INTRODUCTION

The engine section of this manual is broken into four separate sections:

- air induction system
- exhaust system
- engine removal and installation
- cooling system

The 84 Series tractors use a diesel engine manufactured for New Holland by the Cummins Engine Company and are available in five different sizes with eight different horsepower outputs.

The following chart is a list of tractor models with horsepower and engine classification:

Model	Engine	Horsepower	Engine Type
9184	C8.3	240	Mechanical
9384	M11	270	Mechanical
9484	M11	310	Mechanical
9684	N14	360	Mechanical
9684	N14	360	Electronic
9884	N14	425	Mechanical
9884	N14	425	Electronic

If an internal engine problem arises, that requires engine removal, this section will describe the proper procedure for removal and installation of the engine assembly. The engine will be repaired by an authorized Cummins dealer/distributor.

When contact is made with your Cummins dealer/distributor, it is important that the information contained on the Engine Identification Plate is given.

On the 9384 and 9484 (Cummins M11) engines, the Engine Identification Plate is located on the left side of the engine block below the valve cover.

For the 9184 (Cummins C8.3) and 9684 and 9884 (Cummins N14) tractors, the Engine Identification Plate is located on the left side of the engine ahead of the fuel injection pump.

NOTE: It is very important to include the engine number, engine family, and engine CPL (control parts listing) number when contacting your Cummins Engine Dealer/Distributor.

To locate your nearest Cummins Engine Dealer/Distributor, contact the Cummins Engine Co. at 1-800 DIESELS (North America, excluding Alaska and Hawaii).

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DESCRIPTION AND OPERATION

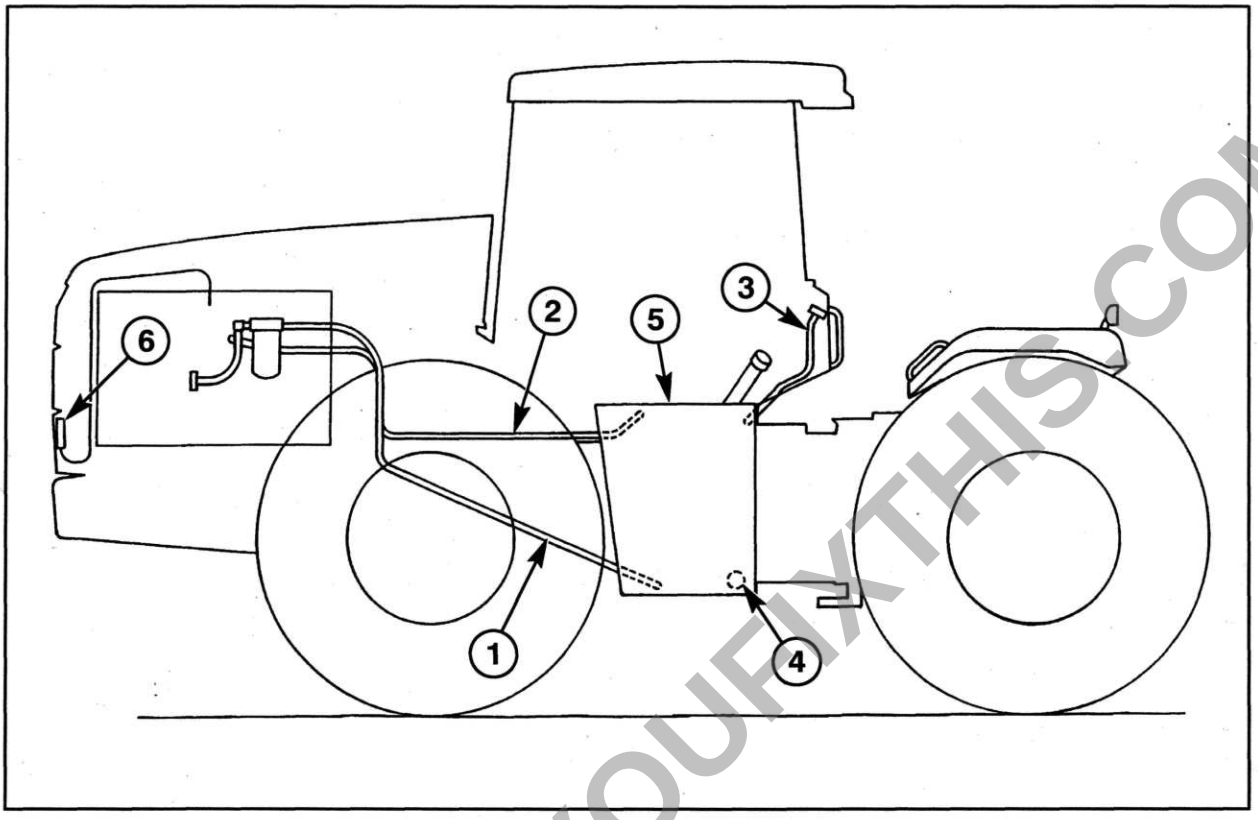


Figure 2-1

INTRODUCTION

This section covers the tanks and tubing between the return line fitting at the engine to the suction line fitting at the fuel filter. The cold start system and the throttle and decelerator linkage are also included. The electronic engine option available on 9684 and 9884 models, and its electronic circuits and controls, are also covered in this section.

All engine-related fuel system components starting at the fuel filter(s), including the fuel pump, injectors, and external tubing on the engine, are serviced by the Cummins Engine Company authorized Dealer/Distributors.

NOTE: The fuel filter(s) can be purchased from New Holland and serviced by the dealer or customer.

When contacting a Cummins dealer or distributor, have the engine serial number, engine model number, and control parts listing (CPL) number available. This information is contained on the engine identification tag located on the engine.

The figures contained in this section represent all model Cummins engines used in 84 Series tractors. Any appreciable differences will be noted in the text.

The fuel system on the 84 Series tractors consists of:

1 Fuel suction line
2 Fuel return line
3 Breather with hoses
4 Crossover tube
5 Two fuel tanks
6 Cold starting system
7 Throttle linkage (not pictured)
8 Decelerator (not pictured)

The fuel system is designed to carry and deliver clean fuel to and from the engine.

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DEFINITION OF TERMS

AMP - A unit of measure for the flow of current in a circuit. The amp measures electrical flow the same as "gallons per minute" is used to measure hydraulic flow.

AMMETER - An instrument for measuring the flow of electrical current in amps. Ammeters are connected in series with the circuit to be tested.

CIRCUIT - A continuous, unbroken path along a conductor through which electrical current can flow from a source (high potential), through a component, and return to the source (low potential).

COLD CRANKING AMPS (CCA) - The measure of a battery's capability to rotate the crankshaft at a sufficient speed for starting at 18°C (0°F).

CONTINUITY - Unbroken path along a conductor through which electrical current can flow.

CURRENT - Movement of electricity along a conductor. Current is measured in amps.

DIODE - A device that will allow current to pass in one direction only the same as a check valve in a hydraulic system.

DIRECT CURRENT (DC) - A flow of electrons moving in the same direction along a conductor from a point of high potential to one of lower potential.

FUSE - A device used to protect wires and circuits from an over-current condition (overload).

OHM - A unit of resistance to the flow of electrical current.

OHMMETER - An instrument for measuring the electrical resistance in a component or circuit. Ohmmeters should only be connected to components/circuits that have no voltage potential present.

POTENTIAL - The difference in voltage between two points in a circuit.

RELAY - A switch which opens or closes a circuit electrically the same as a solenoid valve in a hydraulic system. Relays have "control" and "load" circuits.

RESISTANCE - The force opposing the flow of electrical current the same as an orifice restricts flow in a hydraulic system. Resistance is measured in ohms.

SPECIFIC GRAVITY - A measure of the sulfuric acid in a battery cell which is a measure of the degree of charge of that cell. Specific gravity is measured using a hydrometer.

SWITCH - A device used to open or close an electrical circuit the same as a gate valve in a hydraulic system.

VOLT - A unit of electrical potential which causes current to flow the same as pressure causes flow in a hydraulic system.

VOLTMETER - An instrument for measuring the electrical potential difference in volts. Voltmeters are connected in parallel to the points where voltage is being measured.

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INSTRUMENTS

The 84 Series tractors are equipped with an Electronic Instrument Control System and an optional Tractor Performance Monitor to provide the operator with information concerning tractor functions.

ELECTRONIC INSTRUMENT CONTROL SYSTEM

The 84 Series tractors are equipped with an Electronic Instrument Control System designed to provide the operator with information concerning tractor functions, calibration procedures to meet specific operation requirements, and a visual and audio warning system of malfunctions that have occurred in the tractor operating systems.

