# 1845C SKID STEER

## Service Manual
## 8-42913

## Table of Contents




**CASE CORPORATION**
**700 State Street**
**Racine, WI 53404 U.S.A.**

**CASE CANADA CORPORATION**
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**Burlington, ON L7N 3M6 CANADA**

Reprinted

Bur 8-18953




Issued August, 1992 (Revised February, 2001)

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**NOTE:** Case Corporation reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold.

# 1001

# SAFETY RULES
# SERVICE MANUAL INTRODUCTION
# AND
# TORQUE SPECIFICATIONS

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CASE CORPORATION

8-42910

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Issued March 1986

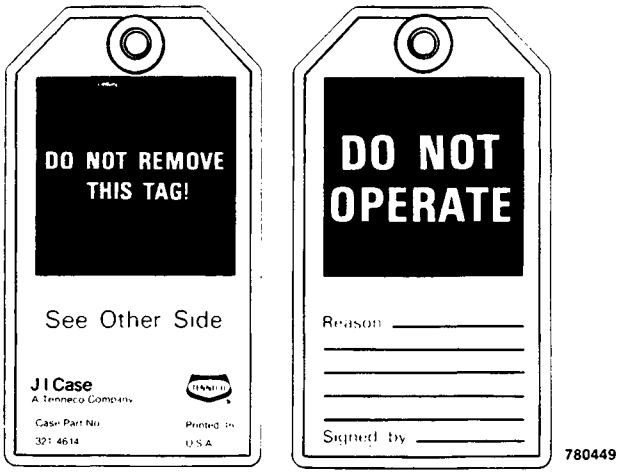
# SAFETY RULES

*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*

**IMPORTANT:** *To prevent injury on the job, follow the Warning, Caution, and Danger notes in this section and other sections throughout this manual. Follow the instructions carefully.*

The procedures recommended and shown in this manual are good, effective service methods. However, all possible procedures and service hazards may not be covered. Therefore, if you use a tool or procedure not recommended, you must make sure that the method you select is a safe method.

Put the warning tag shown below on the key for the key switch when you are servicing or repairing this machine. One warning tag is on every new machine. You can buy additional warning tags, part number 331-4614, from Service Parts Supply.

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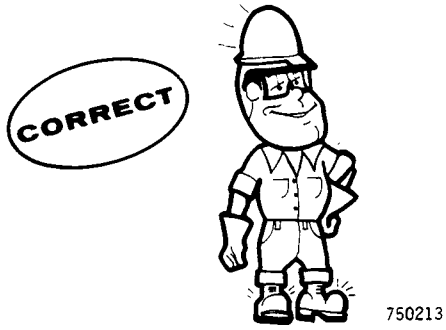
**DANGER:** *Engine exhaust fumes can cause death. If it is necessary to start the engine in a closed place, remove the exhaust fumes from the area with an exhaust pipe extension. If you do not have an exhaust pipe extension, open the doors and get outside air into the area.* 48-56

**WARNING:** *Read operator's manual to familiarize yourself with control lever functions.* 46-27

**WARNING:** *Operate tractor and equipment controls from the seat position only. Any other method could result in serious injury.* 48-55

**WARNING:** *This is a one man machine, no riders allowed.* 35-8

**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

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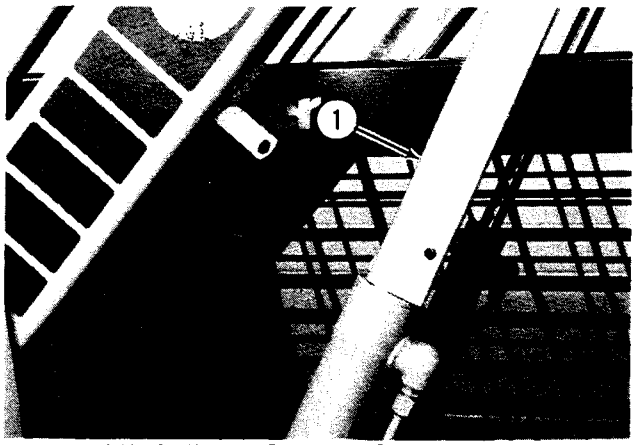
**WARNING:** *Operate controls from the operator's seat only.* 35-7

**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:** *Whenever the bucket must be raised to aid in servicing, block the loader arms in place with lift cylinder support strut or a suitable safety stand.* *23-7-B*




1. *Lift Cylinder Support Strut* 855871

**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:** *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:** *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:** *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:** *Use suitable floor (service) jacks or chain hoists to raise wheels or track off the floor. Always block machine in place with suitable safety stands.* *40-7-A*

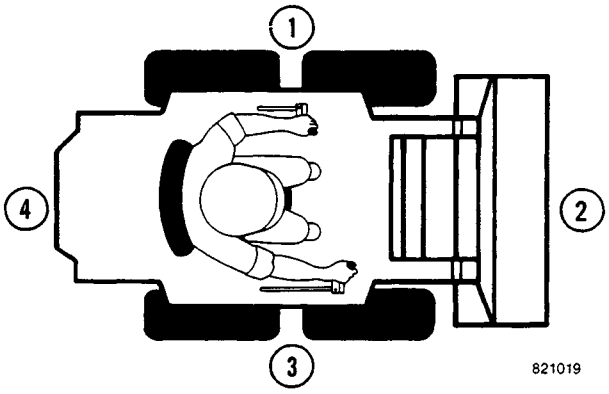
**CAUTION:** *Some components of this machine are very heavy. Use suitable lifting equipment or additional help as instructed in this service manual.* *40-10*

# SERVICE MANUAL INTRODUCTION

This service manual has been prepared with the latest service information available. Troubleshooting, removal, disassembly, inspection and installation procedures, and complete specifications and tightening references can be found in most sections. Some sections have drawings but no written procedure because the job is so easily done. This service manual is one of the most important tools available to the service technician.

## Right, Left, Front, and Rear

The terms right-hand and left-hand and front and rear as used in this manual indicate the right and left sides, and front and rear of the machine as seen from the operator's seat for correct operation of the machine or attachment.




1. *Left Side*
2. *Front*
3. *Right Side*
4. *Rear*

## Text

If the service manual is for more than one machine or different models of components (planetary axles, gear boxes, control valves, etc.) the procedures have the steps necessary to service each model.

## Table of Contents

A Table of Contents is in the front of this manual. The Table of Contents shows the main divisions and the sections that are in each division. The individual sections, where necessary, have a Table of Contents on the cover or second page of that section.

## Page Numbers

All page numbers are made of two numbers separated by a dash, such as 4002-9. The number before the dash is the section number. The number following the dash is the page number in that section. Page numbers will be found at the upper right or left of each page.

## Illustrations and Photos

Illustrations are put as near as possible to the text and are to be used as part of the text. Photos normally are put below the step to which they apply.

## Clear and Simple English

This manual is written in C.A.S.E. (Clear and Simple English). C.A.S.E. is easier to read and understand than "regular" English because C.A.S.E. uses a small number of common words and has special rules for writing.

## Special Tools

Special tools are needed to remove and install, disassemble and assemble, check, and adjust some component parts of this machine. Some special tools can be easily made locally and the necessary information to make the tool is in this service manual. Other special tools are more difficult to make locally and are available from Service Tools in the U.S. and from Jobborn Manufacturing in Canada. Use these tools according to the instructions in this service manual for your personal safety and to do the job correctly.

Order special tools from either of the following companies:

Service Tools
P.O. Box 314
Owatonna, Minnesota 55060

Jobborn Manufacturing Co.
97 Frid Street
Hamilton, Ontario L8P 4M3
Canada

# PRODUCT IDENTIFICATION NUMBER (PIN) AND SERIAL NUMBERS

**NOTE:** *A serial number plate is also on some components such as the starter, alternator, pump, etc.*

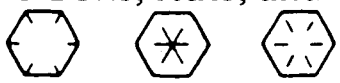
# TORQUE SPECIFICATIONS - U.S. HARDWARE

Use the torques in this chart when special torques are not given. These torques apply to fasteners with both UNC and UNF threads as received from suppliers, dry, or when lubricated with engine oil. Not applicable if special graphites, moly-disulfide greases, or other extreme pressure lubricants are used.

## Grade 5 Bolts, Nuts, and Studs

| Size | Pound-Feet | Newton metres | Kilogram metres |
|---|---|---|---|
| **1/4 in** 6.4 mm | 9-11 | 12-15 | 1.2-1.5 |
| **5/16 in** 7.9 mm | 17-21 | 23-28 | 2.4-2.9 |
| **3/8 in** 9.5 mm | 35-42 | 48-57 | 4.8-5.8 |
| **7/16 in** 11.1 mm | 54-64 | 73-87 | 7.5-8.8 |
| **1/2 in** 12.7 mm | 80-96 | 109-130 | 11.1-13.3 |
| **9/16 in** 14.3 mm | 110-132 | 149-179 | 15.2-18.2 |
| **5/8 in** 15.9 mm | 150-180 | 203-244 | 20.8-24.9 |
| **3/4 in** 19.0 mm | 270-324 | 366-439 | 37.3-44.8 |
| **7/8 in** 22.2 mm | 400-480 | 542-651 | 55.3-66.4 |
| **1.0 in** 25.4 mm | 580-696 | 787-944 | 80.2-96.2 |
| **1-1/8 in** 28.6 mm | 800-880 | 1085-1193 | 111-122 |
| **1-1/4 in** 31.8 mm | 1120-1240 | 1519-1681 | 155-171 |
| **1-3/8 in** 34.9 mm | 1460-1680 | 1980-2278 | 202-232 |
| **1-1/2 in** 38.1 mm | 1940-2200 | 2631-2983 | 268-304 |

## Grade 8 Bolts, Nuts, and Studs



| Size | Pound-Feet | Newton metres | Kilogram metres |
|---|---|---|---|
| **1/4 in** 6.4 mm | 12-15 | 16-20 | 1.7-2.1 |
| **5/16 in** 7.9 mm | 24-29 | 33-39 | 3.3-4.0 |
| **3/8 in** 9.5 mm | 45-54 | 61-73 | 6.2-7.5 |
| **7/16 in** 11.1 mm | 70-84 | 95-114 | 9.7-11.6 |
| **1/2 in** 12.7 mm | 110-132 | 149-179 | 15.2-18.2 |
| **9/16 in** 14.3 mm | 160-192 | 217-260 | 22.1-26.5 |
| **5/8 in** 15.9 mm | 220-264 | 298-358 | 30.4-36.5 |
| **3/4 in** 19.0 mm | 380-456 | 515-618 | 52.5-63.0 |
| **7/8 in** 22.2 mm | 600-720 | 814-976 | 83.0-99.5 |
| **1.0 in** 25.4 mm | 900-1080 | 1220-1465 | 124-149 |
| **1-1/8 in** 28.6 mm | 1280-1440 | 1736-1953 | 177-199 |
| **1-1/4 in** 31.8 mm | 1820-2000 | 2468-2712 | 252-277 |
| **1-3/8 in** 34.9 mm | 2380-2720 | 3227-3688 | 329-376 |
| **1-1/2 in** 38.1 mm | 3160-3560 | 4285-4827 | 437-492 |

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# TORQUE SPECIFICATIONS - METRIC HARDWARE

Use the following torques when special torques are not given.

These values apply to fasteners with coarse threads as received from supplier, plated or unplated, or when lubricated with engine oil. These values do not apply if graphite or moly-disulfide grease or oil is used.

## Grade 8.8 Bolts, Nuts, and Studs

8.8

| Size | Pound-Feet | Newton metres | Kilogram metres |
|---|---|---|---|
| **M4** 0.15 in | 2-3 | 3-4 | 0.3-0.4 |
| **M5** 0.19 in | 5-6 | 6.5-8 | 0.7-0.8 |
| **M6** 0.23 in | 8-9 | 10.5-12 | 1.1-1.2 |
| **M8** 0.31 in | 19-23 | 26-31 | 2.6-3.2 |
| **M10** 0.39 in | 38-45 | 52-61 | 5.3-6.2 |
| **M12** 0.46 in | 66-79 | 90-107 | 9.1-10.9 |
| **M14** 0.55 in | 106-127 | 144-172 | 14.7-17.6 |
| **M16** 0.62 in | 160-200 | 217-271 | 22.1-27.7 |
| **M20** 0.78 in | 320-380 | 434-515 | 44.2-52.5 |
| **M24** 0.94 in | 500-600 | 675-815 | 69.1-83.0 |
| **M30** 1.17 in | 920-1100 | 1250-1500 | 127-152 |
| **M36** 1.40 in | 1600-1950 | 2175-2600 | 221-270 |

## Grade 10.9 Bolts, Nuts, and Studs

10.9

| Size | Pound-Feet | Newton metres | Kilogram metres |
|---|---|---|---|
| **M4** 0.15 in | 3-4 | 4-5 | 0.4-0.5 |
| **M5** 0.19 in | 7-8 | 9.5-11 | 1.0-1.1 |
| **M6** 0.23 in | 11-13 | 15-17.5 | 1.5-1.8 |
| **M8** 0.31 in | 27-32 | 37-43 | 3.7-4.4 |
| **M10** 0.39 in | 54-64 | 73-87 | 7.5-8.8 |
| **M12** 0.46 in | 93-112 | 125-150 | 12.9-15.5 |
| **M14** 0.55 in | 149-179 | 200-245 | 20.6-24.7 |
| **M16** 0.62 in | 230-280 | 310-380 | 31.8-38.7 |
| **M20** 0.78 in | 450-540 | 610-730 | 62.2-74.7 |
| **M24** 0.94 in | 780-940 | 1050-1275 | 108-130 |
| **M30** 1.17 in | 1470-1770 | 2000-2400 | 203-245 |
| **M36** 1.40 in | 2580-3090 | 3500-4200 | 357-427 |

## Grade 12.9 Bolts, Nuts, and Studs

12.9

Usually the torque values specified for grade 10.9 fasteners can be used satisfactorily on grade 12.9 fasteners.

# TORQUE SPECIFICATIONS - STEEL HYDRAULIC FITTINGS

| Tube OD Hose ID | Thread Size | Pound-Feet | Newton metres | Kilogram metres |
|---|---|---|---|---|
| **37 Degree Flare Fittings** | | | | |
| **1/4 in** 6.4 mm | 7/16-20 | 6-12 | 8-16 | 0.8-1.7 |
| **5/16 in** 7.9 mm | 1/2-20 | 8-16 | 11-21 | 1.1-2.2 |
| **3/8 in** 9.5 mm | 9/16-18 | 10-25 | 14-33 | 1.4-3.5 |
| **1/2 in** 12.7 mm | 3/4-16 | 15-42 | 20-56 | 2.1-5.8 |
| **5/8 in** 15.9 mm | 7/8-14 | 25-58 | 34-78 | 3.5-8.0 |
| **3/4 in** 19.0 mm | 1-1/16-12 | 40-80 | 54-108 | 5.5-11.1 |
| **7/8 in** 22.2 mm | 1-3/16-12 | 60-100 | 81-135 | 8.3-13.9 |
| **1.0 in** 25.4 mm | 1-5/16-12 | 75-117 | 102-158 | 10.4-16.2 |
| **1-1/4 in** 31.8 mm | 1-5/8-12 | 125-165 | 169-223 | 17.3-22.8 |
| **1-1/2 in** 38.1 mm | 1-7/8-12 | 210-250 | 285-338 | 29.0-34.6 |

| Tube OD Hose ID | Thread Size | Pound-Feet | Newton metres | Kilogram metres |
|---|---|---|---|---|
| **Straight Threads with O-ring** | | | | |
| **1/4 in** 6.4 mm | 7/16-20 | 12-19 | 16-25 | 1.7-2.6 |
| **5/16 in** 7.9 mm | 1/2-20 | 16-25 | 22-33 | 2.2-3.5 |
| **3/8 in** 9.5 mm | 9/16-18 | 25-40 | 34-54 | 3.5-5.5 |
| **1/2 in** 12.7 mm | 3/4-16 | 42-67 | 57-90 | 5.8-9.3 |
| **5/8 in** 15.9 mm | 7/8-14 | 58-92 | 79-124 | 8.0-12.7 |
| **3/4 in** 19.0 mm | 1-1/16-12 | 80-128 | 108-174 | 11.1-17.8 |
| **7/8 in** 22.2 mm | 1-3/16-12 | 100-160 | 136-216 | 13.8-22.1 |
| **1.0 in** 25.4 mm | 1-5/16-12 | 117-187 | 159-253 | 16.2-25.9 |
| **1-1/4 in** 31.8 mm | 1-5/8-12 | 165-264 | 224-357 | 22.8-36.5 |
| **1-1/2 in** 38.1 mm | 1-7/8-12 | 250-400 | 339-542 | 34.6-55.3 |

| Split Flange Mounting Bolts | | | |
|---|---|---|---|
| Size | Pound-Feet | Newton metres | Kilogram metres |
| 5/16-18 | 15-20 | 20-27 | 2.1-2.8 |
| 3/8-16 | 20-25 | 26-33 | 2.8-3.5 |
| 7/16-14 | 35-45 | 47-61 | 4.7-6.2 |
| 1/2-13 | 55-65 | 74-88 | 7.6-9.0 |
| 5/8-11 | 140-150 | 190-203 | 19.4-20.7 |

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# Section

# 1002

## FLUIDS AND LUBRICANTS

## 1845C Skid Steer

CASE CORPORATION
700 State Street
Racine, WI 53404 U.S.A.

