TABLE OF CONTENTS
4490 AND 4690 TRACTORS

Rac 8-21453

Printed in U.S.A.
Revised November, 1985

CASE CORPORATION

Section

1210

GENERAL SPECIFICATIONS

4490 TRACTORS

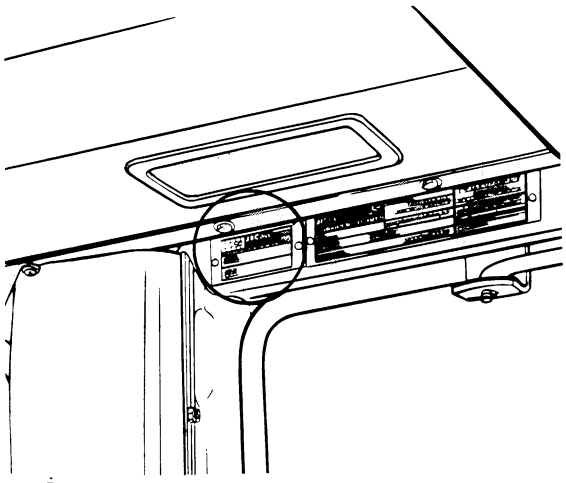
Written In *Clear And Simple English*

CASE CORPORATION

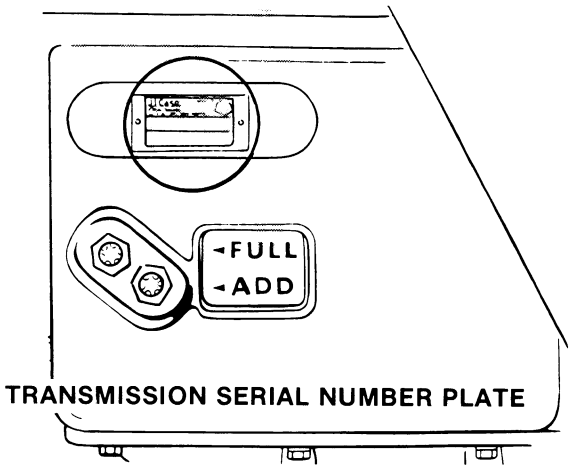
Rac 8-21460

Printed in U.S.A.
August, 1979

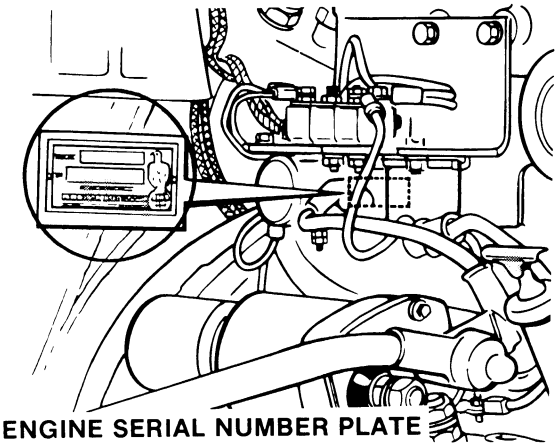
SERIAL NUMBERS



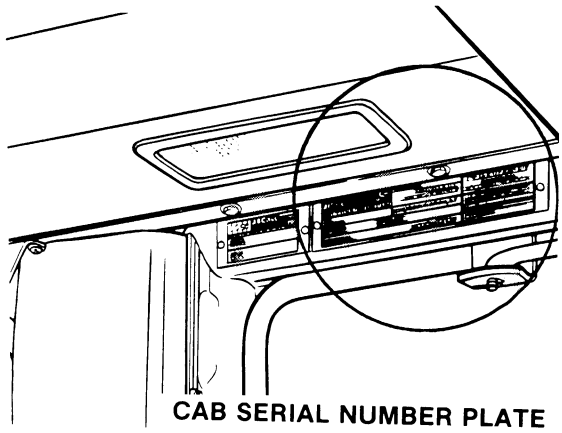
MODEL AND PRODUCT IDENTIFICATION NUMBER PLATE



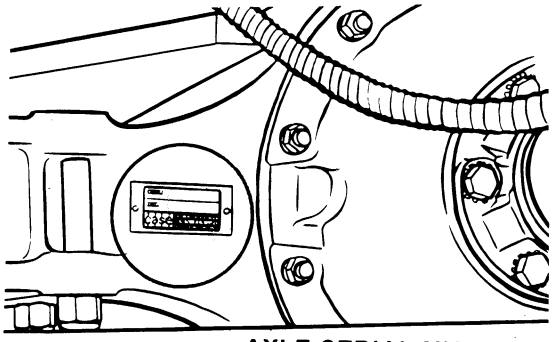
TRANSMISSION SERIAL NUMBER PLATE



ENGINE SERIAL NUMBER PLATE



CAB SERIAL NUMBER PLATE



AXLE SERIAL NUMBER PLATE (Front and Rear)

DIESEL ENGINE SPECIFICATIONS

General

Type	Six Cylinder, Four Stroke Cycle, Turbocharged, Valve in Cylinder Head
Firing Order	1-5-3-6-2-4
Bore	4-5/8 Inches (117.5 mm)
Stroke	5 Inches (127 mm)
Piston Displacement	504 Cubic Inches (8 259 cm^3)
Compression Ratio	15.75 to 1
Cylinder Sleeves	Wet Type, Can be Removed
Governor Engine Speed Without Load	2340 to 2380 RPM
Rated Engine Speed	2200 RPM
Engine Idle Speed	725 to 775 RPM
Rocker Arm-to-Valve Clearance (Exhaust)	0.025 Inch (0.635 mm)
(Intake)	0.015 Inch (0.381 mm)

IMPORTANT: *Rocker Arm-to-Valve clearance adjustment must be made when the engine is not running.*

Piston and Rod

Rings Per Piston	3
Compression Rings Per Piston	2
Oil Rings Per Piston	1
Type Piston Pin	Full Float
Type Bearings	Replacement Bearings Available, Steel Back with Aluminum or Copper and lead liners.

Main Bearings

Quality of Bearings	7
Type of Bearings	Replacement Bearings Available, Steel Back With Aluminum or Copper and Lead Liners.

