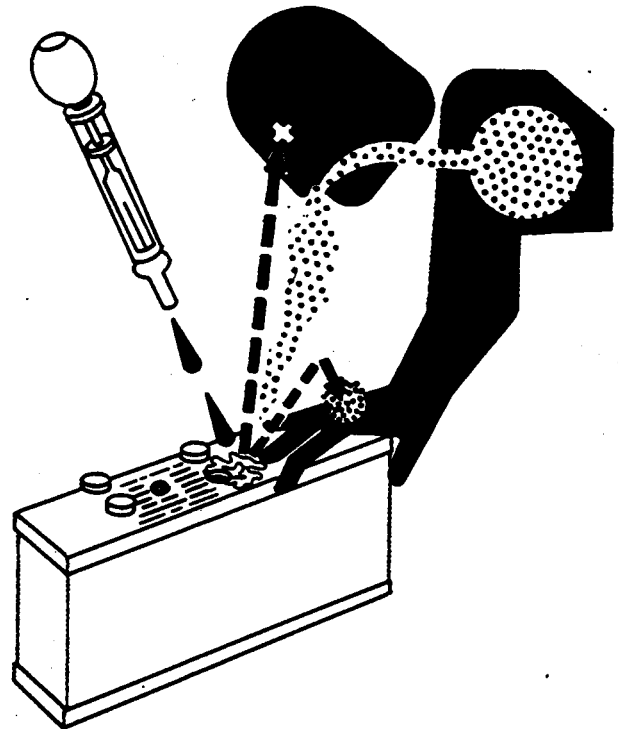
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

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.



DX,POISON -19-21APR93

TS203 -JUN-23AUG88

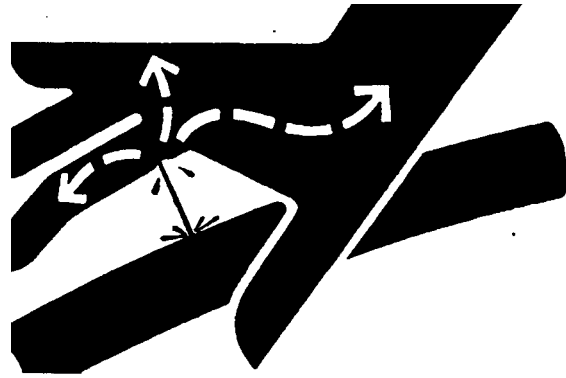
AVOID HIGH-PRESSURE FLUIDS

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.



-JUN-23AUG88

X9811

DX,FLUID -19-03MAR93

SERVICE COOLING SYSTEM SAFELY

Explosive release of fluids from pressurized cooling system can cause serious burns.

Shut off engine. Only remove filler cap when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.



-JUN-23AUG88

TS281

DX,RCAP -19-04JUN90

REMOVE PAINT BEFORE WELDING OR HEATING

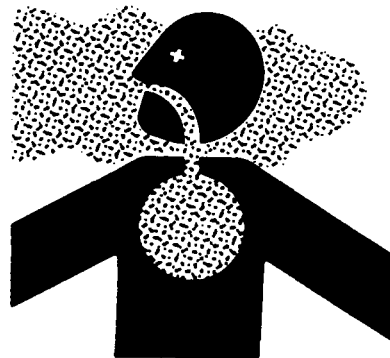
Avoid potentially toxic fumes and dust.

Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

Do all work outside or in a well ventilated area. Dispose of paint and solvent properly.

Remove paint before welding or heating:

- If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.
- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.



DX,PAINT -19-03MAR93

TS220 -JUN-23AUG88

AVOID HEATING NEAR PRESSURIZED FLUID LINES

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can be accidentally cut when heat goes beyond the immediate flame area.



DX,TORCH -19-03MAR93

TS953 -JUN-15MAY90

WORK IN VENTILATED AREA

Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area, remove the exhaust fumes from the area with an exhaust pipe extension.

If you do not have an exhaust pipe extension, open the doors and get outside air into the area.



DX,AIR -19-04JUN90

TS220 -JUN-23AUG88

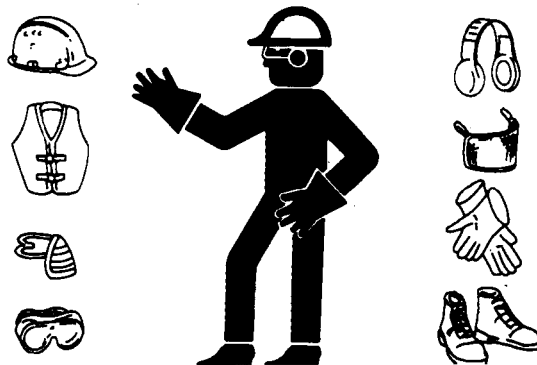
WEAR PROTECTIVE CLOTHING

Wear close fitting clothing and safety equipment appropriate to the job.

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.



DX,WEAR -19-10SEP90

TS206 -JUN-23AUG88

PRACTICE SAFE MAINTENANCE

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is moving. Keep hands, feet, and clothing from power-driven parts. Disengage all power and operate controls to relieve pressure. Lower equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

On self-propelled equipment, disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

On towed implements, disconnect wiring harnesses from tractor before servicing electrical system components or welding on machine.



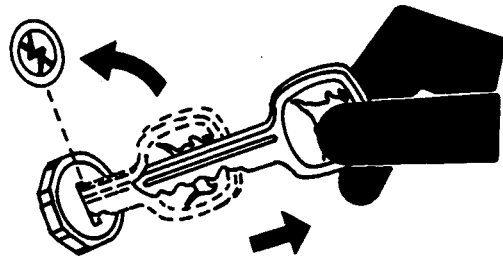
DX,SERV -19-04FEB99

TS218 -JUN-23AUG88

PARK MACHINE SAFELY

Before working on the machine:

- Lower all equipment to the ground.
- Stop the engine and remove the key.
- Disconnect the battery ground strap.
- Hang a "DO NOT OPERATE" tag in operator station.



