

888P/888P4A EXCAVATOR

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Section

1001

SAFETY, GENERAL INFORMATION
AND TORQUE SPECIFICATIONS

SAFETY

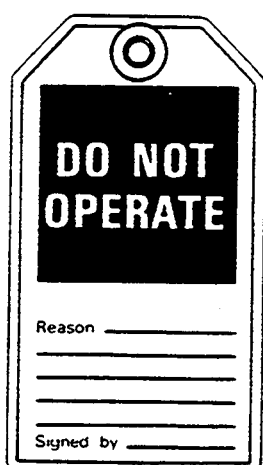


This symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED. The message that follows the symbol contains important information about safety. Carefully read the message. Make sure you fully understand the causes of possible injury or death.

1-1-C

To prevent injury always follow the Warning, Caution and Danger notes in this section and throughout the manual.

Put the warning tag shown below on the key for the keyswitch when servicing or repairing the machine. One warning tag is supplied with each machine. Additional tags Part Number 331-4614 are available from your service parts supplier.



B004

WARNING: Before starting engine, study Operator's Manual safety messages. Read all safety signs on machine. Clear the area of other persons. Learn and practice safe use of controls before operating.



It is your responsibility to understand and follow manufacturers instructions on machine operation, service, and to observe pertinent laws and regulations. Operator's and Service Manuals may be obtained from your J.I. Case dealer

45-2

WARNING: If you wear clothing that is too loose or do not use the correct safety equipment for your job, you can be injured. Always wear clothing that will not catch on objects. Extra safety equipment that can be required includes hard hat, safety shoes, ear protection, eye or face protection, heavy gloves and reflector clothing



45-3-A



WARNING: Read the operator's manual to familiarize yourself with the correct control functions.

46-27



WARNING: When working in the area of the fan belt with the engine running, avoid loose clothing if possible, and use extreme caution.

35-4



WARNING: Operate the machine and equipment controls from the seat position only. Any other method could result in serious injury.

48-55



WARNING: When doing checks and tests on the equipment hydraulics, follow the procedures as they are written. DO NOT change the procedure.

47-44



WARNING: This is one man machine, no riders allowed.

35-8



WARNING: When putting the hydraulic cylinders on this machine through the necessary cycles to check operation or to remove air from a circuit, make sure all people are out of the way.

47-45



WARNING: Use insulated gloves or mittens when working with hot parts.

47-41A



CAUTION: Lower all attachments to the ground or use stands to safely support the attachments before you do any maintenance or service.

49-11



CAUTION: Pin sized and smaller streams of hydraulic oil under pressure can penetrate the skin and result in serious infection. If hydraulic oil under pressure does penetrate the skin, seek medical treatment immediately. Maintain all hoses and tubes in good condition. Make sure all connections are tight. Make a replacement of any tube or hose that is damaged or thought to be damaged. **DO NOT** use your hand to check for leaks, use a piece of cardboard or wood.

40-6-A



CAUTION: When removing hardened pins such as a pivot pin, or a hardened shaft, use a soft head (brass or bronze) hammer or use a driver made from brass or bronze and a steel head hammer.

46-17



CAUTION: When using a hammer to remove and install pivot pins or separate parts using compressed air or using a grinder, wear eye protection that completely encloses the eyes (approved goggles or other approved eye protectors).

46-13



CAUTION: Use suitable floor (service) jacks or chain hoist to raise wheels or tracks off the floor. Always block machine in place with suitable safety stands.

40-7-A



CAUTION: When servicing or repairing the machine. Keep the shop floor and operator's compartment and steps free of oil, water, grease, tools, etc. Use an oil absorbing material and or shop cloths as required. Use safe practices at all times.

40-8



CAUTION: Some components of this machine are very heavy. Use suitable lifting equipment or additional help as instructed in this Service Manual.

40-10



DANGER: Engine exhaust fumes can cause death. If it is necessary to start the engine in a closed place, remove the exhaust fumes from the area with an exhaust pipe extension. Open the doors and get outside air into the area.

48-56



DANGER: When the battery electrolyte is frozen, the battery can explode if (1), you try to charge the battery, or (2), you try to jump start and run the engine. To prevent the battery electrolyte from freezing, try to keep the battery at full charge. If you do not follow these instructions, you or others in the area can be injured.

48-35



DANGER: Batteries contain acid and explosive gas. Explosions can result from sparks, flames or wrong cable connections. To connect the jumper cables correctly to the battery of this machine see the Operator's Manual. Failure to follow these instructions can cause serious injury or death.

GENERAL INFORMATION

CLEANING

Clean all metal parts except bearings, in mineral spirits or by steam cleaning. Do not use caustic soda for steam cleaning. After cleaning dry, and put oil on all parts. Clean oil passages with compressed air. Clean bearings in kerosene, dry the bearings completely and put oil on the bearings.

INSPECTION

Check all parts when the parts are disassembled. Replace all parts that have wear or damage. Small scoring or grooves can be removed with a hone or crocus cloth. Complete visual inspection for indications of wear, pitting and the replacement of parts necessary will prevent early failures.

BEARINGS

Check bearings for easy action. If bearings have a loose fit or rough action replace the bearing. Wash bearings with a good solvent or kerosene and permit to air dry. DO NOT DRY BEARINGS WITH COMPRESSED AIR.

NEEDLE BEARINGS

Before you press needle bearings in a bore always remove any metal protrusions in the bore or edge of the bore. Before you press bearings into position put petroleum jelly on the inside and outside diameter of the bearings.

GEARS

Check all gears for wear and damage. Replace gears that have wear or damage.

OIL SEALS, O-RINGS AND GASKETS

Always install new oil seals, o-rings and gaskets. Put petroleum jelly on seals and o-rings.

SHAFTS

Check all shafts that have wear or damage. Check the bearing and oil seal surfaces of the shafts for damage.

SERVICE PARTS

Always install genuine Case service parts, when ordering refer to the Parts Catalog for the correct part number of the genuine Case replacement items. Failures due to the use of other than genuine Case replacement parts are not covered by warranty.

LUBRICATION

Only use the oils and lubricants specified in the Operator's or Service Manual. Failures due to the use of non specified oils and lubricants are not covered by warranty.

MODEL AND SERIAL NUMBERS

When ordering parts or when requesting information or assistance, always give the identification numbers of your machine.

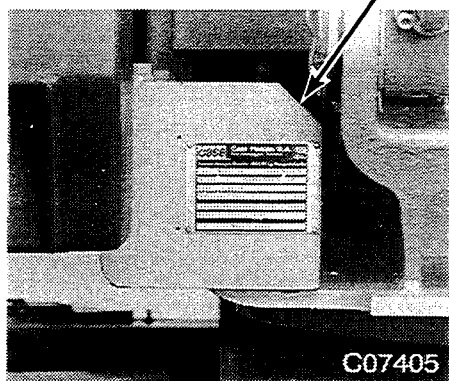
Write the model and serial numbers of your machine on the lines below.



C14426A

Machine Model Number

Machine Serial Number



C07405

Engine Serial Number

High Pressure Pump Serial Number

Low Pressure Pump Serial Number

Section 2000

2000

ENGINE REMOVAL AND INSTALLATION

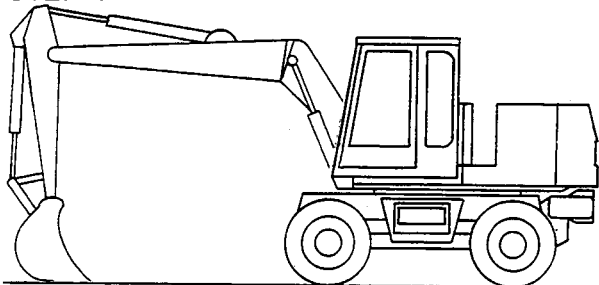
For 888P Excavators

Removal



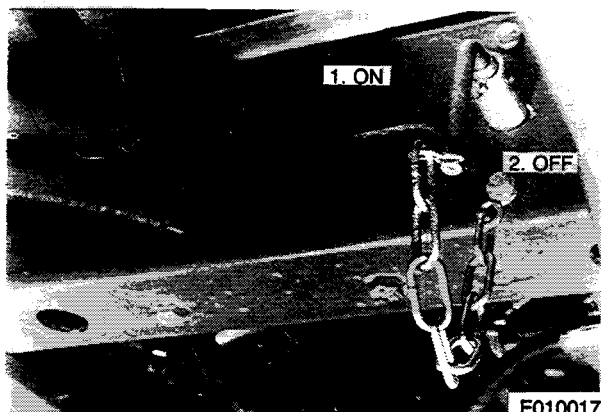
WARNING: When the machine is operating, the engine systems and the hydraulic pump systems heat up to a high temperature. To avoid the possibility of being burnt by hot metal or scalded by hot oil or water, allow the machine to cool before starting any maintenance work.

STEP 1



Put the machine on level ground. Lower the attachment to the ground. Stop the engine and allow the systems to cool.

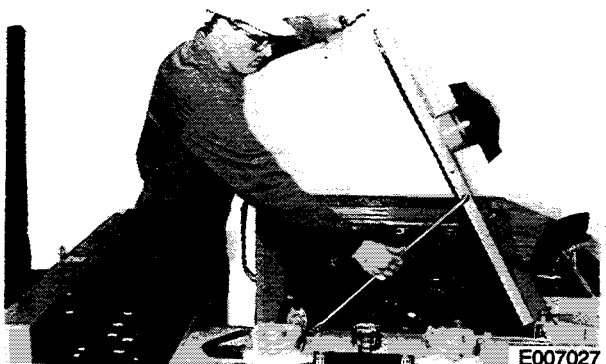
STEP 2



E010017

Turn the master disconnect switch, located under the left hand side of the walkway, to the OFF position and remove the key.