Engine Lubrication System

Oil Pressure	45 to 60 PSI (310 to 414 kPa)(3.1 to 4.14 bar) with Engine Warm and Operating at Rated Speed.
Type System	Pressure and Spray with Piston Oil Cooling
Oil Pump	Gear Type
Oil Filters (2)	Full Flow, Turn on Type, ByPass Valve in Filter Base.
Oil Capacity	With Filters, 28 U.S. Quarts (27 litres) Without Filters, 24 U.S. Quarts (23 litres)
Oil Cooler	Engine Oil

Fuel System

Fuel Injection Pump	Robert Bosch, Type PES.
Pump Timing	25 Degrees (BTC) Before Top Center. **IMPORTANT:** *Do not increase past 25 degrees BTC at any time. The given 25 degrees Gives Minimum Emissions in Tractor Operation and Longer Engine Life.*
Fuel Injectors	American Bosch, 17 mm.
Fuel Transport Pump	Plunger Type, a Part of the Fuel Injection Pump
Governor	Variable Speed, Part of the Fuel Injection Pump
First Stage Fuel Filter	Full Flow, Turn on Type
Second Stage Fuel Filter	Full Flow, Turn on Type
Water Trap and Drain For Fuel Tanks	Location is in Bottom of Each Fuel Tank
Fuel Tank Capacity	64 U.S. Gallons (242.3 litres) Each Tank, 128 U.S. Gallons (484.6 Litres) Total
Fuel Level Gauge	Electric, Location is on Instrument Cluster
Hand Primer Pump	Location is on Top of Fuel Transport Pump
Primary Fuel Filter	Location is at Bottom of Fuel Transport Pump

GENERAL TRACTOR SPECIFICATIONS

Air Intake System

Type	Dry Type Air Induction System, Two Stage with Service Indication, Strata Tube.

Cooling System

Capacity	48 U.S. Quarts (45.4 litres)
Type	Pressure System, Thermostat Controlled, Bypass Impeller Type Pump
Radiator	Heavy Duty Fin and Tube Type
Thermostats (2)	Start to Open at Approximately 175°F (79 °C), Fully Open at 202°F (94°C)
Pressure Cap	10 PSI (69 kPa)(6.9 bar) No Vent
Coolant Level	Low Coolant Warning Lamp on Instrument Cluster

Electrical System

Type of System	12 volt, Negative Ground
Batteries	Two 12 Volt Batteries Connected in Parallel, AABM Group Size 30H, Rated in 1.255 to 1.265 Specific Gravity. Discharge Rate 300 Amperes at 0° F. Voltage Decrease to 9.2 After 10 Seconds. Voltage Decreases 1.0 Volt per Cell After 5 Minutes.
Alternator	12 Volt, 72 Ampere Output, Negative Ground
Voltage Regulator	12 Volt, Solid State, Inside Component of Alternator
Starting Motor	12 Volt with Solenoid Switch
Headlights (2)	12 Volt, 40/60 Watt Sealed Beam High-Low
Floodlights (8 max)(Optional)	12 Volt, 50 Watt, Sealed Beam
Flasher Lights (2) With Direction Turn Signals	12 Volt, Amber Lens
Rear Flood and Taillight	12 Volt, 35 Watt Sealed Beam With Taillight Bulb.
Tractor Electrical System Circuit Breaker	12 Volt, Dual 50 Ampere Circuit Breakers Connected in Parallel, 100 Ampere Rating, 80 Ampere Continuing Capacity.
Cab Electrical System Circuit Breaker	12 Volt, 20 Ampere

Bulb and Lamp Replacement:

Instrument Cluster Warning Bulbs	No. 168
Instrument Cluster Illumination Bulbs	No. 194
Dome Light Bulb	No. 93
Console Light Bulb	No. 194
Flasher Light Bulbs	No. 1156
Headlight Lamps	No. 4652
Front and Rear Floodlights	No. H7606
Rear Flood and Taillight:	
Lamp	No. 4409
Bulb	No. 1156

Fuse and Circuit Breaker Replacement:

Wiper	7.5 Ampere
Instrument Panel Lights	5.0 Ampere
Headlight Low Beam	15 Ampere
Accessories	15 Ampere
Blower	15 Ampere
Radio	3.0 Ampere
Headlight High Beam	15 Ampere
Key Switch	20 Ampere
Cigarette Lighter	15 Ampere
Console Light	3.0 Ampere
Rear Floodlights (Optional)	20 Ampere
Rear Steering	3.0 Ampere
Dome Light	3.0 Ampere
Flasher Warning Lights	15 Ampere
Front Floodlights (Optional)	20 Ampere
Sound Warning for	Transmission Filters, Engine Oil Pressure, Coolant Temperature and Hand Brake.

Tractor Brakes

Type ..... Hydraulic Actuated, Self-Adjusting, Several Plate Dry Type.

Parking Brake

Type ..... Cable Actuated by over center Type Handle Adjustable from Operators Seat. Several Plate Type.

Power Shift Transmission

Type ..... Three Speed Compound Planetary with Hydraulically Actuated Clutches and Four Speed Gear Section.
Gear Selection ..... 12 Speeds Forward and Four Speeds Reverse
Shift Control ..... Hydraulic Power Shift Controlled by a Mechanical Shifter Actuated by Levers on the Instrument Console.
Oil Cooler ..... Transmission, Hydraulic and Steering Oil
Oil Type ..... Case PTF Power Transmission Fluid
Oil Refill Capacity (With PTO and Hitch) ..... *32 U.S. Quarts (30.3 litres)
(No PTO) ..... *30 U.S. Quarts (28.4 litres)
*Includes 8 Qts (7.6 litres) for Filter Change.

Hydrostatic Front Power Steering

Oil Supply ..... Hydraulic Pump, 15 gpm (56.8 litres/min) at 2200 RPM and 2000 PSI (13 790 kPa)(137.9 bar). 10 gpm (38 litres/min) for front steering and 5 gpm (19 litres/min) returns to filters.
Relief Valve Pressure ..... 2250 PSI (15 414 kPa)(154.1 bar)
Front Steering Cylinders ..... Two Cylinders with two way action
Steering Pump ..... Hydrostatic Type, Actuated by the steering wheel

Rear Power Steering

Oil Supply ..... Hydraulic Pump, 10 gpm (37.85 litres/min) at 2200 RPM
Relief Valve Pressure ..... 1650 to 1900 PSI (11 377 to 13 101 kPa) (113.8 to 131 bars)
Rear Steering Cylinders ..... Two Cylinders with Two Way Action
Controls ..... Selective Steering with Automatic rear Steering with all Wheels Controlled by steering wheel or rear wheels Controlled by a hydraulic-electric servo system with three position selection switch and a toggle switch on operator console.

