SERVICE MANUAL

QUADTRAC TRACTOR

9370
9380
9390

8-83394

1. Trim along dashed line.
2. Slide into pocket on Binder Spine.

TYPE 1-4

SERVICE MANUAL

QUADTRAC TRACTOR

9370
9380
9390

8-83394

1. Trim along dashed line.
2. Slide into pocket on Binder Spine.

TYPE 1-4

SERVICE MANUAL

QUADTRAC TRACTOR

9370
9380
9390

8-83394

1. Trim along dashed line.
2. Slide into pocket on Binder Spine.

TYPE 1-4

SERVICE MANUAL

QUADTRAC TRACTOR

9370
9380
9390

8-83394

1. Trim along dashed line.
2. Slide into pocket on Binder Spine.

TYPE 1-4

# 9370, 9380, 9390 and Quadtrac Tractor Service Manual
## Table of Contents




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

**CASE CANADA CORPORATION**
3350 SOUTH SERVICE ROAD
BURLINGTON, ON L7N 3M6 CANADA

Rac 8-83394

Reprinted




Printed in U.S.A.
May, 1997 (Revised November, 1998)

**Power Train (Cont'd)**



**Brakes**



**Hydraulic System**



**Chassis**

# Section

# 1003

1003

## GENERAL INFORMATION AND SPECIFICATIONS

## For 9370 and 9380 Series Tractor

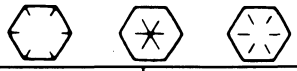
CASE CORPORATION

Rac 7-65420


Printed in U.S.A.
November, 1995

## SAE FASTENER TORQUE CHART

**NOTE:** Use these torques, unless special torques are specified. Values are for UNC and UNF thread fasteners, plated or unplated, as received from supplier. Fasteners can be dry or lubricated with normal engine oil. Values do not apply if graphite, moly-disulphide or other extreme pressure lubricant is used.

| SAE Grade No. | 2 | | | | 5 | | | | 8* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bolt head identification (See Note 1) |  | | | |  | | | |  | | | |
| Bolt Size | LB FT | | Nm | | LB FT | | Nm | | LB FT | | Nm | |
| | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. |
| 1/4 | 5 | 6 | 7 | 8 | 9 | 11 | 12 | 15 | 12 | 15 | 16 | 20 |
| 5/16 | 10 | 12 | 14 | 16 | 17 | 20.5 | 23 | 28 | 24 | 29 | 33 | 39 |
| 3/8 | 20 | 23 | 27 | 31 | 35 | 42 | 48 | 57 | 45 | 54 | 61 | 73 |
| 7/16 | 30 | 35 | 41 | 47 | 54 | 64 | 73 | 87 | 70 | 84 | 95 | 114 |
| 1/2 | 45 | 52 | 61 | 70 | 80 | 96 | 109 | 130 | 110 | 132 | 149 | 179 |
| 9/16 | 65 | 75 | 88 | 102 | 110 | 132 | 149 | 179 | 160 | 192 | 217 | 260 |
| 5/8 | 95 | 105 | 129 | 142 | 150 | 180 | 203 | 244 | 220 | 264 | 298 | 358 |
| 3/4 | 150 | 185 | 203 | 251 | 270 | 324 | 366 | 439 | 380 | 456 | 515 | 618 |
| 7/8 | 160 | 200 | 217 | 271 | 400 | 480 | 542 | 651 | 600 | 720 | 814 | 976 |
| 1 | 250 | 300 | 339 | 406 | 580 | 696 | 787 | 944 | 900 | 1080 | 1220 | 1464 |
| 1-1/8 | | | | | 800 | 880 | 1085 | 1193 | 1280 | 1440 | 1736 | 1953 |
| 1-1/4 | | | | | 1120 | 1240 | 1519 | 1681 | 1820 | 2000 | 2468 | 2712 |
| 1-3/8 | | | | | 1460 | 1680 | 1980 | 2278 | 2380 | 2720 | 3227 | 3688 |
| 1-1/2 | | | | | 1940 | 2200 | 2631 | 2983 | 3160 | 3560 | 4285 | 4827 |

NOTE 1: Bolt head identification marks as per grade. Manufacturing marks will vary. *Thick nuts must be used with Grade 8 bolts

## STANDARD TORQUE DATA FOR HYDRAULIC TUBES AND FITTINGS

| TUBE NUTS FOR 37° FLARED FITTINGS | | | | | | | | O-RING BOSS PLUGS, ADJUSTABLE FITTING LOCK NUTS, SWIVEL JIC - 37° SEATS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | TUBING O.D. | | THREAD SIZE | LB FT | | Nm | | LB FT | | Nm | |
| SIZE | Inches | mm | | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. |
| 4 | 1/4 | 6.4 | 7/16-20 | 9 | 12 | 12 | 16 | 6 | 10 | 8 | 14 |
| 5 | 5/16 | 7.9 | 1/2-20 | 12 | 15 | 16 | 20 | 10 | 15 | 14 | 20 |
| 6 | 3/8 | 9.5 | 9/16-18 | 21 | 24 | 29 | 33 | 15 | 20 | 20 | 27 |
| 8 | 1/2 | 12.7 | 3/4-18 | 35 | 40 | 47 | 54 | 25 | 30 | 34 | 41 |
| 10 | 5/8 | 15.9 | 7/8-14 | 53 | 58 | 72 | 79 | 35 | 40 | 47 | 54 |
| 12 | 3/4 | 19.1 | 1-1/16-12 | 77 | 82 | 104 | 111 | 60 | 70 | 81 | 95 |
| 14 | 7/8 | 22.2 | 1-3/16-12 | 90 | 100 | 122 | 136 | 70 | 80 | 95 | 109 |
| 16 | 1 | 25.4 | 1-5/16-12 | 110 | 120 | 149 | 163 | 80 | 90 | 108 | 122 |
| 20 | 1-1/4 | 31.8 | 1-5/8-12 | 140 | 150 | 190 | 204 | 95 | 115 | 129 | 156 |
| 24 | 1-1/2 | 38.1 | 1-7/8-12 | 160 | 175 | 217 | 237 | 120 | 140 | 163 | 190 |
| 32 | 2 | 50.8 | 2-1/2-12 | 225 | 240 | 305 | 325 | 250 | 300 | 339 | 407 |

Above torque figures are recommended for plain, cadmium or zinc plated fittings, dry or wet installations and swivel nuts either swaged or brazed. These torques are not recommended for tubes 1/2 inch (12.7 mm) O.D. and larger with wall thickness of 0.035 inch (0.889 mm) or less. The torque is specified for 0.035 inch (0.889 mm) wall tubes on each application individually.

# STANDARD TORQUE DATA FOR HYDRAULIC TUBES AND FITTINGS

| TUBE NUTS FOR 37° FLARED FITTINGS | | | | | | | | O-RING BOSS PLUGS, ADJUSTABLE FITTING LOCK NUTS, SWIVEL JIC - 37° SEATS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SIZE | TUBING O.D. | | THREAD SIZE | TORQUE | | | | TORQUE | | | |
| | | | | FOOT POUNDS | | NEWTON METERS | | FOOT POUNDS | | NEWTON METERS | |
| | Inches | mm | | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. |
| 4 | 1/4 | 6.4 | 7/16-20 | 9 | 12 | 12 | 16 | 6 | 10 | 8 | 14 |
| 5 | 5/16 | 7.9 | 1/2-20 | 12 | 15 | 16 | 20 | 10 | 15 | 14 | 20 |
| 6 | 3/8 | 9.5 | 9/16-18 | 21 | 24 | 29 | 33 | 15 | 20 | 20 | 27 |
| 8 | 1/2 | 12.7 | 3/4-18 | 35 | 40 | 47 | 54 | 25 | 30 | 34 | 41 |
| 10 | 5/8 | 15.9 | 7/8-14 | 53 | 58 | 72 | 79 | 35 | 40 | 47 | 54 |
| 12 | 3/4 | 19.1 | 1-1/16-12 | 77 | 82 | 104 | 111 | 60 | 70 | 81 | 95 |
| 14 | 7/8 | 22.2 | 1-3/16-12 | 90 | 100 | 122 | 136 | 70 | 80 | 95 | 109 |
| 16 | 1 | 25.4 | 1-5/16-12 | 110 | 120 | 149 | 163 | 80 | 90 | 108 | 122 |
| 20 | 1-1/4 | 31.8 | 1-5/8-12 | 140 | 150 | 190 | 204 | 95 | 115 | 129 | 156 |
| 24 | 1-1/2 | 38.1 | 1-7/8-12 | 160 | 175 | 217 | 237 | 120 | 140 | 163 | 190 |
| 32 | 2 | 50.8 | 2-1/2-12 | 225 | 240 | 305 | 325 | 250 | 300 | 339 | 407 |

Above torque figures are recommended for plain, cadmium or zinc plated fittings, dry or wet installations.

Swivel nuts either swaged or brazed.

These torques are not recommended for tubes 1/2 inch (12.7 mm) O.D. and larger with wall thickness of 0.035 inch (0.889 mm) or less. Torque is specified for 0.035 inch (0.889 mm) wall tubes on each application individually.

# FLUID CAPACITIES AND TYPES

All fluid capacities listed are a guide to the quantities required. Always use dipsticks or level plugs to ensure that the units are filled to the correct level.

## ENGINE

Crankcase Capacity (with filter) ..... 11 U.S. gallons (41.5 L)
Oil Type ..... Case No. 1 Multi-Viscosity Engine Oil
Cooling System Capacity (P.I.N. JEE0036000 and before) ..... 17.5 U.S. gallons (66.0 L)
(P.I.N. JEE0036001 and after) ..... 18.3 U.S. gallons (69.0 L)
Fluid Type ..... 50 Percent Ethylene Glycol and Water

## AXLE (each)

Oil Capacity (total) ..... 9.0 U.S. gallons (34.0 L)
Oil Type ..... Case Hy-Tran Plus

## TRANSMISSION (PowerShift)

Oil Capacity (with filter and PTO) ..... 10.5 U.S. gallons (39.7 L)
(w/o PTO) ..... 10.0 U.S. gallons (37.8 L)
Oil Type ..... Case Hy-Tran Plus

## TRANSMISSION (HM-2, HM-24 SynchroShift)

Oil Capacity (with filter and PTO) ..... 12.5 U.S. gallons (47.3 L)
(w/o PTO) ..... 12.0 U.S. gallons (45.4 L)
Oil Type ..... Case Hy-Tran Plus

## HYDRAULIC SYSTEM

Reservoir Capacity (with filter) ..... 18.0 U.S. gallons (68.0 L)
Oil Type ..... Case Hy-Tran Plus

## PTO DROP BOX

Oil Capacity ..... Transmission supplied
Oil Type ..... Case Hy-Tran Plus

## BRAKE SYSTEM

Reservoir Capacity ..... 1 U.S. quart (0.946 L)
Brake Fluid Type ..... SAE J1703 (DOT 3)

## FUEL SYSTEM

Tank Capacity ..... 270 U.S. gallons (1022.0 L)
Fuel Type ..... No. 2D

### ELECTRICAL SYSTEM

| | |
|---|---|
| Type of system | 12 volt, Negative Ground |
| Batteries | Three 12-volt, 625 CCA Hybred Batteries, Group Size 31 |
| Alternator | Delco Remy, 125 Amp |
| Cranking Motor | Delco Remy, 12 volt, 42-MT |
| Sealed Beam Head Lamps | No. H6545 |
| Sealed Beam Flood Lamps | No. 74595 |
| Tail Lamps | No. 168 |
| Warning Lamps | No. 1156 |
| Gauge Panel | No. 1893 |
| Cab Lamp | No. 1141 |
| Console Lamp | No. 168 |
| Instrument Cluster | No. 194 |
| Draft Indicator | No. 1893 |

### CIRCUIT BREAKERS

| | |
|---|---|
| Cab Field Lamps | 30 Amp |
| Rear Field Lamps | 30 Amp |
| Front Frame Field Lamps | 15 Amp |
| Head Lamps | 15 Amp |
| Tail Lamps | 5 Amp |
| Dome and Cigar Lighter | 20 Amp |
| Ignition (B1) and Radio | 15 Amp |
| Windshield Wiper/Washer | 10 Amp |
| Ignition (B2) | 15 Amp |
| Ignition (B3) | 20 Amp |
| Flasher Module | 20 Amp |
| HVAC System | 40 Amp |
| Air Seat | 15 Amp |
| Transmission Solenoids (PowerShift) | 10 Amp |
| Three Point Hitch | 5 Amp |
| Differential Lock | 30 Amp |
| Auxiliary Power | 30 Amp |

## POWER TRAIN

### TRANSMISSION (PowerShift)

| | |
|---|---|
| Model | EW-16 |
| Type | Full PowerShift |
| Speeds | 12 Forward and 3 Reverse |
| Shift/Range Control | Electrically Controlled with Hydraulically Actuated Clutches |

### TRANSMISSION (SynchroShift)

| | |
|---|---|
| Model | HM-2 |
| Type | Constant Mesh, Synchronized Shift |
| Speeds | 12 Forward and 3 Reverse |
| Shift/Range Control | Levers on Console |

### TRANSMISSION (Hi-Lo SynchroShift)

| | |
|---|---|
| Model | HM-24 |
| Type | Constant Mesh, Synchronized Shift |
| Shift/Range Control | Levers on Console |
| Hi-Lo Control | Switch on Console |