CASE CANADA CORPORATION
450 Sherman Avenue
Hamilton, ON L8N 4C4 CANADA

Bur 8-17742


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# CAPACITIES AND LUBRICANTS

ENGINE OIL
- Capacity with filter change ..... 10.4 litres (11 U.S. quarts)
- Type of oil ..... See Engine Oil Recommendations on Page 3
- Oil Level Check Interval ..... Every 10 Hours of Operation or One Time Each Day
- Oil Change and Filter Replacement Interval ..... Every 250 Hours of Operation

ENGINE COOLING SYSTEM
- Capacity ..... 17 litres (18 U.S. quarts)
- Type of coolant ..... Ethylene glycol and water mixed for lowest ambient temperature at least 50/50 mix

FUEL TANK
- Capacity ..... 81.4 litres (21.5 U.S. gallons)

HYDRAULIC SYSTEM
- System capacity ..... 39.7 litres (10.5 U.S. gallons)
- Reservoir capacity with filter change ..... 32.2 litres (8.5 U.S. gallons)
- Reservoir capacity without filter change ..... 31.2 litres (8.25 U.S. gallons)
- Type of oil (Specifications) ..... Case No. 1 engine oil SAE 10W30 (API Service CE, CD, CC/SG) mixed with Case HTO additive

**NOTE:** *Machines prior to PIN JAF0067438 do not need the Case HTO additive. All machines PIN JAF0067438 and after must have the Case HTO additive mixed as instructed.*

WHEN CHANGING OIL: When you change the hydraulic oil, you must add 1.4 litres (1.5 U.S. quarts) of Case HTO additive (Case part number B17508).

WHEN ADDING OIL: When you add oil to the hydraulic reservoir between oil changes, you must use a mixture of Case HTO additive and SAE 10W-30 engine oil. Completely mix one U.S. quart of Case HTO additive to 19 litres (5 U.S. gallons) of 10W-30 engine oil (20 to 1 ratio).

DRIVE CHAIN COMPARTMENTS
- Capacity (each) ..... 4.7 litres (5 U.S. quarts)
- Type of oil (Specifications) ..... Case No. 1 engine oil - SAE 10W30

PLANETARIES (Only Before PIN JAF0067438)
- Capacity (each side) ..... 0.5 litres (1 U.S. pint)
- Type of oil (Specifications) ..... Case No. 1 engine oil - SAE 10W30

GREASE FITTINGS
- Quantity ..... As required
- Specifications ..... Case molydisulfide grease

BATTERY
- Quantity ..... As required
- Specifications ..... Drinking or distilled water

# ENGINE LUBRICATION
## Engine Oil Selection

Case No. 1 Engine Oil is recommended for use in your Case Uni-Loader Engine. Case Engine Oil will lubricate your engine correctly under all operating conditions.


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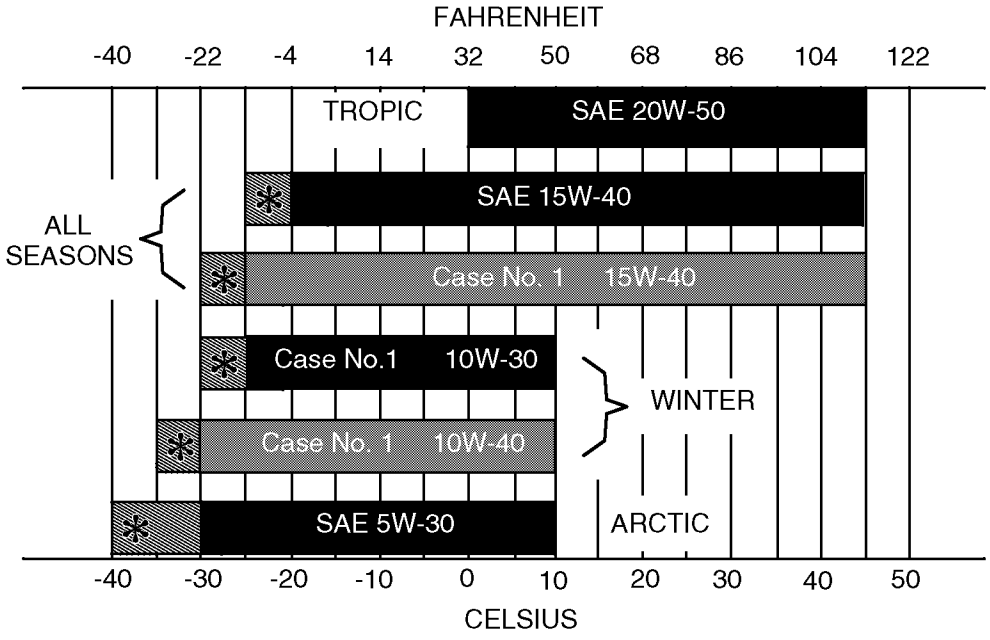
If Case No. 1 Multi-Viscosity or Single Viscosity Engine Oil is not available, use only oil meeting API engine oil service category CE.

tr98h001

See the chart below for recommended viscosity at ambient air temperature ranges.

**NOTE:** *Do not put Performance Additives or other oil additive products in the engine crankcase. The oil change intervals given in this manual are according to tests with Case Lubricants.*

## Oil Viscosity / Temperature Usage Recommendation




* Use of an engine oil heater, or an engine coolant heater, is required in crosshatched area.

ts98h006

# MAINTENANCE SCHEDULE

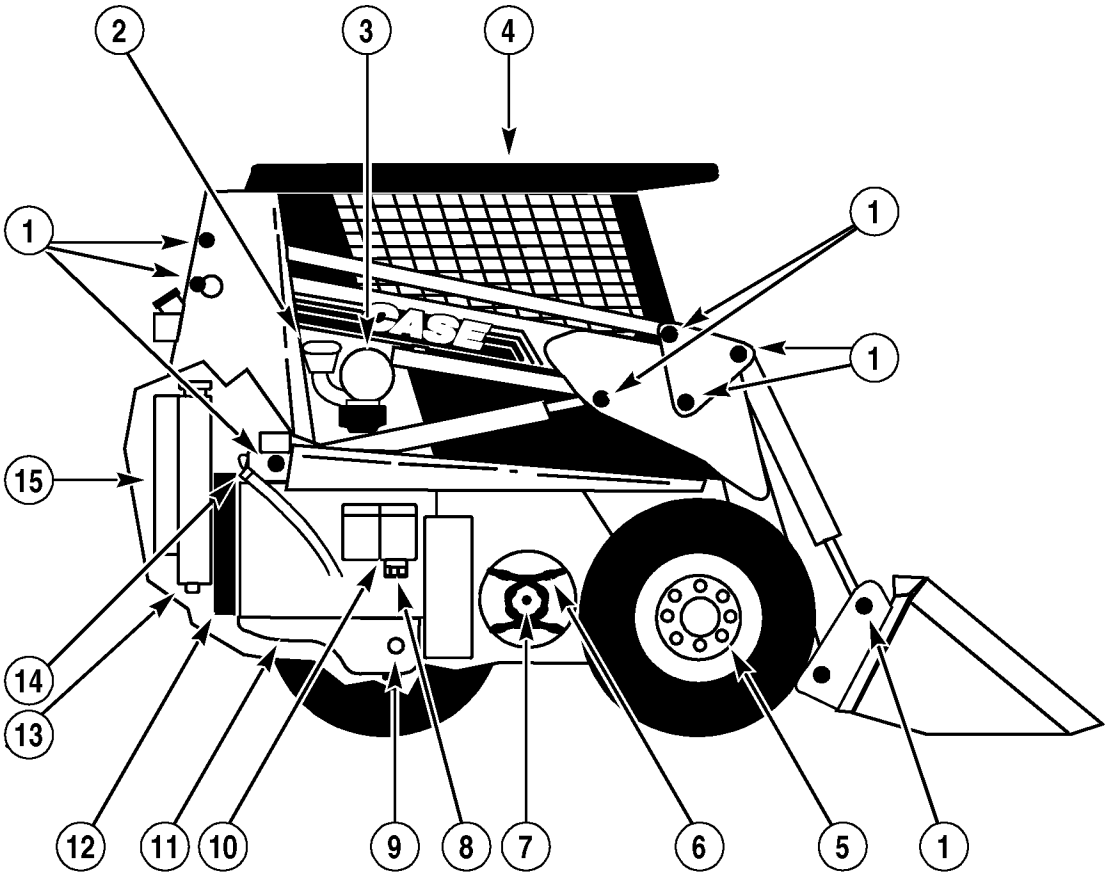
| | SERVICE ITEM | AS REQUIRED | EVERY 10 HOURS OF OPERATION OR DAILY | EVERY 50 HOURS OF OPERATION | EVERY 100 HOURS OF OPERATION | EVERY 250 HOURS OF OPERATION | EVERY 500 HOURS OF OPERATION | EVERY 1000 HOURS OF OPERATION | EVERY 2000 HOURS OF OPERATION |
|---|---|---|---|---|---|---|---|---|---|
| **1.** | Lubricate the Loader Pivot Points (16 Grease Fittings) Case Molydisulfide Grease. | | ● | | | | | | |
| **2.** | Check the Precleaner for the Air Cleaner - if Equipped. See Operators Manual. | | ● | | | | | | |
| **3.** | Service the Air Cleaner if the Air Cleaner Warning Lamps On. See Operators Manual. | ● | | | | | | | |
| **3.** | Clean and Check the Air Cleaner Dust Valve. See Operators Manual. | | | ● | | | | | |
| **3.** | Replace the Air Cleaner Elements. Use Case Filter. | | | | | | | | ● |
| **4.** | Inspect the Rops. See Operators Manual. | | | | | | ● | | |
| **5.** | Check the Wheel Nut Torque, 115 to 125 lb ft (156 To 170 Nm). See Section 6008 | ● | | | | | | | |
| **6.** | Check the Drive Chain Tension (Each Side). See Section 9001. | | | | | ● | | | |
| **7.** | Lubricate the Cluster Sprocket Bearings (2 Grease Fittings) Case Molydisulfide Grease. | | | | | ● | | | |
| **8.** | Drain Water from the Fuel Filter. See Operators Manual. | | | ● | | | | | |
| **9.** | Change Engine Oil and Replace the Engine Oil Filter. Case No. 1 Engine Oil, Use Case Filters. | | | | | ● | | | |
| **10.** | Replace the Fuel Filter(s). See Operators Manual. | | | | | | ● | | |
| **11.** | Clean Dirt and Debris from the Engine Area. | ● | | | | | | | |
| **12.** | Check the Fan Belt for Wear Replace if Damaged. | ● | | | | | | | |
| **13.** | Drain, Flush and Refill the Engine Cooling System (See Note 3). Ethylene Glycol and Water. | | | | | | | | ● |
| **14.** | Check Engine Oil Level Case No. 1 Engine Oil. | | ● | | | | | | |
| **15.** | Check and Clean the Hydraulic Oil Cooler. See Operators Manual. | | ● | | | | | | |

**NOTE 1:** *When adding oil to the hydraulic reservoir between oil changes, use a mixture of Case HTO additive and SAE 10W30 engine oil. Completely mix one U.S. quart of Case HTO additive to 19 litres (5 U.S. gallons) of SAE 10W30 oil (20 to 1 ratio).*

**NOTE 2:** *When changing the hydraulic oil in the reservoir, add 1.7 litres (1.6 U.S. gallons) of Case HTO additive (Case Part No. B17508).*

**NOTE 3:** *Use Ethylene Glycol and water that is mixed 50/50. When adding to the engine, use this mixture.*

# MAINTENANCE LOCATIONS

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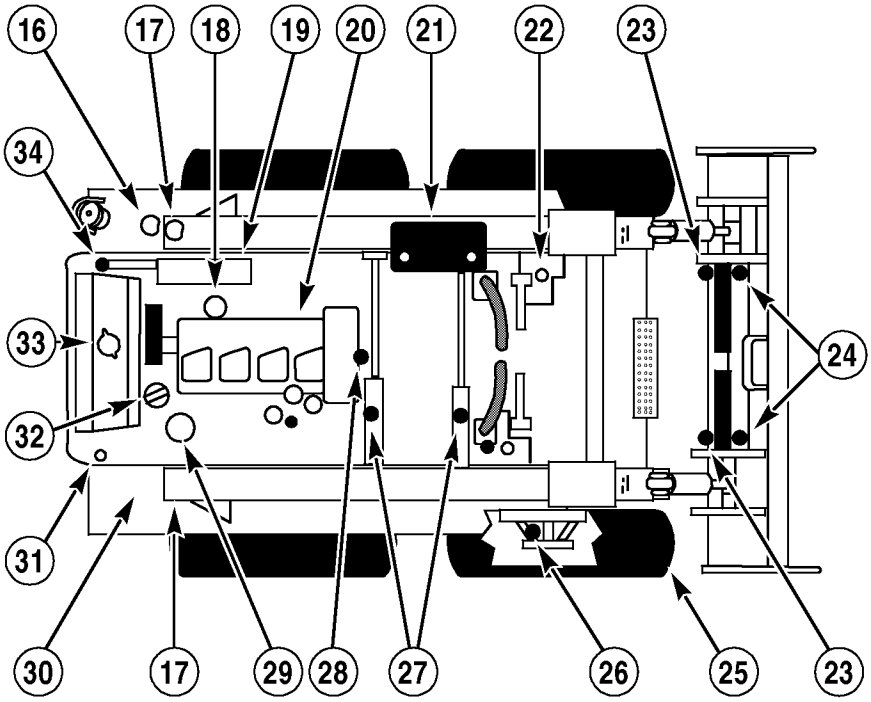
IF YOU OPERATE THE MACHINE IN SEVERE CONDITIONS, LUBRICATE AND SERVICE THE MACHINE MORE FREQUENTLY. IT IS RECOMMENDED THAT YOU SEE YOUR **CASE** DEALER FOR INFORMATION ON THE SYSTEMGARD LUBRICATION SYSTEM.

SEE YOUR OPERATORS MANUAL FOR MAINTENANCE OF SAFETY RELATED ITEMS AND FOR DETAILED INFORMATION OF THE SERVICE ITEMS ON THIS CHART. OPERATORS AND SERVICE MANUALS ARE AVAILABLE FOR THIS MACHINE FROM YOUR **CASE** DEALER.