The Electronic Instrument Control System is comprised of four dash-mounted components and various senders and switches located throughout the tractor. The four dash-mounted components are identified as follows:

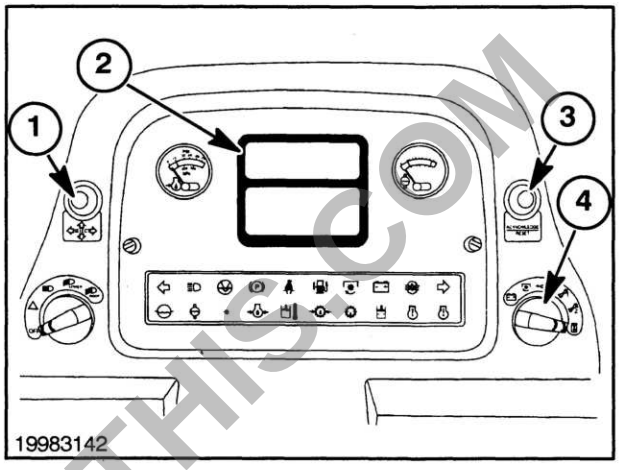


Figure 3-176

1 Electronic monitor digit select switch

2 Electronic monitor

3 Electronic monitor acknowledge/reset button

4 Electronic monitor rotary select switch

Electronic Monitor Digit Select Switch

The electronic monitor digit select switch is a five-position switch used to select digits and units of measurement during the calibration of the electronic monitor:

Center - neutral position

Up - changes the selected digit upward between zero and nine. Tapping the switch changes one value at a time. Holding the switch up will roll the numbers.

Down - changes the selected digit downward between nine and zero. Tapping the switch changes one value at a time. Holding the switch down will roll the numbers.

Left - selects the next digit position to the left.

Right - selects the next digit position to the right.

The switch does not function during normal operation of the tractor, but only when the operator has selected the calibration mode to program the system for specific operational requirements.

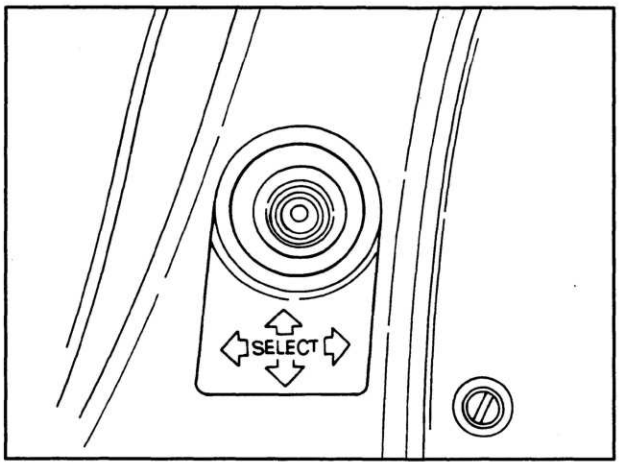


Figure 3-177

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INDIVIDUAL SYSTEM CIRCUITS

The 84 Series tractor has various electrical circuits providing the operator with features to assist in normal operation of the tractor. This section will cover those circuits in detail.

WINDSHIELD WIPERS AND WASHER

Operation

The 84 Series tractors are equipped with a front windshield wiper and washer, and a rear window wiper and washer. Power for the front and rear windshield wipers and washer motors comes from the 10 amp wiper fuse (F20). Power is available when the ignition switch is in the "RUN" or "ACC" position.

Front Windshield Wiper Switch

The front windshield wiper switch, 1, is a three-position switch. Position one (when the bottom of the switch is flush with the dash) is the off position. Position two (when the switch is in the center rocker position) is low speed. Position three (when the top of the switch is pressed flush with the dash) is high speed.

NOTE: When the front windshield wiper switch is turned off, the wiper arm will always stop on the right side of the windshield.

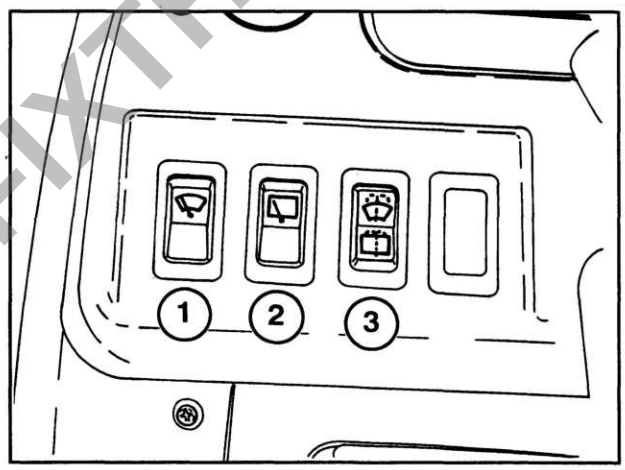


Figure 3-309

Rear Window Wiper Switch

The rear windshield wiper switch, 2, is a three-position switch. Position one (when the bottom of the switch is flush with the dash) is the off position. Position two (when the switch is in the center rocker position) is low speed. Position three (when the top of the switch in pressed flush with the dash) is high speed.

NOTE: When the rear windshield wiper switch is turned off, the wiper arm will always stop on the left side of the rear cab window.

Front and Rear Windshield Washer Switch

The washer switch, 3, is a three position, momentary-type switch. Position one (when switch is in the center rocker position) is the off position. Position two (when the top of the switch is pressed flush with the dash) will provide washer fluid to wash the front windshield. Position three (when the bottom of the switch is flush with the dash) will provide washer fluid to wash the rear window.

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The 12 × 4 QS II transmission has a wet disc clutch that is housed inside the front portion of the transmission, 1. An input stub shaft, 2, is bolted to the clutch to provide power from the engine via an input driveline.

A front, 3, and rear, 4, output shaft are located on the bottom of the transmission for power transmittal to the front and rear axle of the tractor. The output shaft is a solid component running through the bottom of the transmission case.

The transmission has three forward ranges and one reverse range. Within each range, including reverse, are four synchronized speeds. The synchronized speeds allow for easy on-the-go shifting within each range during a rolling light load or rolling unloaded condition. The synchronized portion of the transmission is located on the upper half of the transmission, with all synchronizers located on the input shaft. These are called the speed gears of the transmission.

The lower half of the transmission contains the range gears (located on the output shaft). All range gears are unsynchronized and can only be shifted when the tractor has come to a complete stop.

All gears inside the transmission are in constant mesh. Speed and range shifts are accomplished by locking the appropriate gear to the shaft on which it is located. In the case of speed gears, (upper half of the transmission) the selected speed gear will be locked to the input shaft and will spin at engine speed. This will drive the gears meshed to the selected input gear at the appropriate speed based on gear size (number of teeth).

For range gears (bottom half of the transmission), the output shaft will be locked to the selected range gear and will spin at the appropriate speed and direction based on speed and range gear selected.

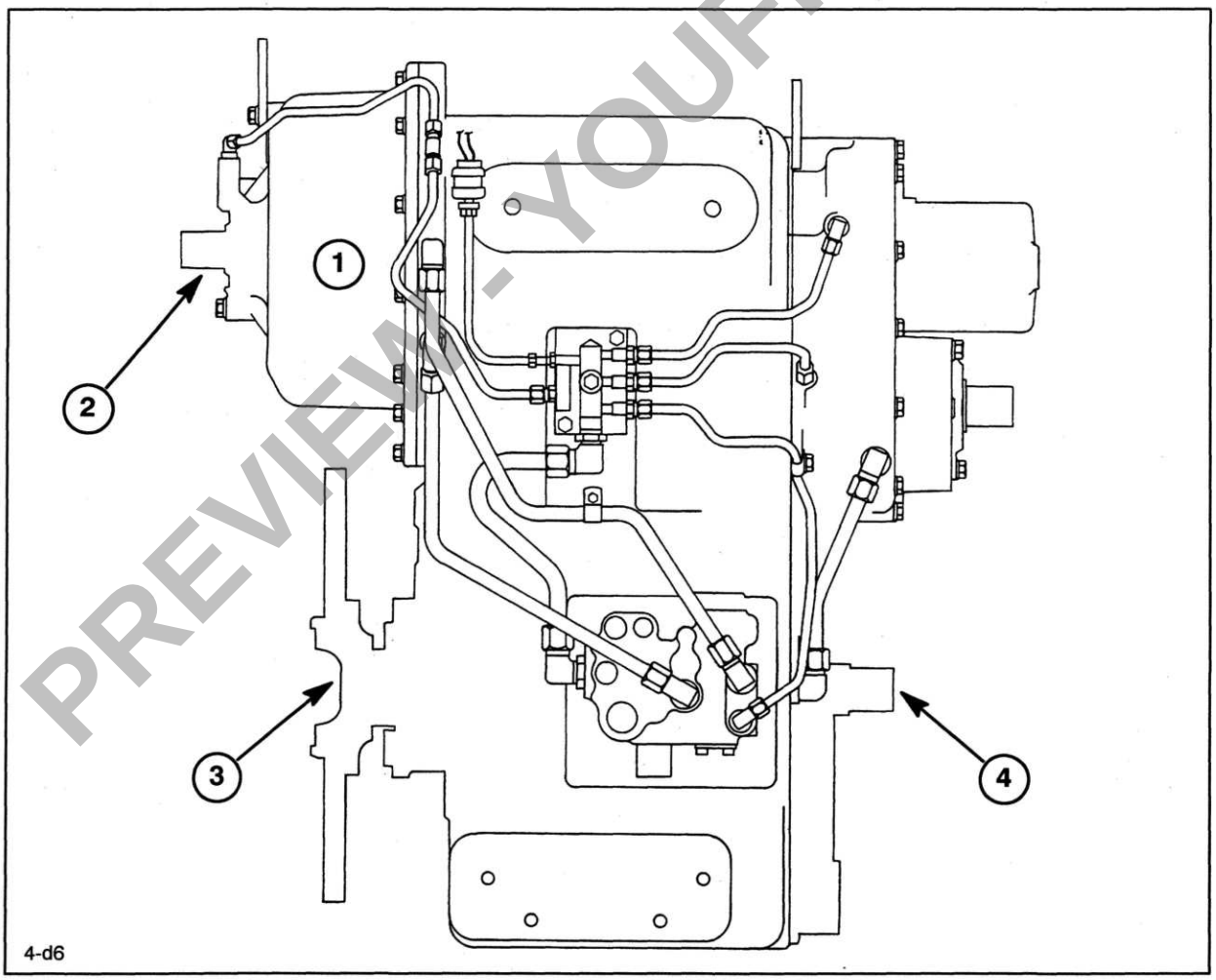


Figure 4-8

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REMOVAL AND REPAIR OF COMPONENTS