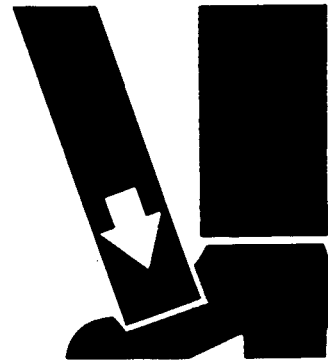
DX,PARK -19-04JUN90

TS230 -JUN-24MAY89

USE PROPER LIFTING EQUIPMENT

Lifting heavy components incorrectly can cause severe injury or machine damage.

Follow recommended procedure for removal and installation of components in the manual.



DX,LIFT -19-04JUN90

TS226 -JUN-23AUG88

CONSTRUCT DEALER-MADE TOOLS SAFELY

Faulty or broken tools can result in serious injury. When constructing tools, use proper, quality materials, and good workmanship.

Do not weld tools unless you have the proper equipment and experience to perform the job.

DX,SAFE,TOOLS -19-19SEP97

LX1016749 -JUN-01JUL97

REMOVING THE ENGINE

Open then hood, and then remove it.

NOTE: The hood is awkward to handle, so one assistant is required for this job.

Take off the side panels and remove the front screen.

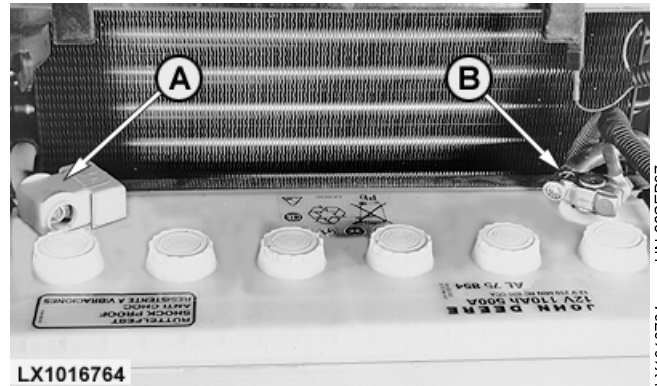
NOTE: The illustrations that follow show the 6505 tractor, but apply equally to the 6205.

LX,2000 019583-19-01FEB99

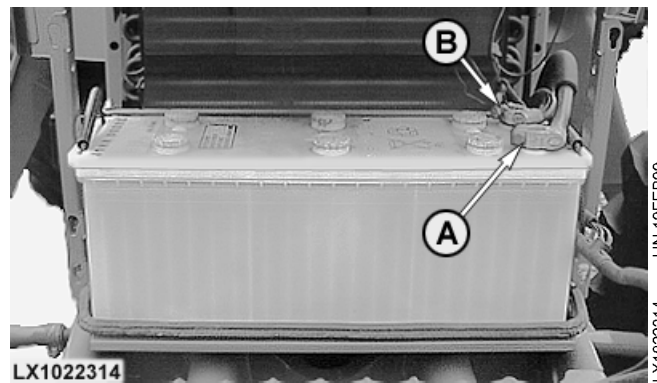
Disconnect battery terminals and remove battery.

CAUTION: Disconnect negative terminal first. When reconnecting, do the positive terminal first. Comply with the safety instructions in Section 10. Always pay close attention to battery terminals.

A—Positive terminal
B—Negative terminal



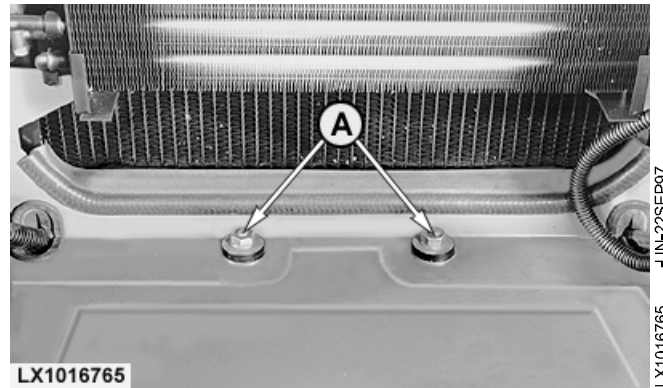
Battery, 110Ah



Battery, 154Ah

LX,2000 019549-19-01FEB99

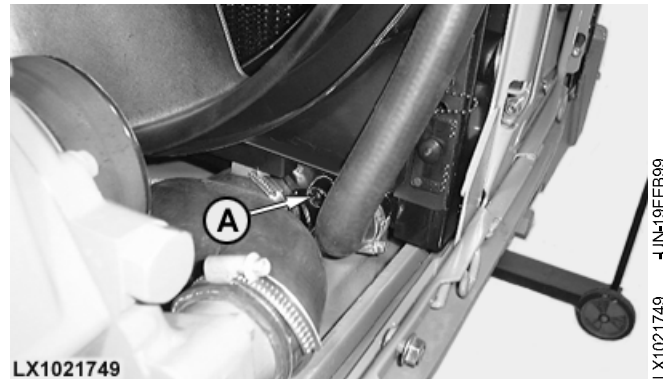
Take nuts (A) off the front attaching point of the front frame.



LX,2000 019550-19-01FEB99

Drain coolant.

To do this, turn tap (A) until coolant emerges from the drain hose. Trap the coolant in a suitable container.