Axle Differential and Planetaries

Front and Rear ..... Spiral Bevel with Planetary Reduction in hub.
Differential Oil Capacity ..... 19 U.S. Quarts (18 litres) Each Differential
Planetary Oil Capacity ..... 11 U.S. Quarts (10.4 litres) Each Planetary

Hitch System

Type Control	Hand Lever
Type Valve	Three Position - Lift, Hold and Lower
Type Draft Arms	Rigid, Swing Type with Manual Float Adjustment
Type Hitch	Three Point, Category III
Hitch Coupler (Available)	Category III

Remote Hydraulic System

Pump	Axial Piston Pump, Pressure and Flow Compensated
Type Remote Valve	Closed Center, Two to Four Sections, Hand Lever Control, Variable Flow Control for Each Section.
Pump Capacity at 2200 RPM	31 GPM (117.4 litres/min) at 2000 PSI (13 790 kPa)(137.9 bar).
Max System Pressure	2250 PSI (15 503 kPa)(155 bar)
Couplings	ASAE R366 Standard, Fast Removal, Break Away Type
Hydraulic Charge Pump	43 GPM (162.8 litres/min) at 2200 RPM and 100 PSI (240 kPa)(2.4 bar).
Charge Circuit Relief Valve Pressure	35 PSI (241 kPa)(2.41 bar)

Power Takeoff

Type Clutch	Hydraulic Actuated
Rotation	Clockwise
Spline Size	21 Splines, 1-3/8 inch (34.9 mm) Diameter
Engine Speed 2200 RPM	1000 RPM Shaft Speed

Drawbar

Standard or Yoke Type	Full Swing, Roller Mount, Takes a 1-1/2 inch (38.1 mm) Diameter Pin

SPECIAL TORQUES

	U.S. Value	Metric Value
Engine To Torque Tube (1/2 inch, Grade 5 Bolts)	80 to 96 lb ft	109 to 130 Nm (10.9 to 13.0 kgm)
Engine To Torque Tube (1/2 inch, Grade 8 Bolts)	110 to 132 lb ft	149 to 179 Nm (14.9 to 17.9 kgm)
Engine To Torque Tube (3/4 inch, Grade 5 Bolts)	270 to 324 lb ft	366 to 439 Nm (36.6 to 43.9 kgm)
Seal Plate Inner Capscrews	15 to 20 lb ft	20 to 27 Nm (2.0 to 2.7 kgm)
Seal Plate Outer Capscrews	35 to 42 lb ft	48 to 57 Nm (4.8 to 5.7 kgm)
Seal Plate (1/2 inch Bolts)	80 to 96 lb ft	109 to 130 Nm (10.9 to 13.0 kgm)
Side Rail Bolts	150 to 180 lb ft	203 to 244 Nm (20.3 to 24.4 kgm)
Axle Retaining Bolts (7/8 inch For 70 and 90 Series Tractors)	600 to 720 lb ft	814 to 976 Nm (81.4 to 97.6 kgm)
Axle Retaining Bolts (7/8 inch For 94 Series Tractors)	400 to 480 lb ft	542 to 651 Nm (54.2 to 65.1 kgm)
Axle Retaining Bolts (1-1/8 inch For 70 and 90 Series Tractors)	1,300 to 1,400 lb ft	1 763 to 1 898 Nm (176.3 to 189.8 kgm)
Axle Retaining Bolts (1-1/8 inch For 94 Series Tractors)	800 to 880 lb ft	1 085 to 1 193 Nm (108.5 to 119.3 kgm)
Differential Drive Shaft (3/8 inch, Grade 5 Bolts)	35 to 42 lb ft	48 to 57 Nm (4.8 to 5.7 kgm)
Differential Drive Shaft (3/8 inch, Grade 8 Bolts)	45 to 54 lb ft	61 to 73 Nm (6.1 to 7.3 kgm)
Differential Drive Shaft (1/2 inch, Grade 5 Bolts)	80 to 96 lb ft	109 to 130 Nm (10.9 to 13.0 kgm)
Differential Drive Shaft (1/2 inch, Grade 8 Bolts)	110 to 132 lb ft	149 to 179 Nm (14.9 to 17.9 kgm)
Rear Transmission Bracket Bolts	150 to 180 lb ft	203 to 244 Nm (20.3 to 24.4 kgm)
Front Transmission Spacer Bolts	270 to 324 lb ft	366 to 439 Nm (36.6 to 43.9 kgm)
Transmission Oil Manifold Bolts	35 to 42 lb ft	48 to 57 Nm (4.8 to 5.7 kgm)
PTO Universal Joint (3/8 inch, Grade 5 Bolts)	35 to 42 lb ft	48 to 57 Nm (4.8 to 5.7 kgm)
PTO Universal Joint (3/8 inch, Grade 8 Bolts)	45 to 54 lb ft	61 to 73 Nm (6.1 to 7.3 kgm)
Torque Tube Spacer Bolts	150 to 180 lb ft	203 to 244 Nm (20.3 to 24.4 kgm)

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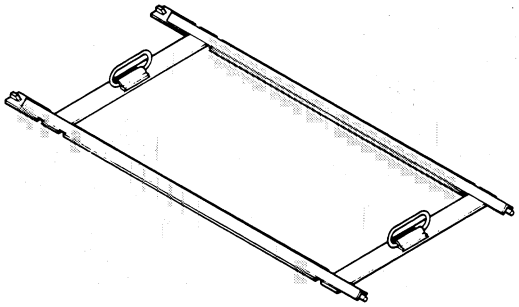
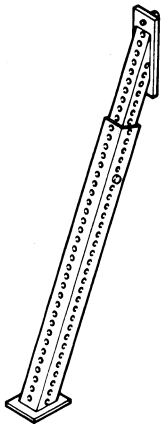
SPECIAL TOOLS

CAS-10500 FOUR WHEEL DRIVE SPLITTING SET COMPLETE

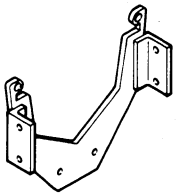


CAS-10500-6 TRACK ASSEMBLY 2 ENDS 3 CENTER

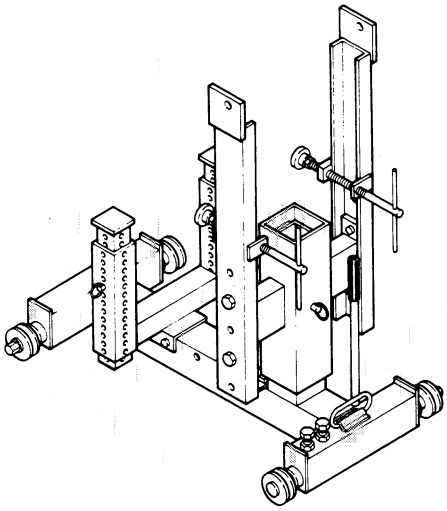
CAS-10501 ONE SECTION OF CENTER TRACK



ENGINE SAFETY STANDS
(PART OF COMPLETE SET)