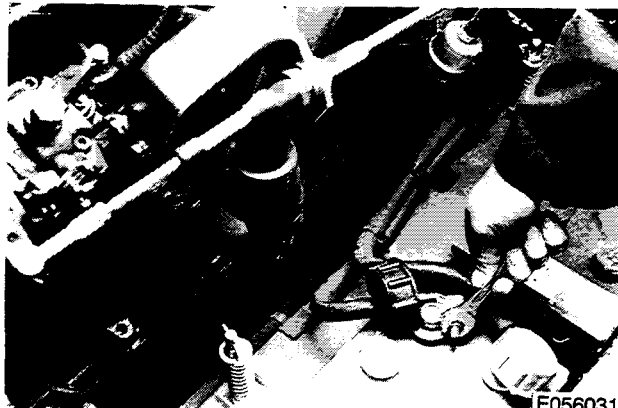
STEP 3



E007027

Raise the engine upper access cover and install the support rod.
Lift and remove the engine front cover.

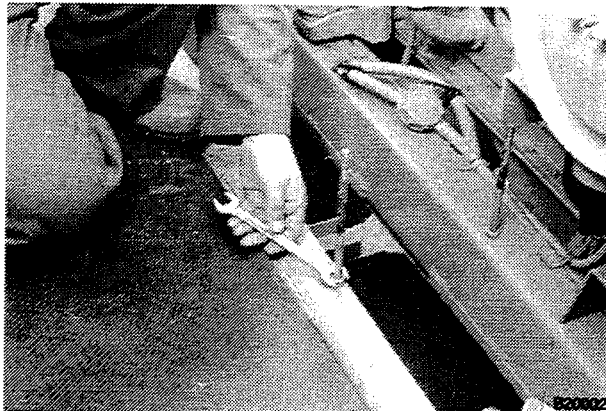
STEP 4



E056031

Remove the battery cover.
Disconnect the negative (-) cable first as shown.
Disconnect the remaining cables.
Remove the battery securing clamps and remove the batteries.

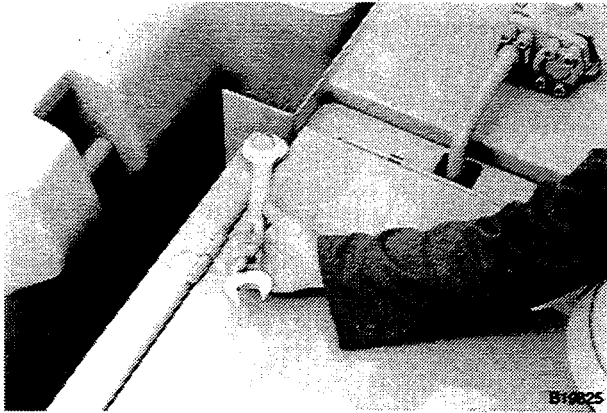
STEP 5



E20002

For safety, remove the battery securing bolts and nuts.

STEP 6



Close the upper access cover. Remove the bolts, spacers and nuts securing the cover. Lift and remove the cover.

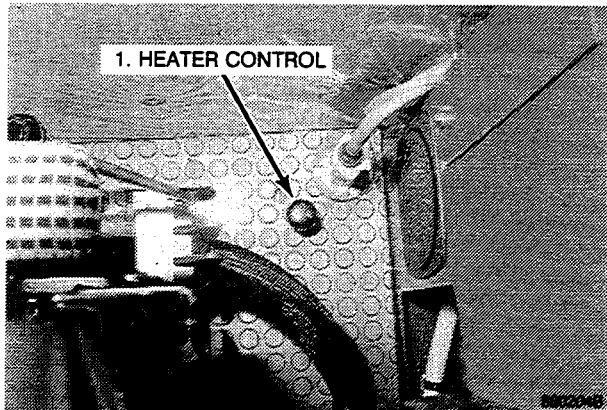
STEP 7

Remove the access panel under the engine.

STEP 8

Remove the access panels under the radiator and under the hydraulic oil tank.

STEP 9



Pull up the heater control in the cab to prevent the unnecessary draining of the cab heating system.

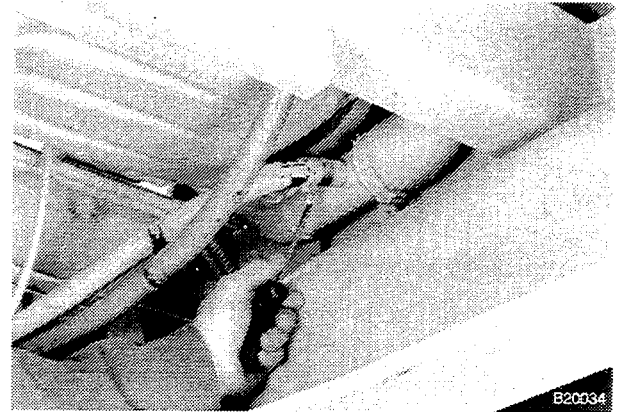


Hot coolant can spray out if the radiator cap is removed. To remove the radiator cap, let the cooling system cool, turn to the first notch, and wait until the pressure is released. Then, remove the radiator cap.

STEP 10

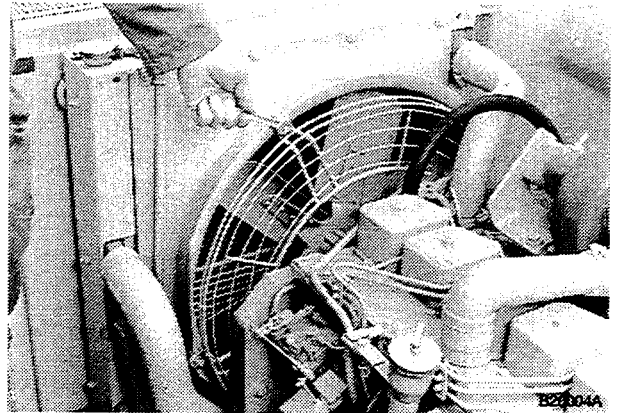
Remove the radiator cap.
Place a clean container of at least 20 litres (5½ US gallons) capacity under the radiator.

STEP 11



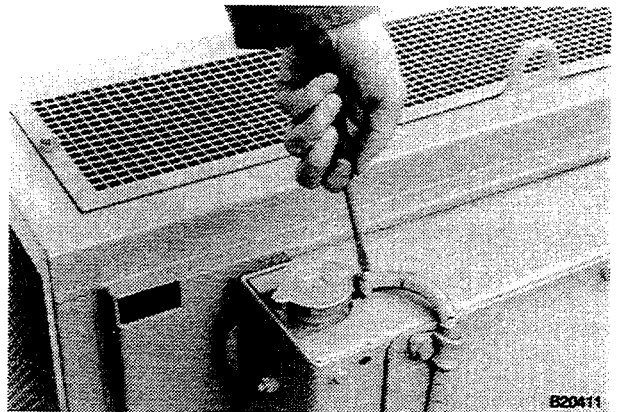
Disconnect the cab heater hose from the engine coolant tube and drain the engine coolant into the container.

STEP 12

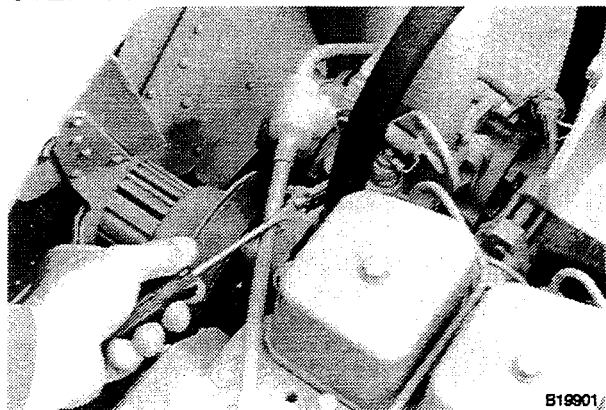


Remove the fan guard securing bolts, spacers and nuts. Remove the fan guard.

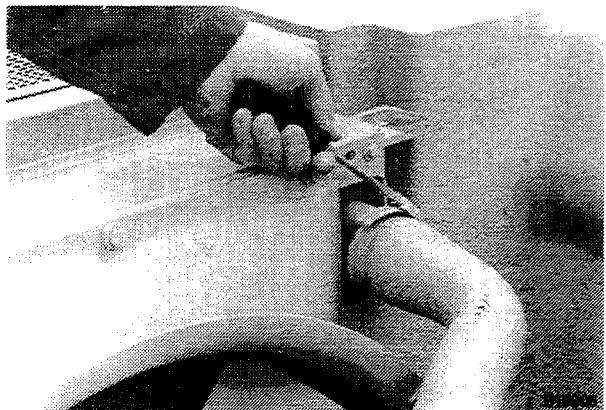
STEP 13



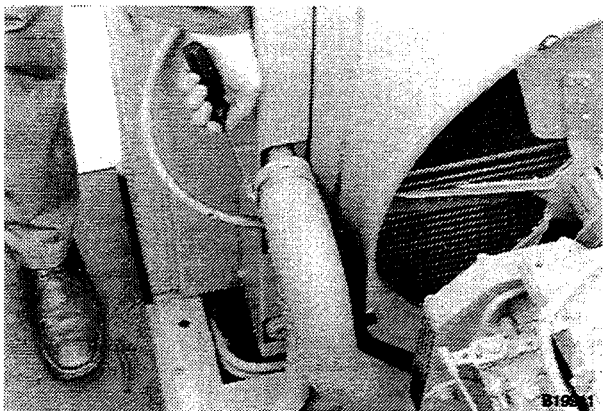
Disconnect the engine coolant recovery hose from the radiator and fan shroud.