12 X 4 QUADRA SYNC II TRANSMISSION

Removal

1. Park the tractor on a level surface, set the park brake and remove the keys from the ignition. Install the articulation lock in the center of the tractor.
2. Remove the bottom panel of the cab as described in Section 11 - Cab of this manual.
3. Disconnect the batteries as detailed in Section 3 - Electrical of this manual.
4. Remove the door from the cab as detailed in Section 11 - Cab of this manual.
5. Remove the steering wheel from the steering column as detailed in Section 9 - Steering of this manual.
6. Drain the transmission oil as detailed in the Adjustments portion of this section.
7. If the tractor is equipped with an optional Power Take Off (PTO), remove the PTO articulation drive shaft shield, 1, from the rear of the transmission as detailed in Section 7 - PTO of this manual.

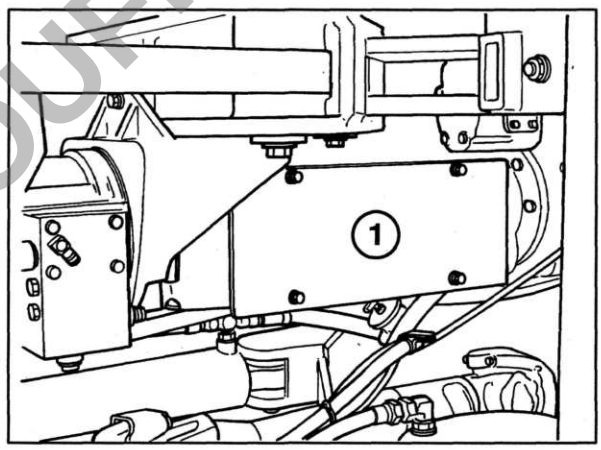


Figure 4-130

8. If the tractor is equipped with an optional Power Take Off (PTO), remove the PTO articulation drive shaft, 1, from the rear of the transmission as detailed in Section 7 - PTO of this manual.

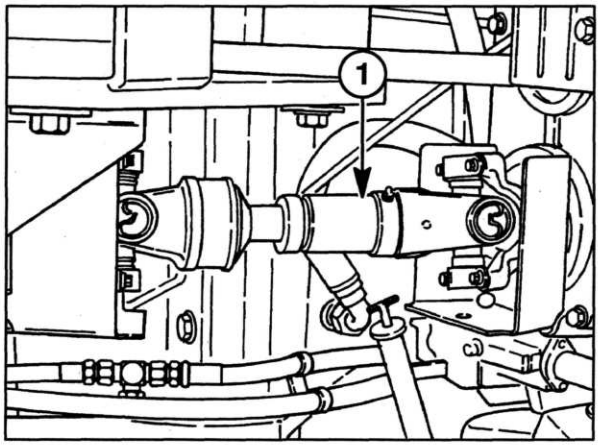


Figure 4-131

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DESCRIPTION AND OPERATION

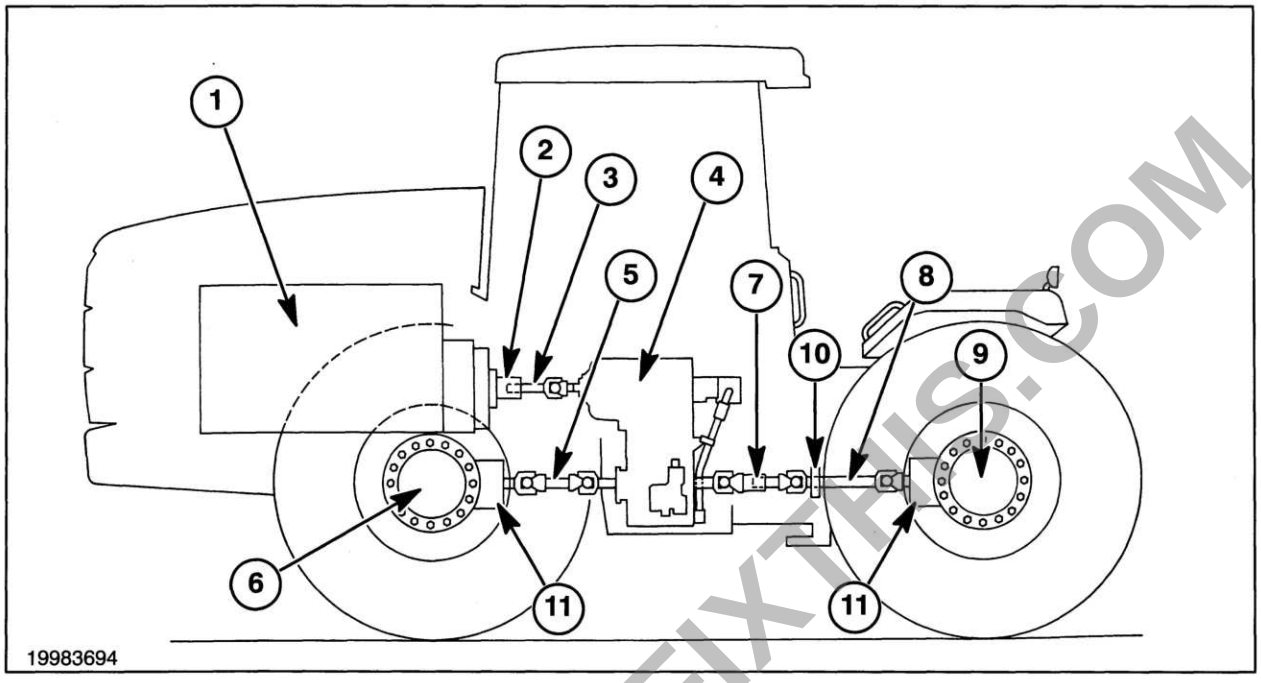


Figure 5-1

INTRODUCTION

The drive shafts and axles transfer the engine torque to the wheels. The drive shafts link the engine to the transmission and the transmission to the axles.

The power from the engine, 1, travels through the flexible coupler, 2, and input drive shaft, 3, to the transmission. The outer ring of the flexible coupler attaches to the engine flywheel and the inner ring attaches to the input drive shaft.

The transmission, 4, always drives the front and rear axles equally. The front axle drive shaft, 5, drives the front axle, 6. The articulation drive shaft, 7, and rear axle drive shaft, 8, drive the rear axle, 9.

A steady bearing, 10, holds the rear axle drive shaft steady in the rear frame while the articulation joint changes angles during steering articulation and oscillation.

The gears inside the differential head assembly, 11, and center housing, 12, change the direction of the rotational power from the drive shafts and transfer it to the axles.

On all models of 84 Series tractors, the engine turns counterclockwise (viewed from the operator's seat). In Forward and Reverse, the front and rear axle drive shafts always turn in the same direction at the same speed.

The differential lock electric shift unit, 13, bolts to the front differential head assembly, 11. The operator controls the differential lock function with a momentary switch, 14, on the right hand console in the cab. Differential lock keeps the axle shafts turning at the same rate during low torque conditions.