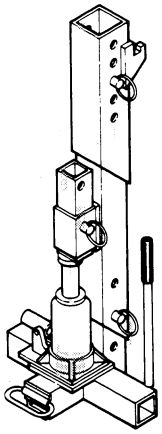


2470 AND 2670 ENGINE YOKE
(PART OF COMPLETE SET)

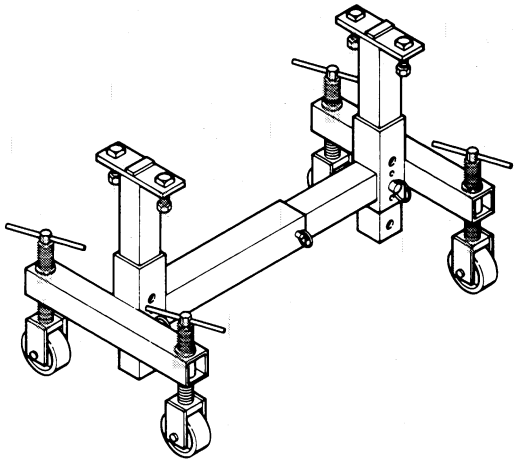


CAS-10500-3 TRANSMISSION CART

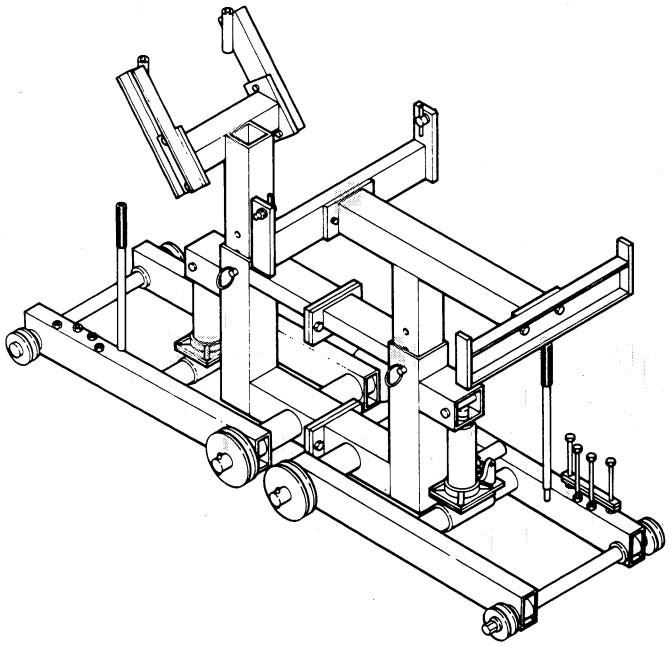
CAS-10500-5 FRAME LOCKS (2)



CAS-10500-1 SIDE FRAME JACKS (2)



CAS-10500-4 AXLE CART



CAS-10500-2 ENGINE CART

Disconnects For Engine, Front Axle And Transmission Removal

STEP 1

Pull the latch on each side of the tractor to release the hood.

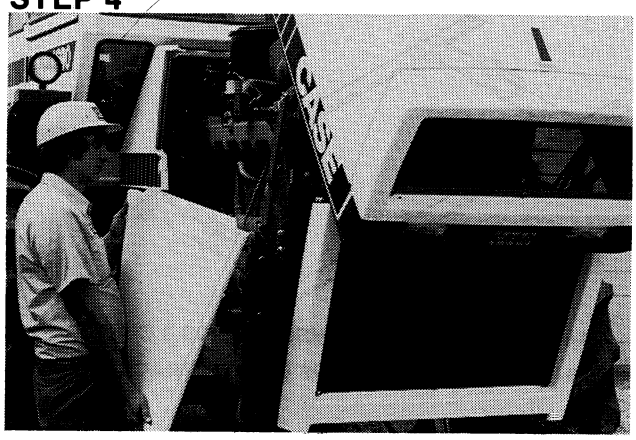
STEP 2

Lift the hood until the front hinge is in the lock position.

STEP 3

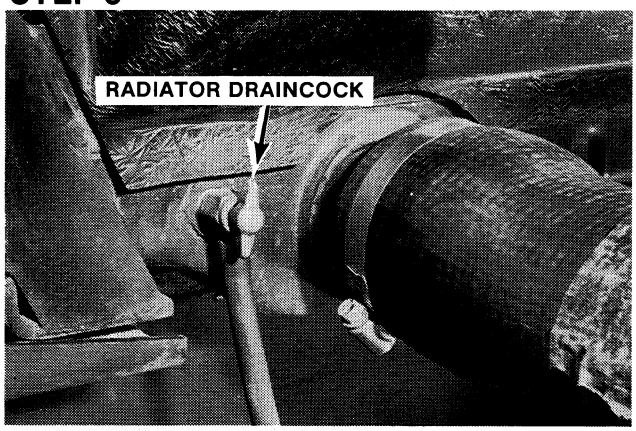
Make sure the hood is completely held in the up position by the hinge lock.

STEP 4



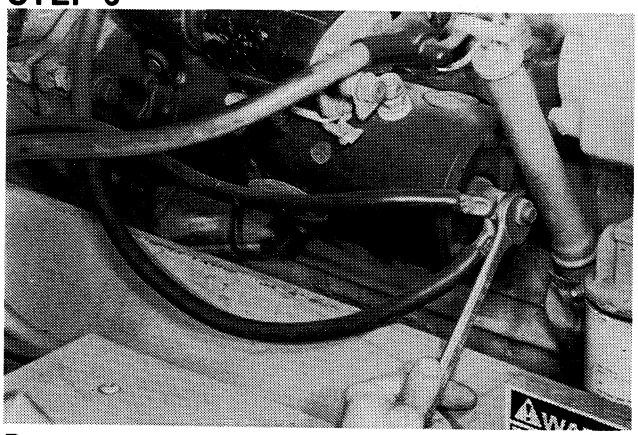
Remove the two side panels. To remove the sheet metal and radiator on the 2470 and 2670, see Section 2032 in your Case Service Manual.

STEP 5



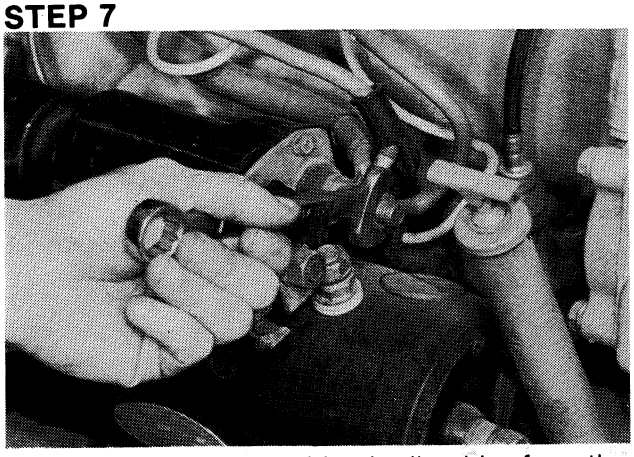
Drain the coolant from the radiator.