### BRAKES

| | |
|---|---|
| Type (9370) | Hydraulic Operated, single caliper, disc |
| (9380) | Hydraulic Operated, dual caliper, disc |
| Disc Size | 20 inch (508 mm) |
| Park Brake | Hand Lever Actuated |

### AXLE

| | |
|---|---|
| Model | K694 |
| Type | Double Reduction Outboard Planetary, Spiral Bevel Ring/Pinion |
| Overall Ratio | 25.23:1 |

### POWER TAKEOFF (if Equipped)

| | |
|---|---|
| Type | Live Independant System Integral with Transmission |
| Clutch Type | Modulateable, Hydraulic |
| Control | Hand Lever Actuated |
| Rotation (from rear of tractor) | Clockwise |
| Shaft Size | 1.75 Inch Diameter, 20 Splines |
| Speed | 1000 RPM at 2100 Engine RPM |

### HYDRAULIC SYSTEM

| | |
|---|---|
| Type | Closed Center, Load Sensing, Pressure Compensating |
| Steering | Full Priority System |
| Remote Valve | Closed Center, Stack Type with float position and flow control |
| Pump Capacity (2100 RPM) | |
| Implement Pump - Powershift | 27 GPM (102.2 L/min) |
| SynchroShift | 30 GPM (113.6 L/min) |
| Steering Pump - PowerShift | 31 GPM (117.3 L/min) |
| SynchroShift | 34 GPM (128.7 L/min) |
| Maximum System Pressure | 2900 PSI (197 Bar) |
| Couplings | ISO Standard Lever Type |

### HITCH SYSTEM (9370)

| | |
|---|---|
| Type Hitch | Three Point, Category IV-N |
| Hitch Coupler (Adjustable | Category III or IVN |
| Hitch Control | Hand Lever Actuated, Electronic Control System |
| Hitch Valve | 3-Position, Lift, Hold and Lower |
| Type Draft Arms | Rigid, Swing Type with Manual Float Adjustment |
| Lift Capacity (OECD static) | 17 000 lb (7 711 Kg) |
| | 24 inch (610 mm) back |

## DIESEL ENGINE

### P.I.N. JEE0036000 AND BEFORE

| | |
|---|---|
| Engine Make | Cummins |
| Model | NTA-855-A |
| Type | In-Line Six Cylinder, Four Stroke Cycle |
| Displacement | 855 Cubic Inch (14.0 L) |
| Cylinder Sleeves | Removable, wet type |
| Bore | 5.5 inch (140 mm) |
| Stroke | 6.0 inch (152 mm) |
| Governed Speed (No Load) | 2275 to 2450 RPM |
| Rated Speed | 1700 to 2100 RPM |
| Idle Speed (approximate) | 825 to 900 RPM |
| Engine Operating Torque (at 2100 RPM) | |
| 9370 | 900 lb ft (1220 Nm) |
| 9380 | 1000 lb ft (1356 Nm) |
| Engine Peak Torque (at 1400 RPM) | |
| 9370 | 1215 lb ft (1649 Nm) |
| 9380 | 1330 lb ft (1803 Nm) |
| Torque Rise | |
| 9370 | 35% |
| 9380 | 33% |
| Compression Ratio | |
| 9370 | 14.0:1 |
| 9380 | 15.0:1 |
| Firing Order | 1-5-3-6-2-4 |

Oil Pressure (warm at 1300 RPM) ..... 35 to 40 PSI (240 to 310 kPa)
Air Induction System ..... Dry Type, 2-Stage Aspirator
Fuel Injection Pump ..... Cummins
fuel Injectors ..... Cummins Top Stop
Thermostat ..... 180°F to 202°F (82°C to 94°C)
Radiator Cap ..... 7 PSI (62 kPa)

**P.I.N. JEE0036001 AND AFTER**

Engine Make ..... Cummins
Model ..... N-14
Type ..... In-Line Six Cylinder, Four Stroke Cycle
Displacement ..... 855 Cubic Inch (14.0 L)
Cylinder Sleeves ..... Removable, wet type
Bore ..... 5.5 inch (140 mm)
Stroke ..... 6.0 inch (152 mm)
Governed Speed (No Load) ..... 2275 to 2450 RPM
Rated Speed ..... 1700 to 2100 RPM
Idle Speed (approximate) ..... 825 to 900 RPM
Engine Operating Torque (at 2100 RPM)
  9370 ..... 900 lb ft (1220 Nm)
  9380 ..... 1000 lb ft (12356 Nm)
Engine Peak Torque (at 1400 RPM)
  9370 ..... 1215 lb ft (1649 Nm)
  9380 ..... 1330 lb ft (1803 Nm)
Torque Rise
  9370 ..... 35%
  9380 ..... 33%
Compression Ratio
  9370 ..... 18.5:1
  9380 ..... 16.5:1
Firing Order ..... 1-5-3-6-2-4
Oil Pressure (warm at 1300 RPM) ..... 35 to 40 PSI (240 to 310 kPa)
Air Induction System ..... Dry Type, 2-Stage Aspirator
Fuel Injection Pump ..... Cummins
Fuel Injectors ..... Cummins Top Stop
Thermostat ..... 180°F to 202°F (82°C to 94°C)
Radiator Cap ..... 7 PSI (62 kPa)

# TRACTOR WEIGHTS

**Approximate Shipping Weights**

9370 with 20.8 R42 Dual Tires, Three Point Hitch and PTO ..... 29 035 lb (13 153 Kg)
9380 with 710/70 R38 Dual Tires (No options) ..... 31 947 lb (14 472 Kg)

**NOTE:** *Estimated shipping weights are less fuel, operator, quick coupler or other optional equipment.*

**Maximum Tractor Operating Weight**

9370 ..... 40 000 lb (18 144 Kg)
9380 ..... 44 000 lb (19 958 Kg)

**NOTE:** *Includes operator, tractor, tractor equipment and ballast with a 60% front and 40% rear static weight distribution.*

2001

# Section

# 2001

## ENGINE REMOVAL

## 9370 and 9380 Model Tractors

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

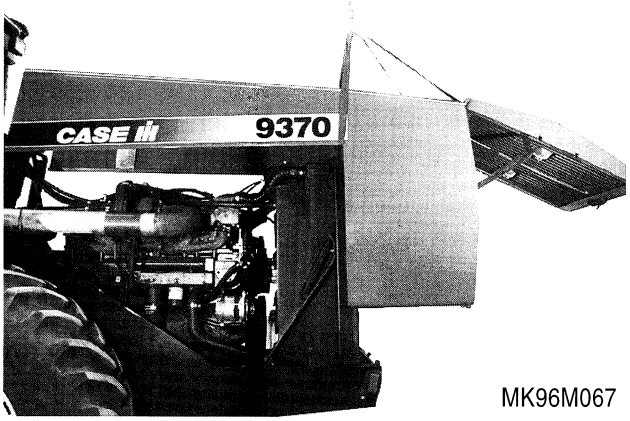
CASE CANADA CORPORATION
450 Sherman Avenue
Hamilton, ON L8N 4C4 CANADA

Rac 8-83900


Printed in U.S.A.
November, 1996

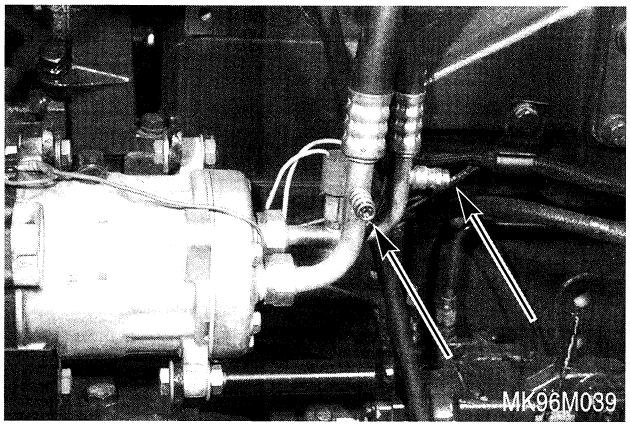
# ENGINE REMOVAL

## STEP 1



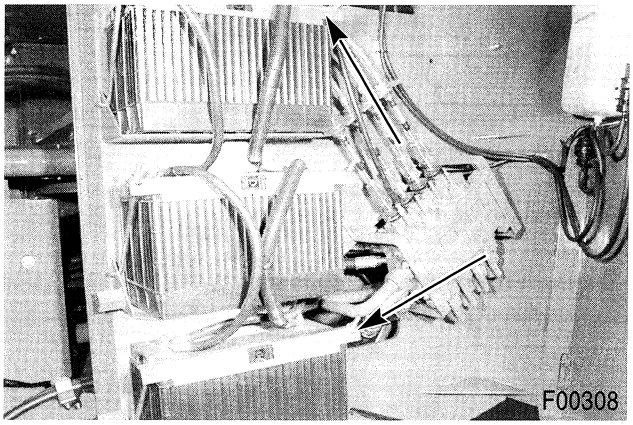

Remove the key from the switch. See Section 9005 in this manual for instructions to remove the hood and grille.

## STEP 2




See Section 9007 in this manual for instructions on discharging the air conditioning system.

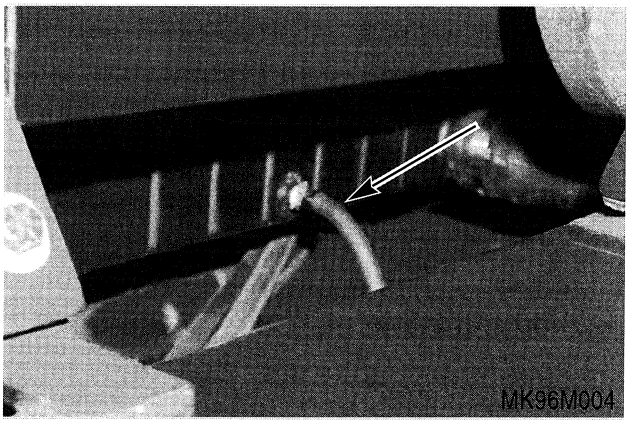
## STEP 3




Open the battery access door and disconnect the negative and positive battery cables from the upper and lower batteries.

**NOTE:** *Always disconnect the negative battery cable first.*

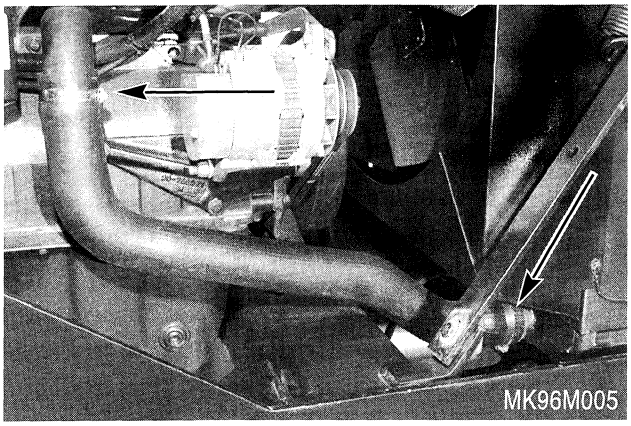
## STEP 4




Install a short length of hose on the radiator drain valve. Open the valve and drain the cooling system.

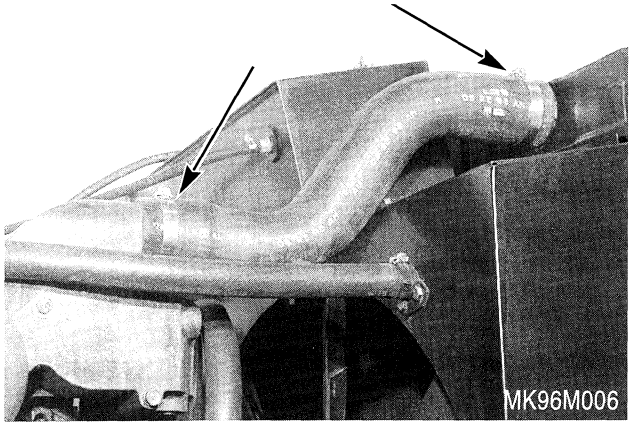
**NOTE:** *The cooling system holds approximately 15 gallons (57 Liters) of coolant.*

## STEP 5



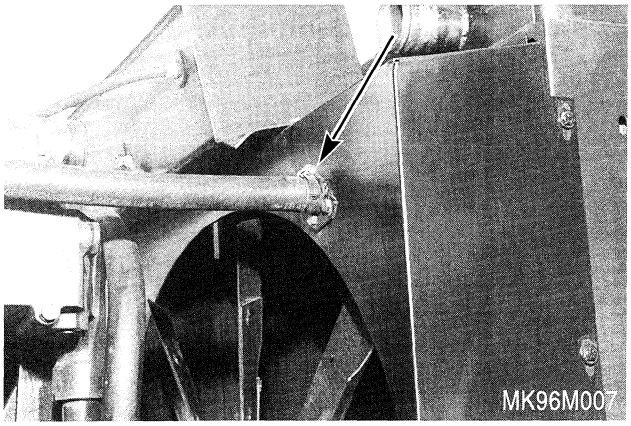

Place a catch pan under the lower radiator hose. Loosen the hose clamps and carefully remove the hose from the engine and radiator.