STEP 14

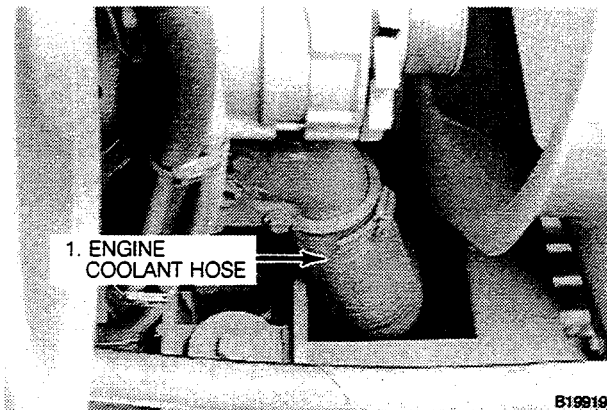
Disconnect the cab heater hose from the engine.

STEP 15

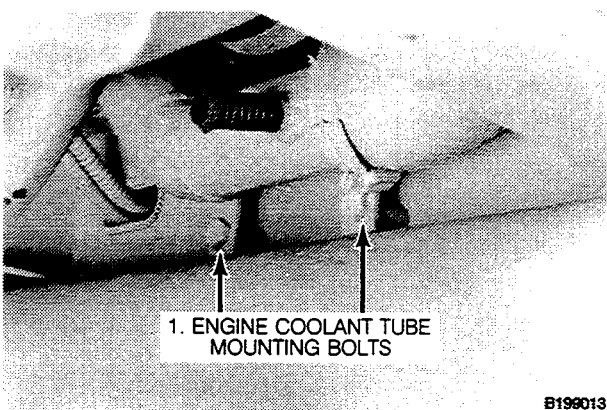
Disconnect the upper radiator hose from the radiator and the engine.

STEP 16

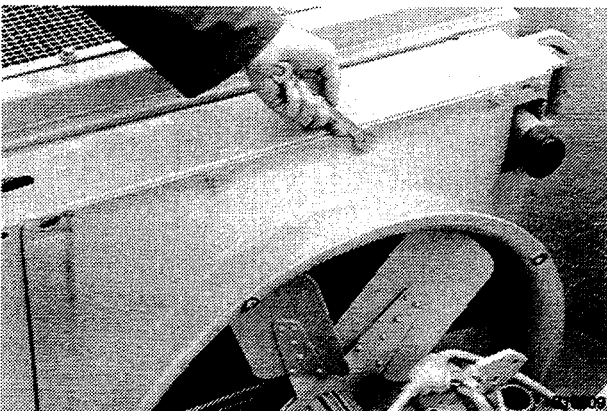
Disconnect the lower radiator hose from the radiator.

STEP 17

Disconnect the engine coolant hose from the engine.

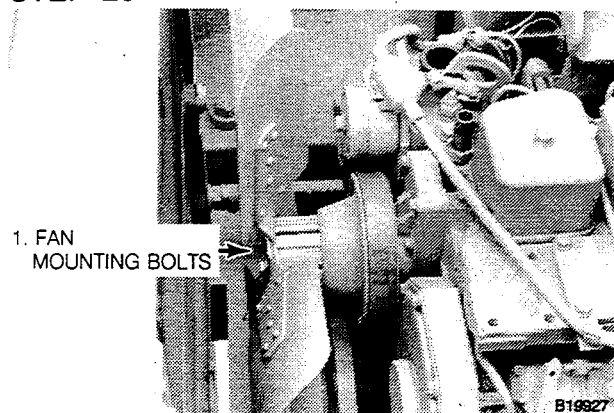
STEP 18

Remove the engine coolant tube mounting bolts, spacers and nuts. Remove the tube complete with hoses attached at both ends.

STEP 19

Remove the fan shroud mounting bolts and spacers.

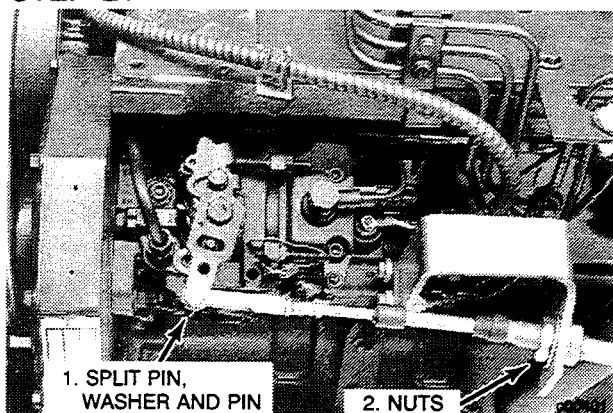
STEP 20



Remove the fan mounting bolts and spacers. Remove the fan, the fan spacer and the fan shroud.

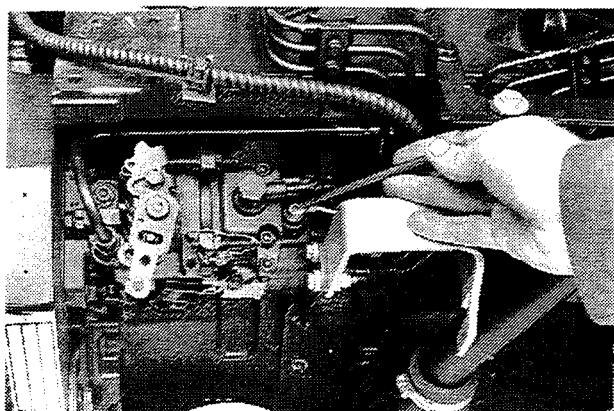
NOTE: The fan shroud in the photograph above has been removed for photographic purposes only. The fan shroud cannot be removed until the fan and fan spacer have been removed.

STEP 21



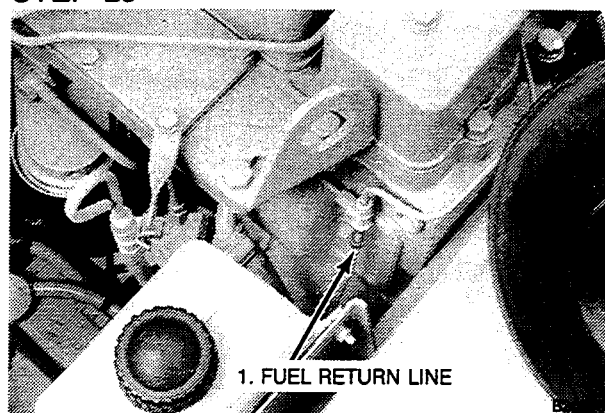
Remove the split pin, washer and pin that hold the throttle cable onto the fuel injection pump lever. Loosen the nuts that hold the throttle cable in the bracket and remove the throttle cable from the engine.

STEP 22



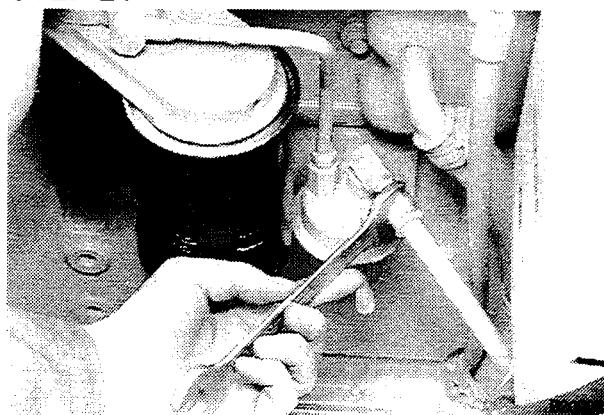
Disconnect the engine shut-down wire from the fuel injection pump.

STEP 23



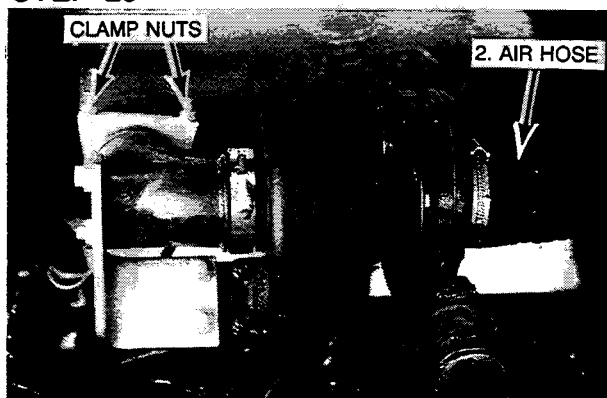
Disconnect the fuel return line from the engine. Disconnect and cap the fuel return line from the tee assembly.