STEP 6



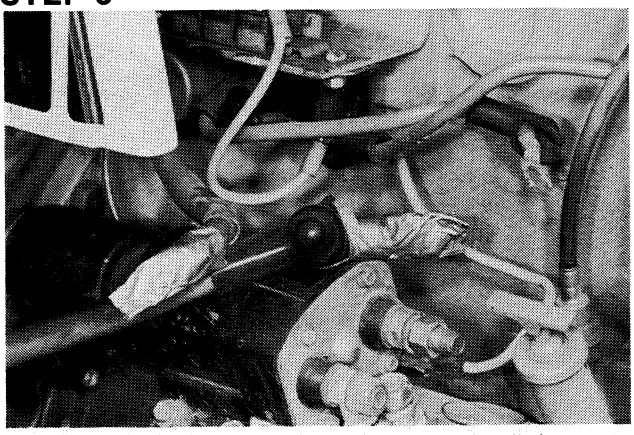
Remove the battery ground cables (negative black) from the starting motor.

STEP 7



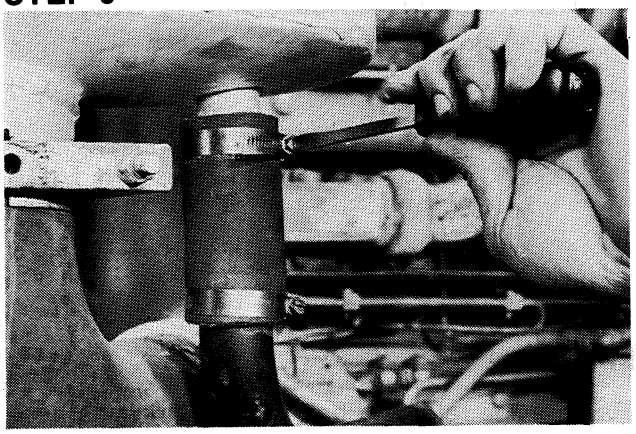
Remove the battery positive (red) cables from the solenoid on the starting motor.

STEP 8



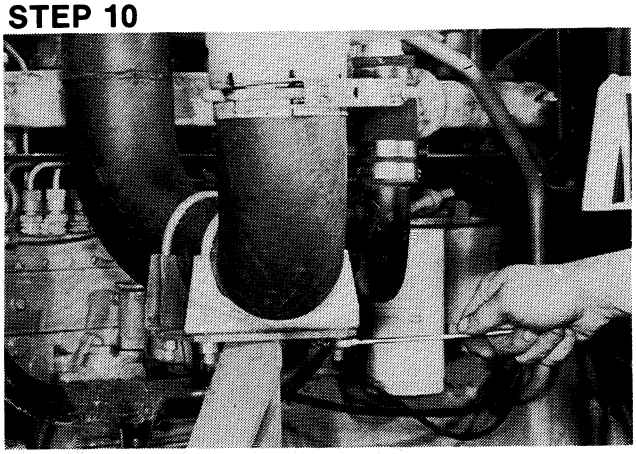
Put tape on the end of the positive (red) battery cables to prevent spark caused by an accident.

STEP 9



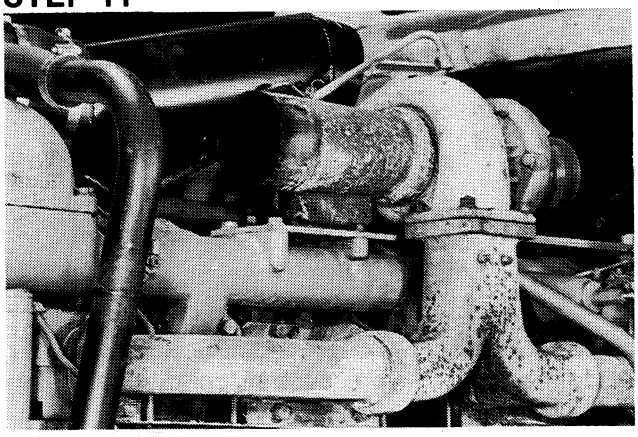
Remove the upper clamp that holds the aspirator hose to the muffler.

STEP 10



Remove the two clamps that hold the muffler tube to the support bracket. Remove the muffler and tube from the tractor.

STEP 11



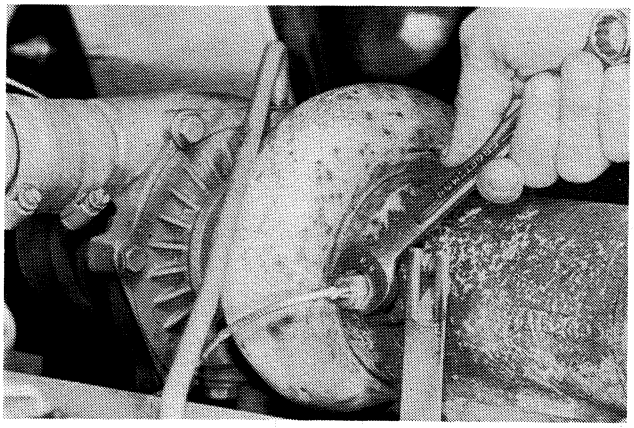
Muffler removed from the tractor.

STEP 12

(For 70 and 90 Series Tractors Only)

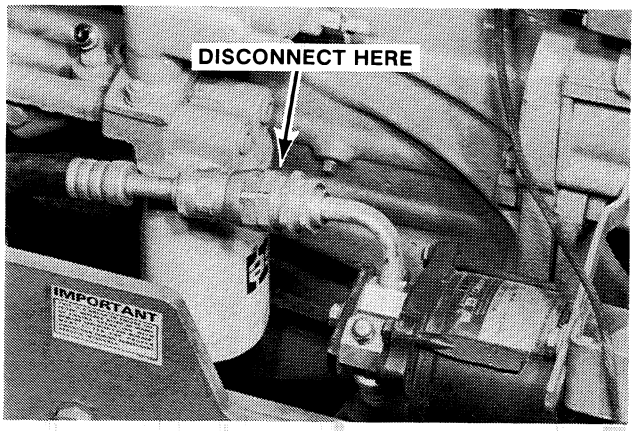
Disconnect the tachometer drive cable from the engine.

STEP 13



Remove the pyrometer sensing unit.

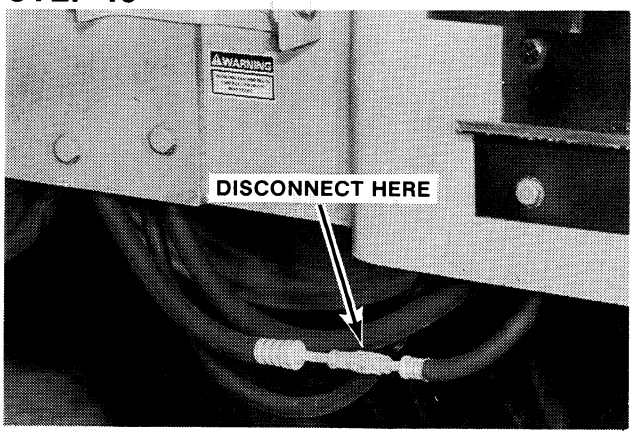
STEP 14



Disconnect the low pressure air conditioner hose at the coupler.