## STEP 6



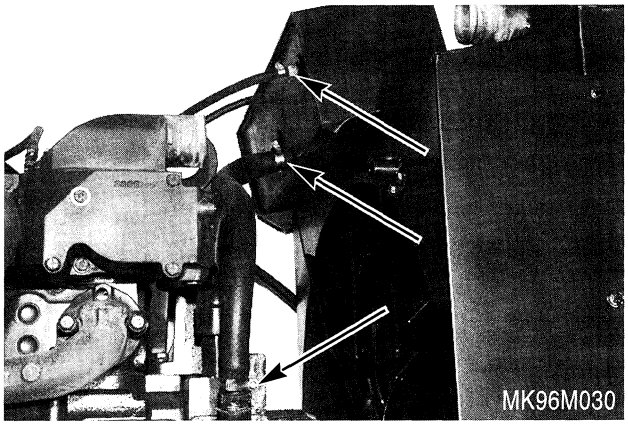

Remove the upper radiator hose from the engine and the radiator.

## STEP 7



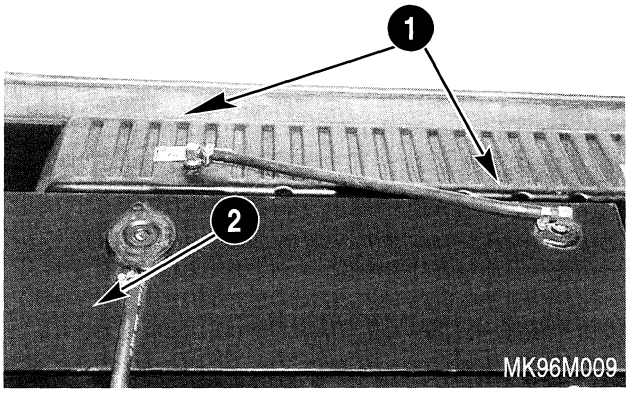

Remove the HVAC aspirator hose from the fan shroud.

## STEP 8



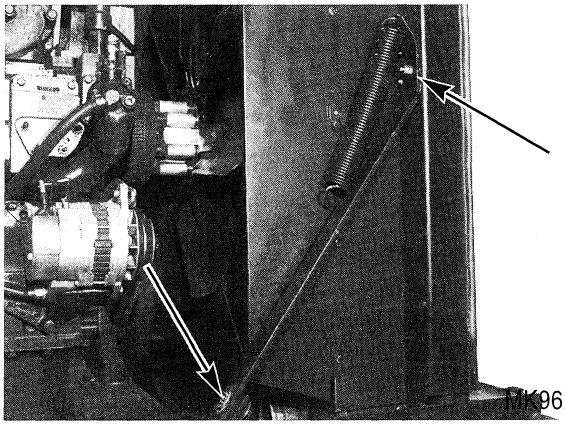

Remove the engine air bleed and shunt hose from the engine and the radiator fill tank.

## STEP 9



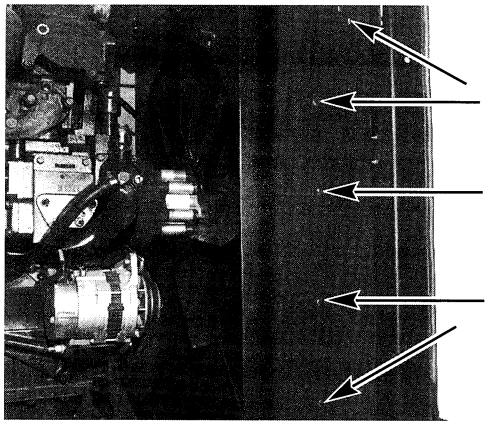

Remove the de-airiation hose (Ref. 1) between the radiator fill tank and the radiator. Remove the coolant recovery hose (Ref. 2) from the radiator fill tank.

## STEP 10

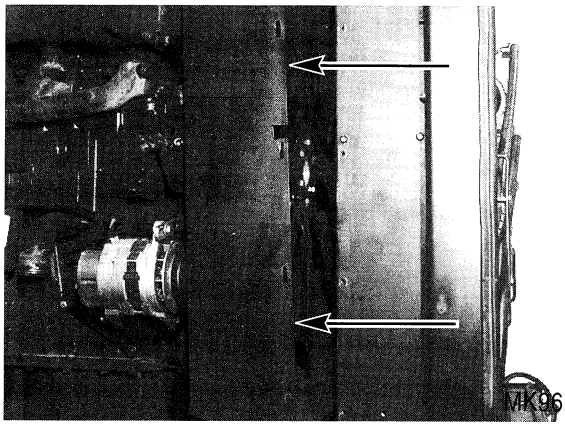



Remove a radiator mounting brace from one side of the front frame.

## STEP 11



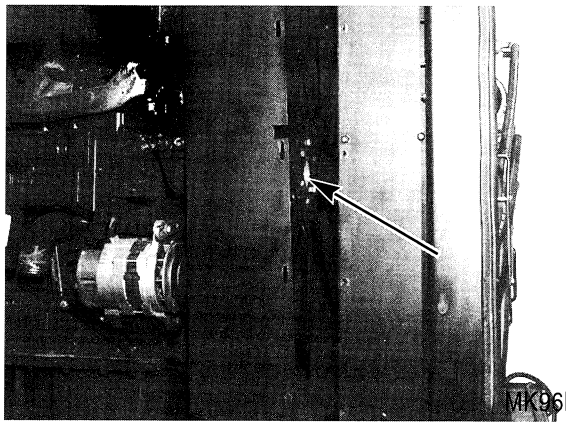
MK96M032



MK96M033

Remove the five right side and left side fan shroud mounting bolts. Move the fan shroud rearward against the frame crossmember.

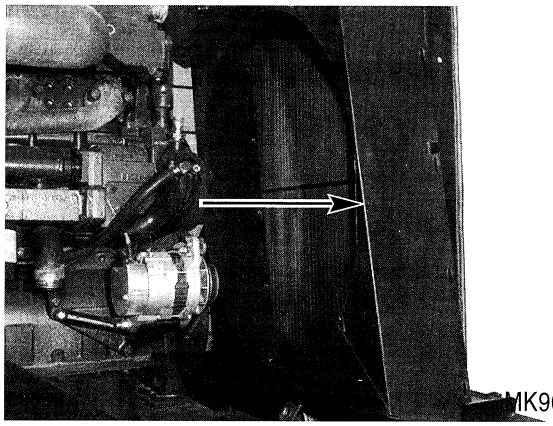
## STEP 12



MK96M033

Remove the fan mounting bolts. Remove the fan and the spacer.

## STEP 13

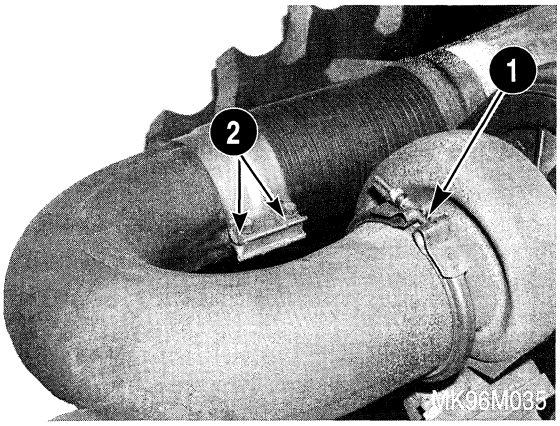


MK96M034

Remove the fan shroud from the tractor.

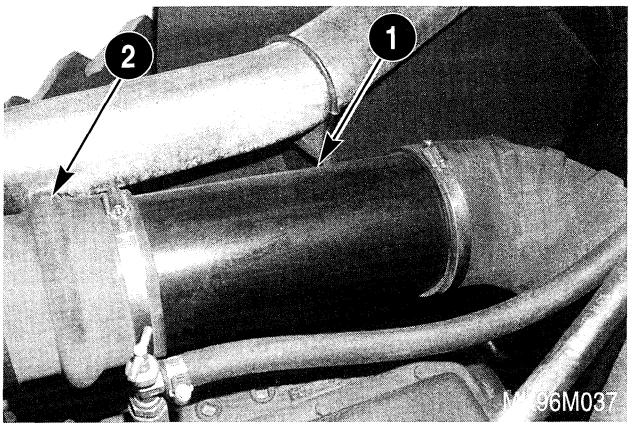
# Right Side

## STEP 14



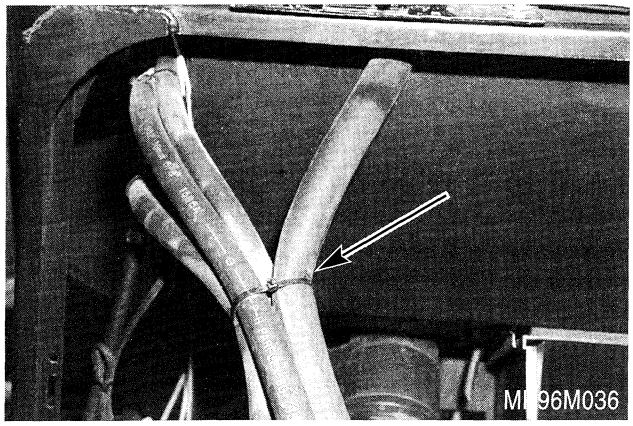

Remove the exhaust pipe clamp (Ref. 1) and loosen the band clamp (Ref. 2). Remove the exhaust pipe elbow.

## STEP 15



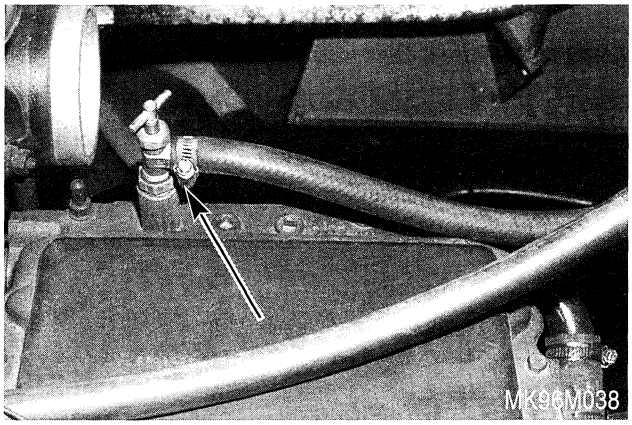

Loosen the clamps. Remove the turbo inlet tube (Ref. 1) and the flex connector (Ref. 2).

## STEP 16



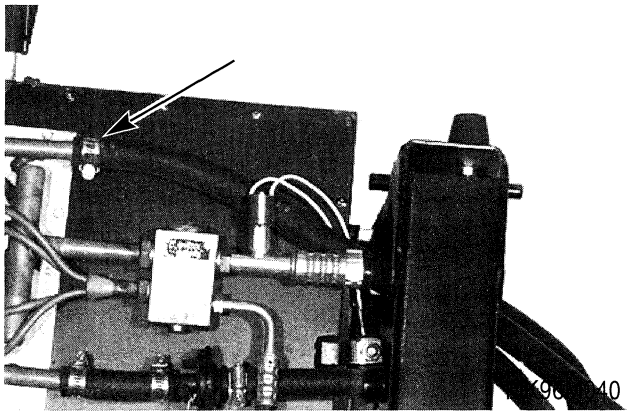

Remove the cable tie from the hoses in front of the HVAC box.

## STEP 17



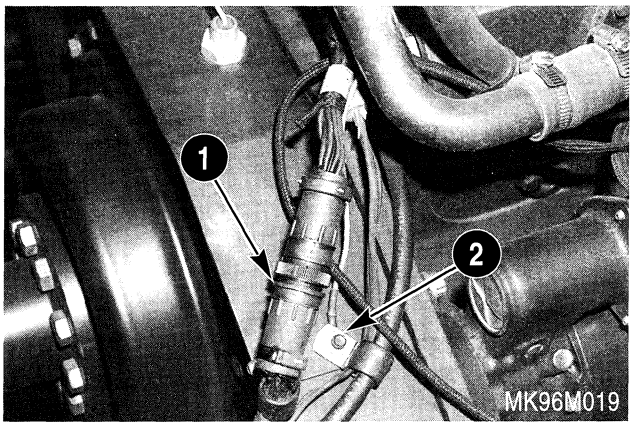

Remove the heater hose from the shut off valve.

## STEP 18



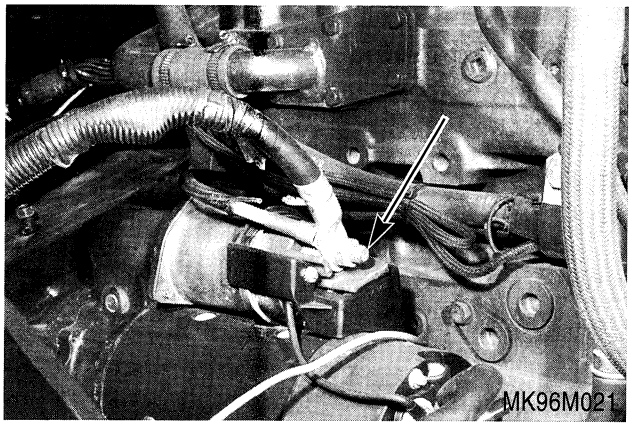
Remove the heater return hose from the heater core.