STEP 24

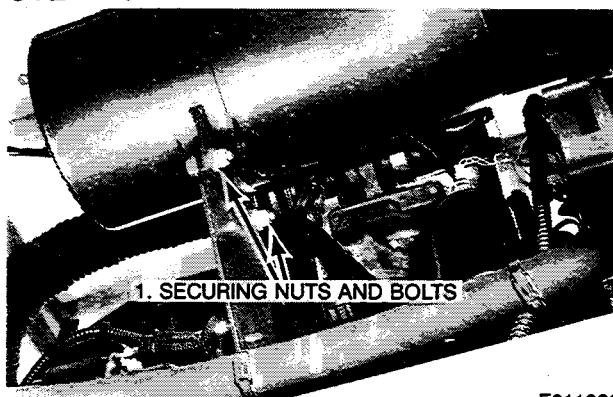


Disconnect and cap the fuel supply line from the fuel lift pump.

STEP 25

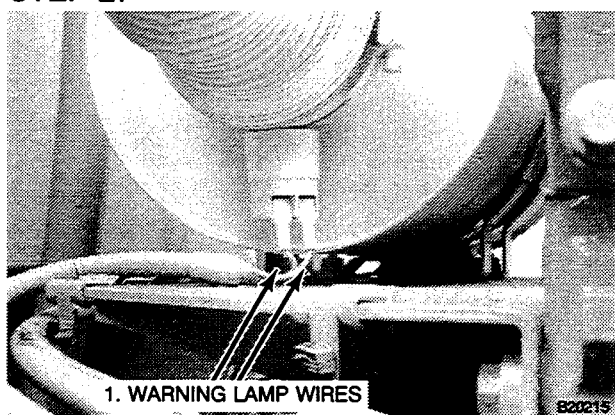


Loosen the nuts and remove the clamp from the turbocharger manifold. Disconnect the air hose from the turbocharger.

STEP 26

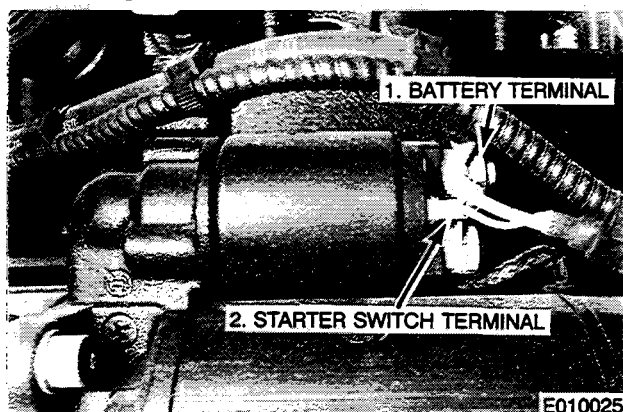
E011026

Remove the silencer securing nuts and bolts from the support bracket. Remove the silencer and exhaust from the engine.

STEP 27

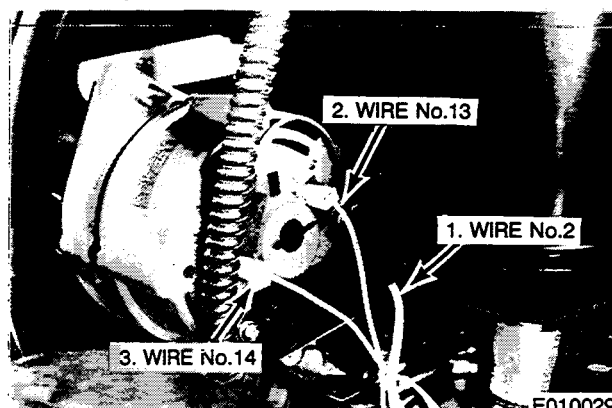
E20215

Label and disconnect the air filter warning lamp wires from the air filter.

STEP 28

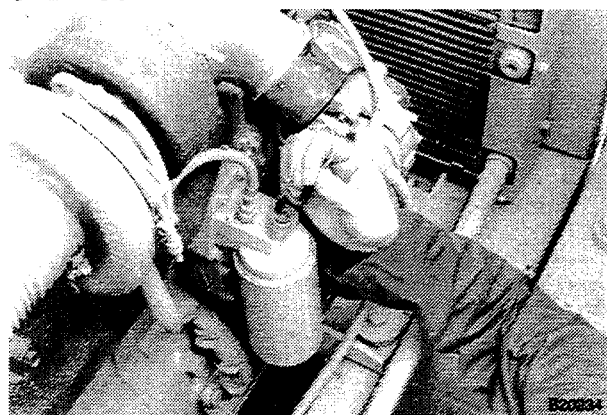
E010025

Remove the nut and washer and remove the battery cable and wire number 2 from the battery terminal. Remove the screw and washer and remove wire number 4 from the starter switch terminal.

STEP 29

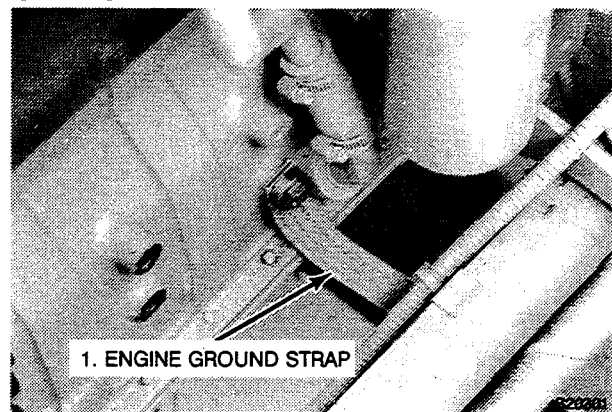
E010029

Remove the nut and remove wire number 2 from the B + terminal on the alternator. Remove wire number 13 from the D + terminal. Remove wire number 14 from the W terminal.

STEP 30

E20334

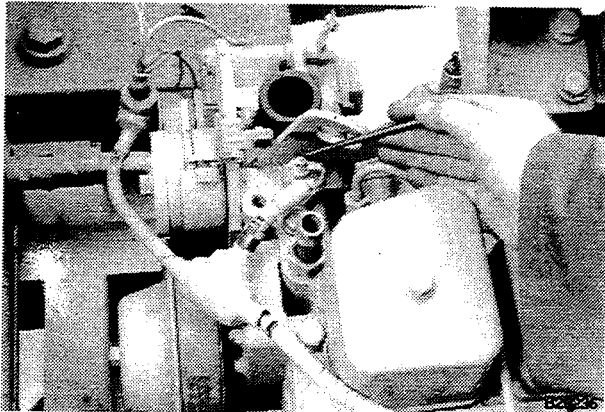
Disconnect the oil pressure warning switch.

STEP 31

E20334

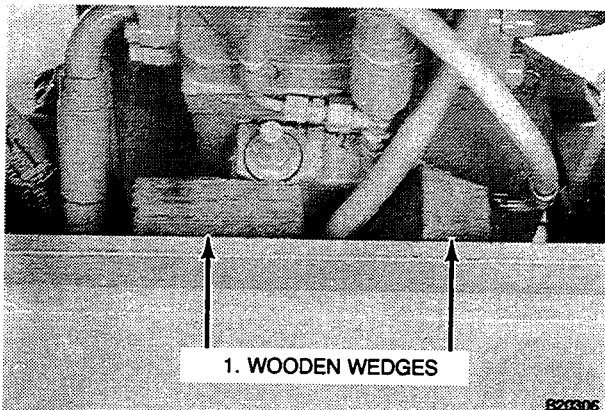
Disconnect the engine ground strap from the engine.

STEP 32



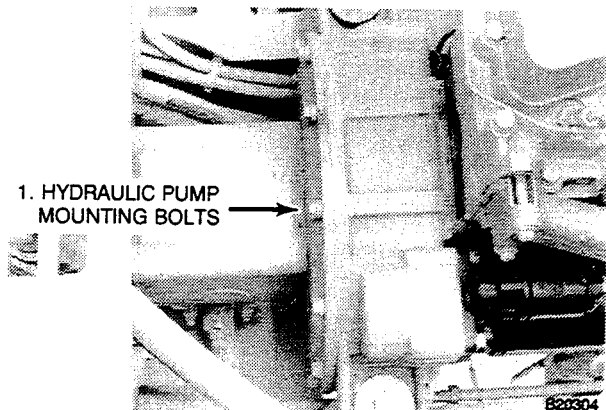
Disconnect the water temperature gauge wire.

STEP 33



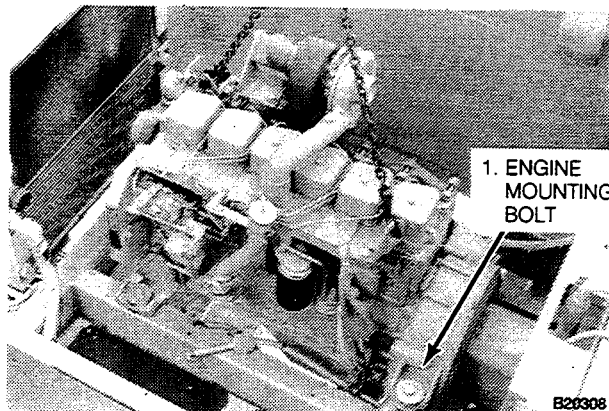
Position wooden wedges under the hydraulic pump to prevent the pump falling when the engine is removed.

STEP 34



Remove the hydraulic pump mounting bolts and spacers.