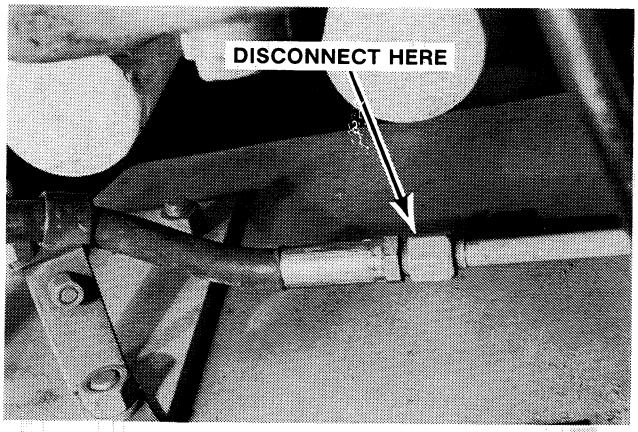
NOTE: *Disconnecting the air conditioner hoses at the coupler will prevent the loss of refrigerant.*

STEP 15



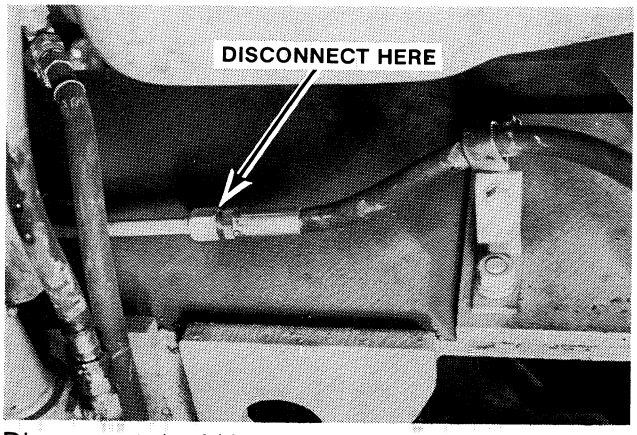
Disconnect the air conditioner hose from the cab to the receiver-drier.

STEP 16



Disconnect the RH oil cooler hose at the inside of the RH side rail.

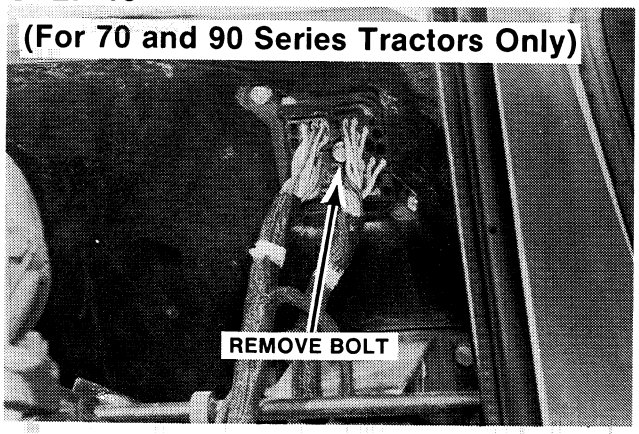
STEP 17



Disconnect the LH oil cooler hose at the inside of the LH side rail.

STEP 18

(For 70 and 90 Series Tractors Only)

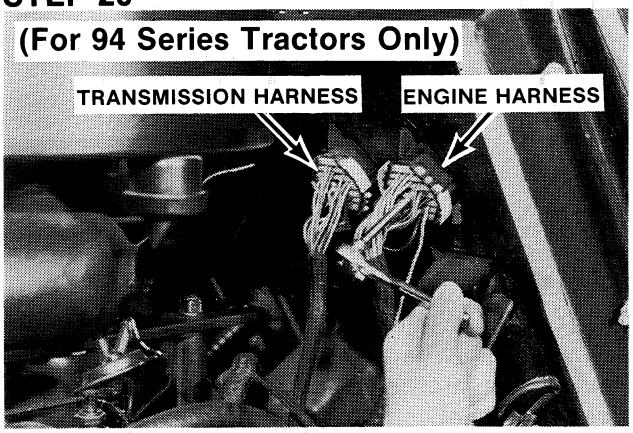


Remove the retaining bolt for the wiring harness connector.

STEP 19

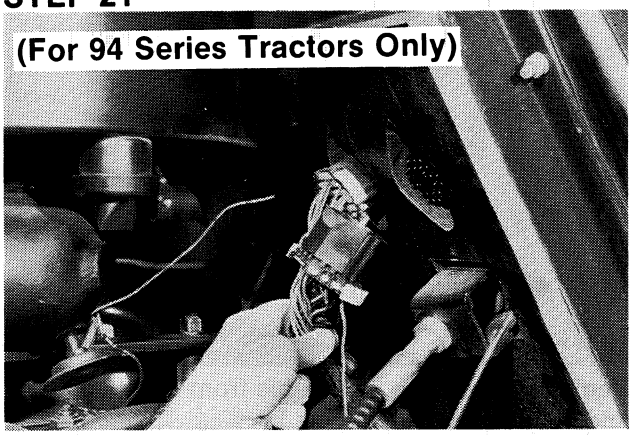
Pull the wiring harness connector from the firewall connector. Disconnect small connectors from the cab harness as needed.

STEP 20



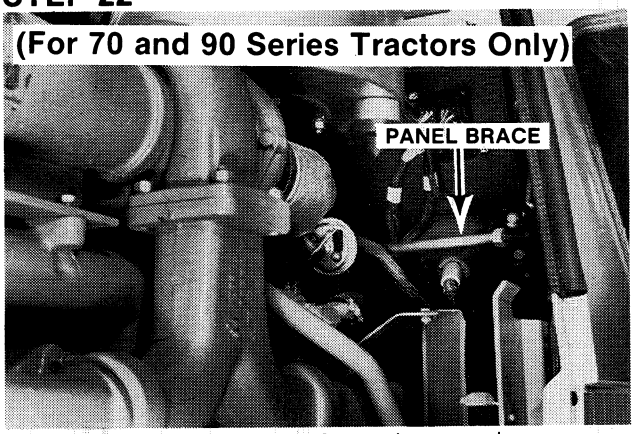
Loosen the bolt that retains the engine harness connector to the firewall connector.

STEP 21



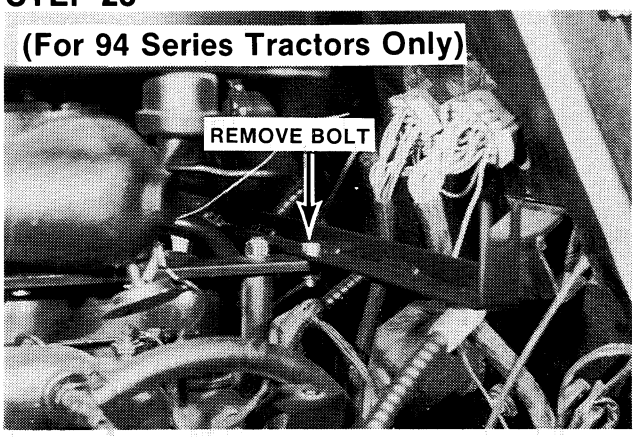
Disconnect the engine harness connector from the firewall connector.