# MAINTENANCE SCHEDULE

| | SERVICE ITEM | AS REQUIRED | EVERY 10 HOURS OF OPERATION OR DAILY | EVERY 50 HOURS OF OPERATION | EVERY 100 HOURS OF OPERATION | EVERY 250 HOURS OF OPERATION | EVERY 500 HOURS OF OPERATION | EVERY 1000 HOURS OF OPERATION | EVERY 2000 HOURS OF OPERATION |
|---|---|---|---|---|---|---|---|---|---|
| **16.** | Drain Water from the Fuel Tank. See Operators Manual. | | | | | | | ● | |
| **17.** | Change the Chain Compartment Oil (Each Side) Case No. 1 Engine Oil (SAE 10W30). | | | | | | ● | | |
| **18.** | Change Engine Oil and Replace the Engine Oil Filter. Case No. 1. Engine Oil, Use Case Filters. | | | | | ● | | | |
| **19.** | Clean the Spark Arrester Muffler. See Operators Manual. | | | | ● | | | | |
| **20.** | Check the Engine Valve Clearance. See Service Manual. | | | | | | | ● | |
| **21.** | Clean the Battery and Check the Battery Fluid Level. Add Drinking or Distilled Water. | | | | | ● | | | |
| **22.** | Change the Planetary Oil (Each Side) Only Before PIN JAF0067438. Case 135H EP Gear Lube. | | | | | | | ● | |
| **23.** | Lubricate the Coupler Wedges (2 Grease Fittings) if Equipped. Case Molydisulfide Grease. | | ● | | | | | | |
| **24.** | Lubricate the Case Coupler Latch Pivots (2 Grease Fittings. Case Molydisulfide Grease. | | | | | ● | | | |
| **25.** | Check the Tire Air Pressure and Tire Condition. See Section 6008. | | | ● | | | | | |
| **26.** | Lubricate Each Axle Bearing (4 Grease Fittings). Case Molydisulfide Grease. | | | | | ● | | | |
| **27.** | Lubricate the Loader Cross Shaft Pivot (2 Grease Fittings). Case Molydisulfide Grease. | | | | | ● | | | |
| **28.** | Lubricate the Drive Shaft Universals (2 Fittings). Case Molydisulfide Grease. | | | | | | ● | | |
| **29.** | Replace the Hydraulic Oil Filter. Use Case Filters. | | | | | | ● | | |
| **29.** | Replace the Hydraulic Filter if the Hydraulic Filter Warning Lamp Is On. Use Case Filters. | ● | | | | | | | |
| **30.** | Change the Hydraulic Oil (See Note 2). Case No.1 Engine Oil. | | | | | | | ● | |
| **31.** | Check the Hydraulic Reservoir Oil Level. (See Note 1). Case No. 1 Engine Oil. | | ● | | | | | | |
| **32.** | Check Engine Oil Level. Case No. 1 Engine Oil. | | ● | | | | | | |
| **33.** | Check the Radiator Coolant Level (See Note 3). Ethylene Glycol and Water. | | | | | ● | | | |
| **34.** | Check the Engine Coolant Reservoir Fluid Level (See Note 3). Ethylene Glycol And Water. | | ● | | | | | | |

# MAINTENANCE LOCATIONS




ts98h005

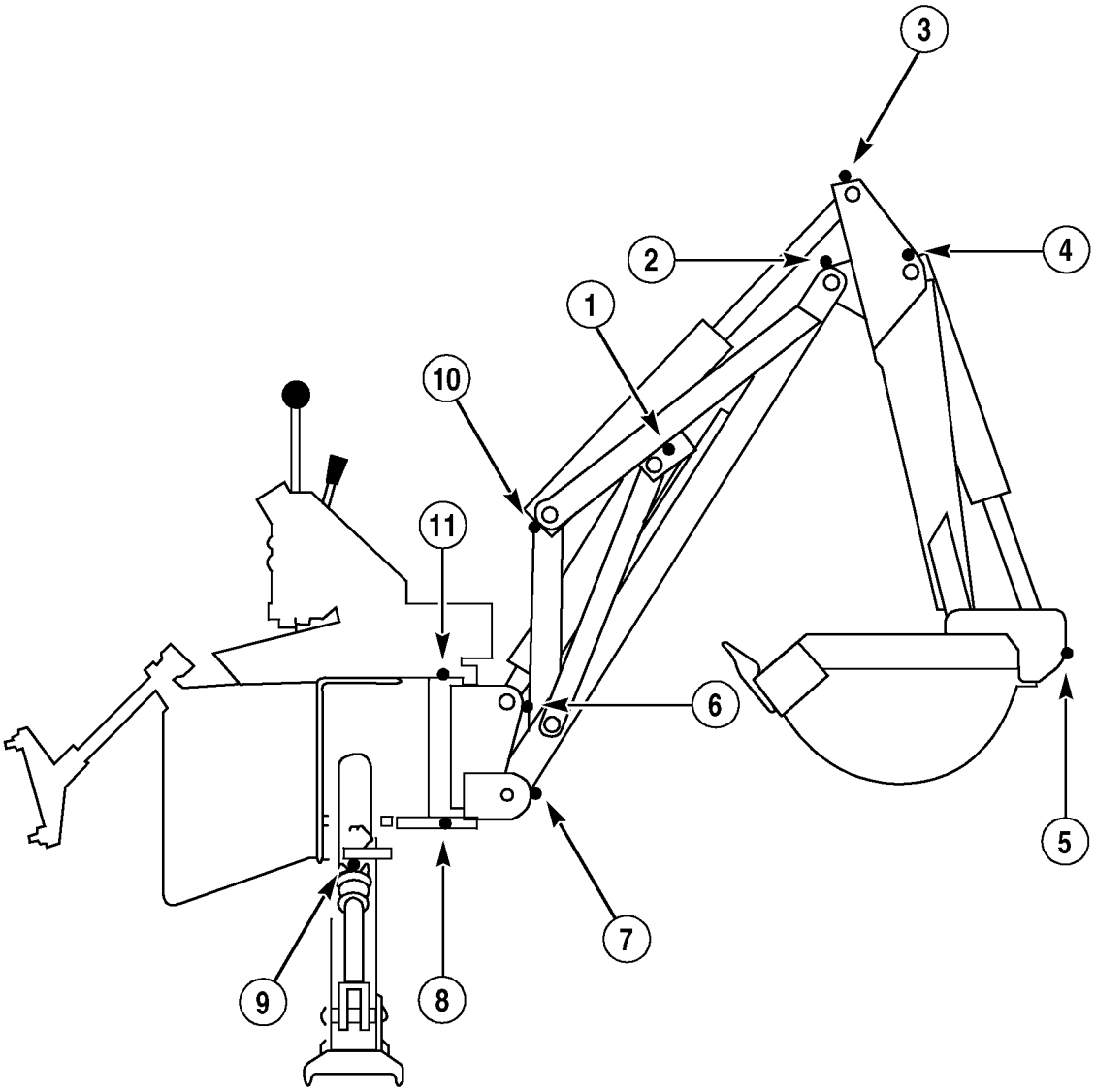
IF YOU OPERATE THE MACHINE IN SEVERE CONDITIONS, LUBRICATE AND SERVICE THE MACHINE MORE FREQUENTLY. IT IS RECOMMENDED THAT YOU SEE YOUR **CASE** DEALER FOR INFORMATION ON THE SYSTEMGARD LUBRICATION SYSTEM.

SEE YOUR OPERATORS MANUAL FOR MAINTENANCE OF SAFETY RELATED ITEMS AND FOR DETAILED INFORMATION OF THE SERVICE ITEMS ON THIS CHART. OPERATORS AND SERVICE MANUALS ARE AVAILABLE FOR THIS MACHINE FROM YOUR **CASE** DEALER.

# D100 - D100XR BACKHOE PIVOTS (IF EQUIPPED)
## Use Case Molydisulfide Grease

| | SERVICE ITEM | AS REQUIRED | EVERY 10 HOURS OF OPERATION OR DAILY | EVERY 50 HOURS OF OPERATION | EVERY 100 HOURS OF OPERATION | EVERY 250 HOURS OF OPERATION | EVERY 500 HOURS OF OPERATION | EVERY 1000 HOURS OF OPERATION | EVERY 2000 HOURS OF OPERATION |
|---|---|---|---|---|---|---|---|---|---|
| | Lubricate the Backhoe Pivot Points (8 Fittings D100 Backhoe and 12 Fittings D100XR Backhoe). Case Molydisulfide Grease. | | ● | | | | | | |
| | Lubricate the Manure Fork Grapple (2 Grease Fittings) if Equipped. Not Shown. Case Molydisulfide Grease. | | ● | | | | | | |
| | Check the Control Linkages and Test Seat Bar Operation. See Section 9001. | | ● | | | | | | |
| 1. | Upper Swing Pivot - 1 Fitting | | ● | | | | | | |
| 2. | Dipper Cylinder, Closed End - 1 Fitting | | ● | | | | | | |
| 3. | Boom Cylinder, Closed End - 1 Fitting | | ● | | | | | | |
| 4. | Dipper Pivot - 1 Fitting | | ● | | | | | | |
| 5. | Dipper Cylinder, Rod End - 1 Fitting | | ● | | | | | | |
| 6. | Bucket Cylinder, Closed End - 1 Fitting | | ● | | | | | | |
| 7. | Bucket Cylinder, Rod End - 1 Fitting | | ● | | | | | | |
| 8. | Boom Cylinder, Rod End - 1 Fitting | | ● | | | | | | |
| 9. | Boom Pivot | | ● | | | | | | |
| 10. | Lower Swing Pivot - 1 Fitting | | ● | | | | | | |
| 11. | Stabilizer Pivot - 2 Fittings (One Each Side) | | ● | | | | | | |

# D100 - D100XR BACKHOE PIVOTS (IF EQUIPPED)
## Use Case Molydisulfide Grease




ts98h008

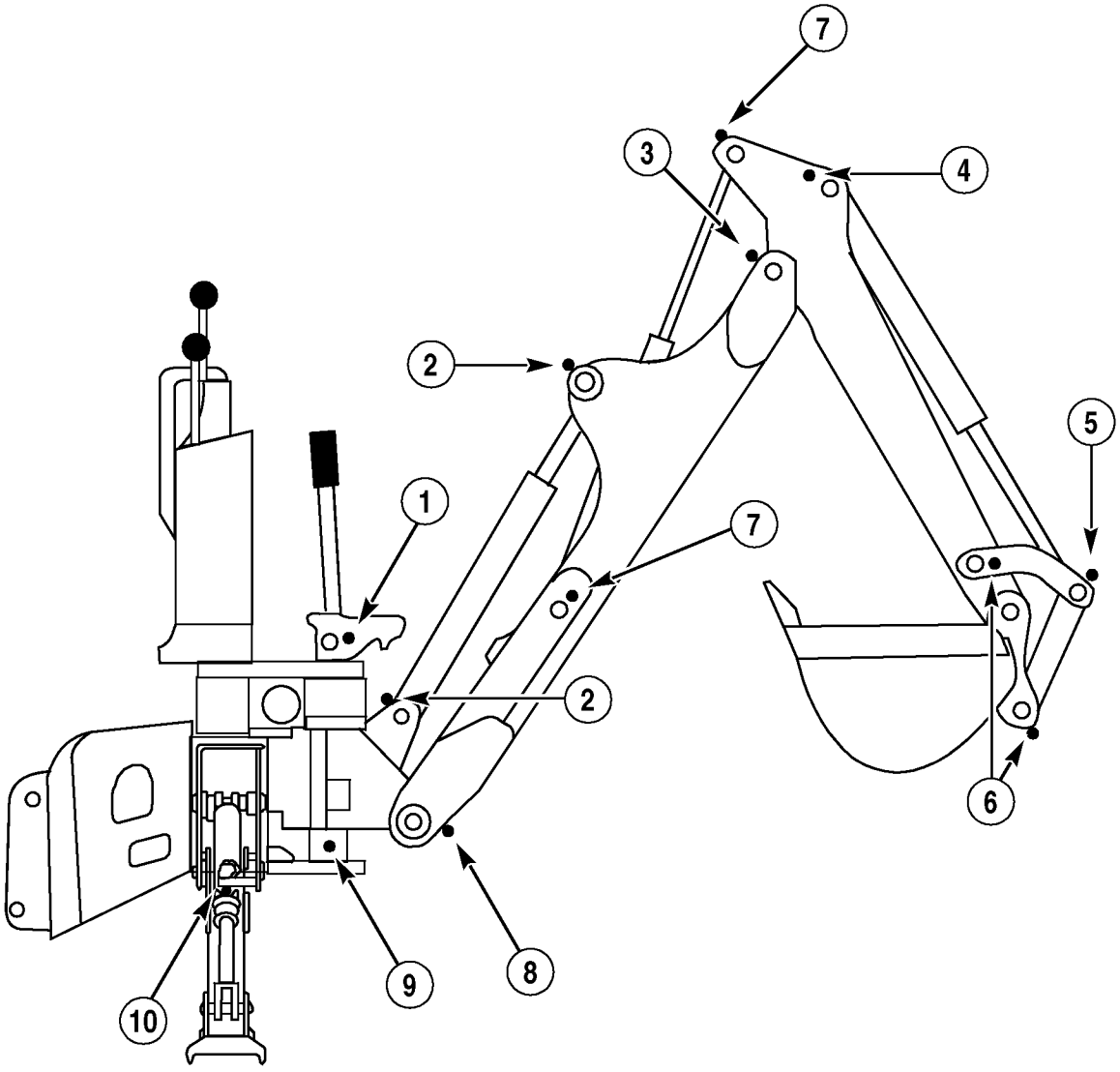
IF YOU OPERATE THE MACHINE IN SEVERE CONDITIONS, LUBRICATE AND SERVICE THE MACHINE MORE FREQUENTLY. IT IS RECOMMENDED THAT YOU SEE YOUR **CASE** DEALER FOR INFORMATION ON THE SYSTEMGARD LUBRICATION SYSTEM.

SEE YOUR OPERATORS MANUAL FOR MAINTENANCE OF SAFETY RELATED ITEMS AND FOR DETAILED INFORMATION OF THE SERVICE ITEMS ON THIS CHART. OPERATORS AND SERVICE MANUALS ARE AVAILABLE FOR THIS MACHINE FROM YOUR **CASE** DEALER.

# D125 BACKHOE PIVOTS (IF EQUIPPED)
## Use Case Molydisulfide Grease

| | SERVICE ITEM | AS REQUIRED | EVERY 10 HOURS OF OPERATION OR DAILY | EVERY 50 HOURS OF OPERATION | EVERY 100 HOURS OF OPERATION | EVERY 250 HOURS OF OPERATION | EVERY 500 HOURS OF OPERATION | EVERY 1000 HOURS OF OPERATION | EVERY 2000 HOURS OF OPERATION |
|---|---|---|---|---|---|---|---|---|---|
| | Lubricate the Backhoe Pivot Points (22 Fittings D125 Backhoe). Case Molydisulfide Grease. | | ● | | | | | | |
| | Lubricate the Manure Fork Grapple (2 Grease Fittings) if Equipped. Not Shown. Case Molydisulfide Grease. | | ● | | | | | | |
| | Check the Control Linkages and Test Seat Bar Operation. See Section 9001. | | ● | | | | | | |
| 1. | Upper Swing Pivot - 1 Fitting | | ● | | | | | | |
| 2. | Boom Cylinder - 2 Fittings | | ● | | | | | | |
| 3. | Dipper Pivot - 1 Fitting | | ● | | | | | | |
| 4. | Bucket Cylinder, Closed End - 1 Fitting | | ● | | | | | | |
| 5. | Bucket Cylinder, Rod End - 1 Fitting | | ● | | | | | | |
| 6. | Bucket Pivot and Linkage - 2 Fittings | | ● | | | | | | |
| 7. | Dipper Cylinder - 2 Fittings | | ● | | | | | | |
| 8. | Boom Pivot | | ● | | | | | | |
| 9. | Lower Swing Pivot - 1 Fitting | | ● | | | | | | |
| 10. | Stabilizer Pivot - 2 Fittings (One Each Side) | | ● | | | | | | |

# D125 BACKHOE PIVOTS (IF EQUIPPED)
## Use Case Molydisulfide Grease




ts98h009

IF YOU OPERATE THE MACHINE IN SEVERE CONDITIONS, LUBRICATE AND SERVICE THE MACHINE MORE FREQUENTLY. IT IS RECOMMENDED THAT YOU SEE YOUR **CASE** DEALER FOR INFORMATION ON THE SYSTEMGARD LUBRICATION SYSTEM.

SEE YOUR OPERATORS MANUAL FOR MAINTENANCE OF SAFETY RELATED ITEMS AND FOR DETAILED INFORMATION OF THE SERVICE ITEMS ON THIS CHART. OPERATORS AND SERVICE MANUALS ARE AVAILABLE FOR THIS MACHINE FROM YOUR **CASE** DEALER.