1. Engine
2. Flexible Coupler
3. Input Drive Shaft
4. Transmission
5. Front Axle Drive Shaft
6. Front Axle Shafts
7. Articulation Drive Shaft
8. Rear Axle Drive Shaft
9. Rear Axle Shafts
10. Steady Bearing
11. Differential Head Assembly
12. Center Housing
13. Electric Shift Unit — Differential Lock
14. Differential Lock Switch

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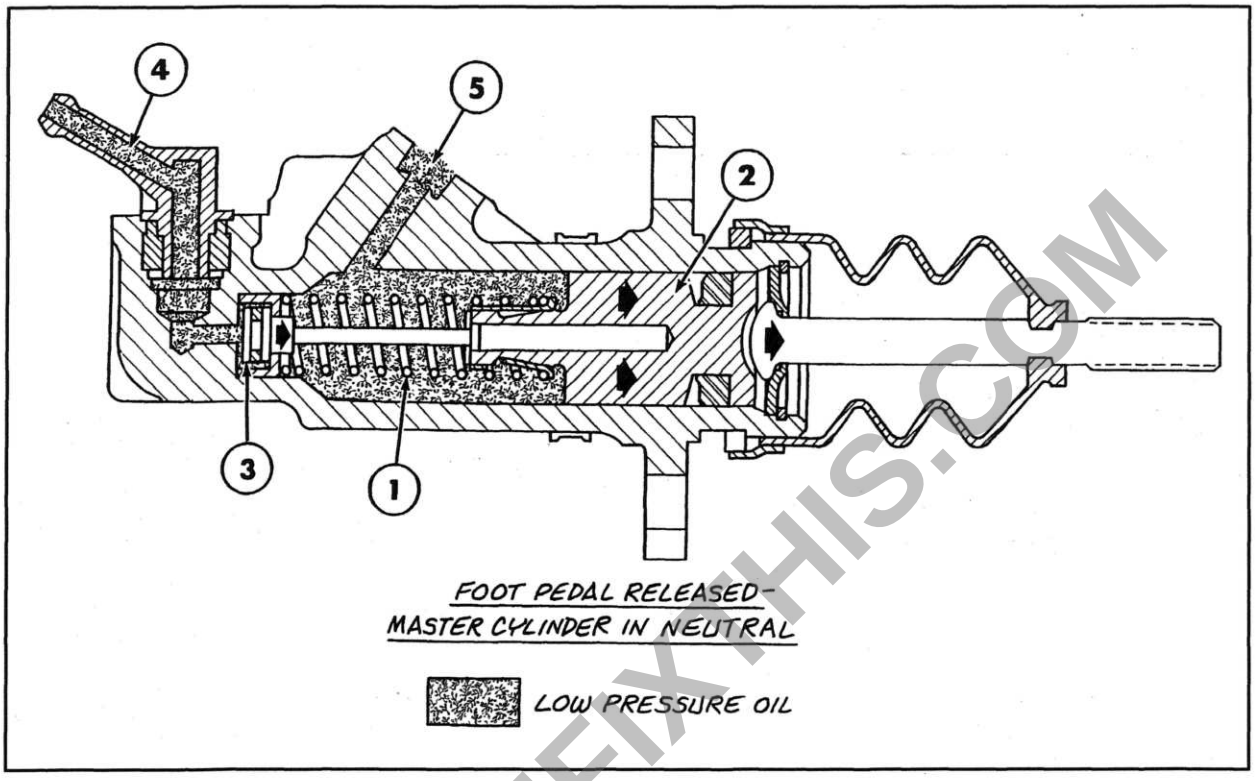


Figure 6-6

06-01-007

When the foot pedal is released, the spring, 1, forces the piston, 2, in the master cylinder to move backward. When the piston moves backward, it pulls the valve stem and seal, 3, away from the reservoir supply passage, 4. This relieves the pressure in the pressure passage, 5, which releases the brakes. Reservoir oil in passage, 4, is now allowed to "connect" with oil trapped in pressure passage, 5. This guarantees the master cylinder and pressure supply passage will remain full of oil at all times.

Brake Caliper

The caliper, 1, is mounted on the front right side of the transmission. The caliper is activated by pressure created from the master cylinder. This pressure is transferred from the master cylinder to the caliper by a steel pressure supply line, 2. The caliper is also activated by mechanical linkage, 3, from the park brake.

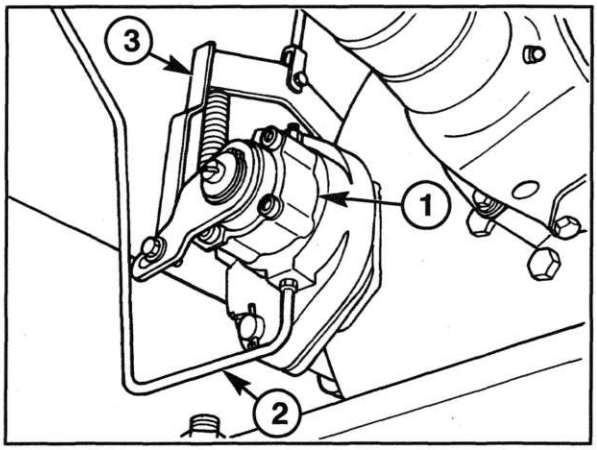


Figure 6-7

06-01-008

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DESCRIPTION AND OPERATION

INTRODUCTION

The 84 Series tractors utilize an electrohydraulic activated mechanical power take-off (PTO) system. The PTO is optional equipment on 9184, 9384, 9484, 9684 and 9884 tractors with Celect electronic engines.

NOTE: 9884 tractors with mechanical engines cannot have a PTO installed on them due to horsepower constraints. 9884 tractors with Celect electronic engines can have a PTO installed due to an automatic engine power derate that occurs when the PTO is activated. (engine power reduced to 360 horsepower).

When an electrohydraulic PTO is installed on an 84 Series tractor, the operator can turn the PTO on and off from the seat in the cab using an electronic switch on the right hand side console. The PTO is rated at 1000 RPM (2100 engine RPM) and has an output shaft 44.45 mm (1-3/4″) in diameter with 20 splines. For more information on operating the PTO, refer to the 84 Series Operator's Manual.

The PTO can be installed at the factory during manufacture on can be fitted to the tractor via a dealer installed accessory kit.

A PTO light is included in the warning light bar on the Electronic Instrument Control System (EICS). The light will illuminate when the when the switch is placed in the ON position and power is supplied to the circuit supplying the PTO solenoid. The PTO will not activate if the tractor RPM is in excess of 1400 RPM. The engine RPM must be below 1400 to activate the PTO system.

A PTO can be installed on the 9184, 9384, 9484 9684 and 9884 Series tractors with a 12 x 4 - Quadra-Sync II (mechanical) transmission or the 9384, 9484 and 9684 tractors with a 12 x 2 powershift transmission. Regardless of transmission type, the major components that make up the PTO system are identical (with the exception of the transfer case on the rear of the transmission) for all models.

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Accumulator

Removal

1. Park the tractor on a level surface, set the parking brake and engage the articulation lock. Remove the keys from the ignition.
2. On all tractors (12 x 4 Quadra-Sync II or 12 x 2 Powershift transmission), the single accumulator, 1, can be removed from the mounting bracket, 2, on the PTO clutch/brake, 3, by removing the jumper tube, 4, from the base of the accumulator.

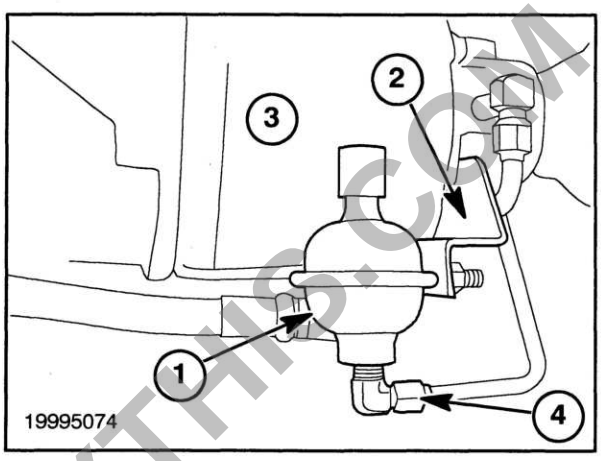


Figure 7-53

3. Loosen the nuts, 1, from the backside of the bracket which connect the U-bolt, 2, to the bracket and pull the accumulator, 3, from the U-bolt.

   NOTE: The U-bolt does not have to be removed from the bracket to remove the accumulator for the bracket.

3. On tractors equipped with a 12 x 2 powershift transmission, a second accumulator is mounted to the right hand side of the rear frame.
4. Disconnect the jumper hose from the base of the accumulator.
5. Remove the two lock nuts on the outside of the frame that secure the U-bolt around the accumulator. Remove the accumulator from the tractor.

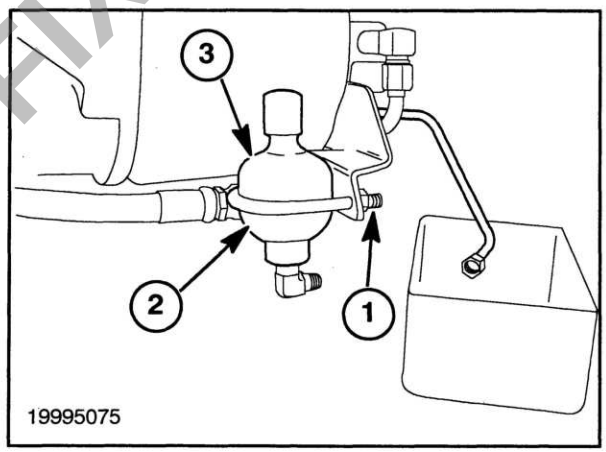


Figure 7-54

Inspection

1. Accumulators are non-serviceable units that must be replaced as an entire unit if defective.

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DESCRIPTION AND OPERATION

OVERALL HYDRAULIC SYSTEM ORIENTATION

NOTE: Section 8 discusses the operation of the implement hydraulics system only. The steering system is covered in Section 9 - Steering.

The 84 Series tractors are manufactured with a closed center load sensing hydraulic system. The hydraulic system supplies oil flow and pressure to operate the external hydraulic equipment. The system will produce flow and pressure to match the demand placed on the system.

The following figure identifies the 13 major components of the hydraulic system on all 84 Series tractors.