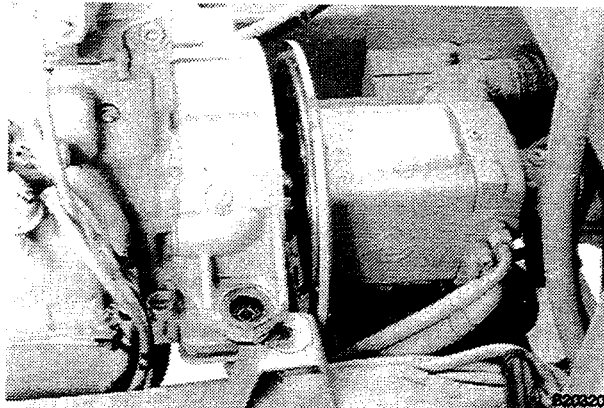
STEP 35



Install suitable lifting gear to the lifting eyes on the engine. Remove the engine mounting bolts, washers, spacers and nuts.

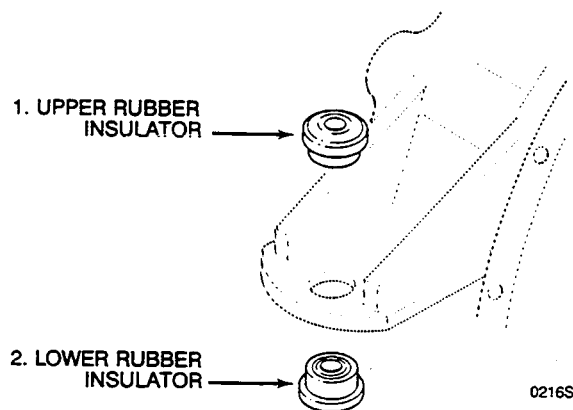
NOTE: The engine weighs approximately 512 kg (1130 lb).

STEP 36

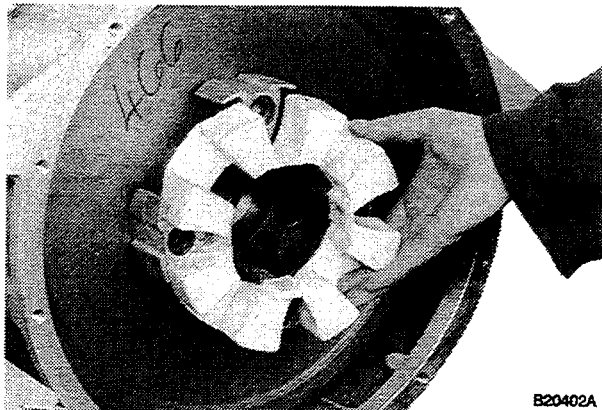


Lift the engine free of the mountings and move towards the radiator until it is free from the hydraulic pump coupling. Carefully remove the engine from the machine.

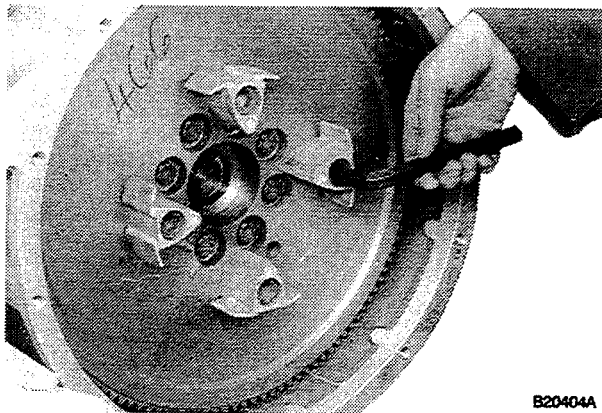
STEP 37



Inspect the rubber insulators for wear or damage and replace as necessary.

STEP 38

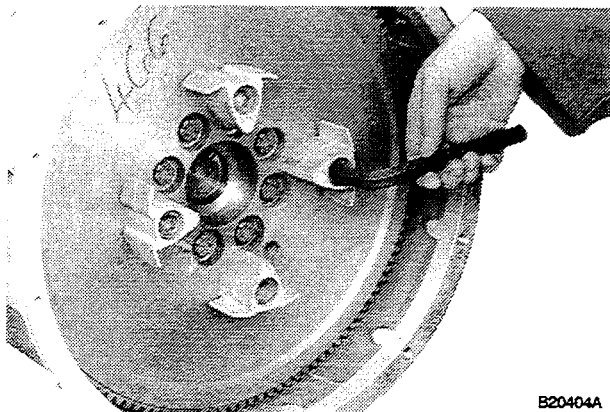
Inspect the hydraulic pump shock absorber for wear or damage and replace if necessary.

STEP 39

Remove the shock-absorber centering-mount bolts and remove the shock-absorber centering-mounts. Inspect the shock-absorber centering-mounts for wear or damage and replace if necessary.

Installation

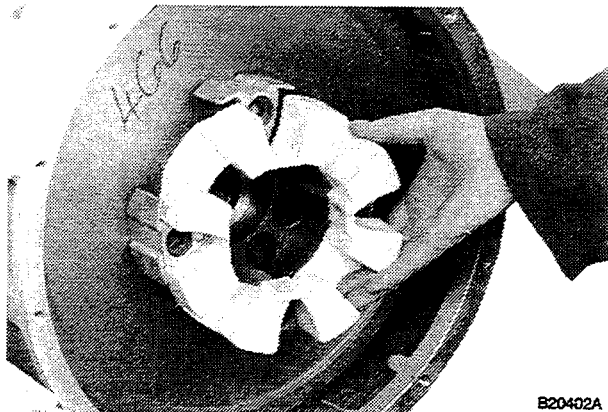
STEP 40



B20404A

Clean the shock-absorber centering-mount bolts and bolt holes. Apply Loctite 638 to the shock-absorber centering-mount bolts. Install the shock-absorber centering-mounts and bolts. Do not fully tighten the bolts.

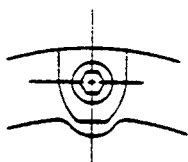
STEP 41



B20402A



1. INCORRECT

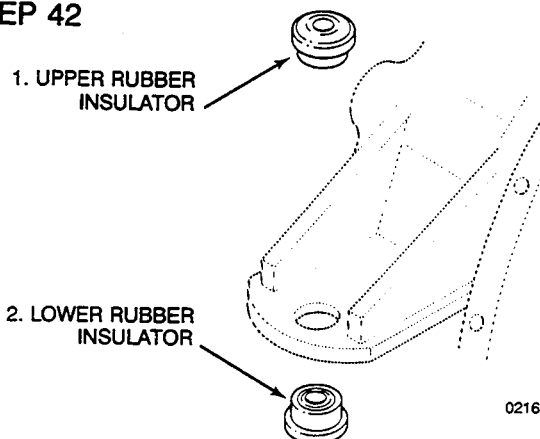


2. CORRECT

0216R

Install the shock-absorber. Make sure that the shock-absorber centering-mounts are centered in the shock-absorber and tighten the bolts to a torque of 220 Nm (162 lb ft).

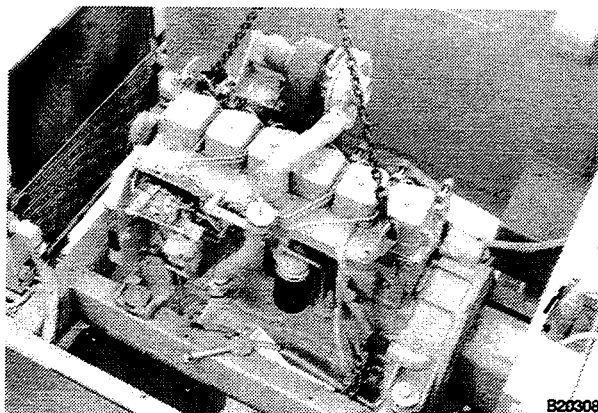
STEP 42



0216S

Install the upper and lower rubber insulators. The insulators are a tight fit in the engine supports.

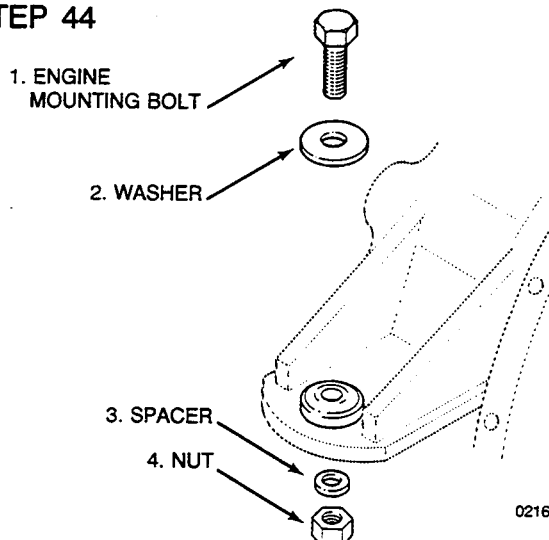
STEP 43



B20308

Connect the engine to the hydraulic pump, making sure that the hydraulic pump drive coupling engages correctly.