# 2000

# ENGINE AND RADIATOR REMOVAL AND INSTALLATION

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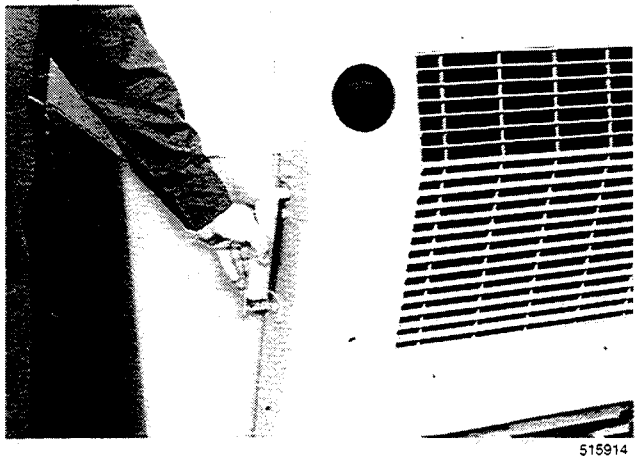
CASE CORPORATION

8-42910

Printed in U.S.A.
Issued March 1986

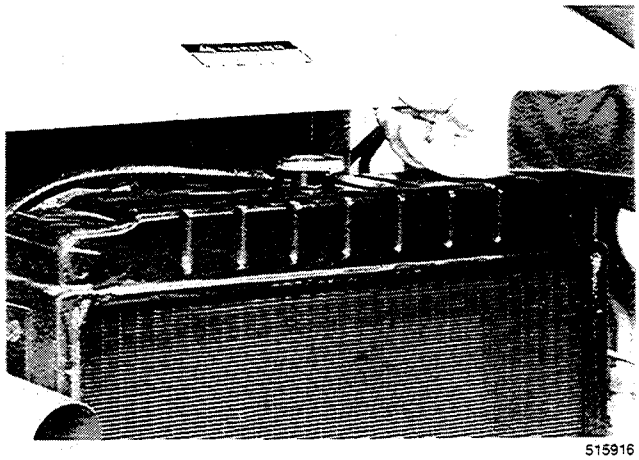
# ENGINE REMOVAL

1. Open the rear door.



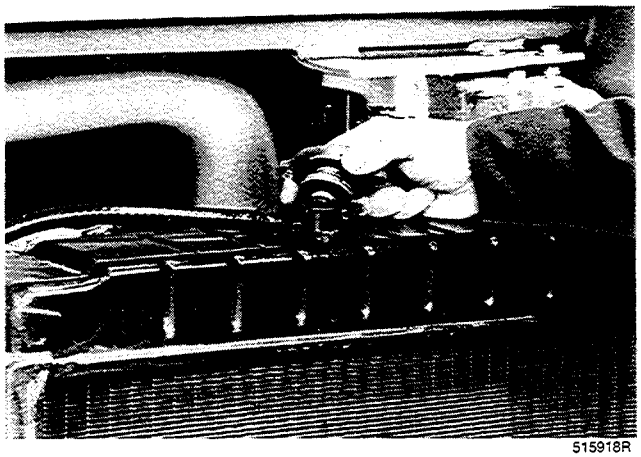
515914

2. Raise the rear cover.



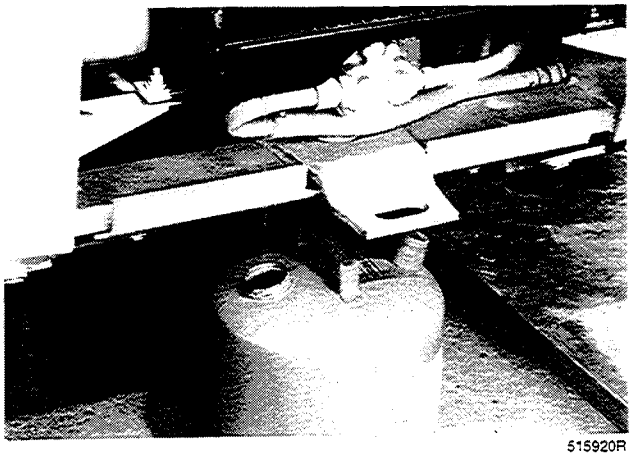
515916

3. Loosen and remove the radiator cap.



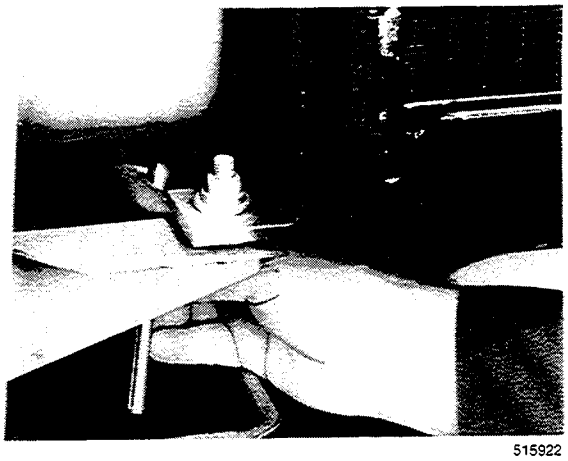
515918R

4. Open the drain valve at the LH bottom side of the radiator and drain the cooling system. The cooling system contains approximately 18.2 quarts (17.2 litres) of coolant.



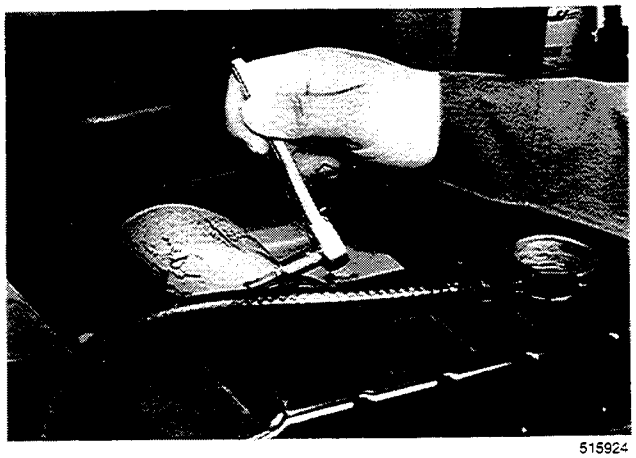
515920R

5. Drain the coolant reservoir. Loosen the clamp for the hose on the coolant reservoir and disconnect the hose to drain the coolant reservoir.



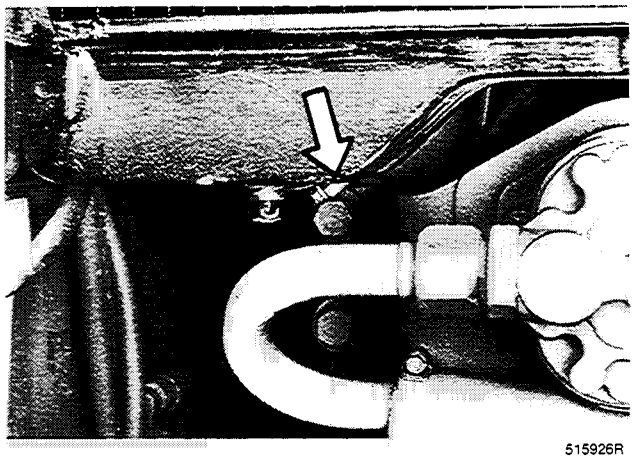
515922

6. Loosen the clamp on the top radiator hose and disconnect the hose.



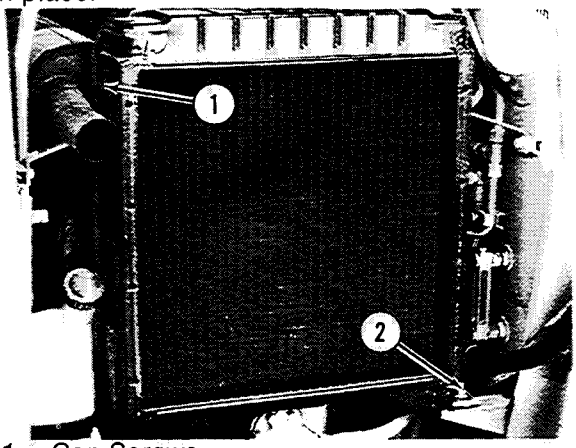
515924

7. Loosen the clamp on the bottom radiator hose.



515926R

8. Loosen and remove the cap screws, bolts, lock washers, flat washers, and nuts that hold the radiator in place.




515928R

1. *Cap Screws*
2. *Bolts*

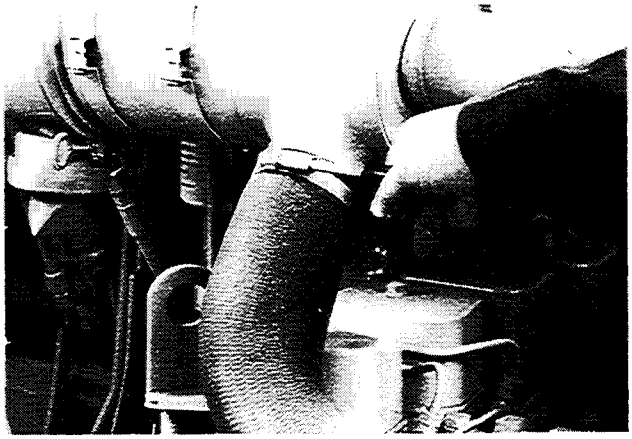
9. Pull the radiator to the rear to disconnect the bottom radiator hose, and remove the radiator from the machine.

515930R

10. Move the operators compartment forward according to the instructions in Section 9003.

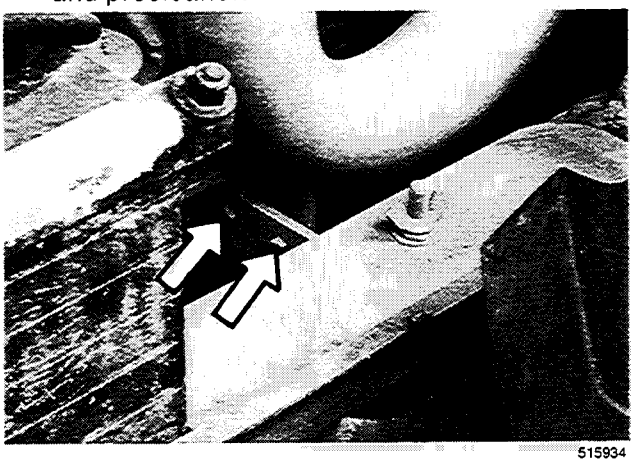
11. If equipped with a precleaner:

a. Loosen the clamp and disconnect the hose for the precleaner.



515932

b. Loosen and remove the nuts, lock washers, and bolts that hold the tube for the precleaner to the frame. Remove the hose, tube, and precleaner.



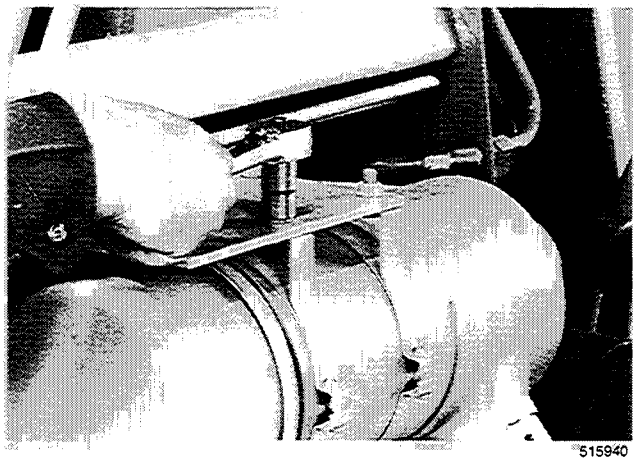
515934

12. Loosen the clamp on the hose at the intake manifold. Remove the hose.

515938

13. Cover or close the opening in the intake manifold.

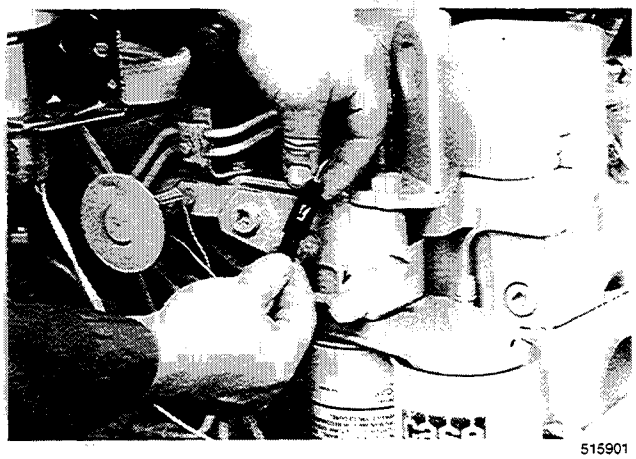
14. Loosen and remove the nuts and bolts that fasten the air cleaner to the bracket. Remove the air cleaner.


515940

15. If equipped with ether injection:

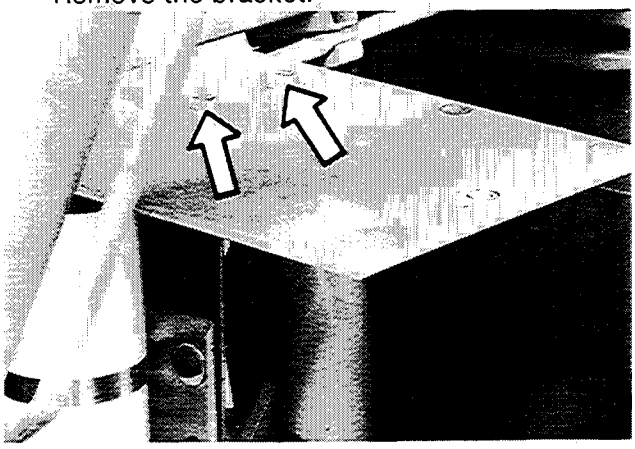
a. Disconnect the tube from the intake manifold.

b. Disconnect the wire for the thermostat.

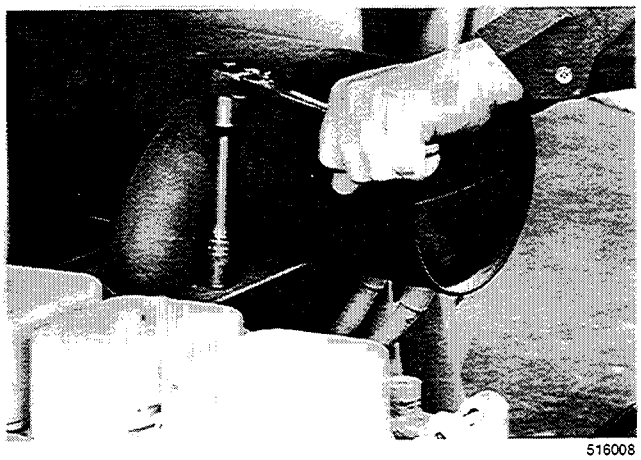

515901

c. Disconnect the wire to the valve assembly.

d. Loosen and remove nuts, lock washers, bolts, and flat washers that fasten the bracket. Remove the bracket.


515903

16. Loosen and remove the cap screws and lock washers that hold the muffler to the exhaust manifold. Remove the muffler.


516008

17. Cover or close the opening in the exhaust manifold.

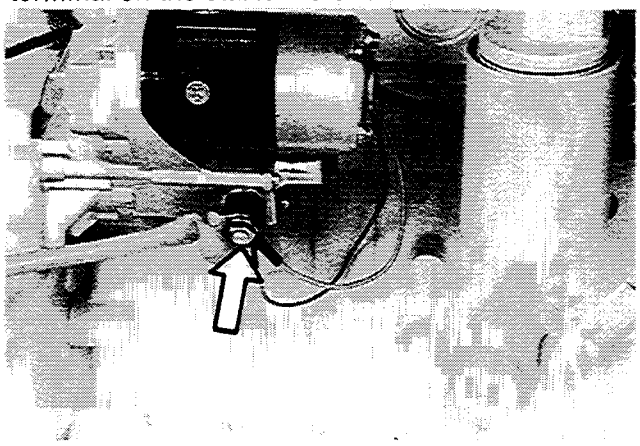
18. Disconnect the ground cable from the battery.

516010

19. Loosen and remove the cap screw and lock washers that fasten the wiring harness, and ground cable to the cover on the flywheel housing. Remove the ground cable.