## STEP 19



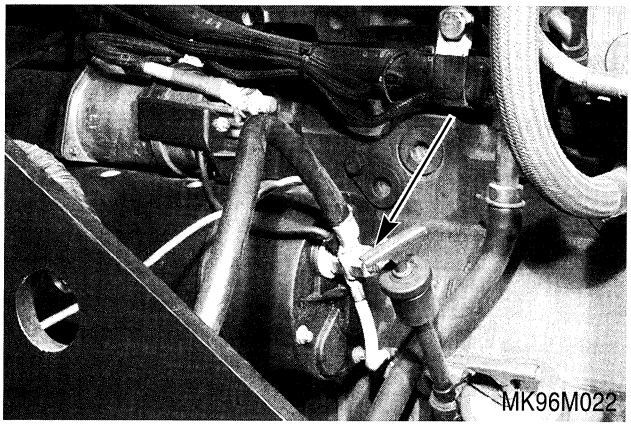

Disconnect the engine wire harness (Ref. 1) and remove the cable clamp bracket (Ref. 2).

## STEP 20



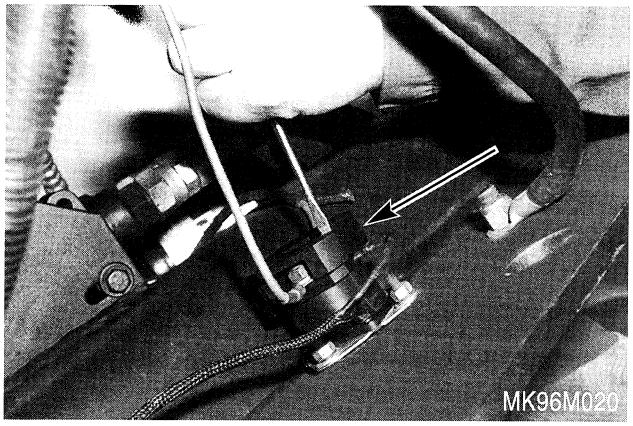

Remove the positive battery cable from the starter solenoid.

## STEP 21

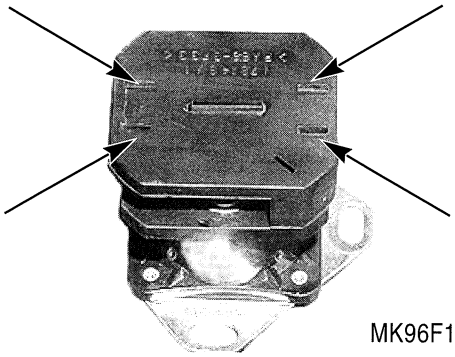



Remove the negative cable from the starter.

## STEP 22

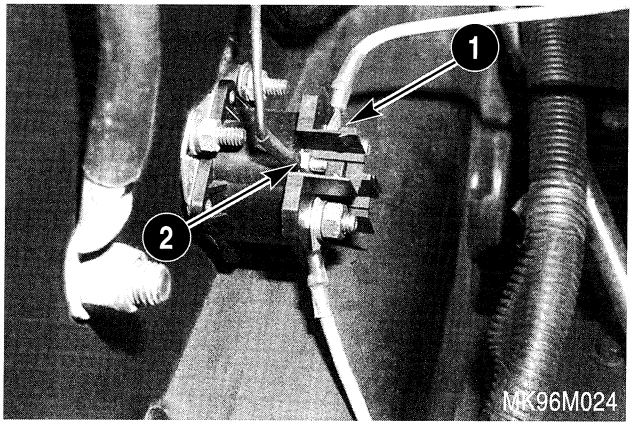



Remove the cover from the magnetic starter switch.




**NOTE:** *Insert a thin blade screwdriver into the slots in the cover to release the cover lock tabs.*

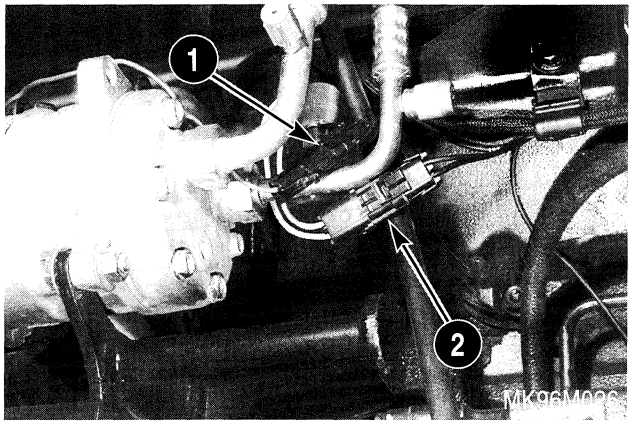
## STEP 23




Remove the starter solenoid wire (Ref. 1) and the wire harness wire (Ref. 2) from the switch.

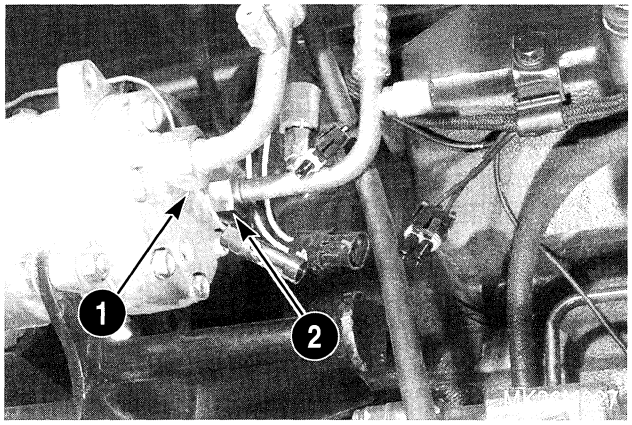
# Left Side

## STEP 24



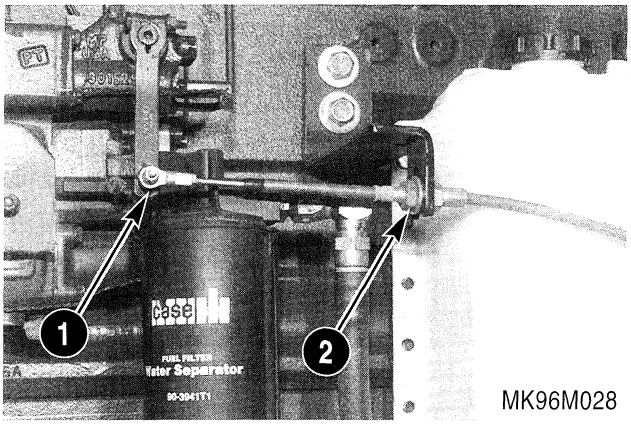

Disconnect the compressor clutch wire (Ref. 1) and the low pressure switch wires (Ref. 2) from the engine wire harness.

## STEP 25



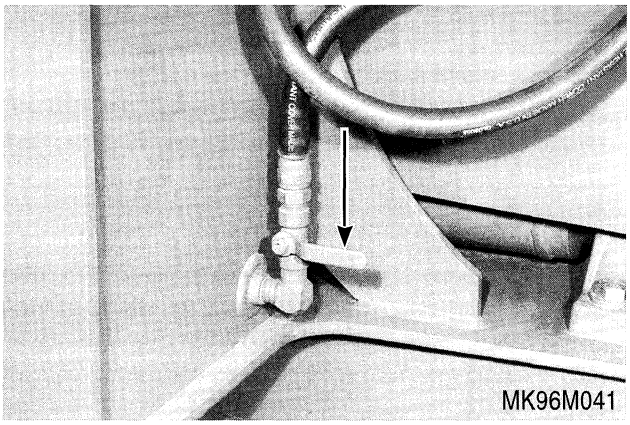

Remove the suction (Ref. 1) and the discharge (Ref. 2) hoses from the compressor. Install caps on the compressor and plugs in the hose ends. Discard the O-rings.

## STEP 26



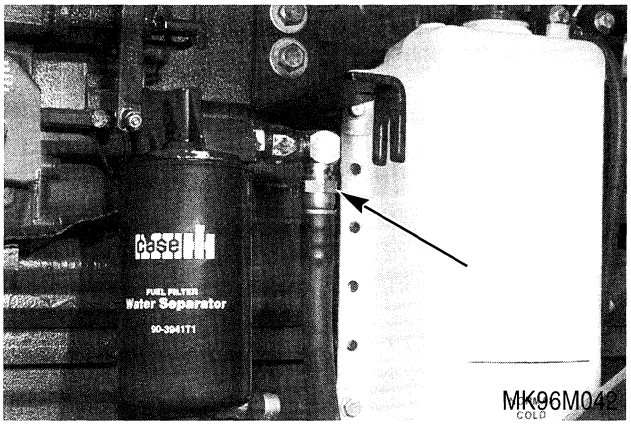

Remove the throttle cable from the fuel pump throttle lever (Ref. 1) and the mounting bracket (Ref. 2).

## STEP 27



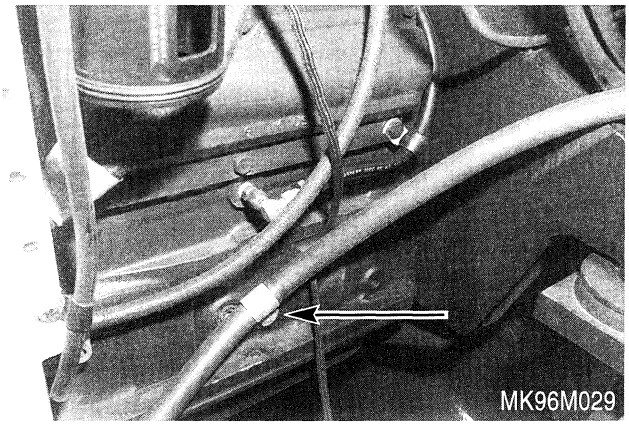

Shut off the fuel supply hose valve.

## STEP 28



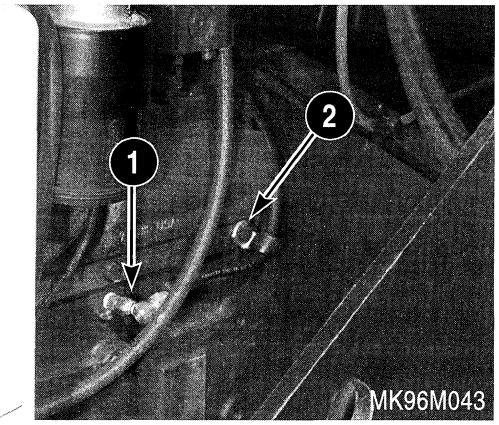

Remove the fuel hose from the fuel filter. Install a cap on the fitting and a plug in the hose end.

## STEP 29



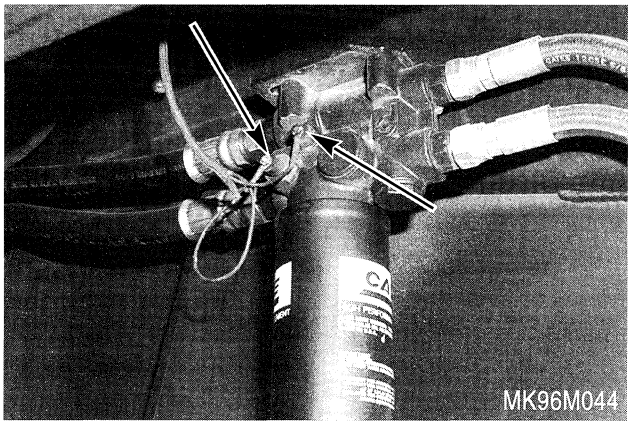

Remove the fuel hose clamp from the engine.

## STEP 30



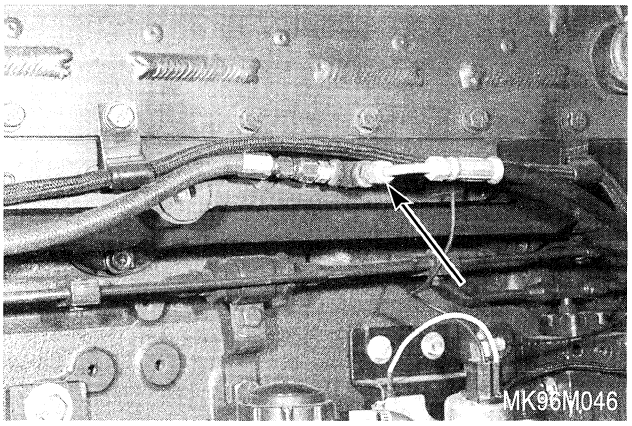

Remove the oil pressure hose (Ref. 1) and clamp (Ref. 2) from the engine. Install a cap on the fitting and a plug in the hose end.

## STEP 31



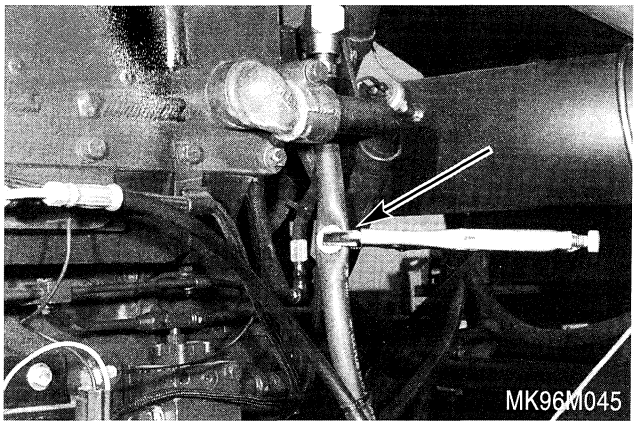

Remove the temperature and the restriction indicator switch wires from the transmission filter head.