HYDRAULIC COMPONENTS

- Implement Valve Block, 1
  - Gray Standard Valve
  - Tan Standard Valve
  - Green Standard Valve
  - Blue Valve with Check Valve
- Implement Pump Pressure Feed Port, 2
- Steering Pump Pressure Feed Port, 3
- Load Sense Port, 4
- Implement Pump, 5
- Pilot Operated Valve, 6
- Steering Pump, 7
- Steering Priority Valve, 8
- Implement Priority Valve, 9
- Steering Cooler, 10
- Implement Cooler, 11
- Hydraulic Filter, 12
- Hydraulic Reservoir, 13

HI-FLO HYDRAULIC FLOW RATES

Engine	Implement Flow Rate	HI-FLO Total Rate
C8.3	95 l/min (25 GPM)	170 l/min (45 GPM)
M11	95 l/min (25 GPM)	170 l/min (45 GPM)
M11	95 l/min (25 GPM)	170 l/min (45 GPM)
N14	115 l/min (30 GPM)	190 l/min (50 GPM)
N14	115 l/min (30 GPM)	190 l/min (50 GPM)

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HI-FLO HYDRAULIC HOSE REPLACEMENT

- Park the tractor on a level surface and set the parking brake.
- Remove the key from the ignition and install the articulation lock.
- Replace hydraulic hoses by simply removing and replacing the hose, making sure to route the hose in the identical fashion as the one you removed. Also be sure to reuse the straps and P clips that are taken off the tractor during removal of a hose.

  If the hose replacement requires removing the hose manifold, refer to the Hose Manifold Removal, Inspection and Installation section below.

- All the hoses are rubber hoses, and are identified as follows:

1. Implement pump suction (filter to pump)
2. Implement pump case drain
3. Implement pump pressure - pump to manifold
4. Implement pump pressure - pump to PO valve
5. Implement pump pressure - manifold to implement valve assembly
6. Load sense line - compensator to manifold
7. Load sense line - compensator to PO valve
8. Load sense line - manifold to implement valve assembly
9. Load sense line - PO valve to implement priority valve
10. Load sense drain line - PO valve to reservoir
11. Steering pump suction
12. Steering pump pressure
13. Steering flow supply - implement priority valve to manifold
14. Steering flow supply - manifold to implement valve assembly
15. Implement valve return line - implement valve assembly to manifold
16. Implement valve return line - manifold to hydraulic filter
17. Zero return line - to manifold
18. Zero return line - manifold to reservoir
19. Steering priority valve tank line - to implement priority valve
20. Implement priority valve tank line - to reservoir
21. Steering cooler to filter line
22. Implement cooler feed line - filter to cooler
23. Implement cooler return line - to reservoir
24. Implement priority valve return line - to steering cooler

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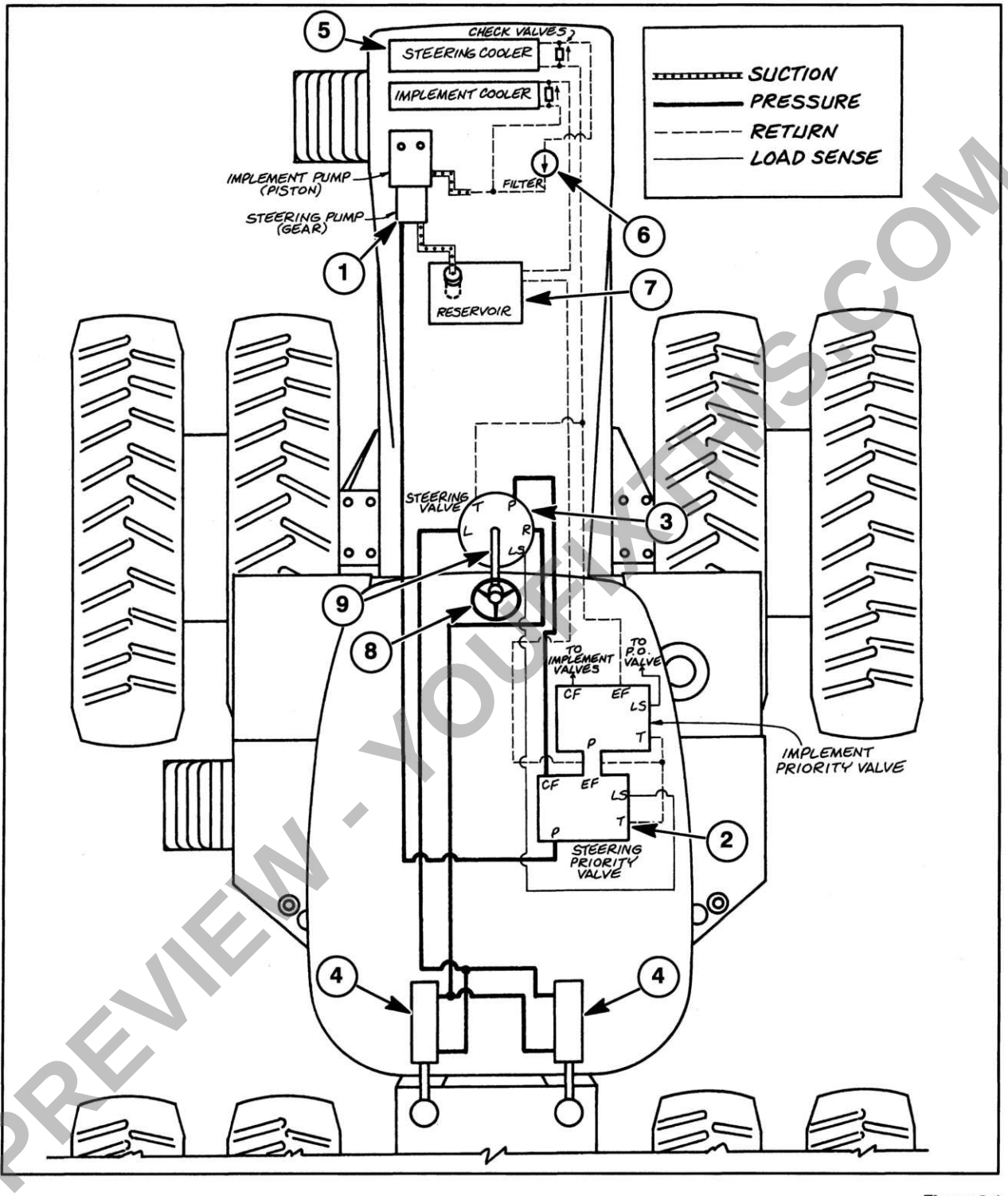


Figure 9-1

84 SERIES STEERING COMPONENTS

- Steering Pump (Gear) - 1
- Priority Valve - 2
- Steering Valve (Closed Center) - 3
- Cylinders - 4
- Oil Cooler - 5
- Oil Filter - 6
- Hydraulic Reservoir - 7
- Steering Wheel - 8
- Steering Column - 9

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DESCRIPTION AND OPERATION

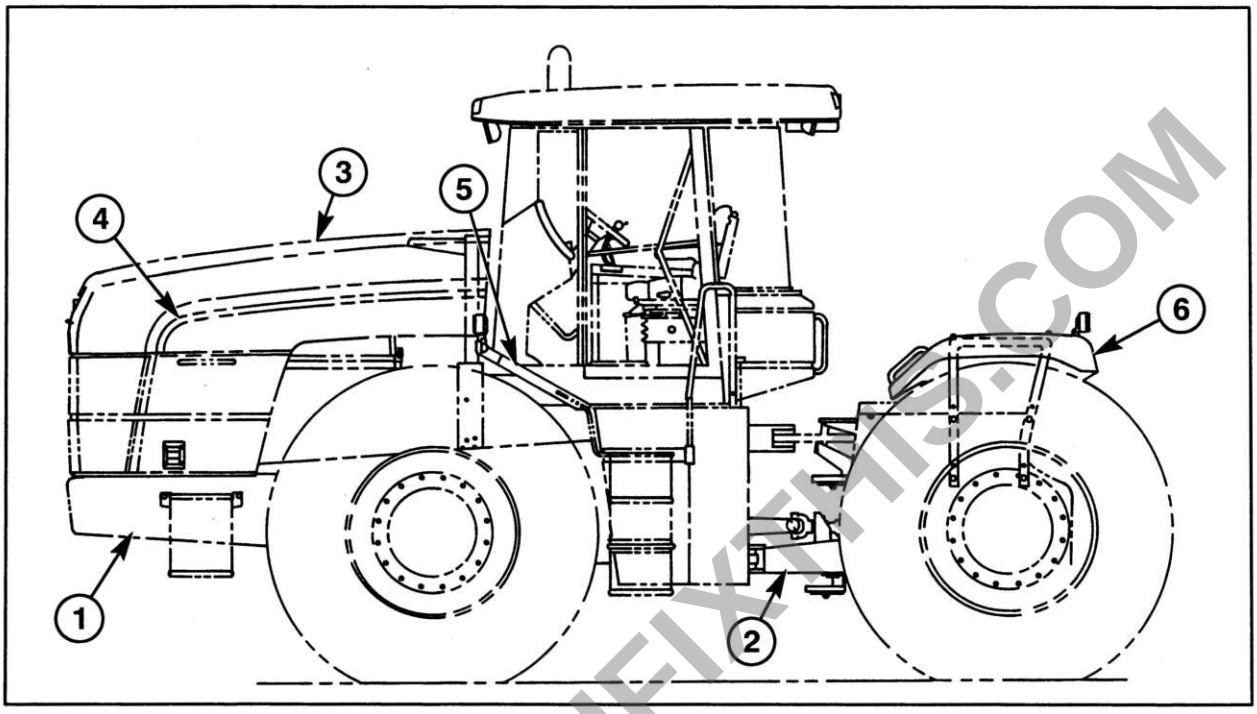


Figure 10-1

INTRODUCTION

The 84 Series tractors are 4-wheel drive, articulating vehicles. The tractor structure consists of front and rear frame assemblies which steer by pivoting at the center articulation joint. The front frame, 1, incorporates the engine, fuel tanks, transmission, front drive axle, and cab. The rear frame, 2, incorporates the rear drive axle and drawbar assembly and provides support for any implement that the tractor operates. This type of design allows for greater flexibility of weight distribution, depending upon operating conditions and type of implement. The tractor can be ballasted to best suit the needs of the particular operation.