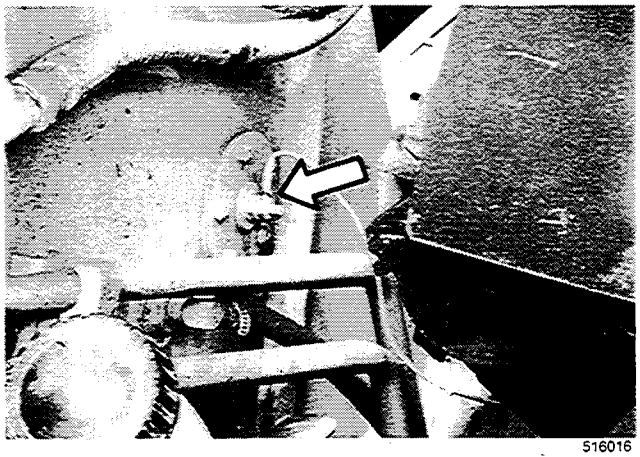
856634

20. Disconnect the positive cable from the battery terminal on the starter solenoid.



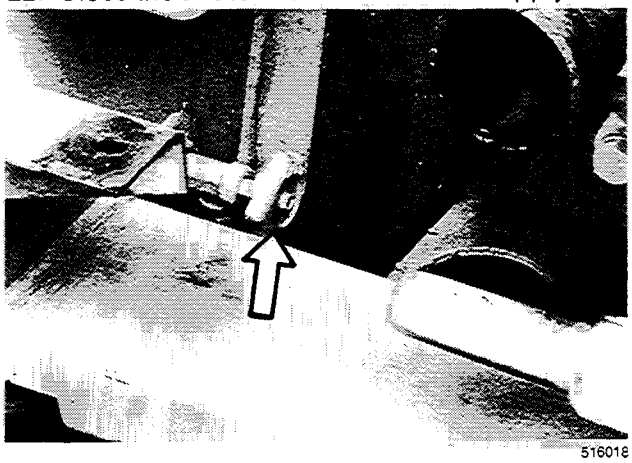
856631

21. Disconnect the wire from the fuel level sender.



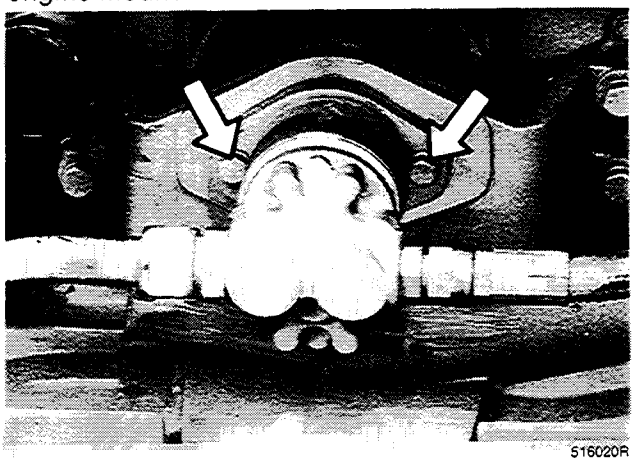
516016

22. Close the shutoff valve for the fuel supply line.



516018

23. Loosen and remove the cap screws and lock washers that hold the equipment pump to the rear engine mount.



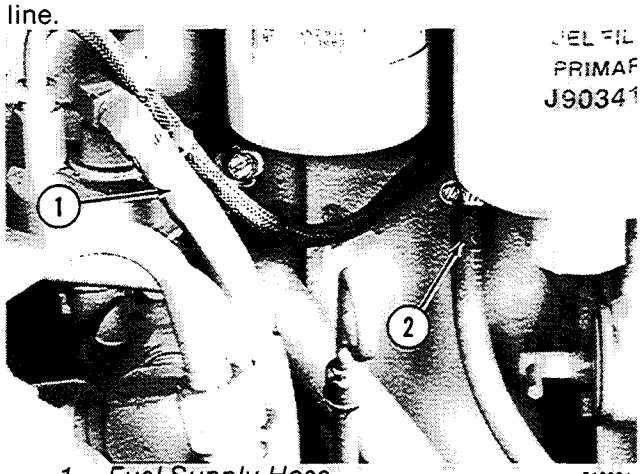
516020R

24. Pull the equipment pump away from the rear engine mount to disengage the drive shaft of the equipment pump from the coupling on the crankshaft pulley.

25. Disconnect the wire from the hydraulic oil filter.

516022R

26. Loosen the clamp and disconnect the fuel supply hose from the hand primer pump. Loosen the clamp and disconnect the hose from the fuel return line.

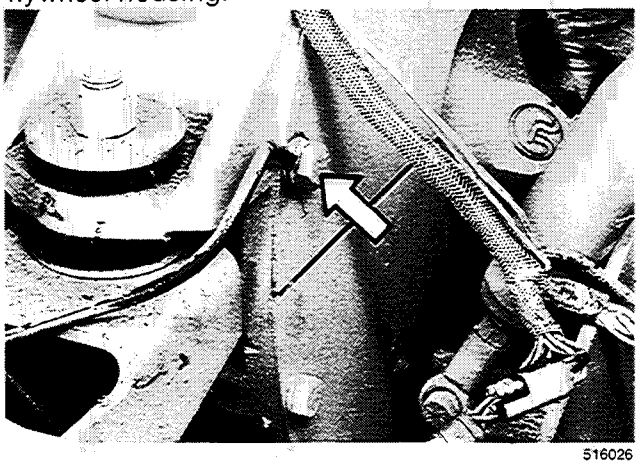



516024

1. *Fuel Supply Hose*
2. *Fuel Return Hose*

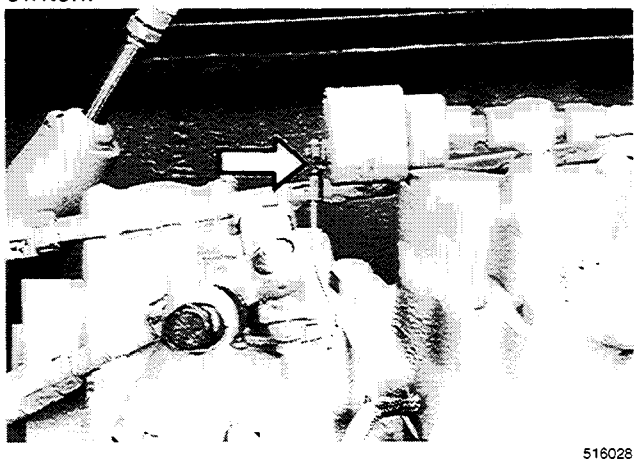
27. Install plugs in the hoses.

28. Loosen and remove the cap screw, lock washer, and flat washer that fasten the ground wire from the bracket for the loader valve to the cover on the flywheel housing.



516026

29. Disconnect the wire from the charge pressure switch.



516028

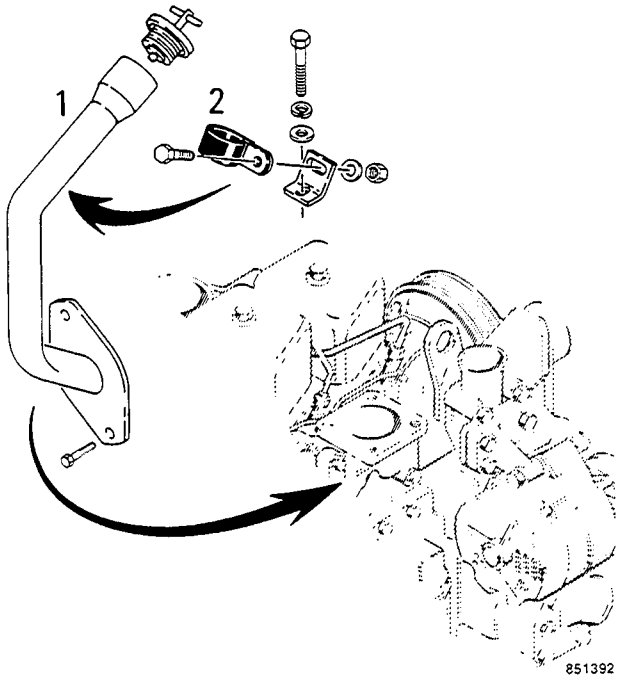
30. Disconnect the wire from the oil temperature switch.

516030

31. Loosen and remove the self-locking nuts, flat washers, and bolts that hold the front engine mounts to the frame.

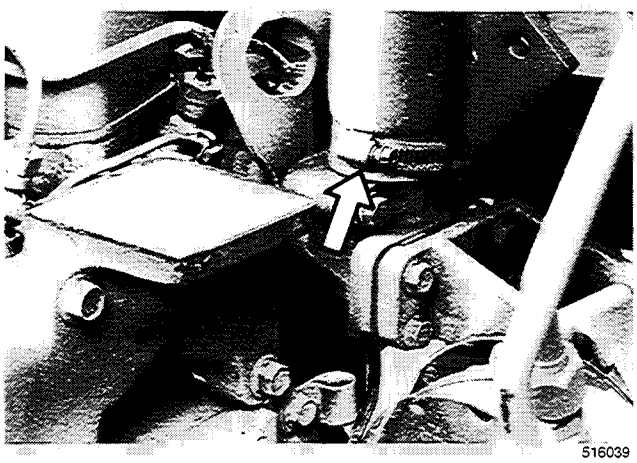
516223

32. Loosen and remove the cap screws, self-locking nut, flat washer, and bolt that fasten the oil fill tube and the clamp for the oil fill tube to the engine. Remove the oil fill tube.

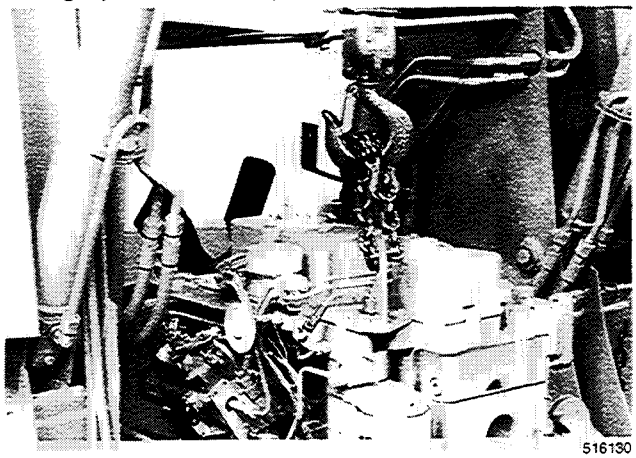



*1. Oil Fill Tube* *2. Clamp*

33. Loosen the clamp for the top radiator hose. Remove the hose.

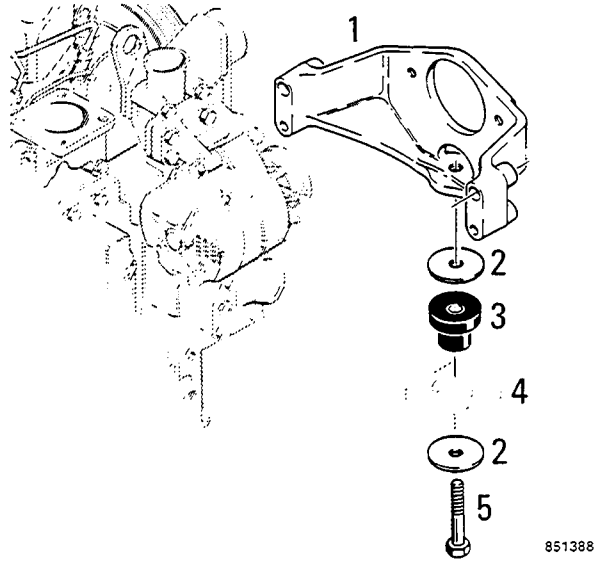



34. Connect acceptable lifting equipment to the lifting eyes on the engine.




35. Remove the access cover from the guard below the rear engine mount.

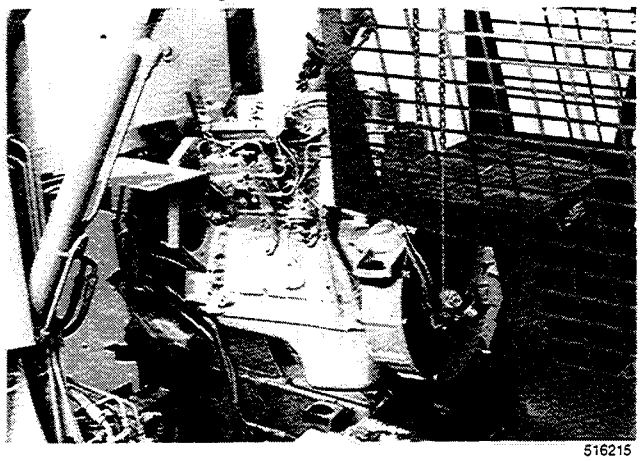
36. Loosen and remove the cap screw and flat washer that hold the rear engine mount to the frame.



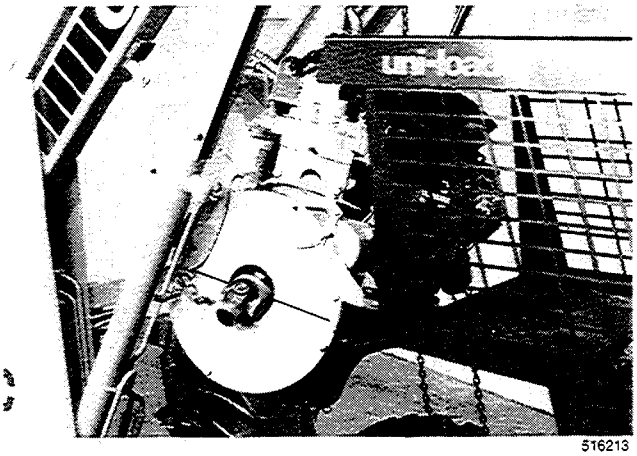

*1. Rear Engine Mount*
*2. Flat Washer*
*3. Insulator*
*4. Frame*
*5. Cap Screw*

37. Move the engine toward the rear to disengage the drive coupling on the flywheel from the drive shaft on the tandem pump.

38. Raise the engine.


516215

39. Turn the engine in the direction shown and carefully raise the engine.


516213

40. Turn the engine toward the rear of the machine.

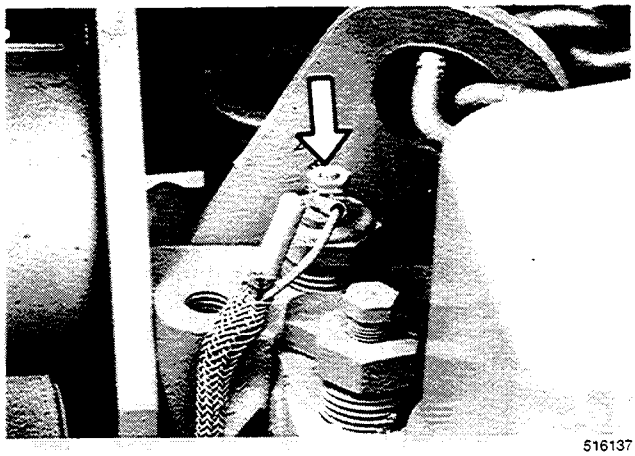

516106

41. Remove the engine from the machine.

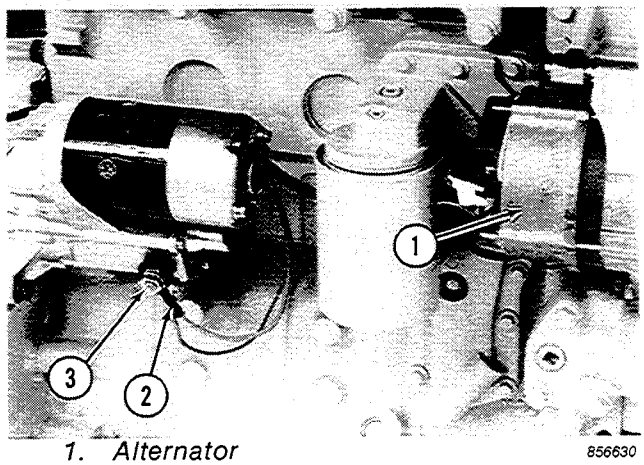

516104

42. If necessary, remove the wiring harness from the engine.

a. Disconnect the wire from the water temperature switch at the top rear of the engine.


516137

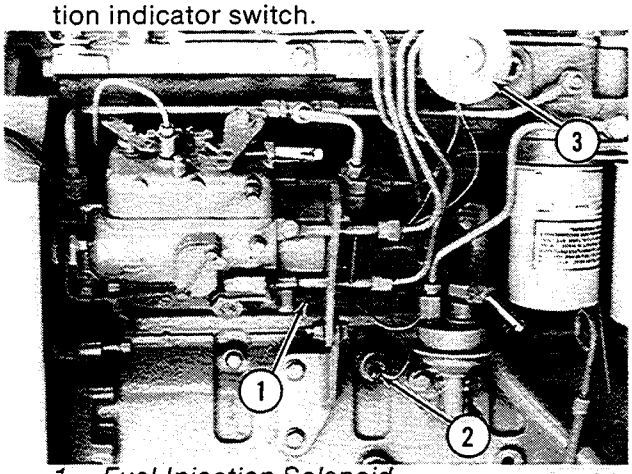
b. Disconnect the wires from the alternator. Disconnect the plug from the alternator. Disconnect the wire from the Switch terminal and disconnect the wire from the Battery terminal on the starter solenoid.