LX,2000 019551-19-01FEB99

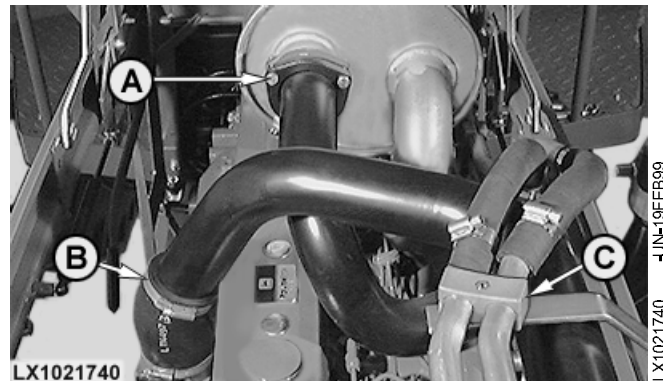
6505:

Disconnect flange (A) from the muffler.

Unfasten clamp (B) and pull out the air intake hose.

IMPORTANT: Seal the holes.

Unfasten line clamp (C).



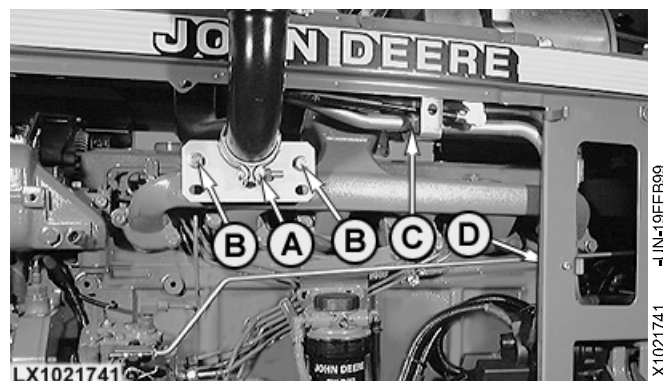
LX,2000 019552-19-01FEB99

6505:

Unfasten clamp (A) and take off the muffler pipe.

Take out cap screws (B).

Unfasten line clamps (C) and (D).



LX,2000 019553-19-01FEB99

6505:

On the cylinder head, take the screws out of bracket (A), and lift off the muffler.



LX,2000 019554-19-01FEB99

6505:

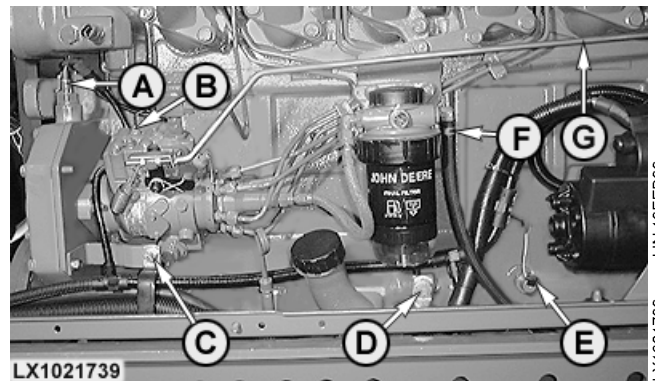
NOTE: Before disconnecting the wiring harness, mark all the plugs and connections. This will facilitate re-assembly. See also Section 40, Group 10.

At a later stage, the positive and negative cables from the battery must be fed through the baseplate.

Disconnect plug (A), connectors (B) and (E), and ground cable (D).

Unscrew clamp (C), then disconnect fuel hose (F) at the fuel filter.

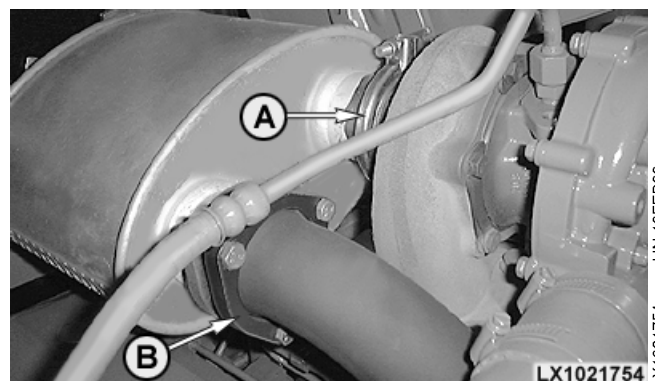
Remove speed control linkage (G).



LX,2000 019555-19-01FEB99

6205:

Unfasten clamp (A) and flange (B).



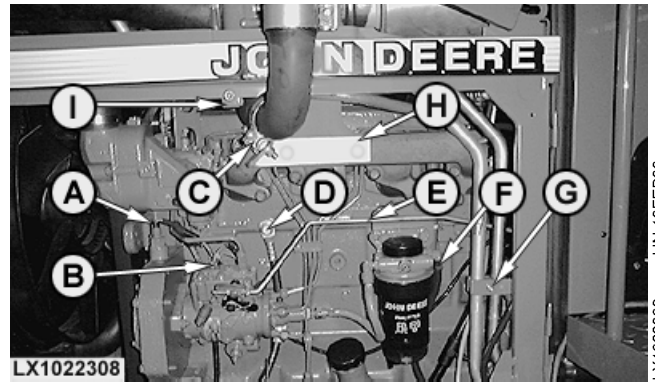
LX,2000 019556-19-01FEB99

6205:

Disconnect plug (A), connector (B) and ground cable (D).

NOTE: Before disconnecting the wiring harness, mark all the plugs and connections. This will facilitate re-assembly. See also Section 40, Group 10.

At a later stage, the positive and negative cables from the battery must be fed through the baseplate.



LX1022308 -JUN-19FEB99

Unfasten clamp (C) and pull off the muffler pipe.
Remove screws that hold bracket (H) on the manifold.
Disconnect line clamps (G) and (I) from the front frame.

Pull fuel hose (F) off its connection.

Remove speed control linkage (E).

LX,2000 019557-19-01FEB99

6205:

Take out the screws that hold bracket (A) on the cylinder head.

Remove the muffler.