The construction of the tractor is a modular-type design. This means that the major components (engine, transmission, axles) are individual units supported in the front and rear frames. This allows for easier serviceability and longer life due to reduced structural stress on drivetrain components.

The engine hood, 3, and side shields, 4, protect the operator from heated and/or moving engine parts. The side shields provide easy excess to the engine. Each side shield opens vertically, and is held open by a gas spring assembly. The hood and side shields are constructed from fiberglass. A front and rear hood support frame provide the attaching points for the hood and pivot points for each side shield.

The front fenders, 5, are made from steel, and provide mounts for the working lights and exhaust muffler. The rear fenders, 6, are made from molded fiberglass, and are mounted on steel tube supports. The supports have two sets of mounting holes so that the fenders can be moved up or down 100 mm (4″), depending on tire size and field conditions. The fenders provide a mounting location for the tail lights, the rear working lights, and the left-hand grab handle.

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DESCRIPTION & OPERATION

INTRODUCTION

A safety cab, 1, incorporating a Roll Over Protective Structure (ROPS) is standard equipment on the 84 Series tractors.



CAUTION: THE ROLL OVER PROTECTION STRUCTURE (ROPS) IS MANUFACTURED TO MEET STRICT SAFETY STANDARDS. NO ATTEMPT SHOULD BE MADE TO ALTER THE ROPS IN ANY FASHION (I.E. WELDING, DRILLING, ETC.).

IF THE ROPS IS DAMAGED IN SUCH A WAY AS TO CHANGE ITS INTEGRAL STRUCTURE, IT MUST BE REPLACED AS A COMPLETE UNIT. NEVER ATTEMPT TO REPAIR A DAMAGED ROPS.

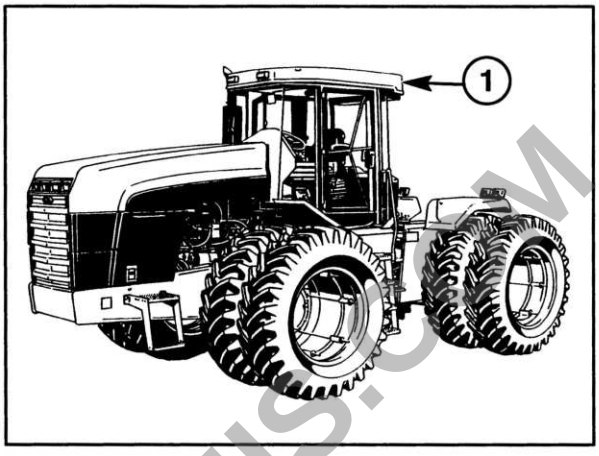


Figure 11-1

The cab has been designed for operator safety, comfort, and convenience. The cab is noise reduced to provide a quiet atmosphere for the Operator to work in.

The cab is the control center of the tractor. The operator can easily monitor and adjust tractor functions using the conveniently located controls.

Standard features of the cab include one door, tinted glass, a hinged window, assist rails, a fresh air heater/defroster, air conditioning, an interior light, an air suspension seat, a storage tray, a cigar/cigarette lighter, and an ashtray.

The cab mounts to the front frame of the tractor in four (4) locations. Individual controls (i.e. transmission cables, hydraulic cables, wiring harnesses) are connected from the cab to the tractor components.

Four (4) individual rubber mount isolators, 1, are used at the mounting points to isolate the cab from the tractor frame. The mount is attached to the cab frame, 2, and rests on the tractor frame, 3.

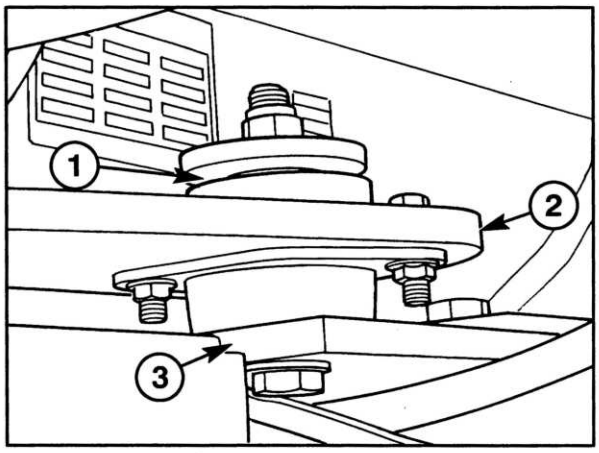


Figure 11-2

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84 Series Cab Air Flow

Outside air is drawn through the outside air filter, 1, by the blower motor assembly, 2. Air passes through the heater/evaporator core, 3, and then through a special recirculation air filter, 4, mounted in the cab roof.

The cooled/heated air enters a large hollow cavity above the operator's head called the plenum, 5. The plenum has eleven adjustable louvers that allow air flow to enter the cab enclosure. One additional louver is located at the operator's feet.

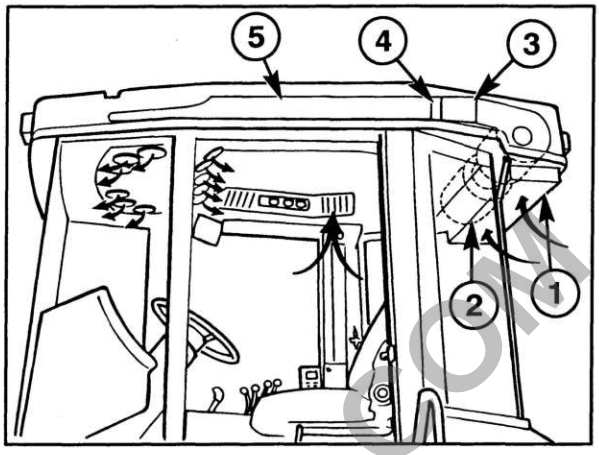


Figure 12-1

An overhead view shows the air flow through the plenum and air box. The plenum assembly, 1, also incorporates two recirculation corridors, 2, that will allow air that has been heated/cooled to return to the inlet sides of the blower motor assembly, 4.

The operator can control the amount of air being recirculated in the right-hand corridor by turning the recirculation knob on the air conditioning control panel. A cable connected to this knob opens and closes a door, 3, in the right-hand recirculation air passage in the air box. Also shown are the evaporator/heater core, 5, and recirculation filter, 6.

The left-hand recirculation corridor has no door contained in it to adjust air flow. It is wide open at all times.