STEP 22



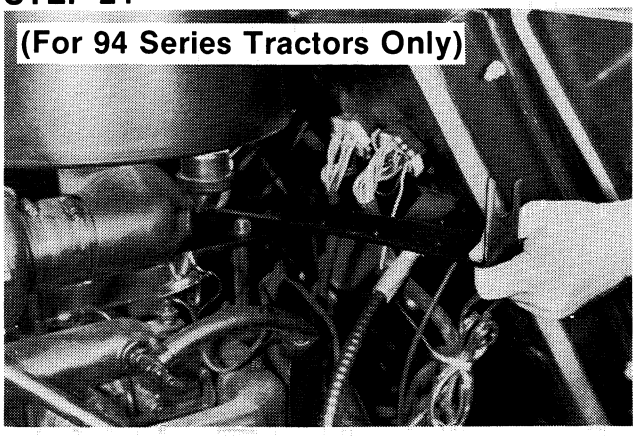
Remove the panel brace from the panels.

STEP 23



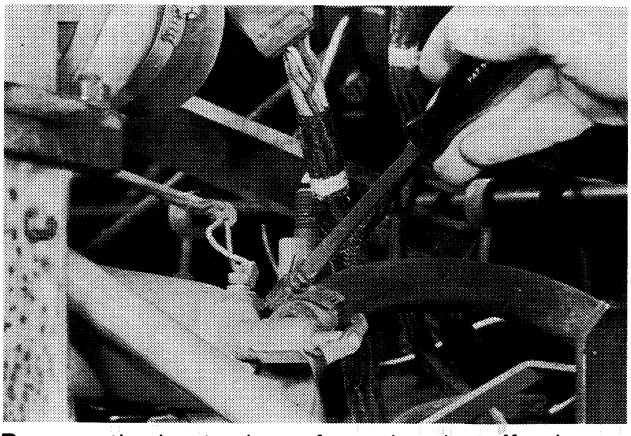
Remove the retaining bolt from the adjustment bar for the hood rear side panels.

STEP 24



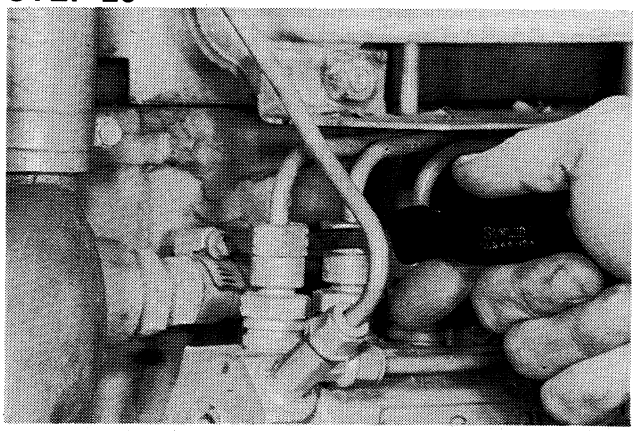
Remove the adjustment bar.

STEP 25



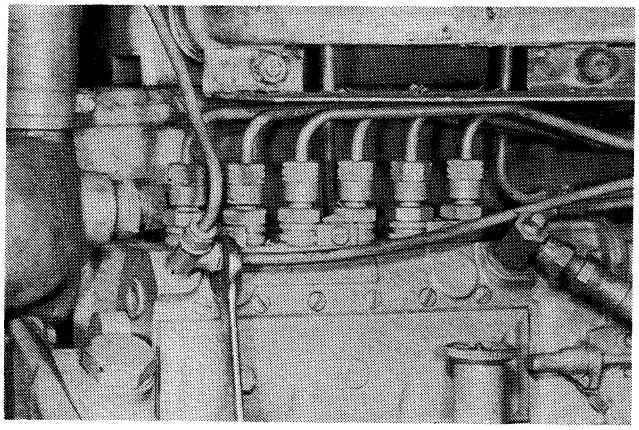
Remove the heater hose from the shutoff valve.

STEP 26



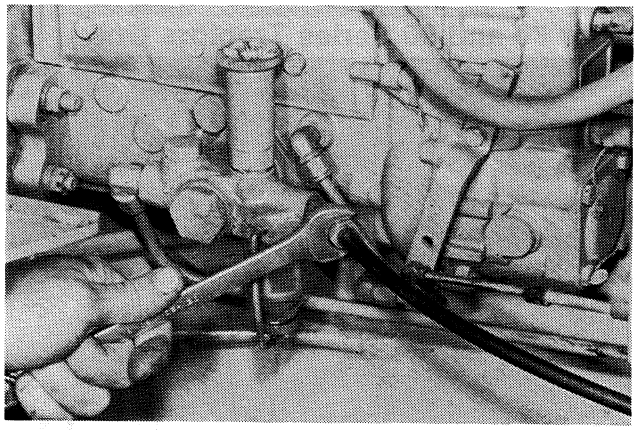
Remove the heater return hose from the water pump housing.

STEP 27



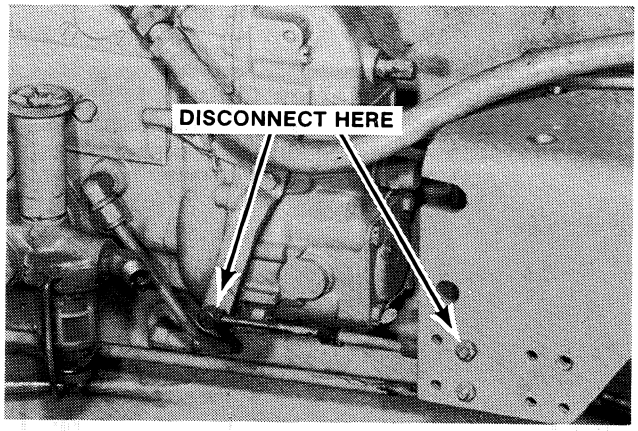
Disconnect the fuel return line from the fuel pump.

STEP 28



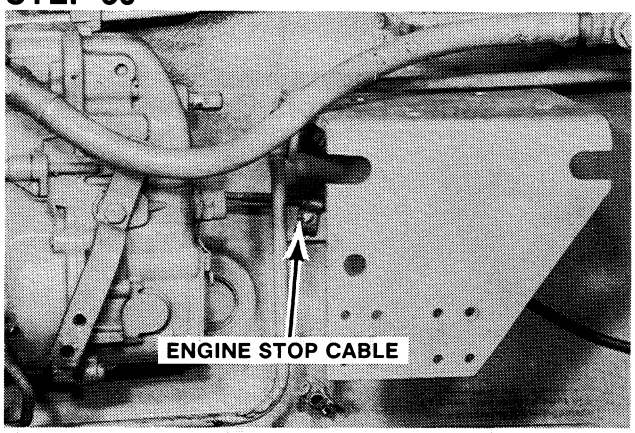
Disconnect the fuel supply line from the fuel pump.