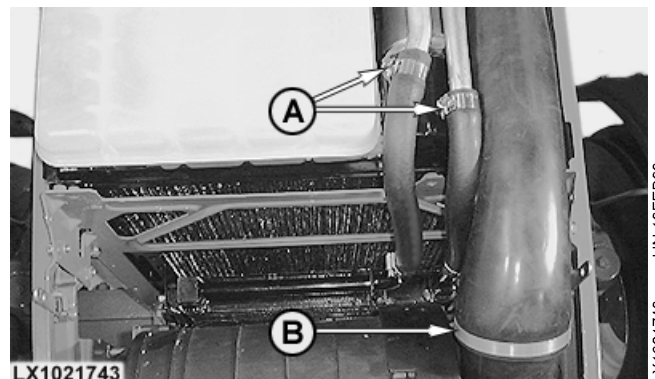


LX1021753 -JUN-19FEB99

LX,2000 019558-19-01FEB99

Unfasten hose clamps (A) and disconnect the oil cooler lines.

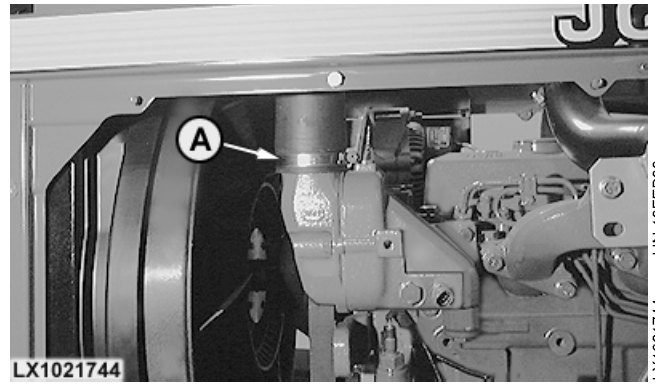
Unfasten hose clamp (B) and disconnect the air intake hose at the air cleaner housing.



LX1021743 -JUN-19FEB99

LX,2000 019559-19-01FEB99

Unfasten hose clamp (A) and disconnect the coolant hose at the thermostat housing.



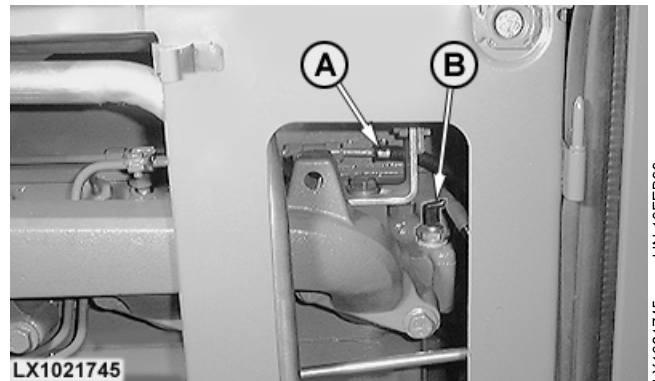
LX1021744

LX1021744 -JUN-19FEB99

LX,2000 019560-19-01FEB99

Remove fuel hose (A) from the line.

Pull off plug (B).



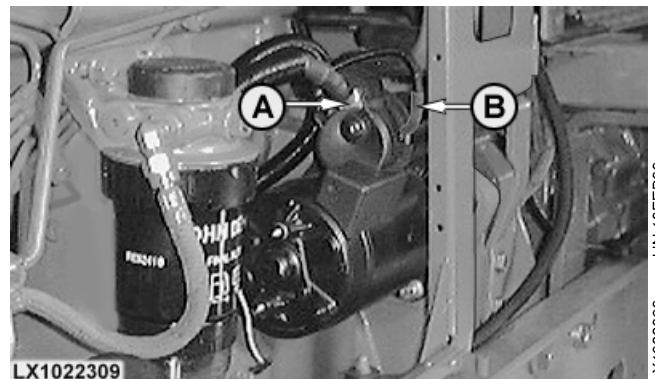
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LX1021745 -JUN-19FEB99

6505 shown

LX,2000 019561-19-01FEB99

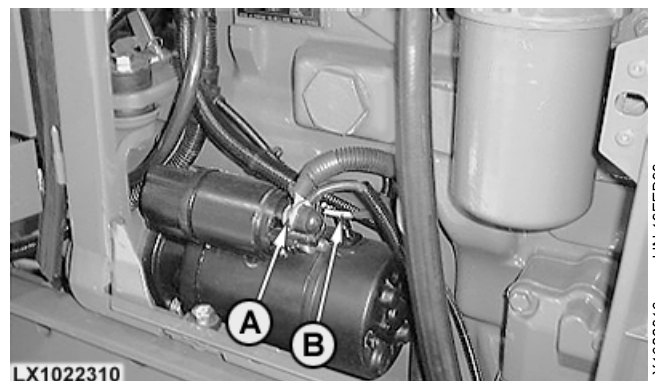
Disconnect starter motor cables (A) and (B).



LX1022309

LX1022309 -JUN-19FEB99

6505



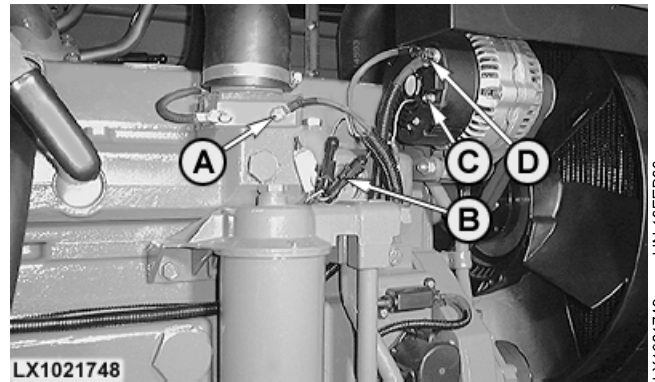
LX1022310

LX1022310 -JUN-19FEB99

6205

LX,2000 019562-19-01FEB99

Break connections (A) to (D).