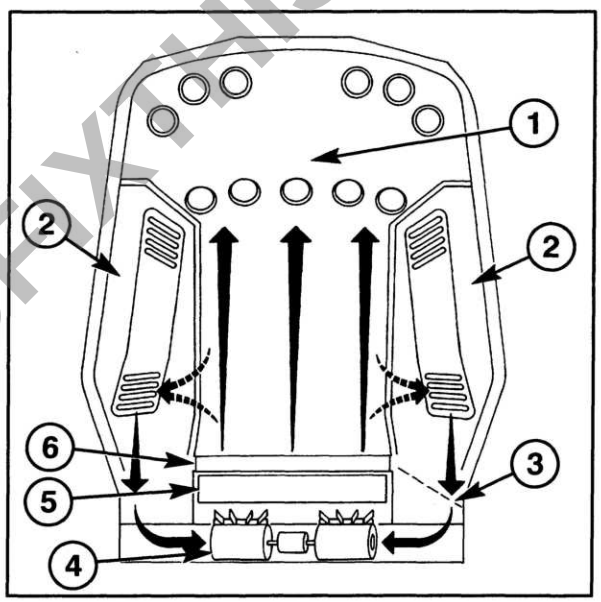


Figure 12-2

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DESCRIPTION AND OPERATION

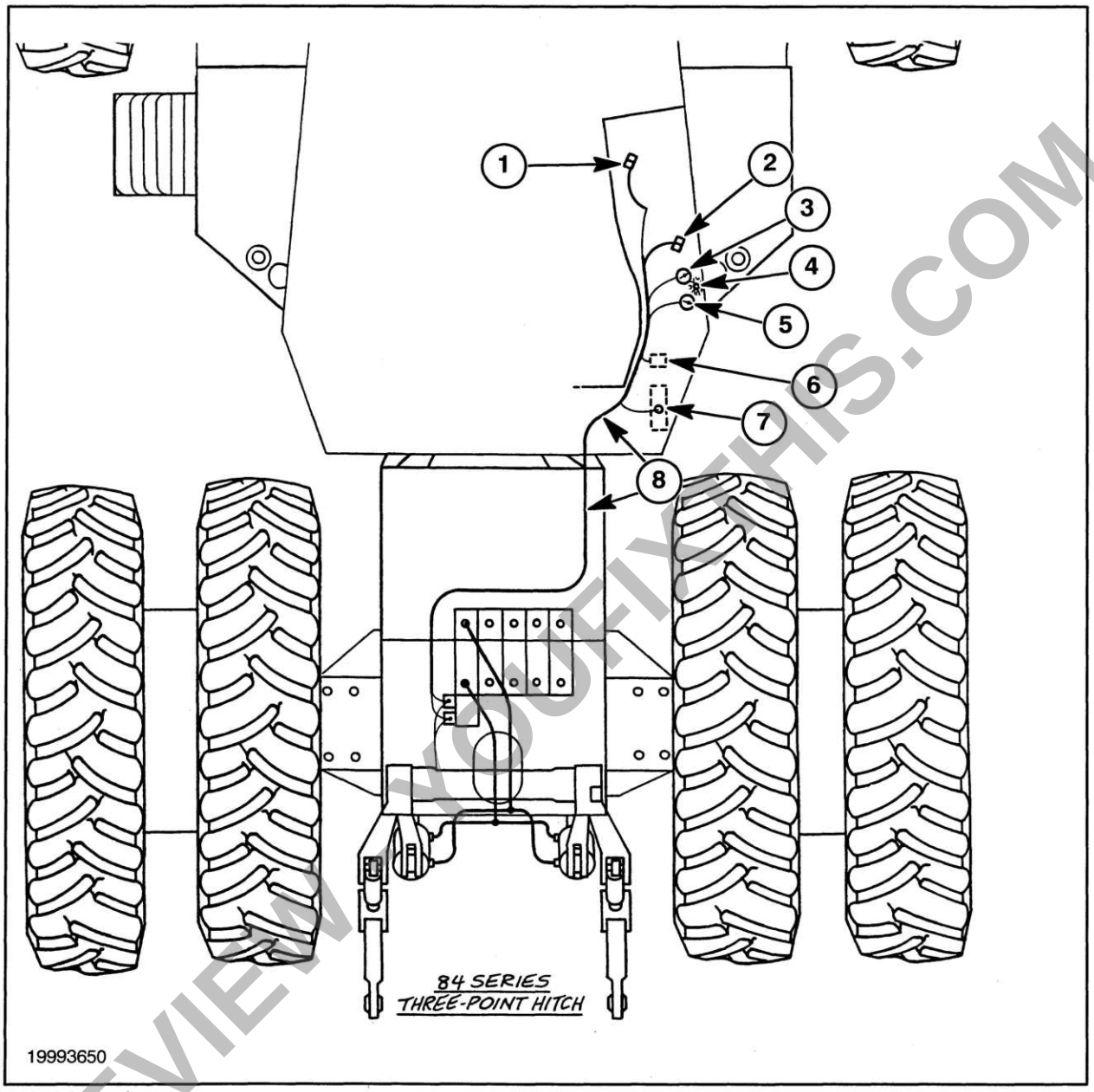


Figure 13-1

INTRODUCTION

The four wheel drive 84 Series tractors have a three-point hitch available as a factory or dealer installed option. The three-point hitch system utilizes an electrohydraulic control that contains a manual and automatic mode of operation. The electronic controls are located on the right hand side console panel of the cab. The three-point hitch is available for tractors equipped with or without an optional PTO system.

An overhead layout of the three-point hitch system on the 84 series tractors shows the automatic switch, 1, manual switch, 2, command potentiometer, 3, automatic indicator lamp, 4, and the lowering rate potentiometer, 5, on the right hand side console. The current controller, 6, and the three-point hitch controller, 7, are located behind the lower trim and access panels of the cab. The three-point hitch wiring harness, 8, connects the right hand side controls to the three-point hitch controller and solenoid valves.

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ENGINE

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NOTE: A field coil should only be removed if the coil needs replacing. All inspection and testing of the coil can be performed with the coil installed in the field housing.

22. While holding the pole shoe, 1, in position, remove the two screws, 2, from the outside of the housing.

23. Gently remove the pole shoe, 1, from the field housing, 3. Note the position of the notched end of the pole shoe.

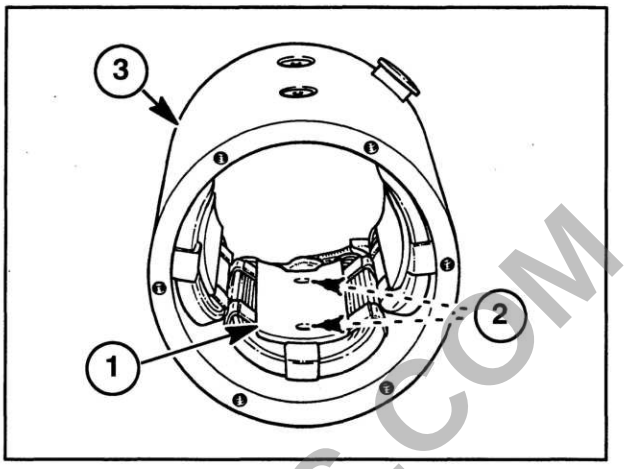


Figure 3-77

24. The field coil, 1, can now be removed from the field housing.

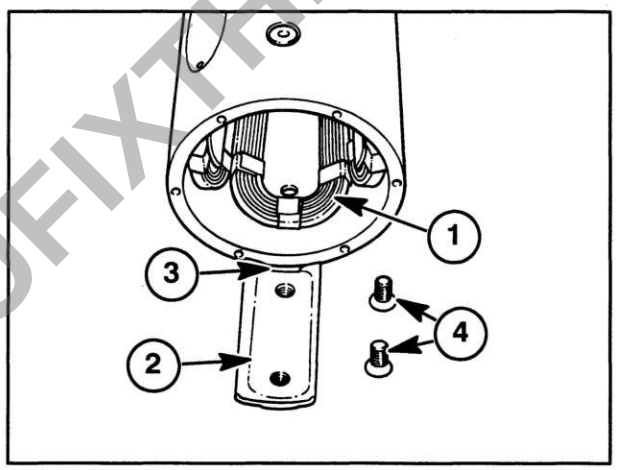


Figure 3-78

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17. The transmission clutch control cable must now be disconnected at the transmission control valve.

    Remove the bolt, 1, and nut, 2, from the sleeve, 3, that is attached to the end of the transmission control valve spool.

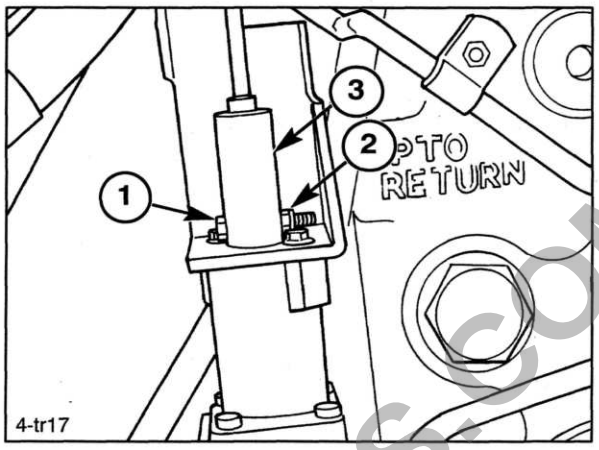


Figure 4-140

Slide the sleeve, 1, upward on the cable so as to expose the nut, 2. Remove the nut and pull the sleeve and rubber isolator from the cable end.

NOTE: The cable has a square shank on the end of it so that it can be held while the nut is loosened. Pull the sleeve down past the nut to access the square shank.

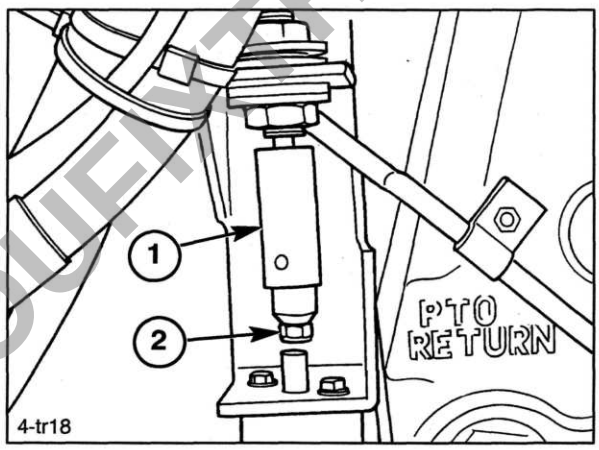


Figure 4-141

Loosen and remove the lower stanchion nut, 1, and washer, 2, from the cable mounting bracket. Pull the cable upward from the bracket and transmission.