856630

1. *Alternator*
2. *Switch Terminal*
3. *Battery Terminal*

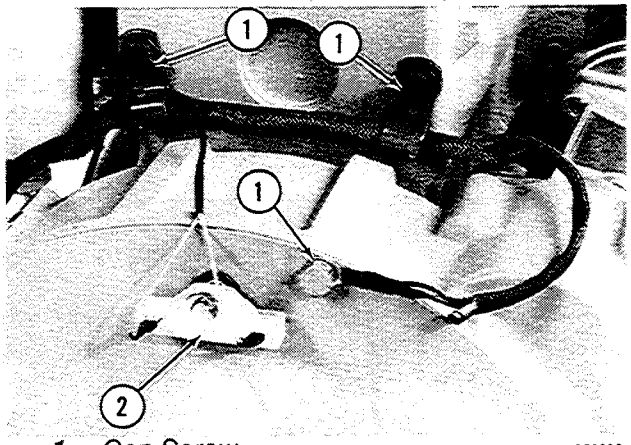
c. Disconnect the wire from the fuel injection solenoid on the fuel injection pump. Disconnect the wire from the engine oil pressure switch. Disconnect the wires from the restriction indicator switch.




516134

1. *Fuel Injection Solenoid*
2. *Engine Oil Pressure Switch*
3. *Restriction Indicator Switch*

d. Loosen and remove the cap screws that fasten the wiring harness to the rear of the engine and flywheel cover. Disconnect the wires from the resistor on the flywheel cover.



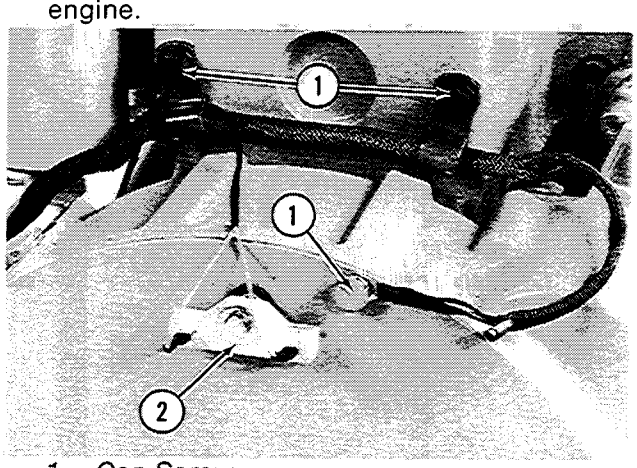

856632

1. *Cap Screw*
2. *Resistor*

# ENGINE INSTALLATION

1. If the wiring harness was removed from the engine, install the wiring harness.

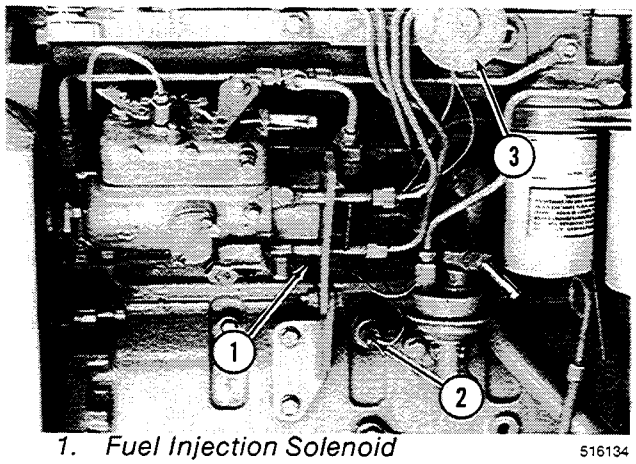
a. Install the cap screws that fasten the wiring harness to the front of the engine and flywheel cover. Connect the wires to the resistor. Tighten the two cap screws at the front of the engine.




*1. Cap Screw*
*2. Resistor*

856632

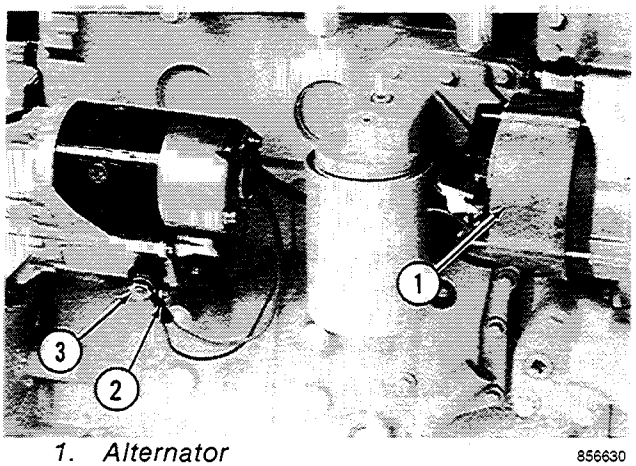
b. Connect the wire to the fuel injection solenoid on the fuel injection pump. Connect the wire to the engine oil pressure switch. Connect the wires to the restriction indicator switch.




*1. Fuel Injection Solenoid*
*2. Engine Oil Pressure Switch*
*3. Restriction Indicator Switch*

516134

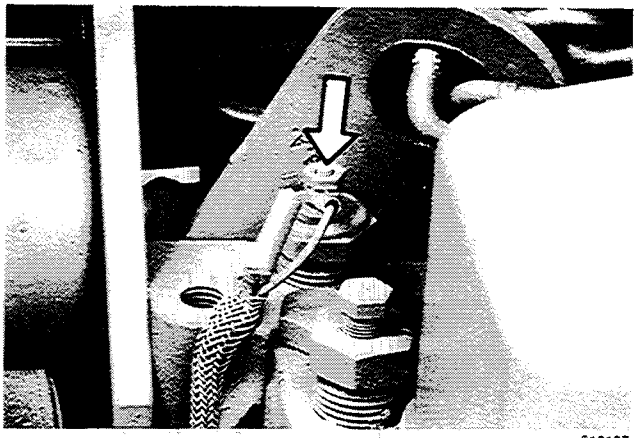
c. Connect the wires to the alternator. Connect the plug to the alternator. Connect the wire to the Switch terminal and connect the wire to the Battery terminal on the starter solenoid.




*1. Alternator*
*2. Switch Terminal*
*3. Battery Terminal*

856630

d. Connect the wire to the water temperature switch at the top rear of the engine.

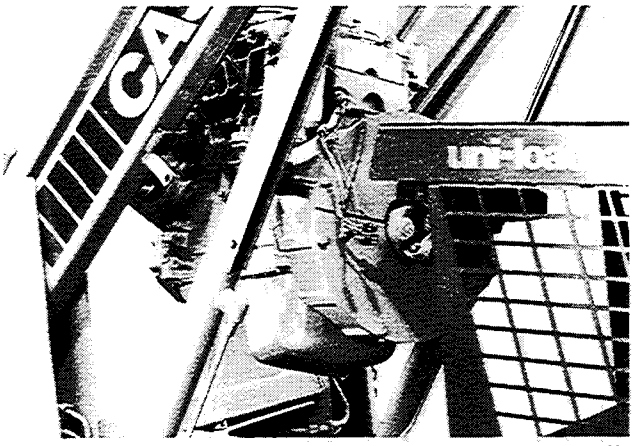


516137

2. Lift the engine over the machine.

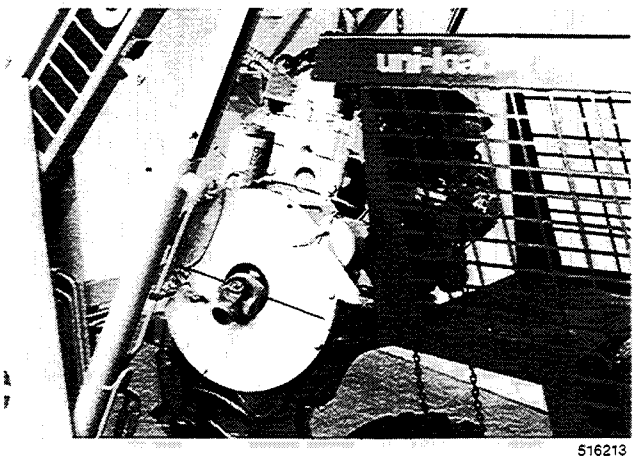

516104

3. Push the engine toward the front of the machine.



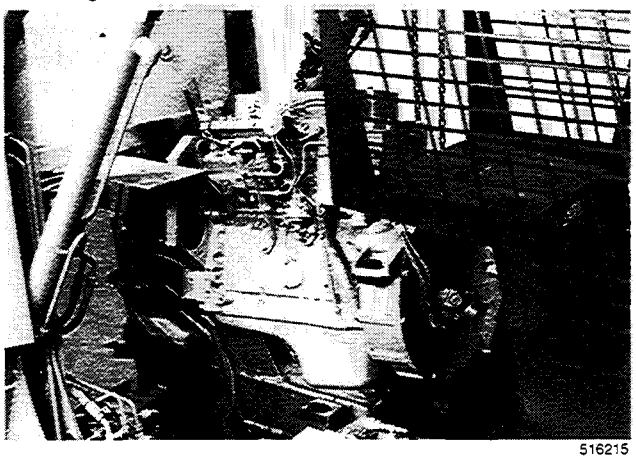
516106

4. Lower the engine and turn the engine in the direction shown.



516213

5. Lower the engine into the machine, and move the engine toward the rear.

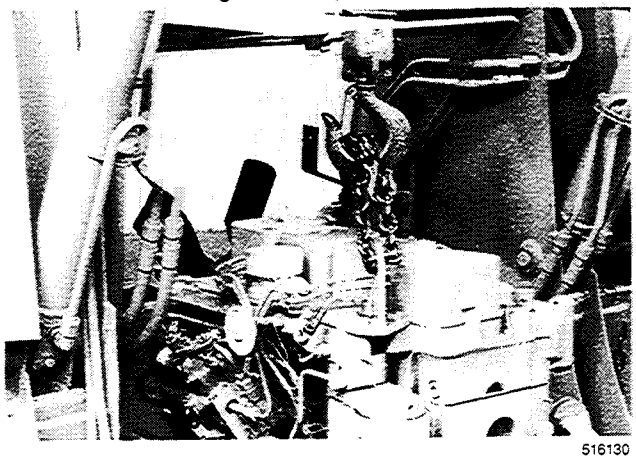


516215

6. Engage the drive coupling on the flywheel with the drive shaft on the tandem pump and push the engine forward.

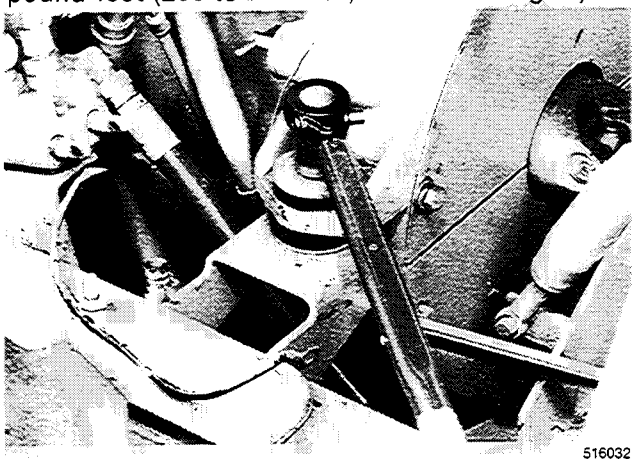
7. Make sure the flat washers are installed between the frame and the front and rear engine mounts.

8. Lower the engine into place.



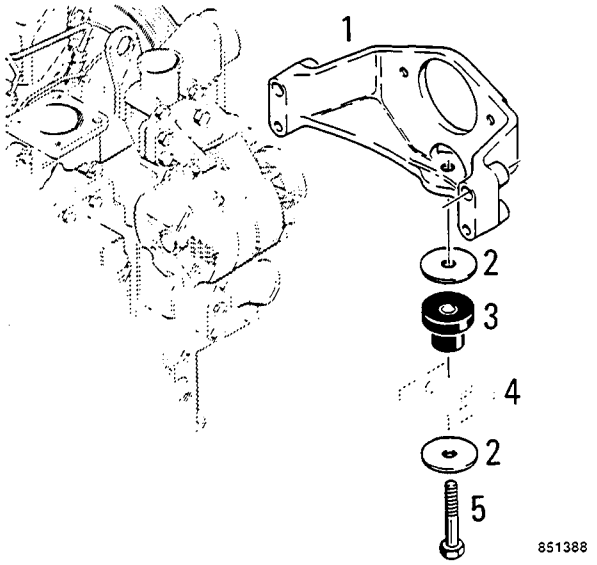
516130

9. Install the bolts, flat washers, and self-locking nuts that hold the front engine mounts to the frame. Tighten the self-locking nuts to 150 to 180 pound-feet (203 to 244 N m, 20.8 to 24.9 kg/m).



516032

10. Install the cap screw and flat washer that holds the rear engine mount to the frame. Tighten the cap screw to 200 to 240 pound-feet (270 to 325 N m, 27.6 to 33.2 kg/m).

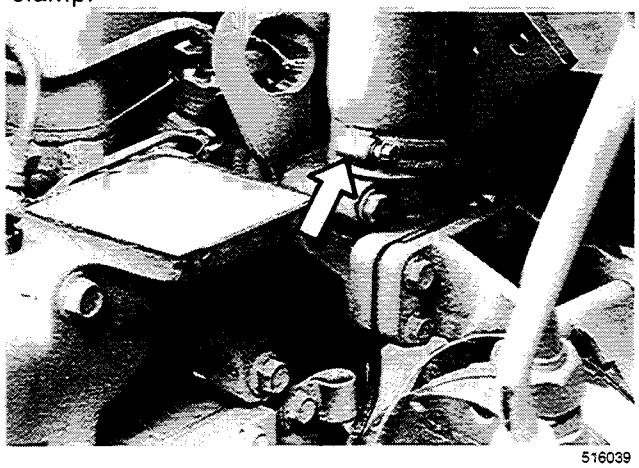



1. *Rear Engine Mount*
2. *Flat Washer*
3. *Insulator*
4. *Frame*
5. *Cap Screw*

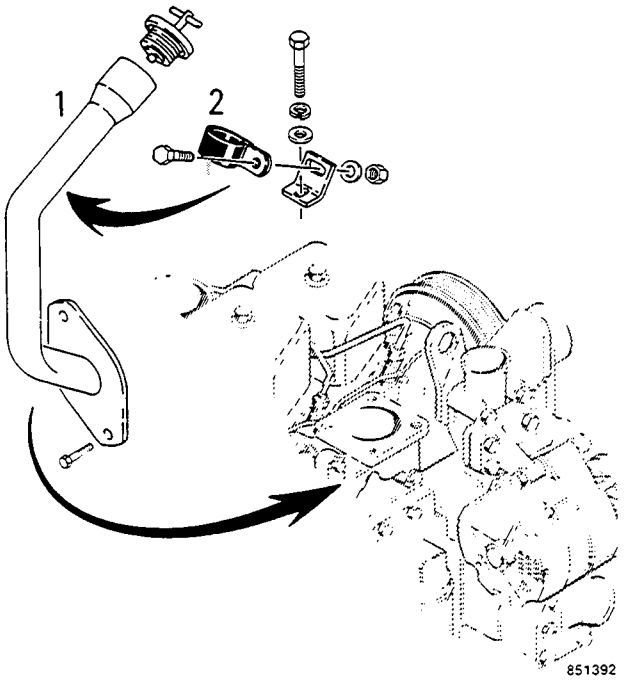
11. Install the access cover in the guard below the rear engine mount.

12. Disconnect the lifting equipment from the engine.

13. Install the top radiator hose and tighten the clamp.



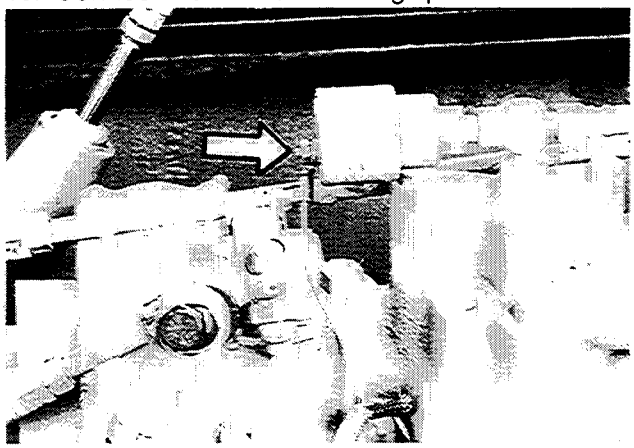

14. Install the oil fill tube. Install the cap screws, bolt, flat washer, and self-locking nut that fasten the oil fill tube and the clamp for the oil fill tube to the engine. Tighten the cap screws and self-locking nut.