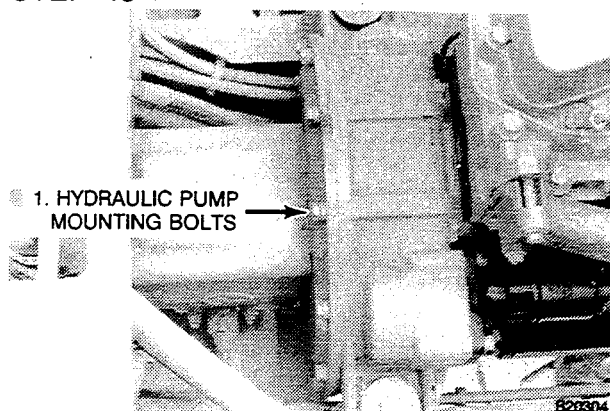
STEP 44



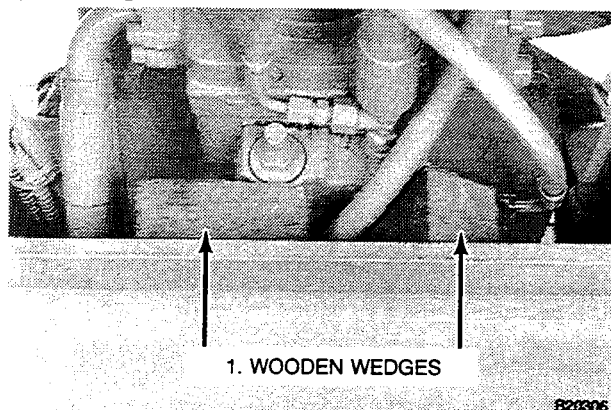
0216T

Install the engine mounting bolts, washers, spacers and nuts. Tighten the engine mounting bolts to a torque of 217 to 271 Nm (160 to 200 lb ft).

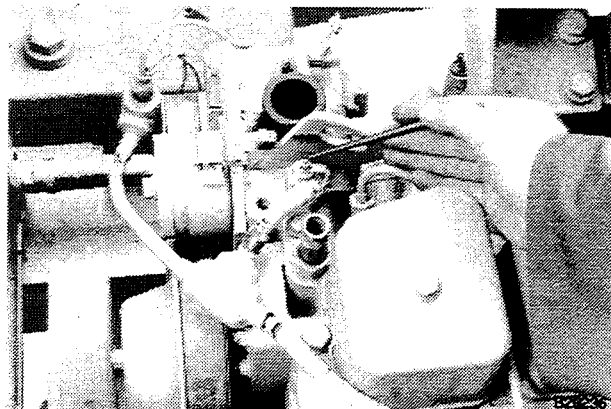
Issued 01-90 Printed in England

STEP 45

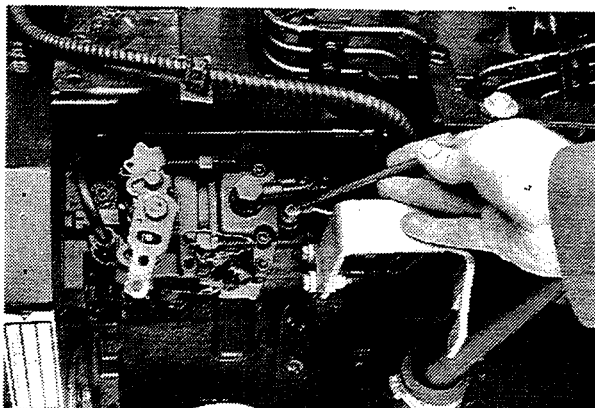
Install and tighten the hydraulic pump mounting bolts and spacers to a torque of 44 Nm (32.5 lb ft).

STEP 46

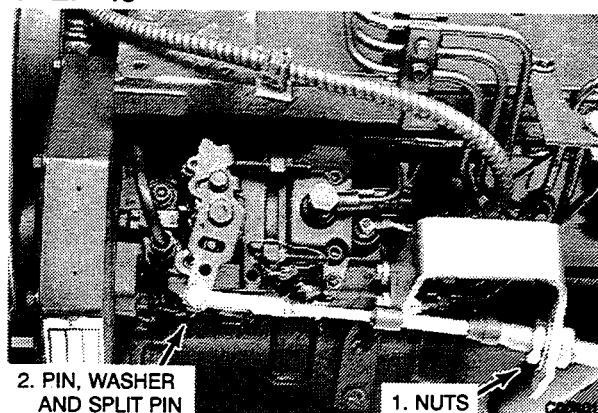
Remove the wooden wedges under the hydraulic pump.

STEP 47

Connect the water temperature gauge wire to the engine.

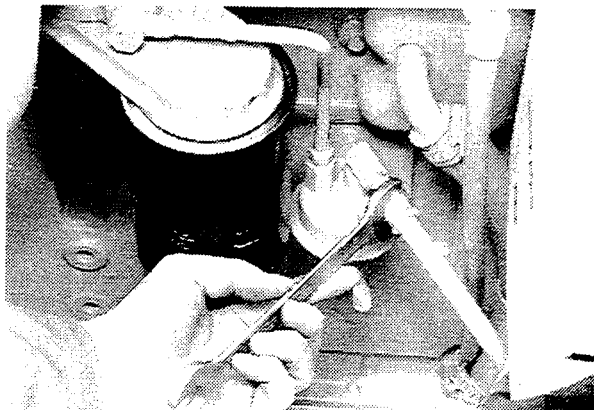
STEP 48

Connect the engine shut-down wire to the fuel injection pump.

STEP 49

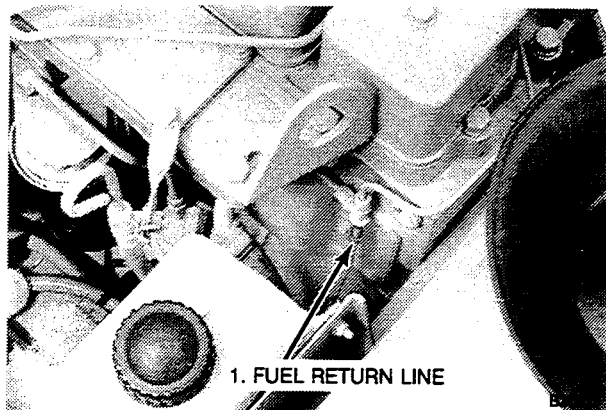
Install the throttle cable in the bracket and tighten the nuts.

Install the pin, washer and split pin connecting the throttle cable to the fuel injection pump lever.

STEP 50

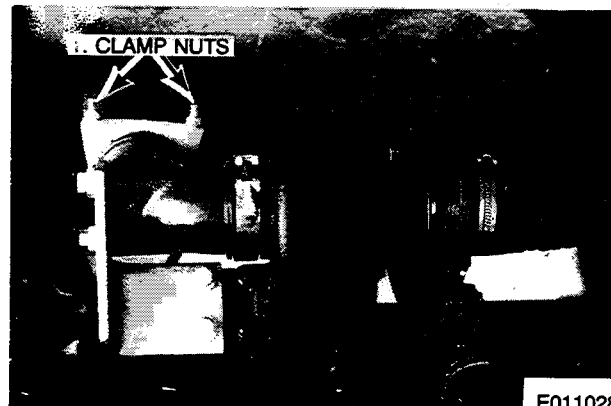
Remove the cap and connect the fuel supply line to the fuel lift pump.

STEP 51



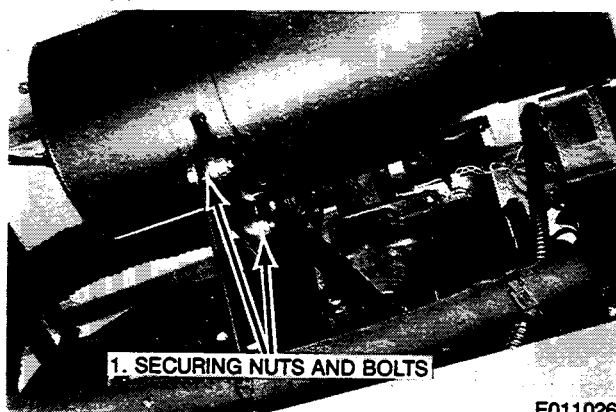
Remove the cap and connect the fuel return line to the test assembly and then to the engine.

STEP 52



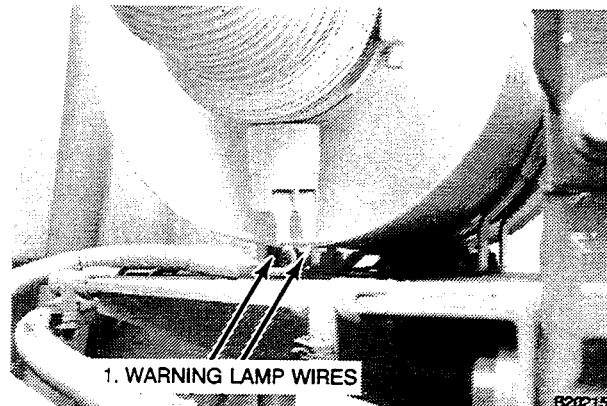
Install the clamp to the turbocharger manifold. Tighten the nuts. Connect the air hose to the turbocharger and tighten the clamp.

STEP 53



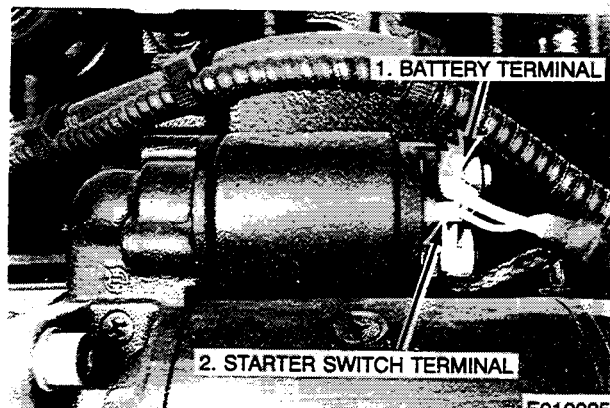
Position the silencer and exhaust on the engine and install the securing bolts and nuts to the support bracket.