## STEP 32



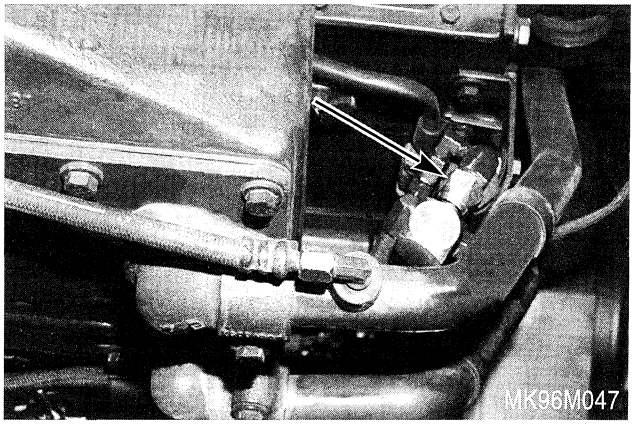

Remove the axle cooling turbo boost pressure line from the intake manifold.

## STEP 33



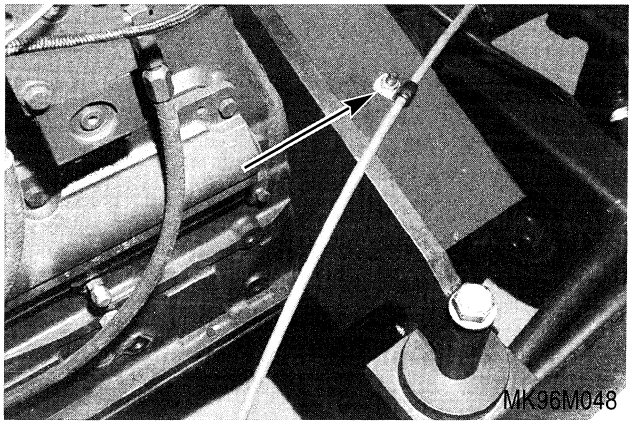

Install a clamp on the fuel return line. Do not tighten the clamp more than necessary to stop the fuel flow or the fuel return line may be damaged.

## STEP 34



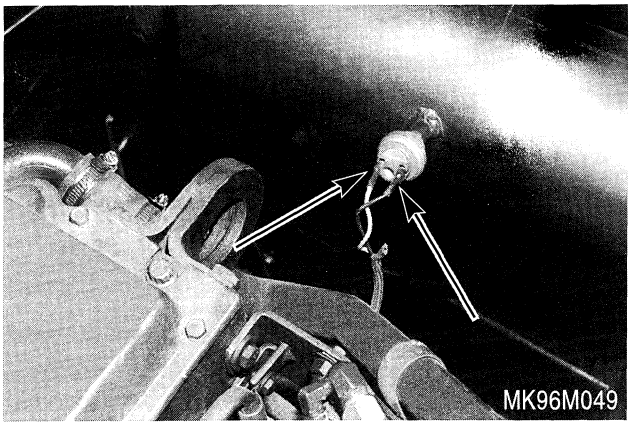

Remove the fuel return line. Install a cap on the fitting and a plug in the hose end.

## STEP 35



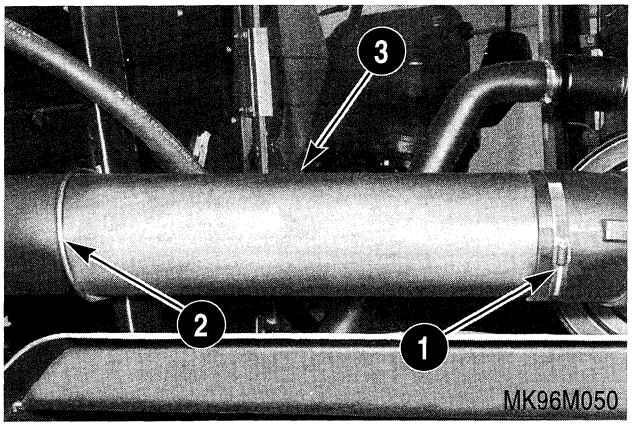

Remove the throttle cable clamp from the flywheel guard.

## STEP 36



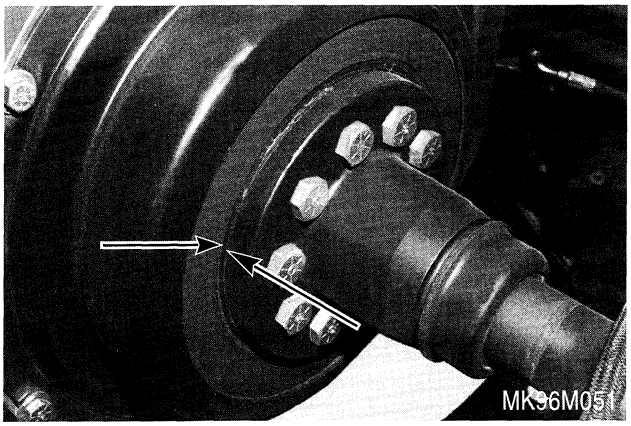

Remove the wires from the air filter restriction indicator switch.

## STEP 37




Loosen the clamp (Ref. 1), remove the U-clamp (Ref. 2) and remove the air inlet tube (Ref. 3).

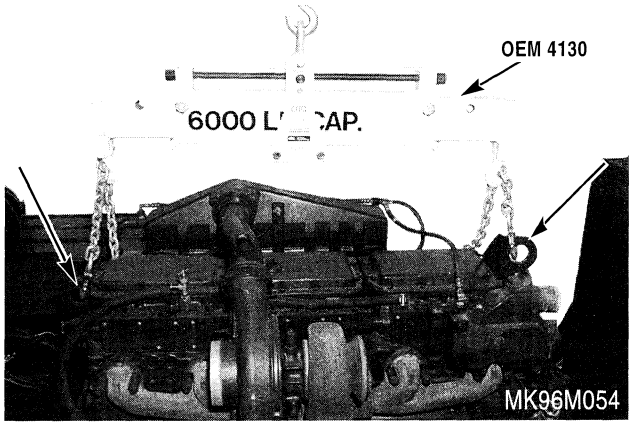
## STEP 38




Mark the position of the driveshaft on the drive coupler. Remove the transmission input driveshaft from the engine drive coupler.

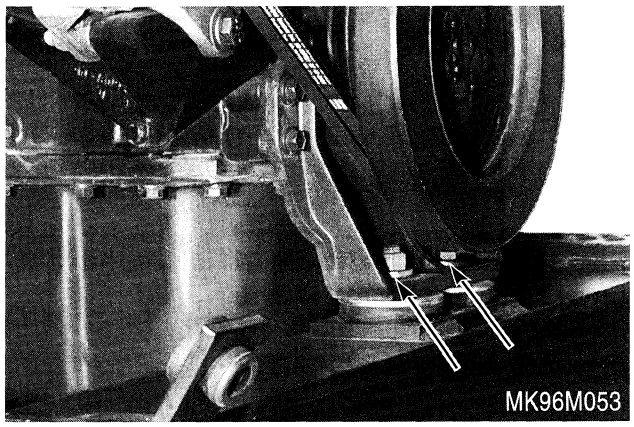
**IMPORTANT:** *Be sure the coupler moves freely on the shaft splines.*

## STEP 39



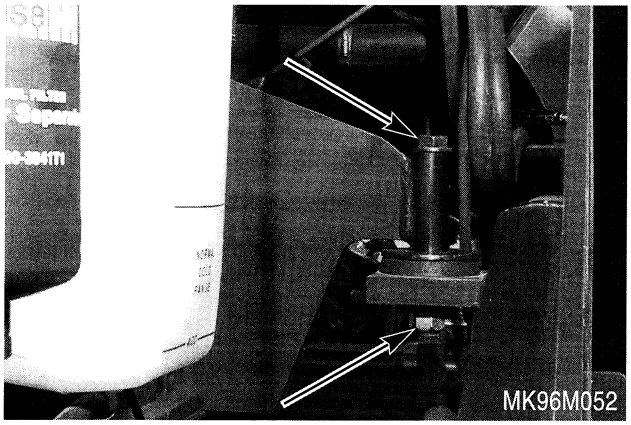

Install an OEM 4130 6000 lb (2722 Kg) Load Rotor on an overhead hoist. Connect the lifting chains to the front and rear engine lift brackets.

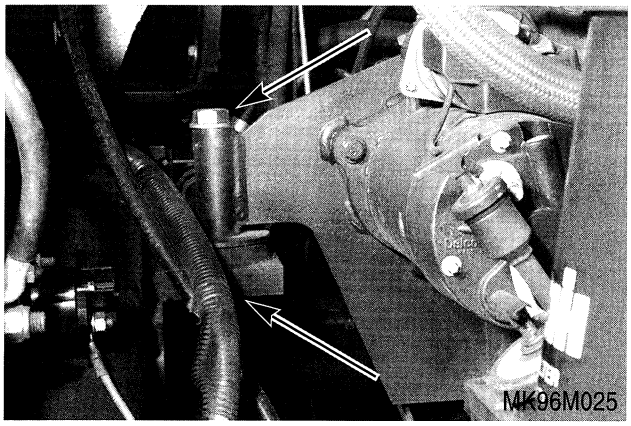
## STEP 40




Remove the front motor mount bolts, nuts and washers.

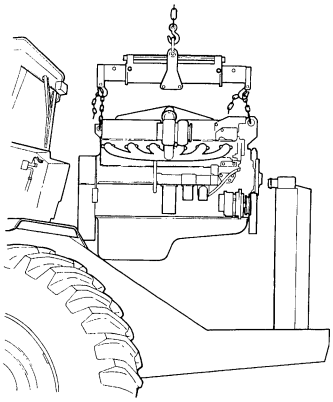
## STEP 41




Remove the LH and RH rear motor mounts.

## STEP 42

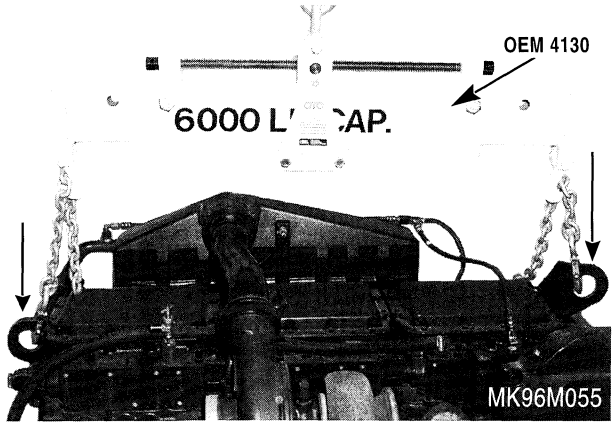


MB96M017

Be sure all hoses, lines, cables and wire harnesses are disconnected and clear of the engine. Lift the engine off the motor mounts and adjust the load rotor to balance the weight of the motor. Lift the engine until the oil pan will clear the side frame rails and remove the engine from the tractor.

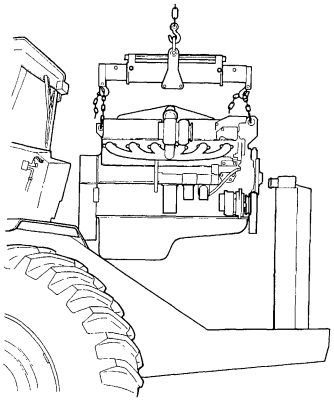
# ENGINE INSTALLATION

## STEP 45




Install an OEM 4130 6000 lb (2722 Kg) Load Rotor on an overhead hoist. Connect the lifting chains to the front and rear engine lift brackets. Lift the engine and adjust the load rotor to balance the weight of the motor.

## STEP 46

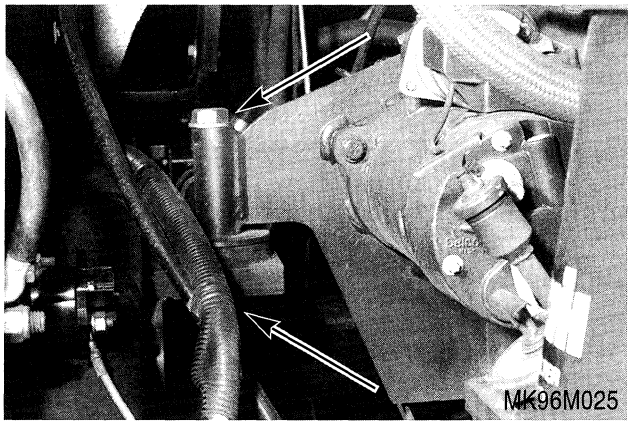


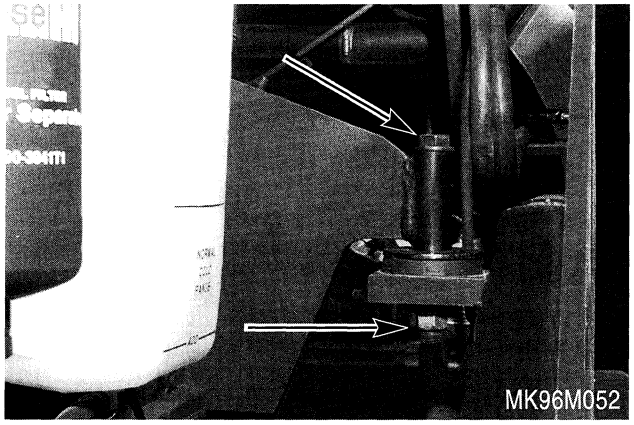
MB96M017

Lift the engine until the oil pan will clear the side frame rails and install the engine into the tractor. Lower the engine onto the motor mounts while guiding the transmission input driveshaft into the engine drive coupler.