1. *Oil Fill Tube*
2. *Clamp*

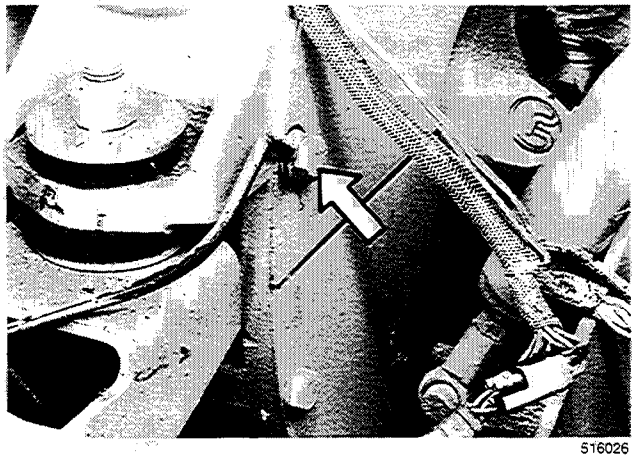
15. Connect the wire to the oil temperature switch.

16. Connect the wire to the charge pressure switch.



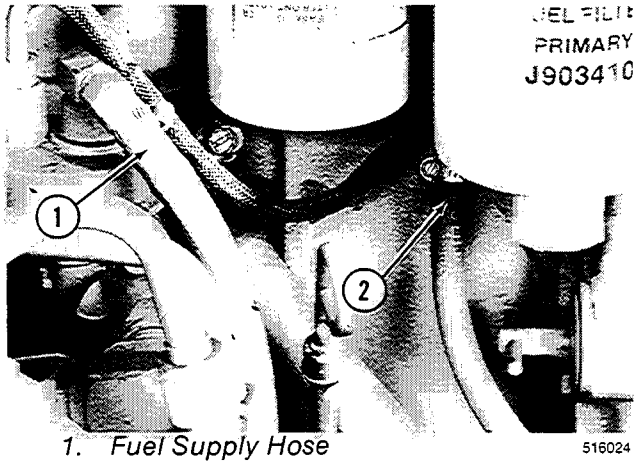
516028

17. Install the cap screw, lock washer, and flat washer that fasten the ground wire from the bracket for the loader valve to the cover on the flywheel housing. Tighten the cap screw.



516026

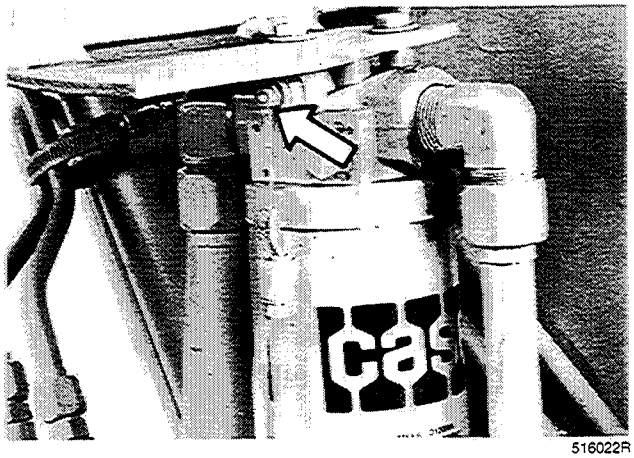
18. Connect the hose to the fuel return line and tighten the clamp. Connect the fuel supply hose to the hand primer pump and tighten the clamp.




516024

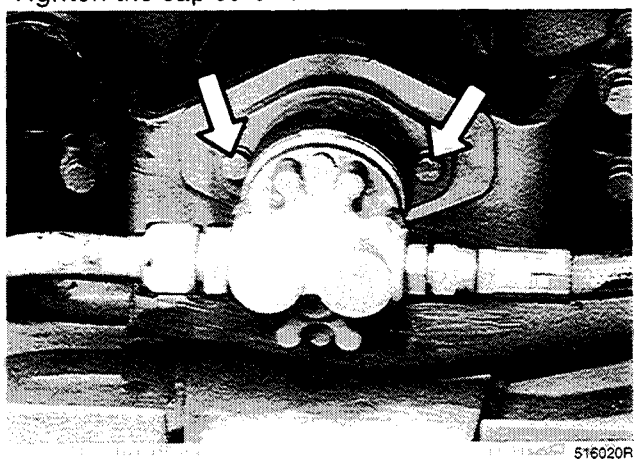
1. *Fuel Supply Hose*
2. *Fuel Return Hose*

19. Connect the wire to the hydraulic oil filter.



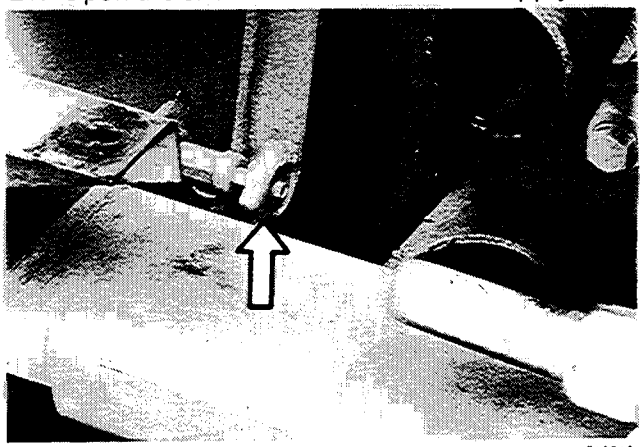
516022R

20. Engage the drive shaft of the equipment pump with the coupling on the crankshaft pulley. Push the equipment pump against the rear engine mount and install the cap screws and lock washers. Tighten the cap screws.



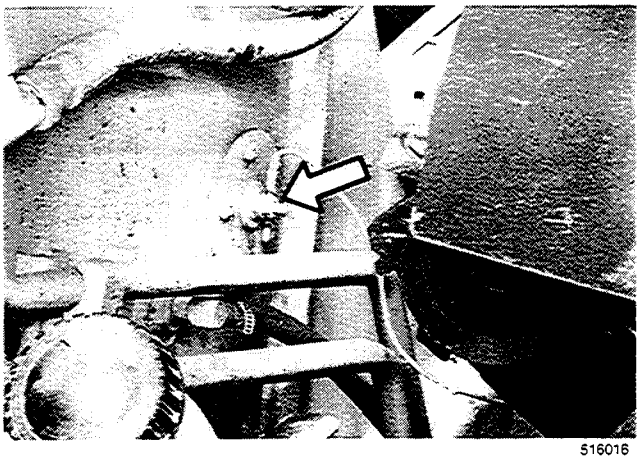
516020R

21. Open the shutoff valve for the fuel supply line.



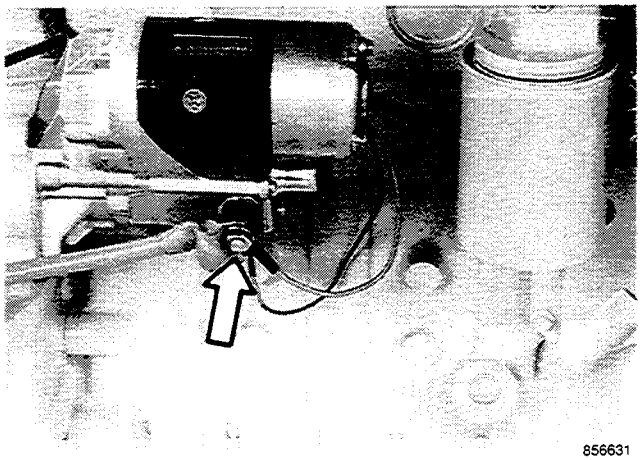
516018

22. Connect the wire to the fuel level sender.



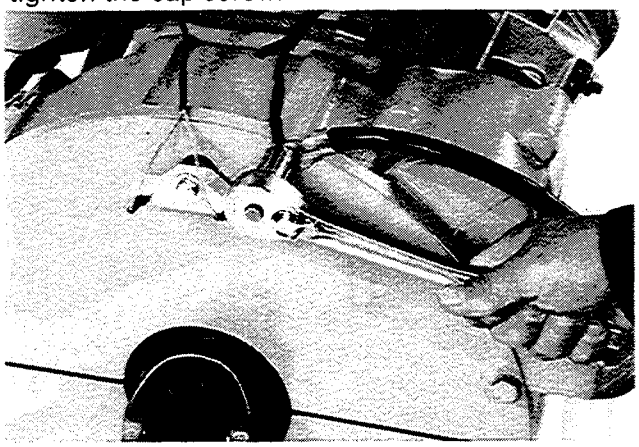
516016

23. Connect the positive cable to the Battery terminal on the starter solenoid.



856631

24. Remove the cap screw from the flywheel cover and install the ground cable and wiring harness in place. Install the cap screw and lock washer and tighten the cap screw.



856634

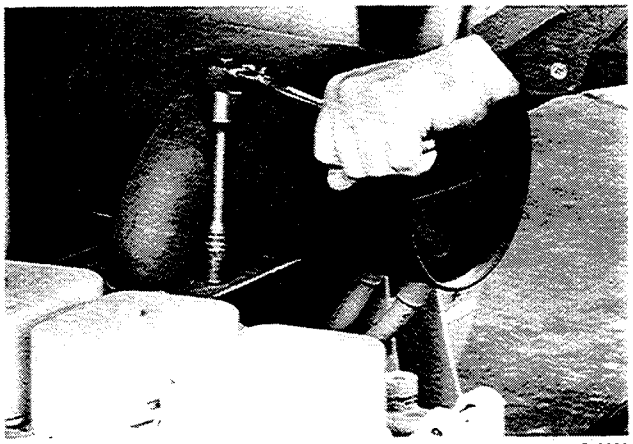
25. Connect the ground cable to the battery.


516010

26. Remove the tape or cover from the opening for the exhaust manifold.

27. Check the condition of the gasket for the muffler and install a new gasket as required.

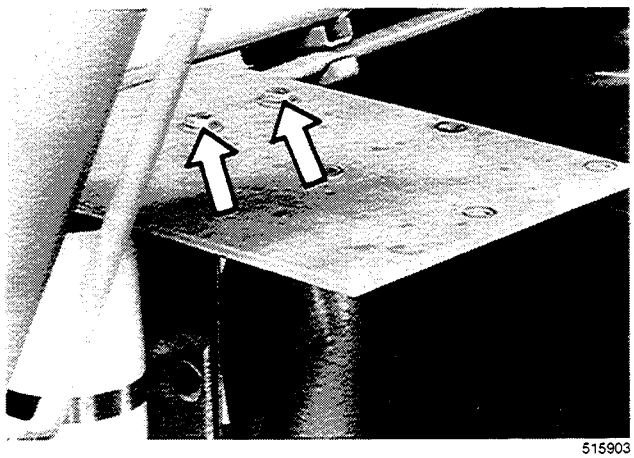
28. Install the muffler. Install and tighten the cap screws and lock washers that hold the muffler.



516008

29. If equipped with ether injection:

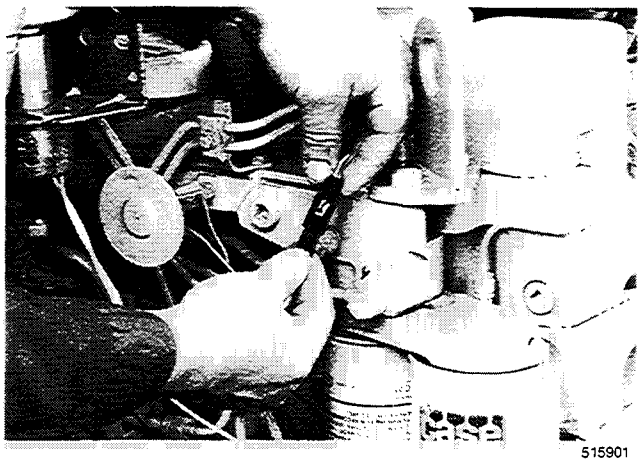
a. Install the bracket. Install the bolts, flat washers, lock washers, and nuts. Tighten the nuts.



515903

b. Connect the wire for the valve assembly.

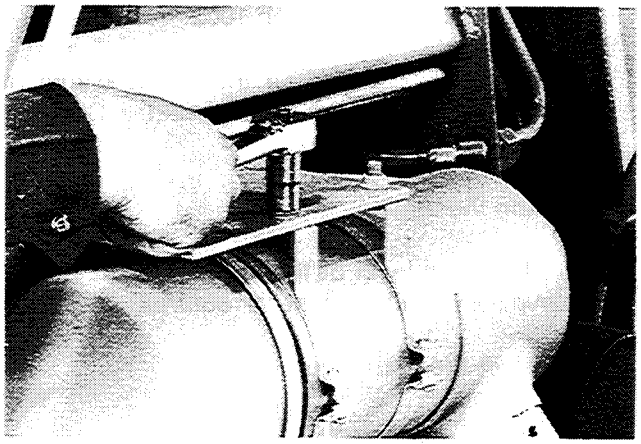
c. Connect the wire for the thermostat.



515901

d. Connect the tube to the intake manifold.

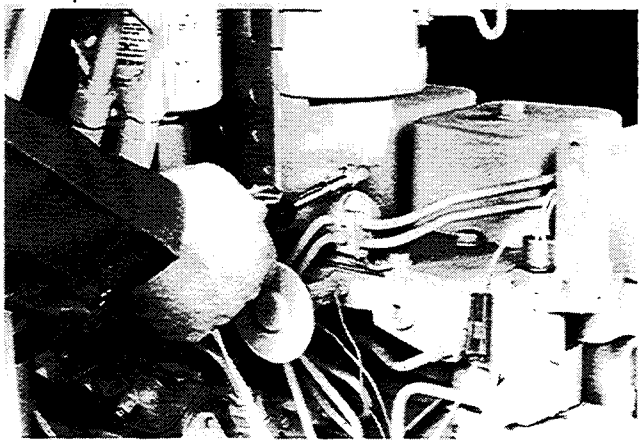
30. Install the air cleaner. Install and tighten the nuts and bolts that hold the air cleaner to the bracket.



515940

31. Remove the tape or cover from the opening for the intake manifold.

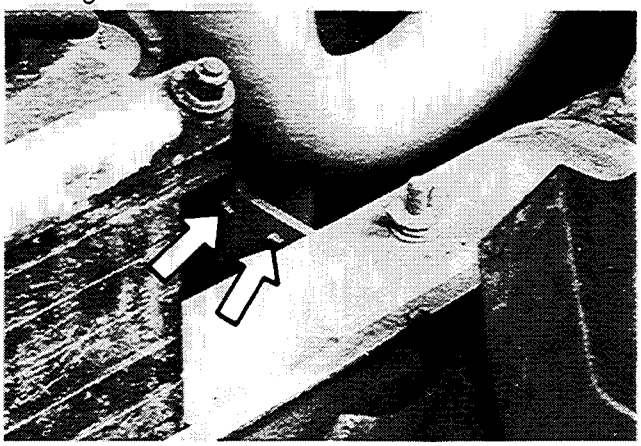
32. Install the air cleaner hose and tighten the clamp.



515938

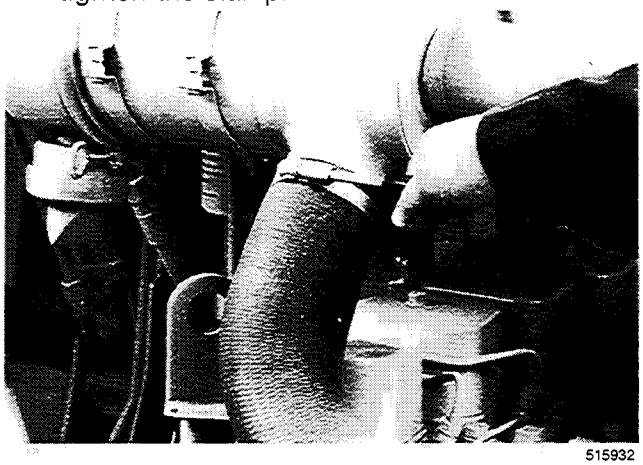
33. If equipped with a precleaner:

a. Install the hose, tube, and precleaner. Install the bolts, lock washers, and nuts that hold the tube for the precleaner to the frame. Tighten the nuts.