LX,2000 019563-19-01FEB99

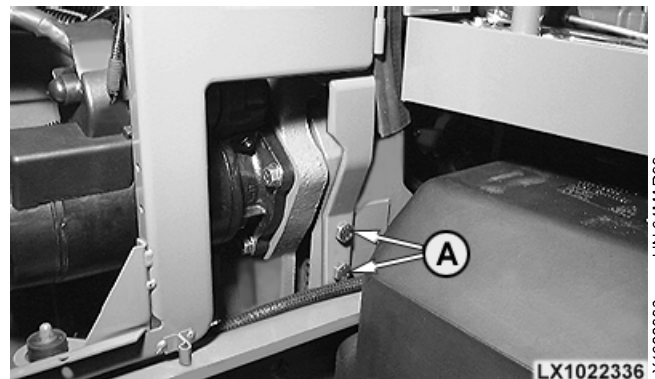
On the right of the engine block, unscrew ground cable (A).



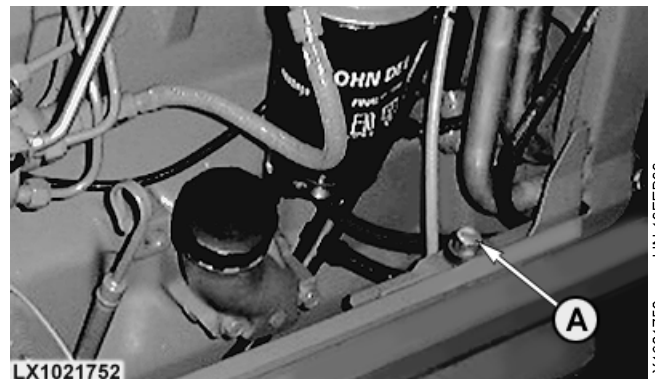
6505 shown

LX,2000 019564-19-01FEB99

Remove retaining nuts (A) from the left and right sides of the front frame.



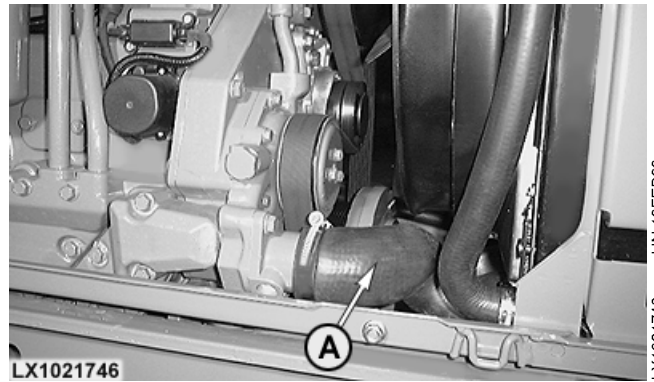
6505



6205

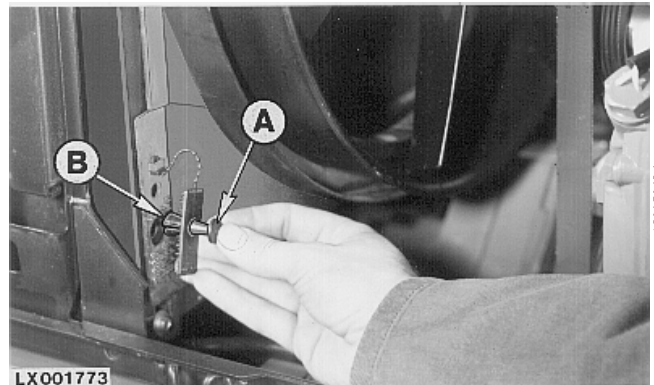
LX,2000 019565-19-01FEB99

Disconnect coolant hose (A) where it joins the coolant pump.



LX,2000 019566-19-01FEB99

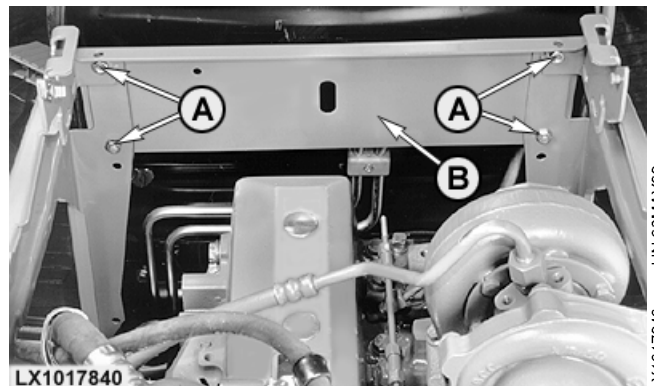
Loosen radiator air shroud by removing four pins (A) and then the expanding rivets (B).



LX,CRA20 002213-19-01OCT93

6205:

Take out screws (A) and remove cross-member (B).



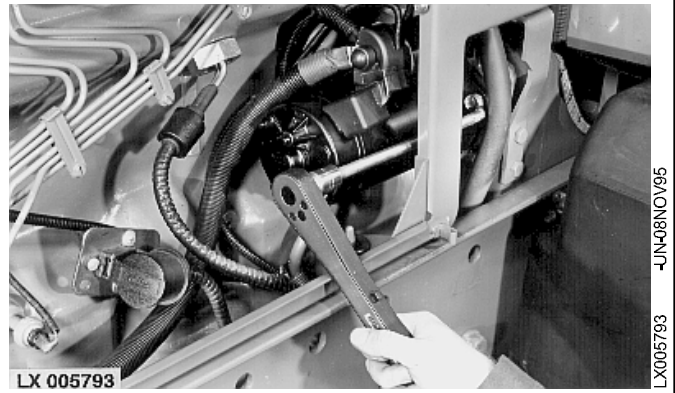
LX,2000 019567-19-01FEB99

Suspend the front frame from a suitable hoist and lift it off.