**NOTE:** *Align the upper and lower motor mounts before the full weight of the engine is lowered onto the mounts.*

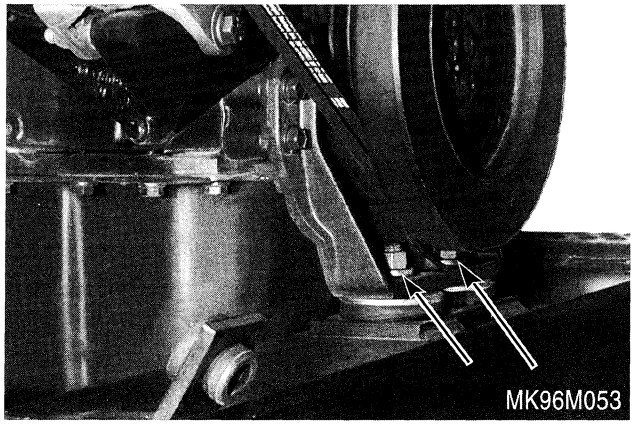
## STEP 47



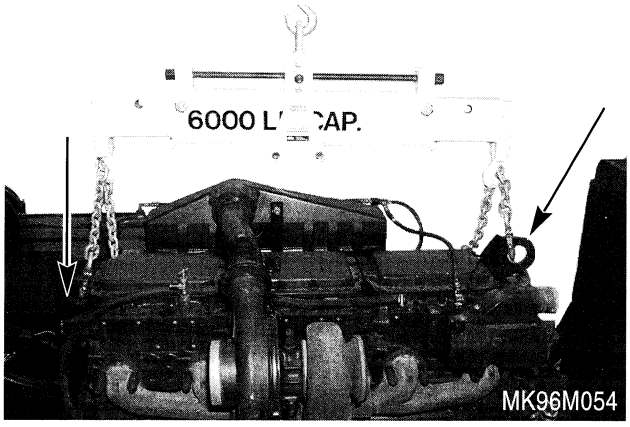

Install the RH and LH rear motor mount bolts, washers and nuts. Do not tighten the bolts.

## STEP 48



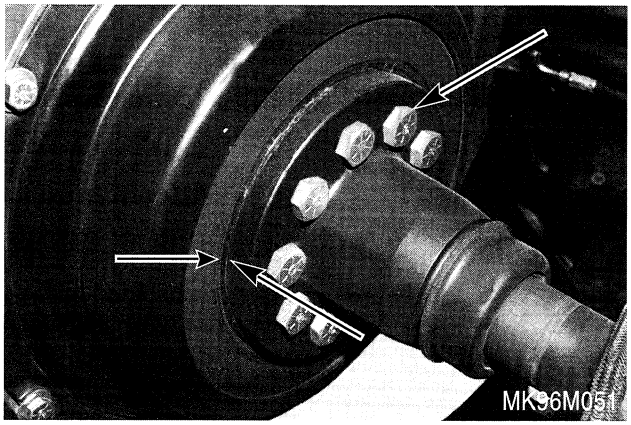

Install the front motor mount bolts, washers and nuts. Tighten the front motor mount bolts to a torque of 167 to 215 lb ft (226 to 291 Nm) and the rear mount bolts to a torque of 300 to 380 lb ft (406 to 515 Nm).

## STEP 49




Disconnect the load rotor and hoist from the engine.

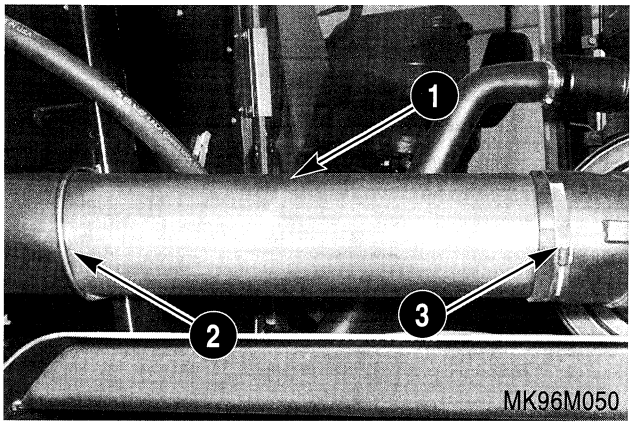
## STEP 50




Align the driveshaft and the drive coupler with the marks made before disassembly. Tighten the bolts to a torque of 157 to 173 lb ft (212 to 236 Nm).

**IMPORTANT:** *The coupler must move freely on the splines of the shaft.*

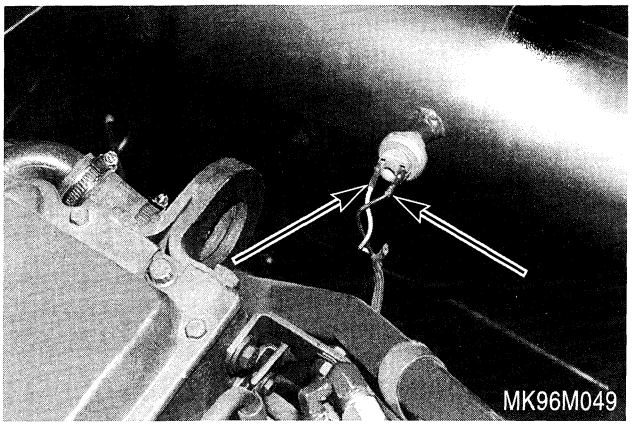
## STEP 51




Install the air inlet tube (Ref. 1) the U-clamp (Ref. 2) and clamp (Ref. 3) onto the air cleaner and hood support bracket. Do not tighten the clamp or U-clamp.

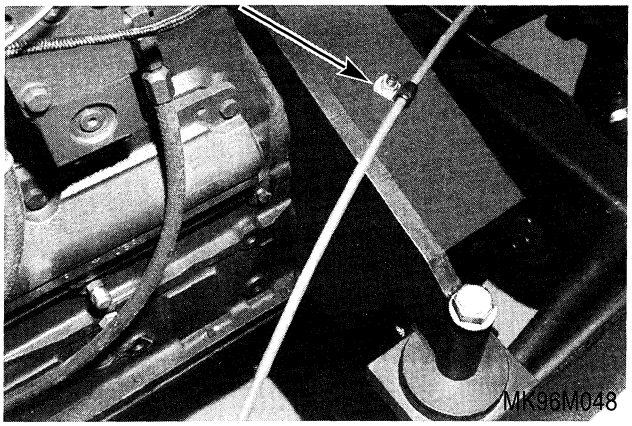
# Left Side

## STEP 52



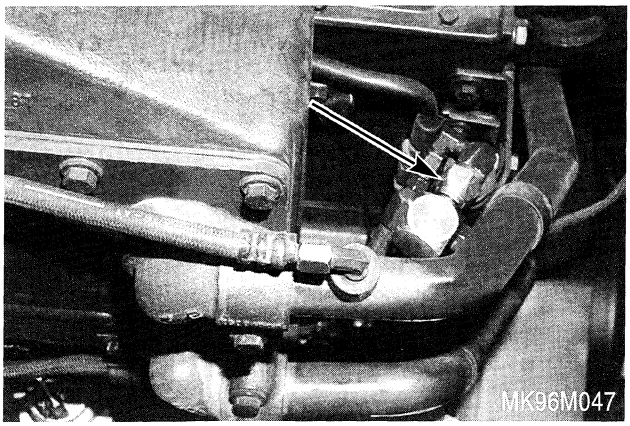

Connect the wires to the air filter restriction indicator switch.

## STEP 53



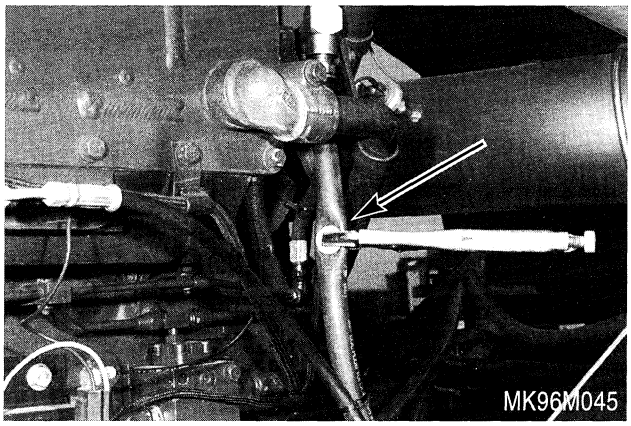

Install the throttle cable clamp on the flywheel guard.

## STEP 54



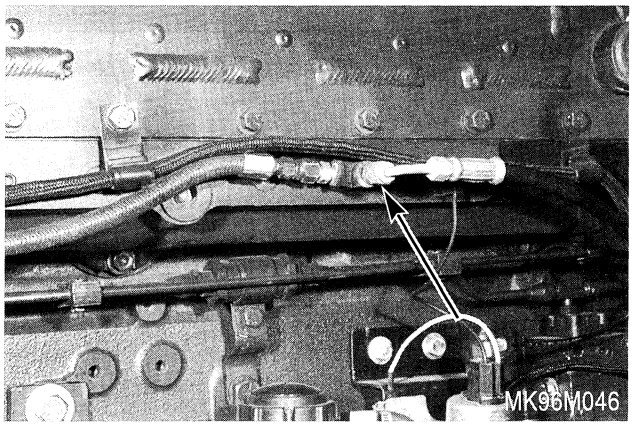

Install the fuel return line.

## STEP 55



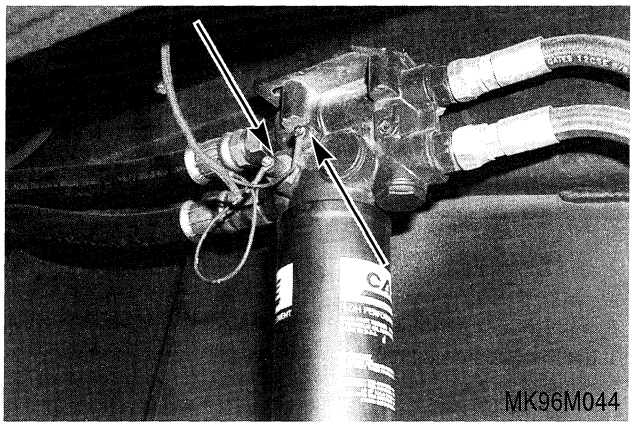

Remove the clamp from the fuel return hose.

## STEP 56



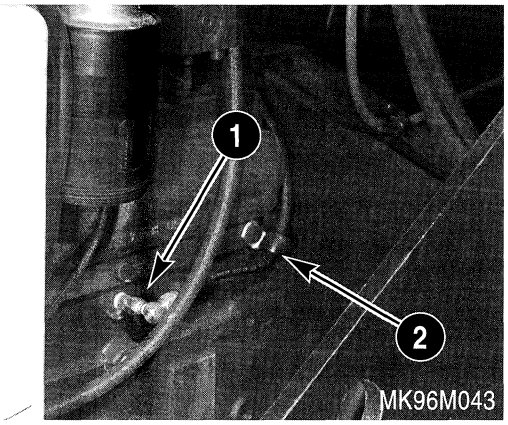

Install the axle cooling turbo boost pressure line on the intake manifold.

## STEP 57



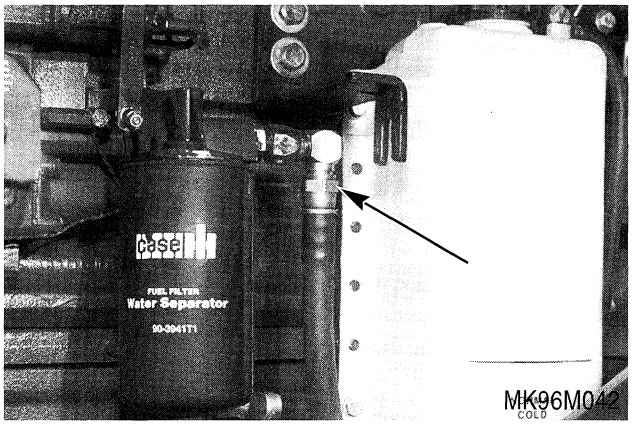

Install the temperature sensor and the restriction indicator wires on the transmission filter head.