STEP 54



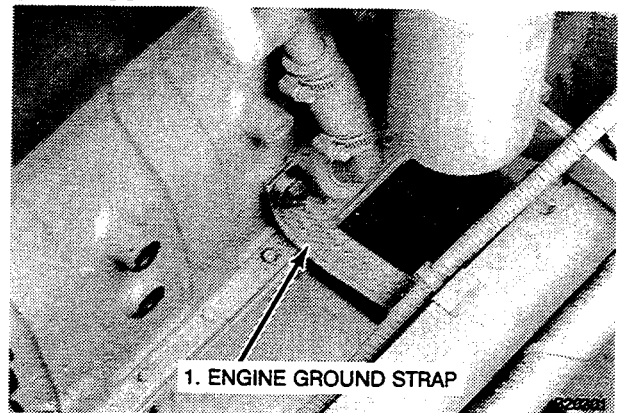
Connect the air filter warning lamp wires to the air filter.

STEP 55



Install the battery cable and wire number 2 on the battery terminal. Install and tighten the washer and nut. Install wire number 4 on the starter switch terminal. Install and tighten the washer and screw.

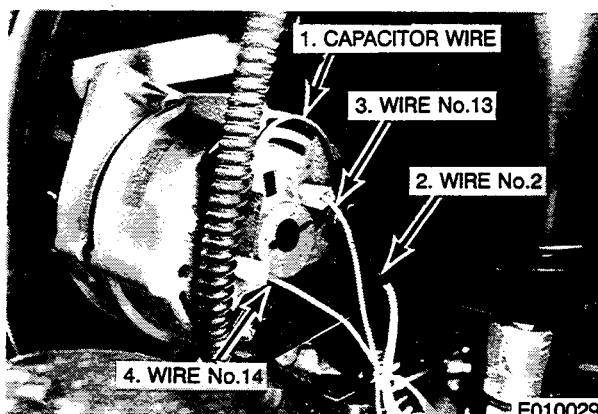
STEP 56



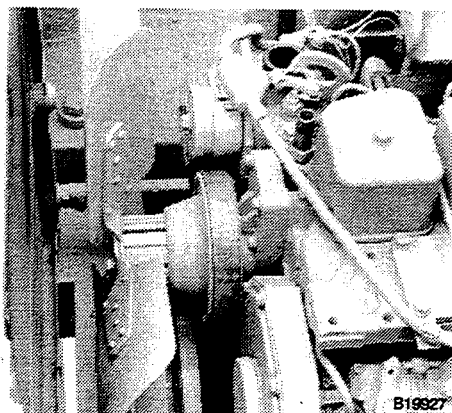
Connect the engine ground strap to the engine.

STEP 57

Connect the oil pressure warning lamp wires.

STEP 58

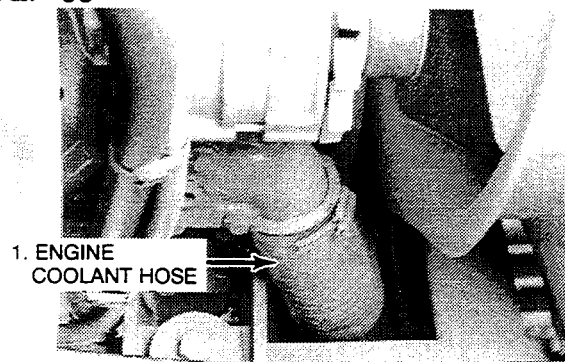
Make sure the capacitor wire is installed on the B+ terminal. Install wire number 2 on the B+ terminal and install and tighten the nut. Connect wire number 13 to the D+ terminal. Connect wire number 14 to the W terminal.

STEP 59

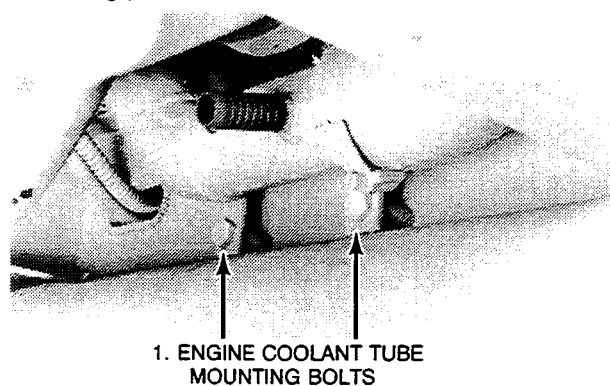
Install the fan shroud, fan spacer and fan. Install the fan mounting bolts and spacers. Tighten the bolts to a torque of 43 Nm (32 lb ft).

NOTE: The fan shroud is removed from the above photograph for photographic purposes only. Install the fan shroud before the fan spacer and fan are installed.

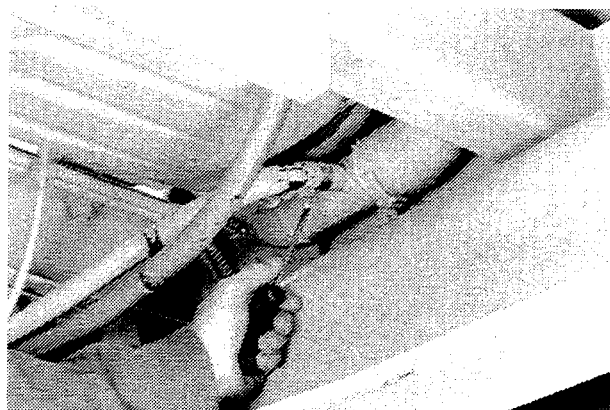
Don 7-31300

STEP 60

Connect the engine coolant hose to the engine and tighten the clamp.

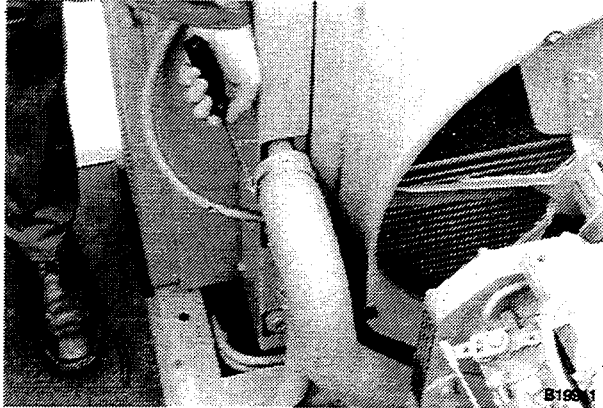
STEP 61

Install the engine coolant tube. Install and tighten the mounting bolts, spacers and nuts.

STEP 62

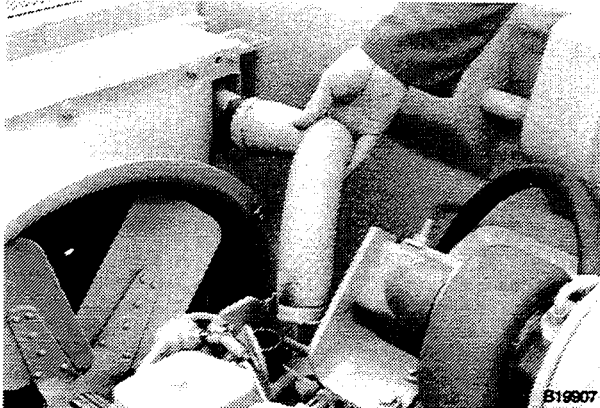
Connect the cab heater hose to the engine coolant tube. Tighten the clamp.

STEP 63



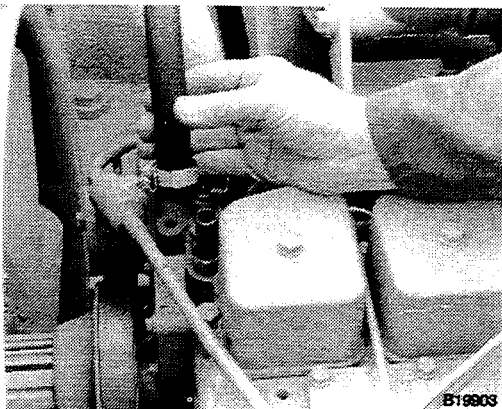
Connect the lower radiator hose to the radiator and tighten the clamp.

STEP 64



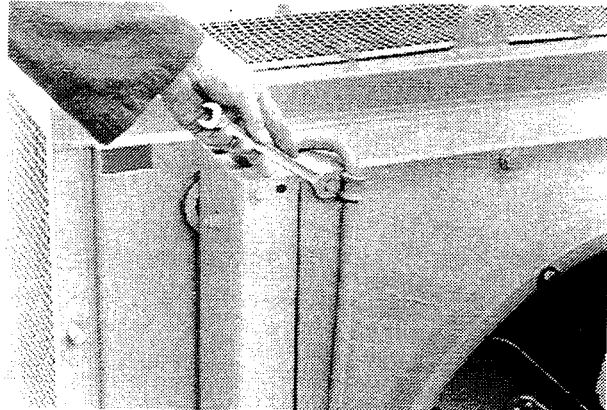
Connect the upper radiator hose to the radiator and the engine and tighten the clamps.