515934

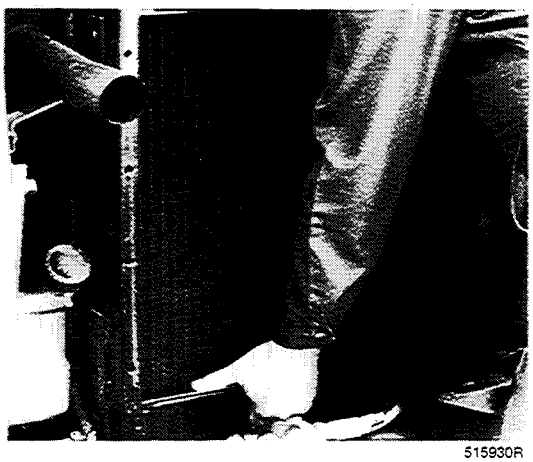
b. Install the hose to the air cleaner and tighten the clamp.



515932

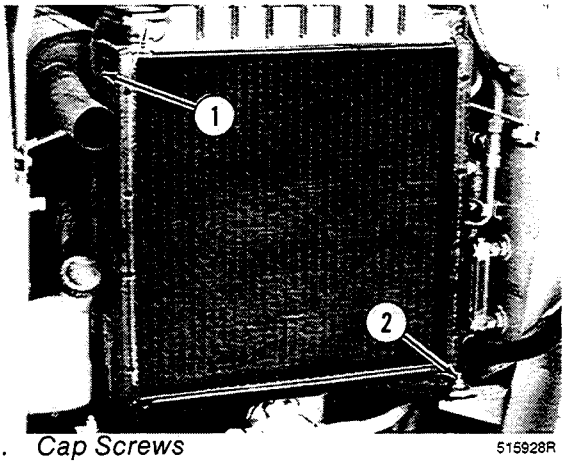
34. Fasten the operators compartment in operating position according to the instructions in Section 9003.

35. Install the radiator and connect the bottom radiator hose.



515930R

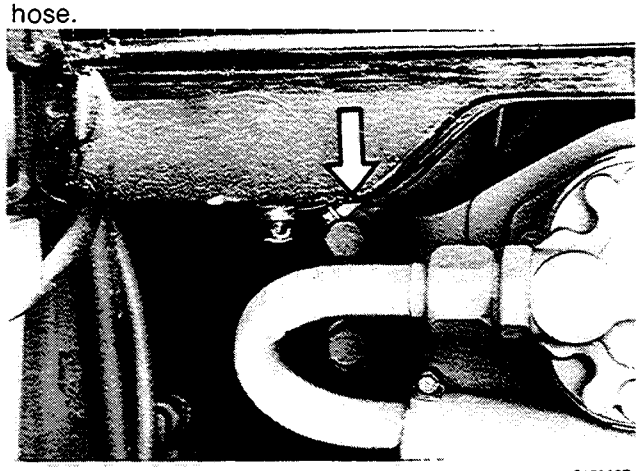
36. Install the cap screws, bolts, lock washers, flat washers, and nuts that hold the radiator. Tighten the cap screws. Tighten the bolts to 15 to 20 pound-inches (1.68 to 2.25 N m, 0.17 to 0.23 kg/m).




515928R

1. *Cap Screws*
2. *Bolts*

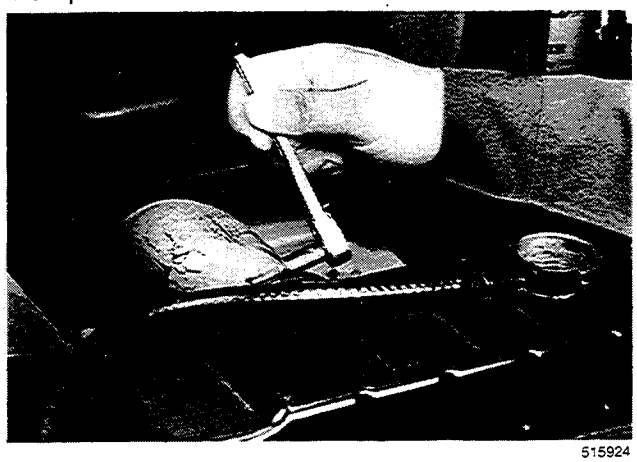
37. Tighten the clamp for the bottom radiator hose.



515926R

38. Connect the hose for the coolant reservoir and tighten the clamp.

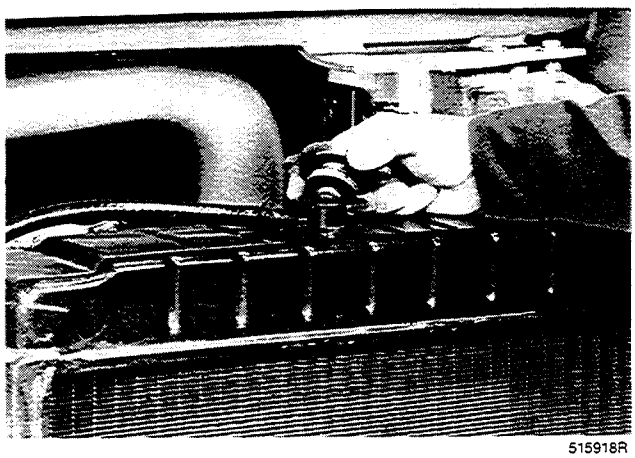
39. Connect the top radiator hose and tighten the clamp.



515924

40. Close the drain valve in the radiator and fill the radiator with coolant. See Section 1002 for coolant specifications.

41. Install the radiator cap.



515918R

42. Fill the coolant reservoir to the FULL mark.

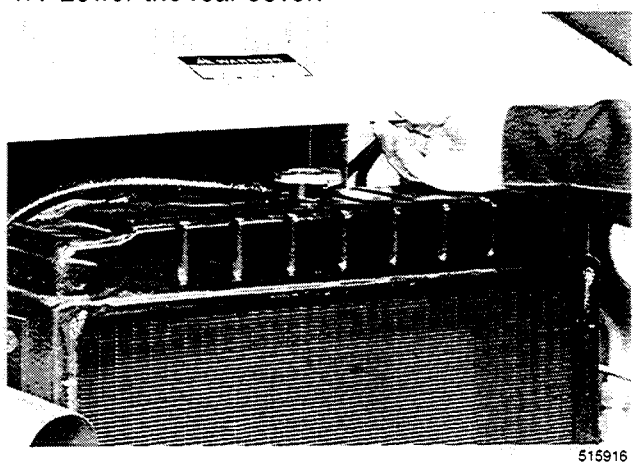
43. Make sure that the crankcase has been filled with engine oil. See Section 1002.

44. Start the engine and run the engine at idle until the engine is at operating temperature. Check for coolant and fuel leaks.

45. Stop the engine.

46. Check the level of the coolant in the coolant reservoir and add coolant as required.

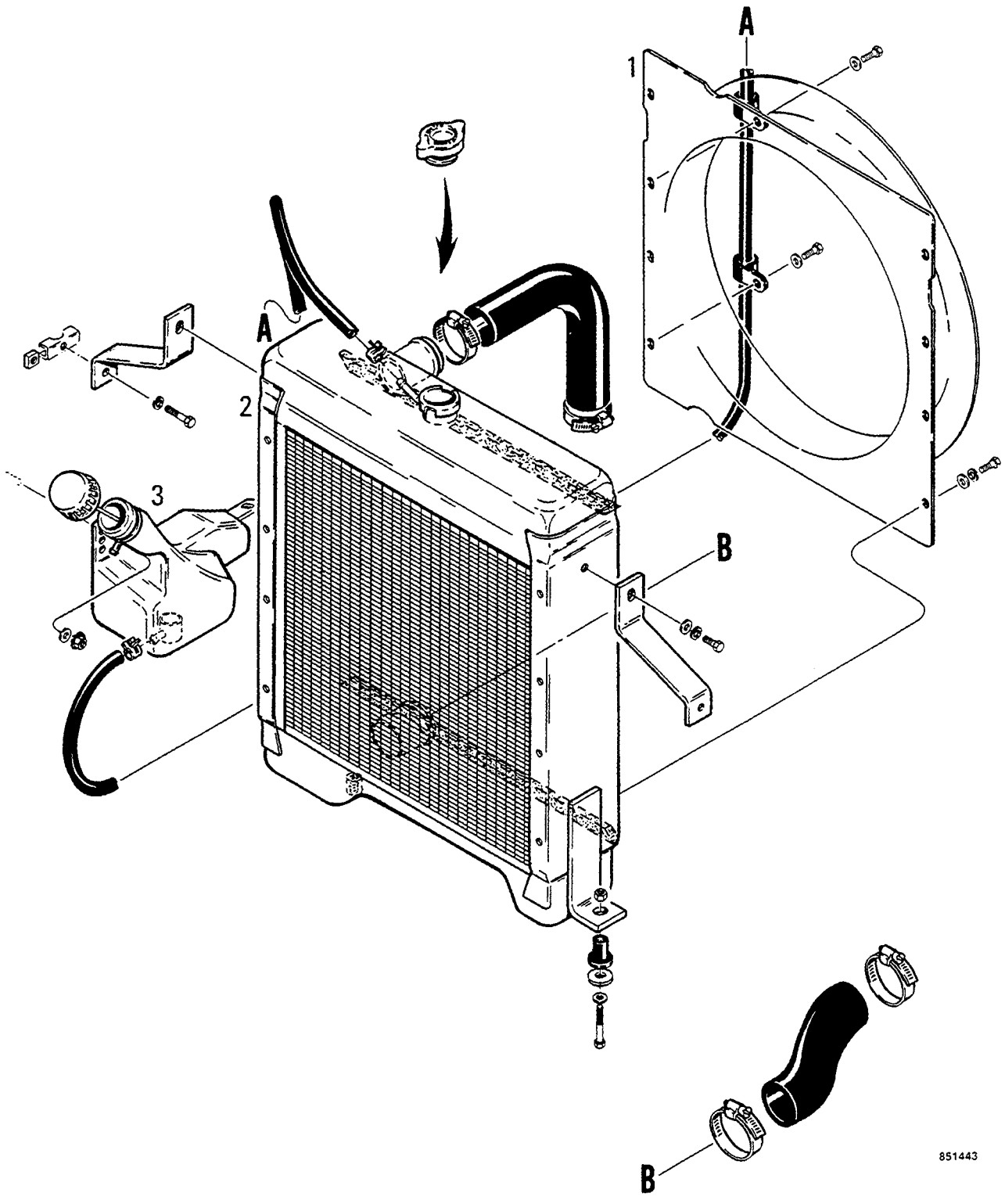
47. Lower the rear cover.



515916

48. Close the rear door.

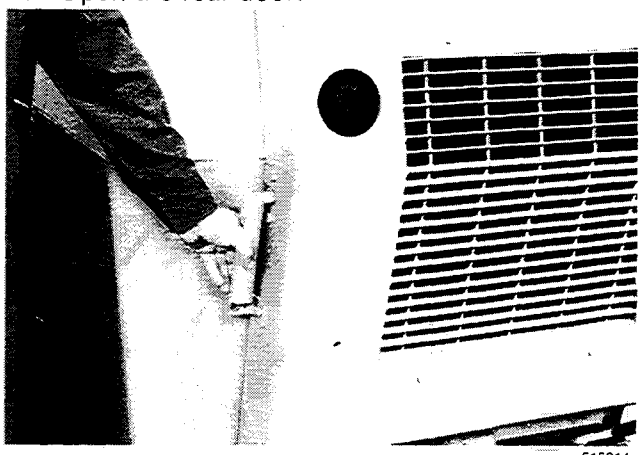
# RADIATOR REMOVAL



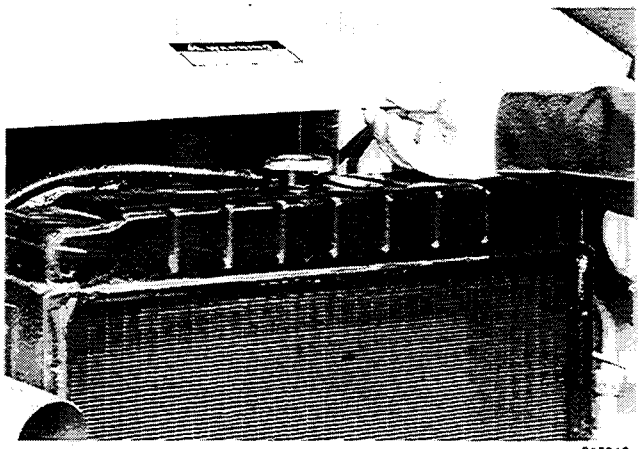

1. *Fan Shroud* 2. *Radiator* 3. *Coolant Reservoir*

Radiator

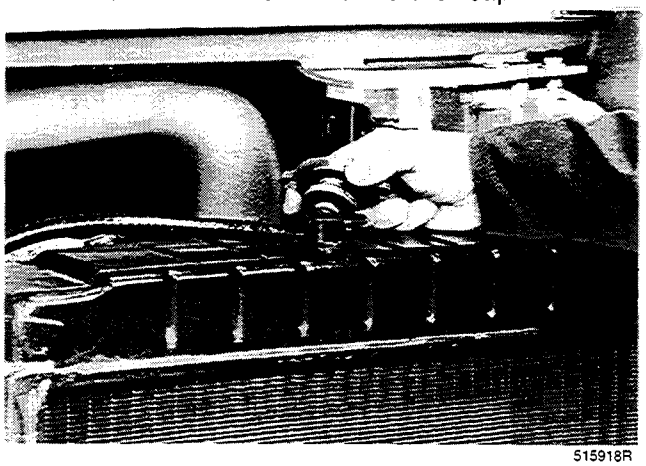
1. Open the rear door.


515914

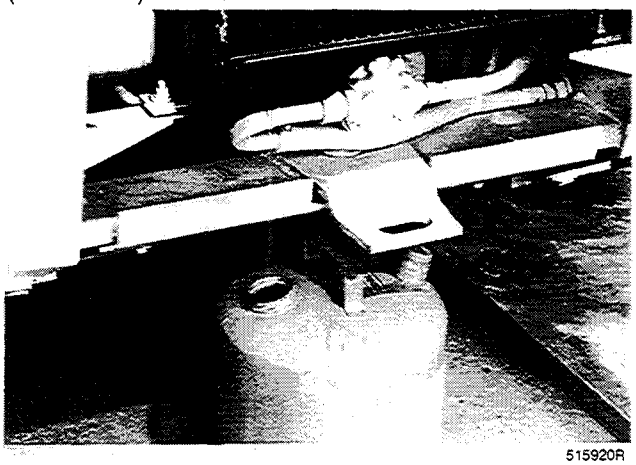
2. Raise the rear cover.


515916

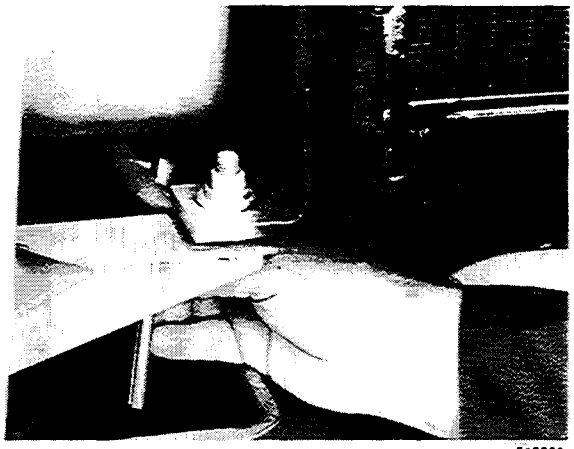
3. Loosen and remove the radiator cap.


515918R

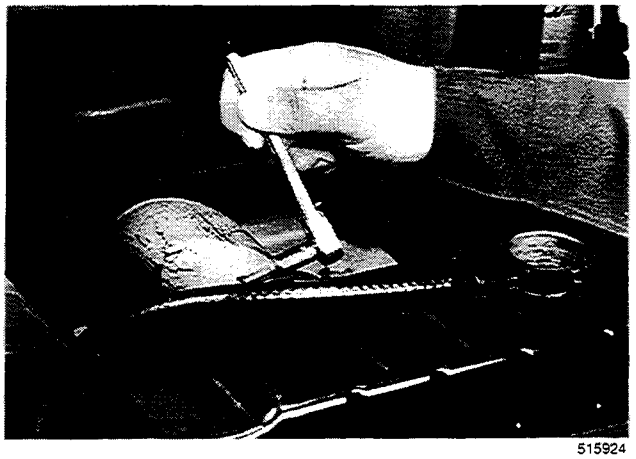
4. Open the drain valve at the LH bottom side of the radiator and drain the cooling system. The cooling system contains approximately 18.2 quarts (17.2 litres) of coolant.


515920R

5. Drain the coolant reservoir. Loosen the clamp for the hose on the coolant reservoir and disconnect the hose to drain the coolant reservoir.


515922

6. Loosen the clamp on the top radiator hose and disconnect the hose.


515924