LX,2000AD013070-19-01NOV97

6505:

Use special tool KJD10213 to remove the starter motor.



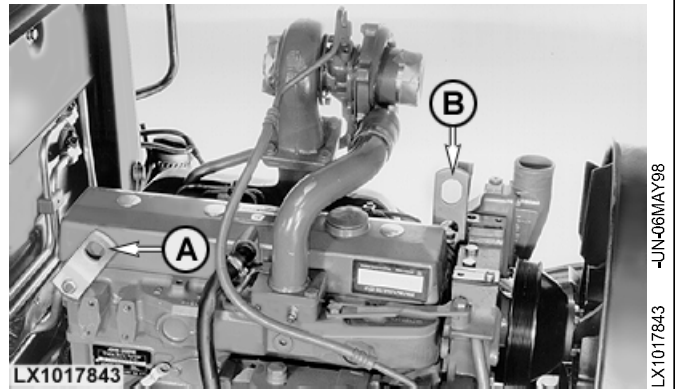
LX 005793

-JUN08NOV95
LX005793

LX,2000 019568-19-01FEB99

Install suspension eyes (A) JD-244-2 and (B) JD-244-1.

Attach lifting tackle.

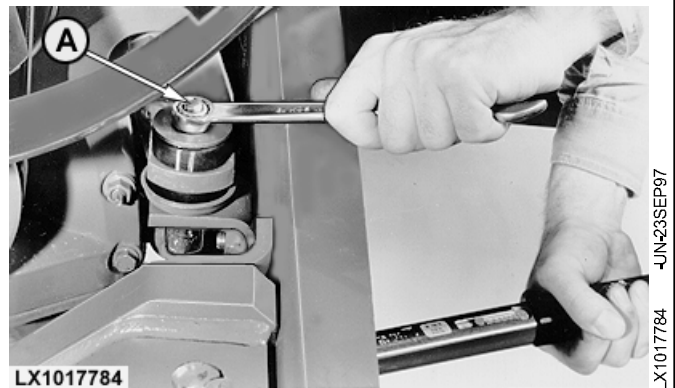


LX1017843

-JUN06MAY98
LX1017843

LX,2000 019569-19-01FEB99

At both sides, take screw (A) out of the front engine mountings.



LX1017784

-JUN23SEP97
LX1017784

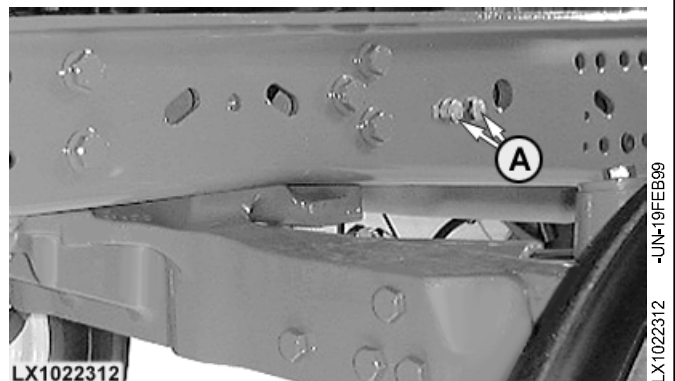
LX,2000AD013638-19-01NOV97

6505:

In addition, take out screws (A) to enable the two front engine supports to be removed.



CAUTION: The engine must be secured to the lifting tackle PROPERLY. Avoid accidents!



LX1022312

-JUN19FEB99
LX1022312

LX,2000 019570-19-01FEB99

At both sides, take screw (A) out of the rear engine mountings.

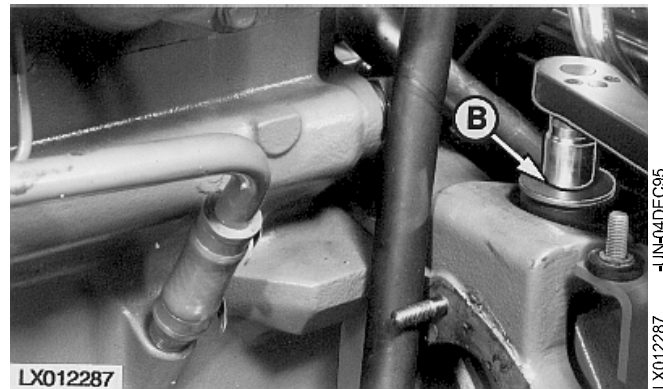


LX1017785

6205

LX1017785
-JN-23SEP97

NOTE: Illustration shows rear engine mounting (B) on a 6505 tractor.



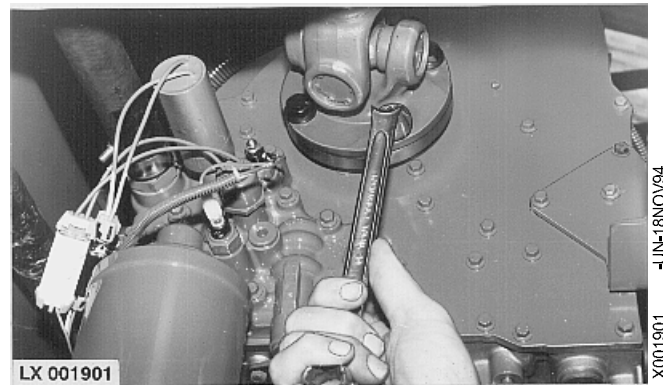
LX012287

6505

LX012287
-JN-04DEC95

LX,2000 019571-19-01FEB99

Remove engine jointed shaft (see Section 56, Group 05).