STEP 29



Remove the throttle cable from the fuel pump and throttle bracket.

STEP 30



Remove the engine stop cable from the fuel pump and throttle bracket.

Suggest:

If the above button click is invalid.

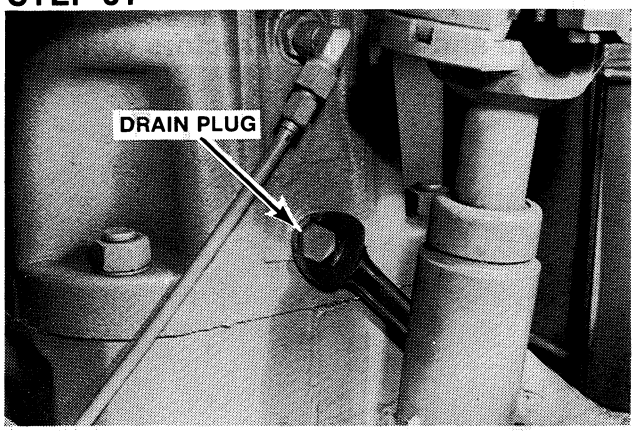
Please download this document

first, and then click the above link

to download the complete manual.

Thank you so much for reading

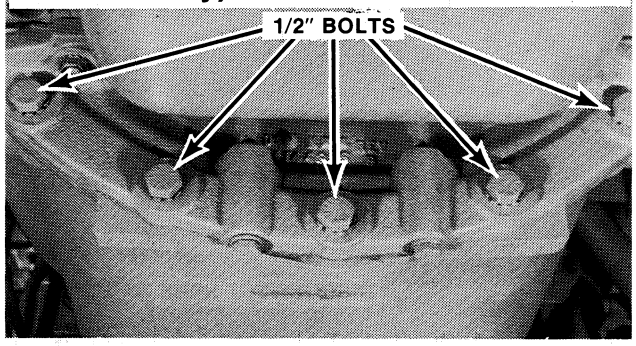
STEP 31



Remove the drain plug from the torque tube and drain the torque tube oil.

STEP 32

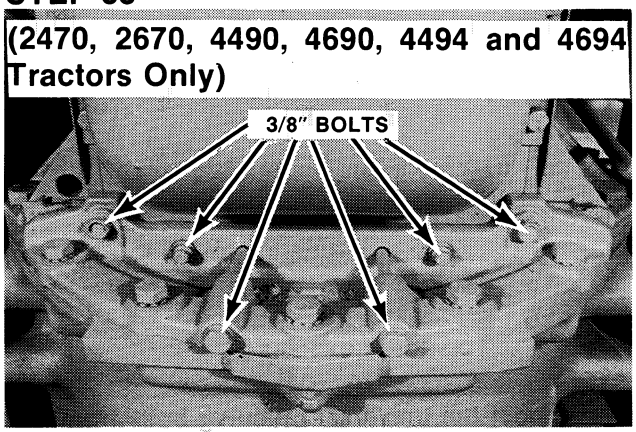
(2470, 2670, 4490, 4690, 4494 and 4694 Tractors Only)



Remove the 1/2" bolts and washers from the torque tube seal plate.

STEP 33

(2470, 2670, 4490, 4690, 4494 and 4694 Tractors Only)

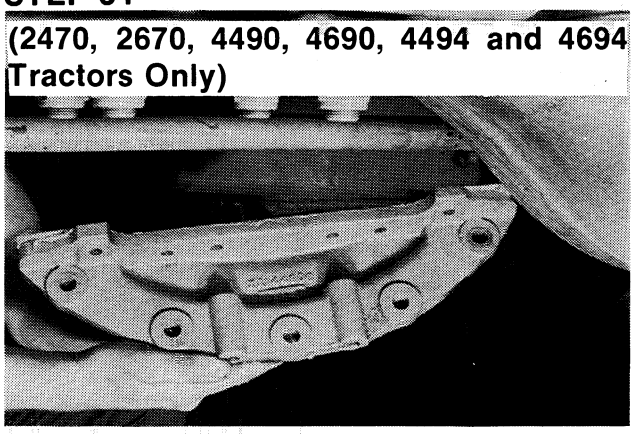


Remove the 3/8" bolts and washers from the torque tube seal plate.

NOTE: *A 3/8 inch-12 point universal socket is needed to remove the four center retaining bolts.*

STEP 34

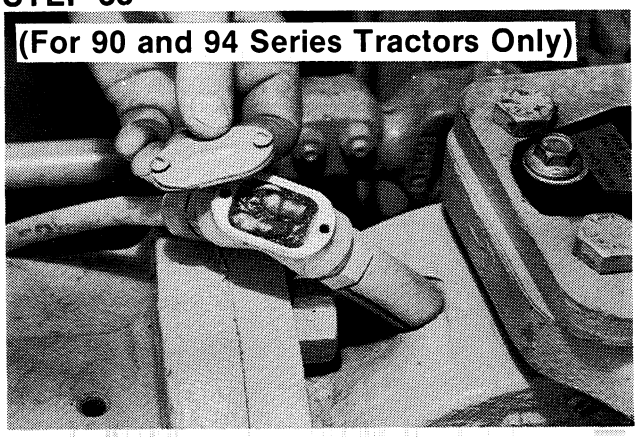
(2470, 2670, 4490, 4690, 4494 and 4694 Tractors Only)



Remove the seal plate.

STEP 35

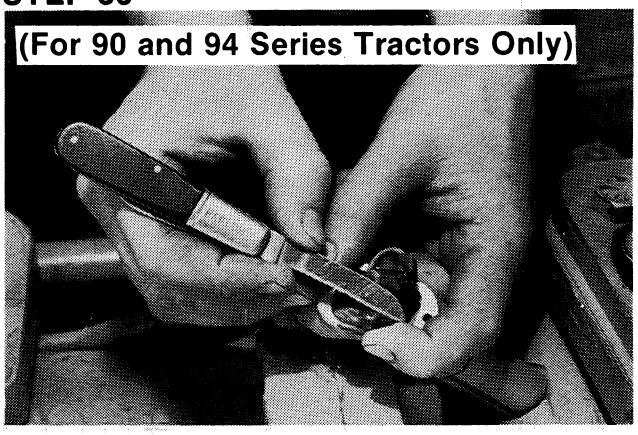
(For 90 and 94 Series Tractors Only)



Remove the cover and gasket from the wiring junction box on the front axle.

STEP 36

(For 90 and 94 Series Tractors Only)



Use a small knife to cut the insulation tubes from each of the three wires.