## STEP 58



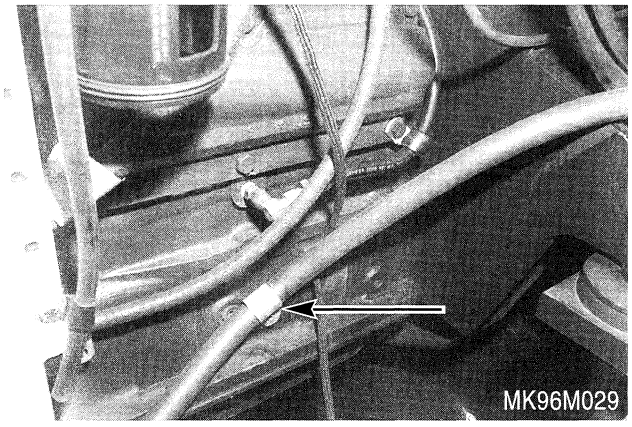

Install the oil pressure hose (Ref. 1) and clamp (Ref. 2).

## STEP 59



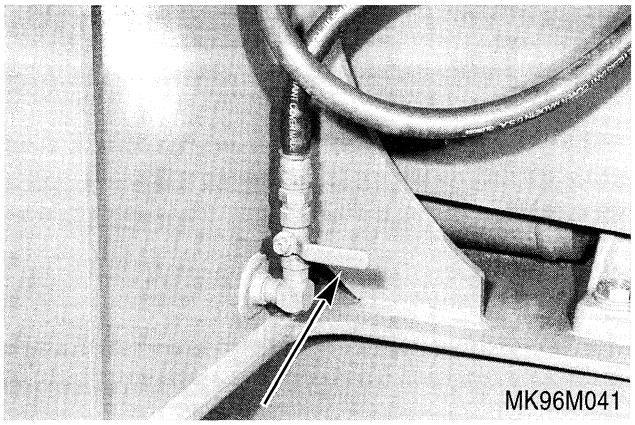

Install the fuel hose onto the fuel filter.

## STEP 60



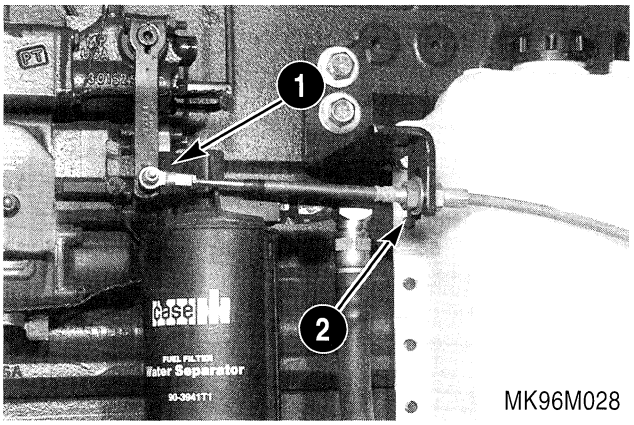

Install the fuel line clamp on the engine.

## STEP 61



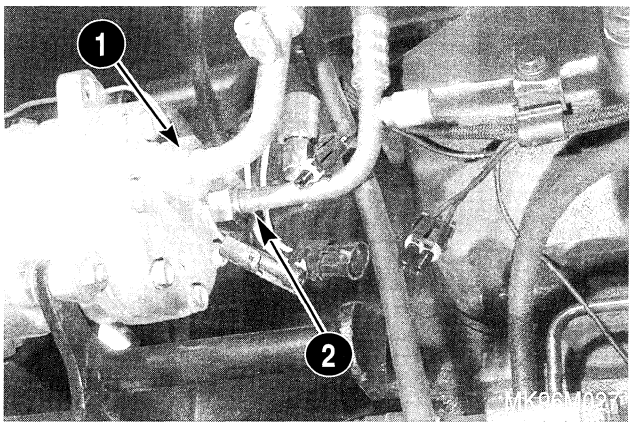

Turn on the fuel supply hose valve.

## STEP 62



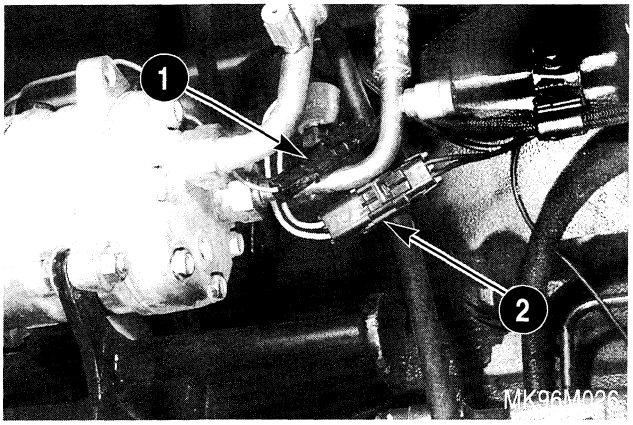

Install the throttle cable on the throttle lever (Ref. 1) and the cable mount (Ref. 2).

## STEP 63




Lubricate the new O-rings with clean refrigerant oil and install on the hose end fittings. Install the suction (Ref. 1) and the discharge (Ref. 2) hoses on the compressor.

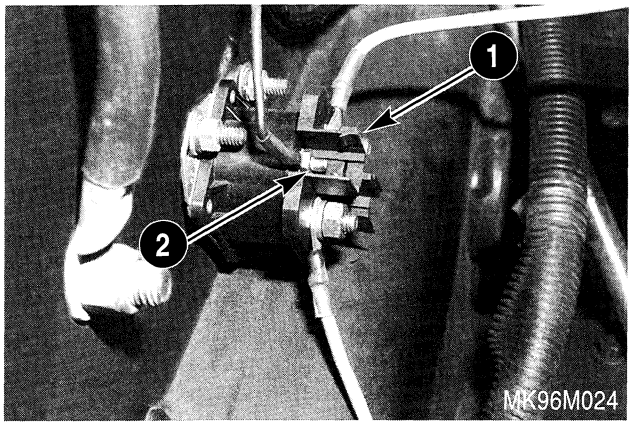
## STEP 64




Connect the compressor clutch (Ref. 1) and the low pressure sensor (Ref. 2) wires to the engine wire harness.

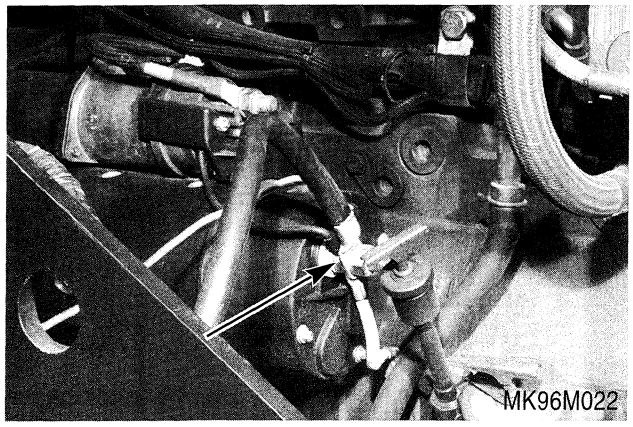
# Right Side

## STEP 65



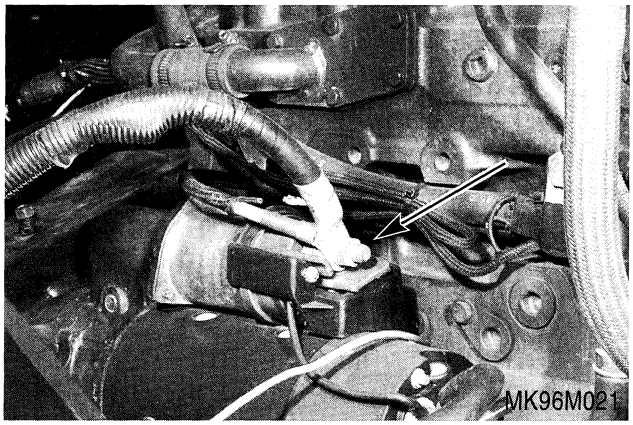

Install the starter solenoid (Ref. 1) and the engine wire harness (Ref. 2) wires onto the magnetic starter switch. Install the switch cover.

## STEP 66



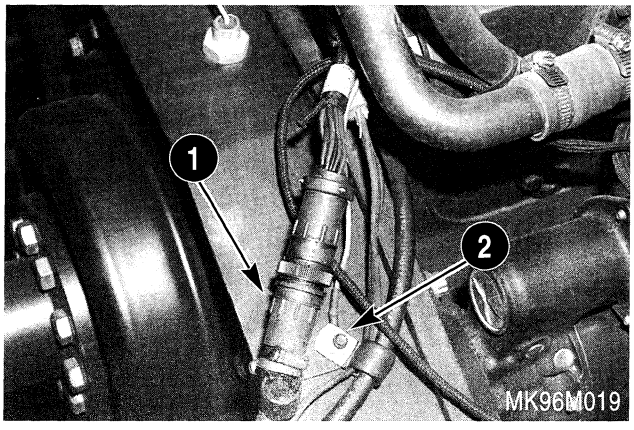

Install the negative cable to the starter.

## STEP 67



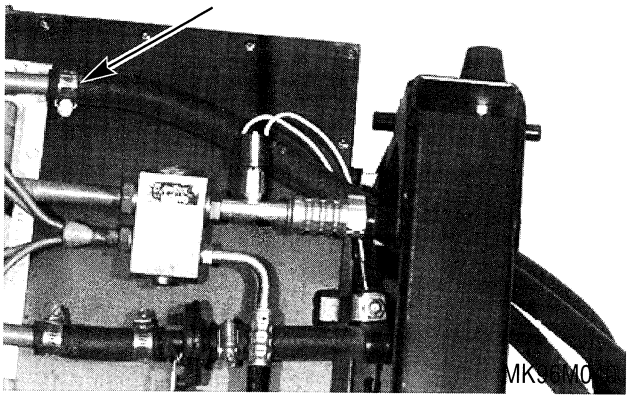

Install the positive battery cable to the starter solenoid.

## STEP 68



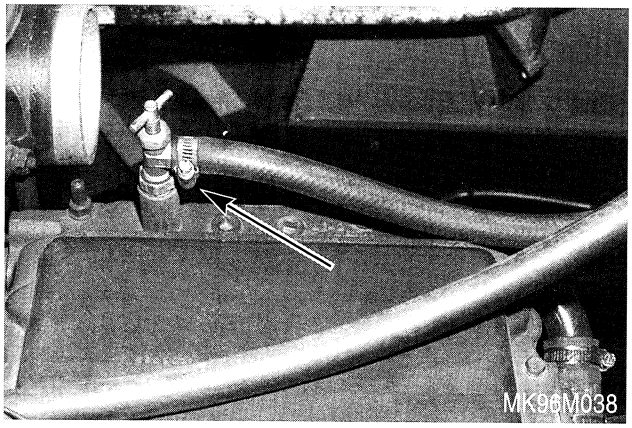

Connect the engine wire harness (Ref. 1) to the front frame wire harness. Install the cable clamp bracket and hose clamp (Ref. 2).

## STEP 69



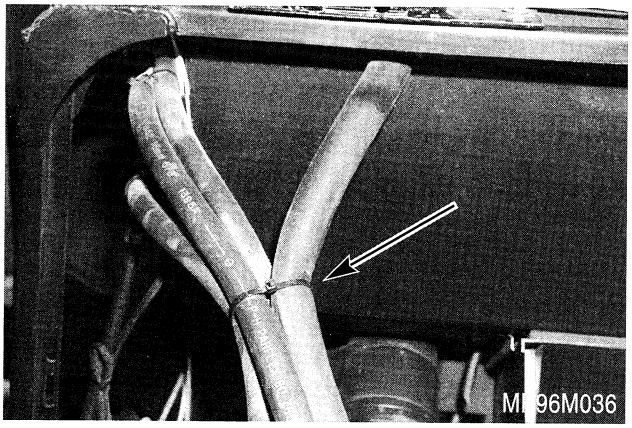
Install the heater return hose on the heater core.

## STEP 70



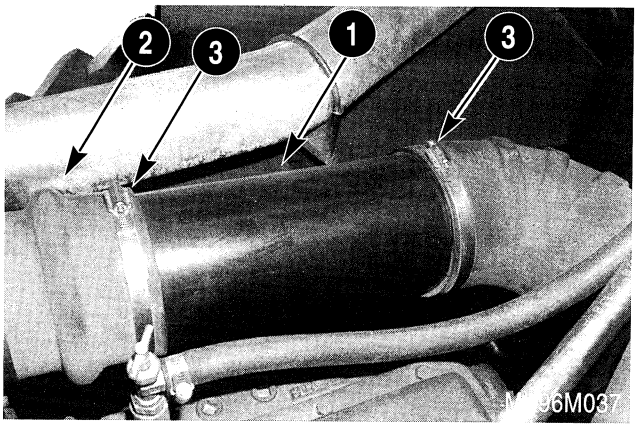

Install the heater hose on the shutoff valve.

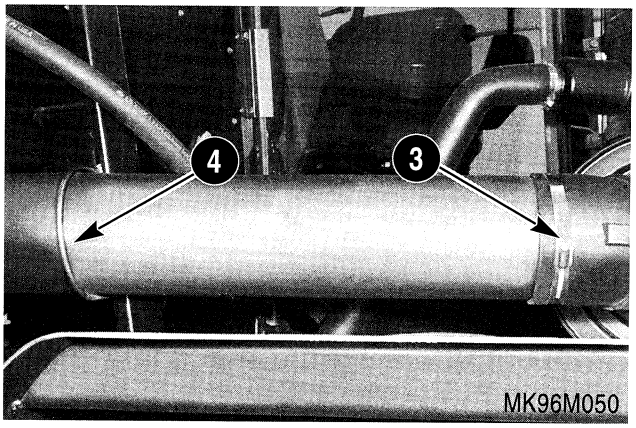
## STEP 71




Install a cable tie around the hoses in front of the HVAC box.