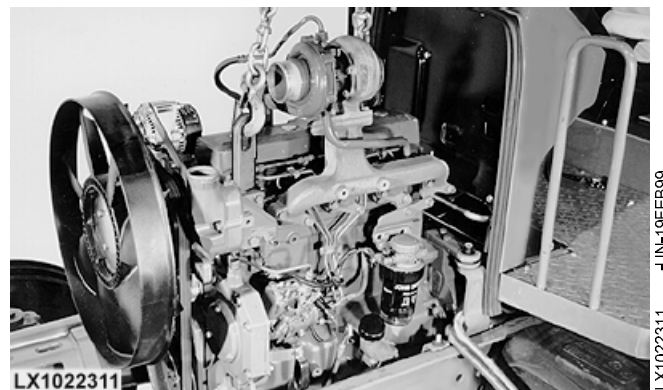


LX 001901

LX,20,00 005097-19-01OCT93

LX001901
-JN-18NOV94

Lift out the engine.



LX1022311

6205 shown

LX,2000 019572-19-01FEB99

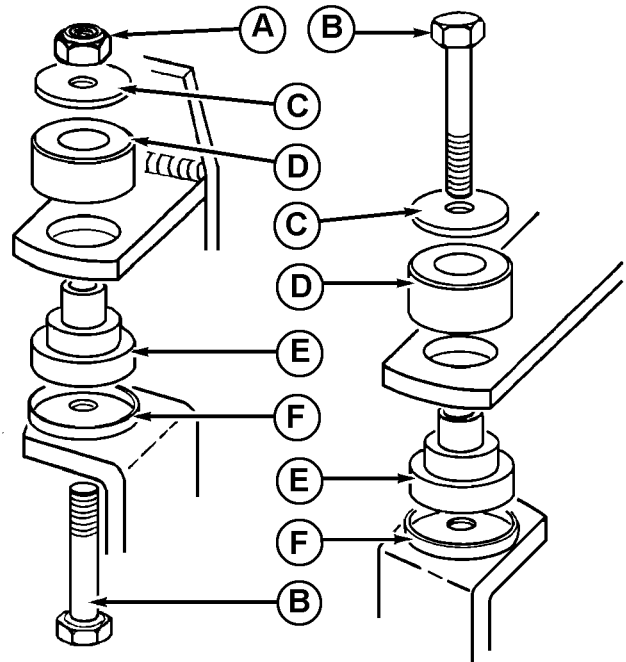
LX1022311
-JN-19FEB99

INSTALLING THE ENGINE

6205 tractor:

As shown, install the engine mountings and lower the engine onto the main frame.

- A—Self-locking nut
- B—Cap screw
- C—Washer
- D—Rubber support pad
- E—Rubber support pad
- F—Supporting cup



LX1017787

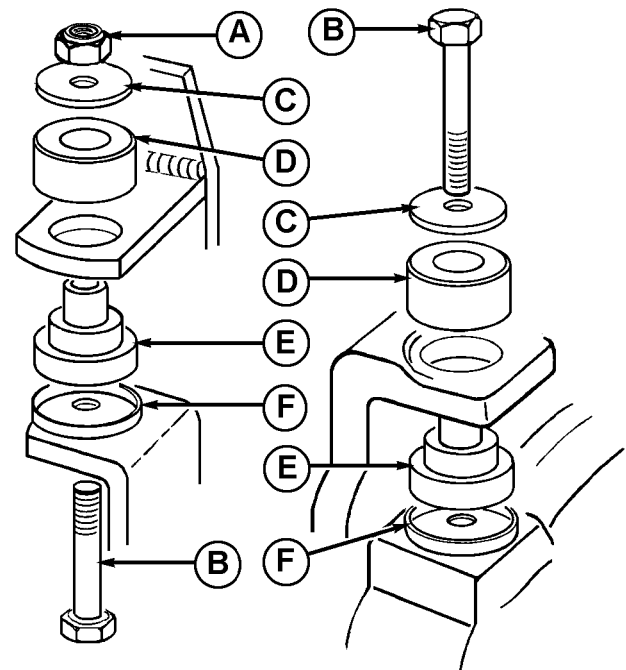
LX1017787 -JUN01OCT97

LX.2000 019573-19-01FEB99

6505 tractor:

As shown, install the engine mountings and lower the engine onto the main frame.

- A—Self-locking nut
- B—Cap screw
- C—Washer
- D—Rubber support pad
- E—Rubber support pad
- F—Supporting cup



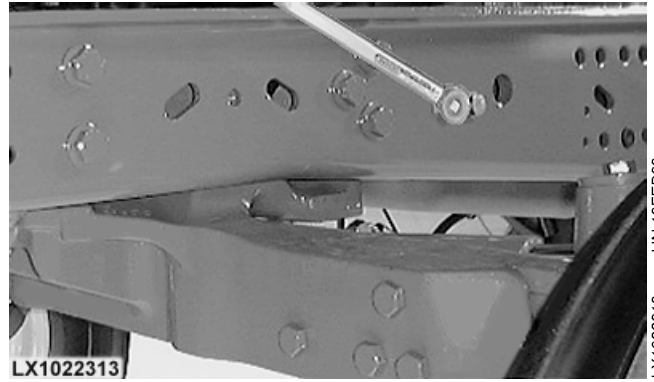
LX1017791

LX1017791 -JUN21OCT97

LX.2000 019574-19-01FEB99

6505:

Install front engine supports and tighten cap screws to 350 N·m (255 lb-ft).

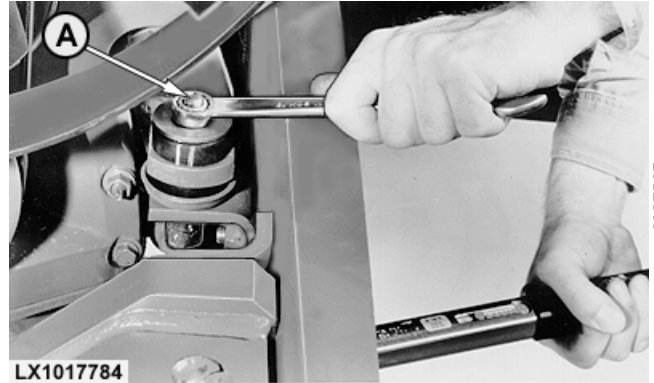


LX,2000 019575-19-01FEB99

Tighten all the screws (A) in the engine mountings to 100 N·m (75 lb-ft).