STEP 65



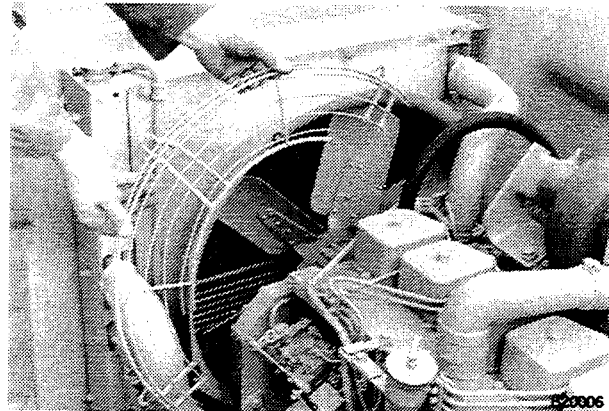
Connect the cab heater hose to the engine and tighten the clamp.

STEP 66



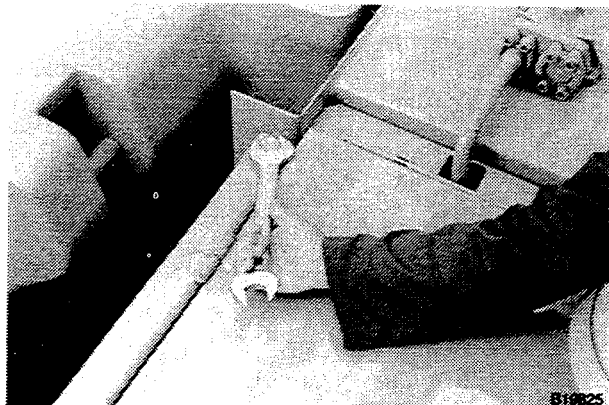
Connect the engine coolant recovery hose clamp to the fan shroud and the radiator.

STEP 67

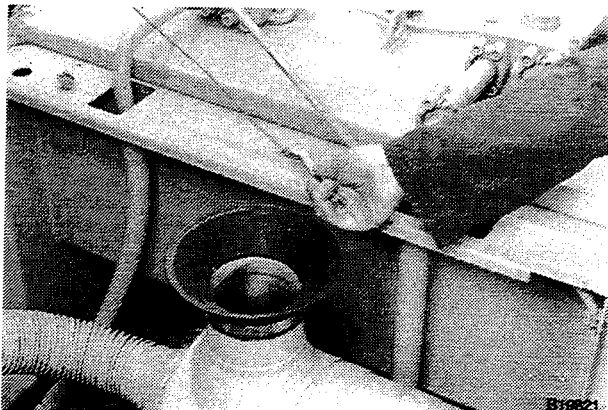


Install the fan guard. Install and tighten the mounting bolts, spacers and nuts.

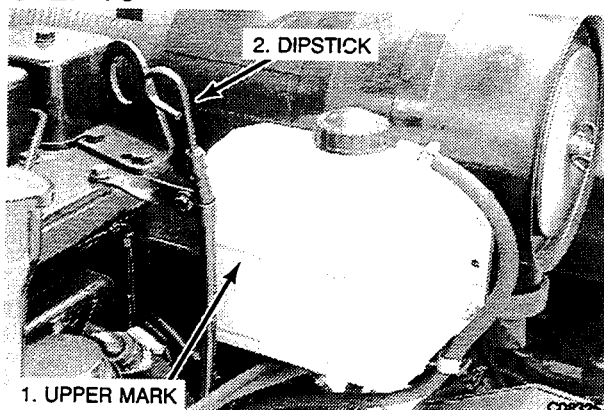
STEP 68



Install the engine upper access cover. Install and tighten the mounting bolts, spacers and nuts. Raise the cover and install the support rod.

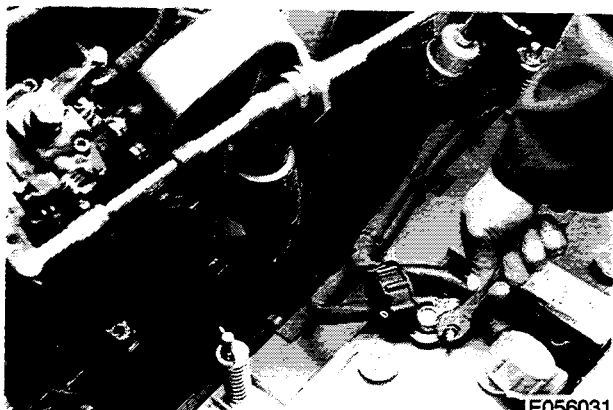
STEP 69

Install and tighten the safety cable securing bolt, spacers and nut.

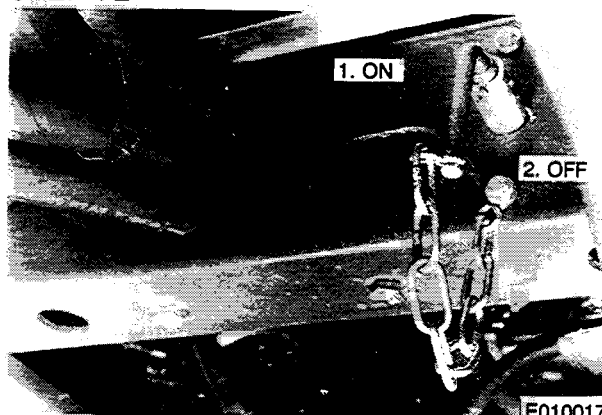
STEP 70

Fill the radiator with specified engine coolant. Install the radiator cap. Fill the coolant recovery bottle with specified engine coolant up to the upper mark. Install the bottle cap.

Fill the engine with specified engine oil up to the FULL mark on the engine oil dipstick.

STEP 71

Install the battery securing bolts and nuts. Install the batteries and install and tighten the battery securing clamps. Connecting the negative (-) cable last, connect the battery cables. Install the battery cover

STEP 72

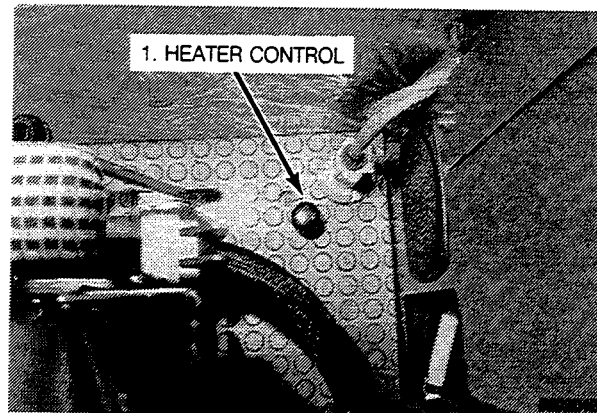
Install the key and turn the master disconnect switch to the ON position.

STEP 73

Remove air from the fuel system. Refer to Section 3410.



WARNING: Never operate the engine in a closed building. Proper ventilation is required under all circumstances.

STEP 74

Push down the heater control in the cab to allow circulation of the engine coolant and to allow trapped air to collect at the air bleed screw. Start and run the engine for 5 minutes. Stop the engine.



Suggest:

If the above button click is invalid.

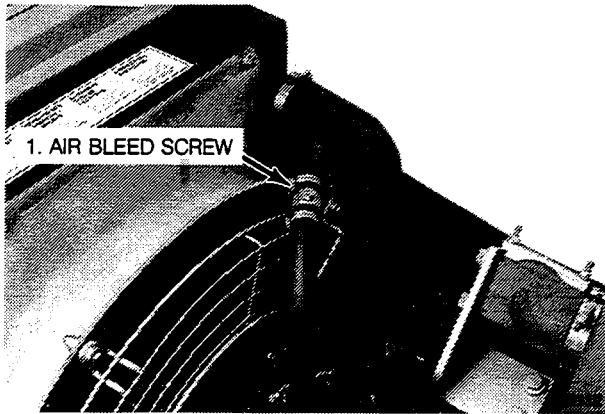
Please download this document first, and then click the above link to download the complete manual.

Thank you so much for reading



WARNING: *Hot coolant will spray out of the air bleed screw. To avoid injury, care must be taken when removing air from the cooling system.*

STEP 75

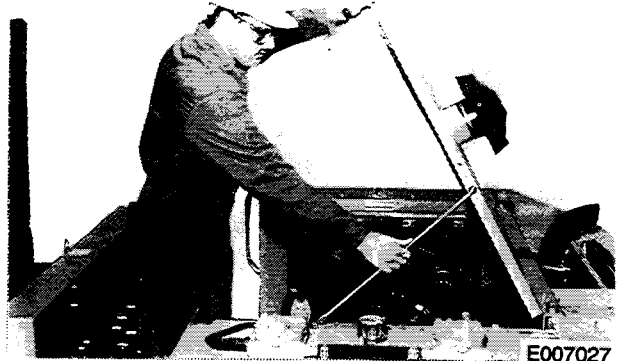


Open the air bleed screw until there is a flow of coolant without bubbles. Tighten the air bleed screw.

STEP 76

Check for and repair any fuel, engine coolant and oil leaks. Check the level of engine oil and the level of engine coolant in the recovery bottle. Top up the levels as required.

STEP 77



Install the engine front cover. Close the engine upper access cover. Install the access panels under the engine, radiator and hydraulic oil tank.

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