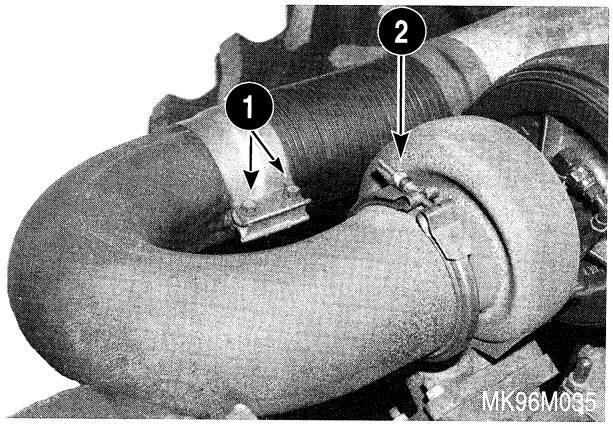
## STEP 72



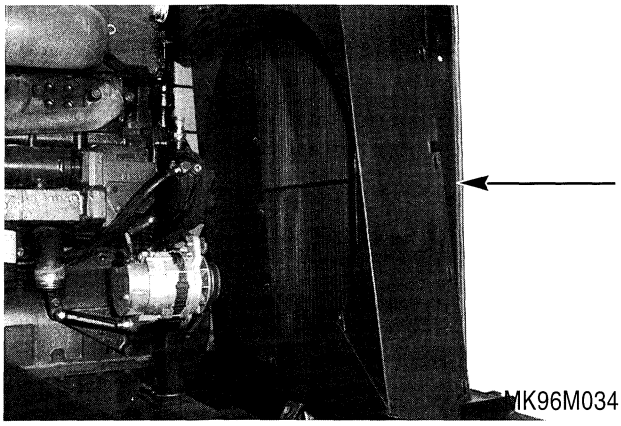

Install the turbo inlet tube (Ref. 1) and the flex connector (Ref. 2). Tighten all the inlet clamps (Ref. 3) to a torque of 77 to 93 lb inch (9 to 11 Nm). Tighten the U-clamp (Ref. 4) to a torque of 9 to 10 lb ft (12 to 14 Nm).

## STEP 73



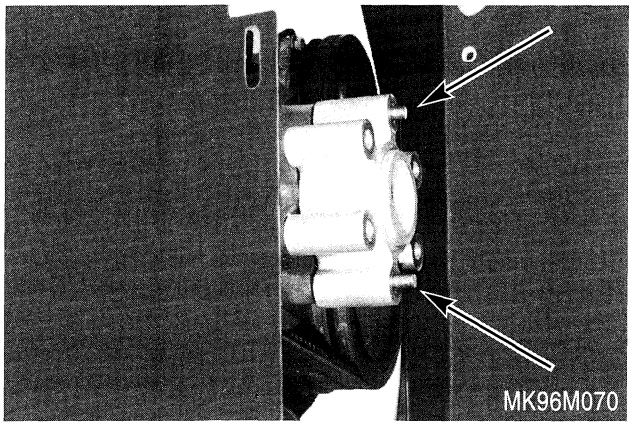

Install the exhaust pipe elbow between the turbo outlet and the exhaust pipe. Tighten the band clamp (Ref. 1) to a torque of 34 to 38 lb ft (46 to 52 Nm) and the elbow to turbo clamp (Ref. 2) to a torque of 75 lb inch (8 Nm).

## STEP 74



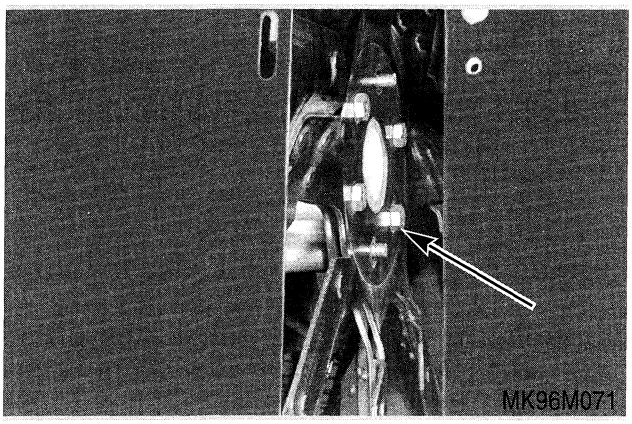

Install the fan shroud into the tractor. Place the shroud against the frame crossmember.

## STEP 75



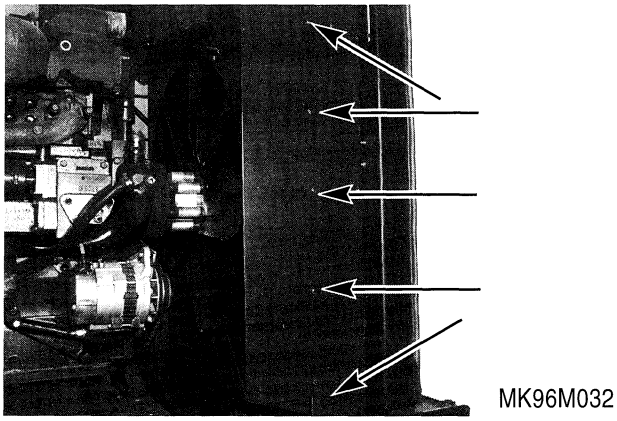

Install two pilot studs into the fan mounting flange and install the fan spacer on the studs.

## STEP 76



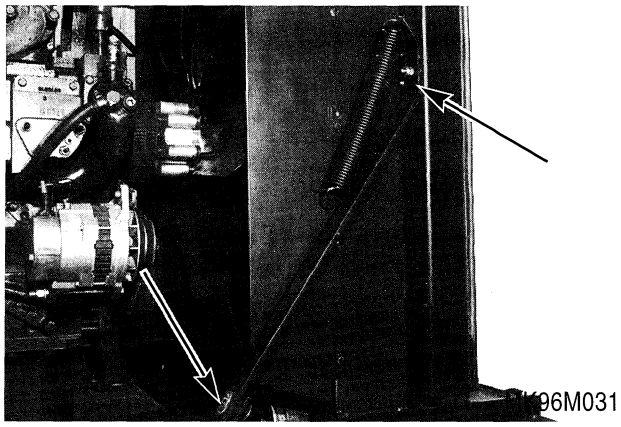

Install the fan on the spacer and install four of the mounting bolts. Remove the pilot studs and install the last two mounting bolts. Tighten the mounting bolts to a torque of 70 to 80 lb ft (95 to 108 Nm).

## STEP 77



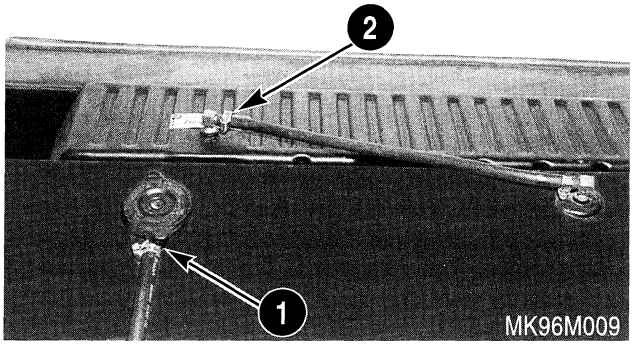

Move the fan shroud forward and install the five right side and left side mounting bolts. Tighten the bolts to a torque of 12 to 14 lb ft (16 to 19 Nm).

## STEP 78




Install the radiator mount brace. Tighten the mounting bolts to a torque of 70 to 80 lb ft (95 to 108 Nm).

## STEP 79




Install the coolant recovery hose (Ref. 1) onto the radiator fill tank. Install the de-airiation hose (Ref. 2) between the radiator fill tank and the radiator. Tighten the clamps.


Suggest:

If the above button click is invalid.

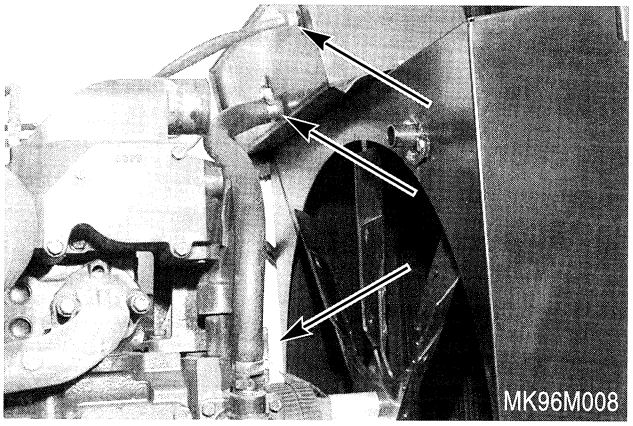
Please download this document

first, and then click the above link

to download the complete manual.

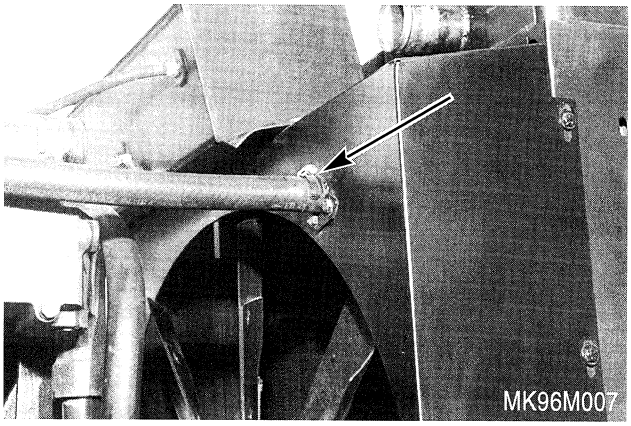
Thank you so much for reading

## STEP 80



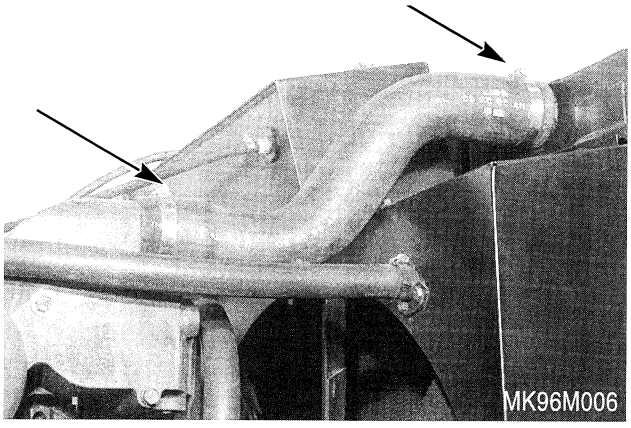

Install the air bleed hose and shunt hose between the engine and the radiator fill tank.

## STEP 81



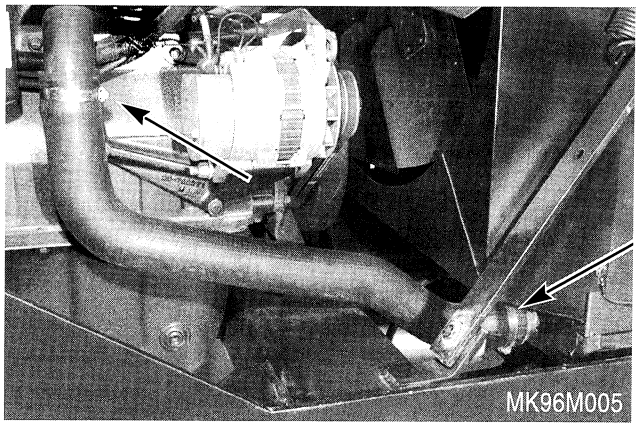

Install the HVAC aspirator hose onto the fan shroud.

## STEP 82



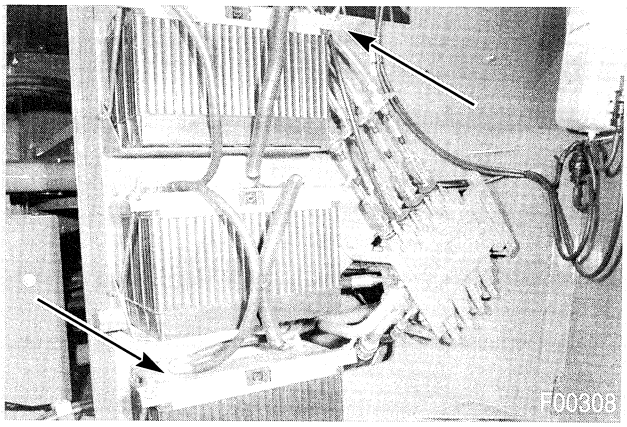

Install the upper radiator hose on the engine and the radiator.

## STEP 83




Install the lower radiator hose on the radiator and the engine.

## STEP 84




Open the battery access door. Connect the positive and the negative battery cables.

**NOTE:** *Always connect the positive cable first and the negative cable last.*