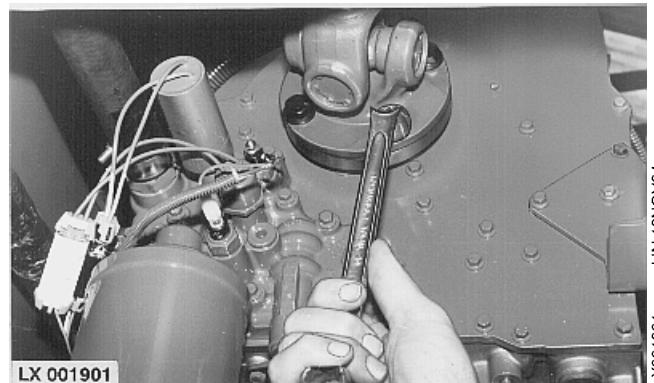
6205 shown



6205 shown

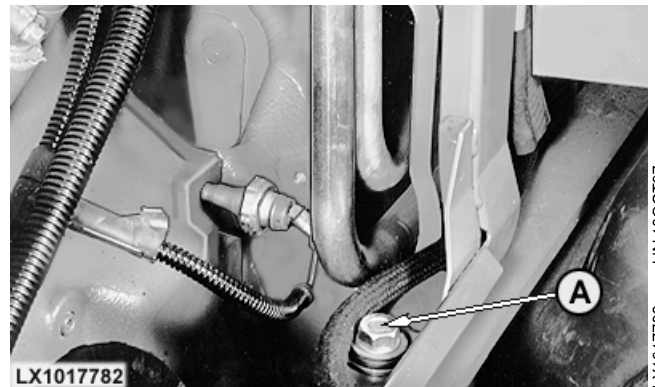
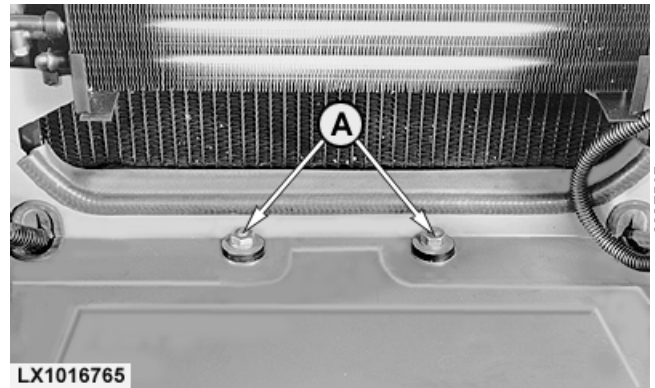
LX,2000 019576-19-01FEB99

Install the jointed shaft on the engine. See Section 56, Group 05.



LX,2000AD013647-19-01NOV97

Lower the front frame into position. Install nuts (A) on the front and rear attachment points and tighten them to 100 N·m (75 lb-ft).



LX,2000 019577-19-01FEB99

For further assembly, reverse disassembly procedure.

LX,CRA50 003089-19-01OCT93

IMPORTANT: When assembling, make absolutely certain that none of the lines (electrical, hydraulic, pneumatic or fuel) are trapped or damaged. Make sure they do not come into contact with moving parts or sharp edges.

LX,WICHTIG,1 -19-01NOV97



Suggest:

If the above button click is invalid.

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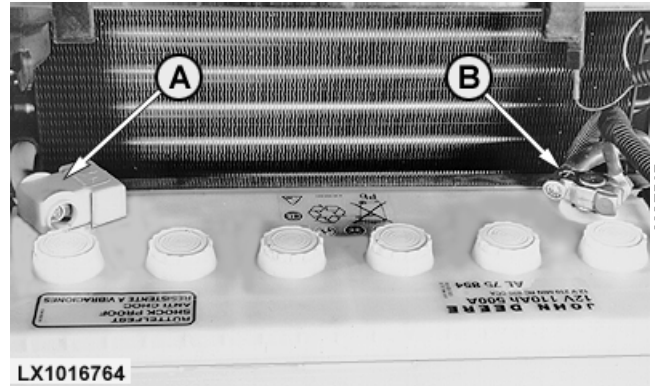
Do not install and connect the battery until final assembly is completed.



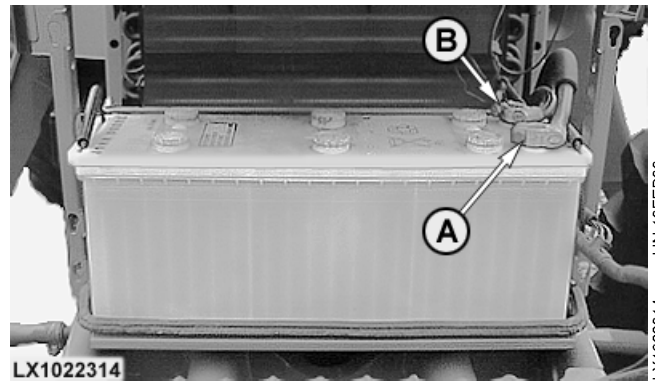
CAUTION: Connect the positive terminal first and the negative terminal second. Pay close attention to the symbols marked on the battery.

A—Positive terminal

B—Negative terminal



Battery, 110Ah



Battery, 154Ah

LX,2000 019578-19-01FEB99

- Add coolant.
- Bleed the fuel system. See Section 30, Group 10.
- Check level of oil in engine.
- Adjust the speed control linkage.

LX,2000AD013650-19-01NOV97

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