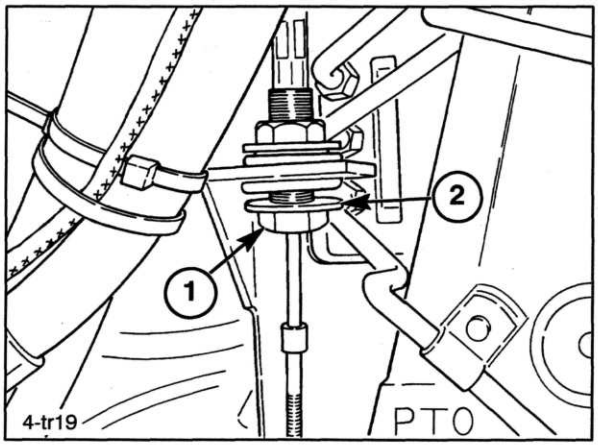


Figure 4-142

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14. Check the adjustment of the collar by placing the cover plate over the end of the holder and pushing it toward the flex coupler. The cover plate foam should come up against the collar, then the cover plate should move evenly flush against the flex coupler adapter flange around its entire diameter.

    The tube holder must be firmly seated in the flywheel pilot bore and must not move when the cover plate is seated against the flex coupler adapter flange. Wiggle the laser end of the holder to be sure it does not move when the cover plate is firmly seated on the adapter flange of the flex coupler.

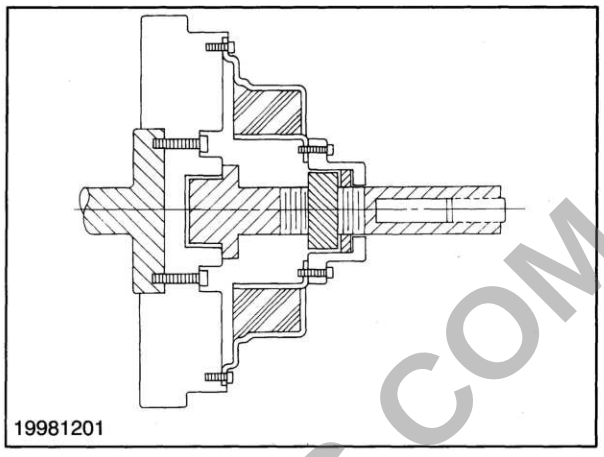


Figure 5-77

15. With the collar adjusted properly, install the cover plate, 1, onto the flex coupler, 2, using two cap screws, 3, removed from the input drive shaft. Tighten the cap screws securely so that the cover plate is flush around the adapter flange of the coupler.

    The cover plate inner diameter, 4, must not touch the laser holder at any location. If necessary, loosen the two cap screws and shift the cover away from the tube where necessary.

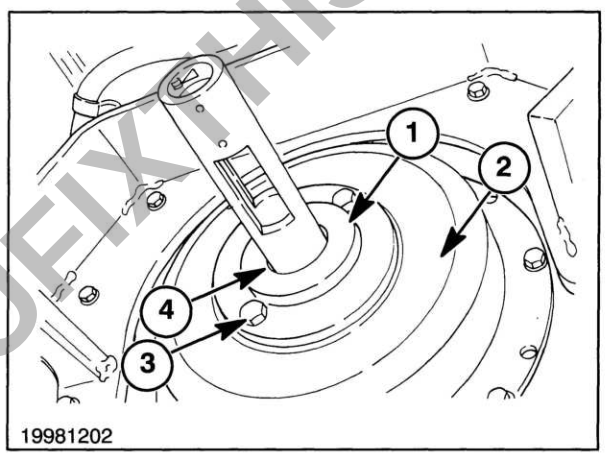


Figure 5-78

16. Insert the plug, 1, of the 110 V power adapter into the port, 2, of the laser.

    Flip the laser on/off switch, 3, to the ON position.

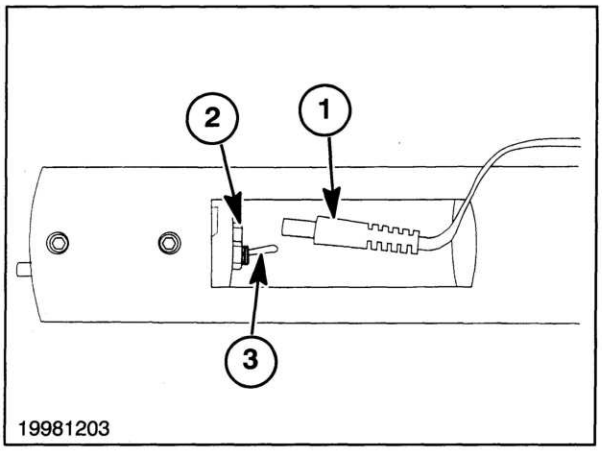


Figure 5-79

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Installation

1. Be sure that the rear PTO drive shaft yokes are in phase (both yokes on either end of the shaft are positioned identically on the shaft).

   Lift the shaft into the rear frame of the tractor so that the long tube portion (tube shaft) is toward the rear of the tractor. The slip yoke should be toward the front of the tractor and connects to the clutch output yoke.

2. Use a 3/8″-24 UNF tap to clean the threads of the clutch output yoke.

   Lift the rear drive shaft into position in the clutch output yoke. Use four cap screws, 1, and two bearing straps, 2, to secure the rear drive shaft, 3, to the clutch output yoke, 4. Torque bearing strap screws to 75 N·m (55 ft. lbs.).

   NOTE: New cap screws should be used when the rear drive shaft is reassembled. Special thread-locking compound is used to retain the bolt in the yoke.

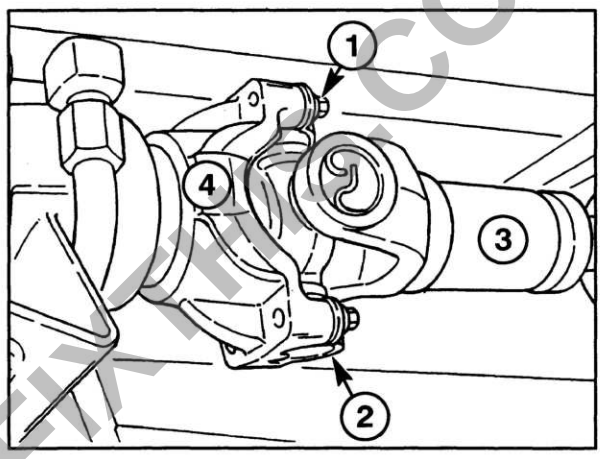


Figure 7-206

3. Use a 3/8″-24 UNF tap to clean the threads of the drop box input yoke.

   Lift the rear PTO drive shaft upward so that it protrudes through the hole in the rear frame. Use four cap screws, 1, and two bearing straps, 2, to secure the rear drive shaft, 3, to the drop box input yoke, 4. Torque the bearing strap screws to 75 N·m (55 ft. lbs.).

   NOTE: New cap screws should be used when the rear drive shaft is reassembled. Special thread-locking compound is used to retain the bolt in the yoke.

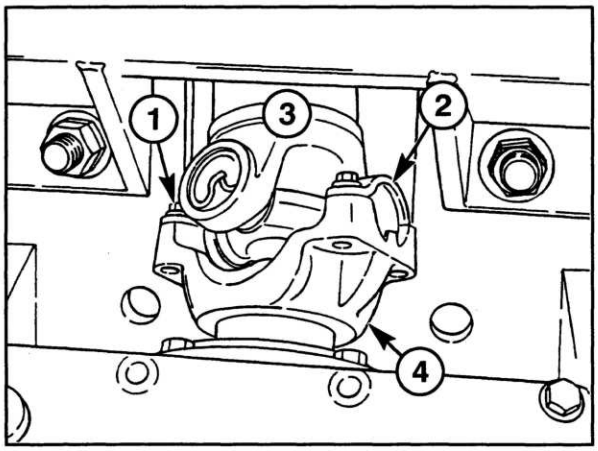


Figure 7-207

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4. Attach the hose support bracket, 1, to the right hand cooler bracket, 2, with the two capscrews, 3. Make sure the capscrews also secure the cooler to the bracket.

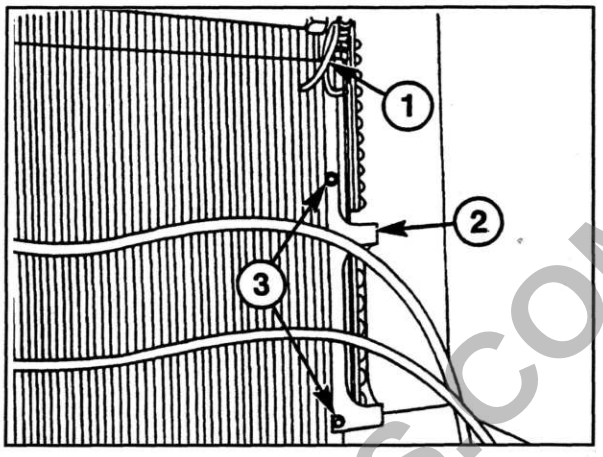


Figure 8-577

5. Install the P-clip, 1, around the connector tube, 2, by installing and tightening the capscrew, 3, and nut.

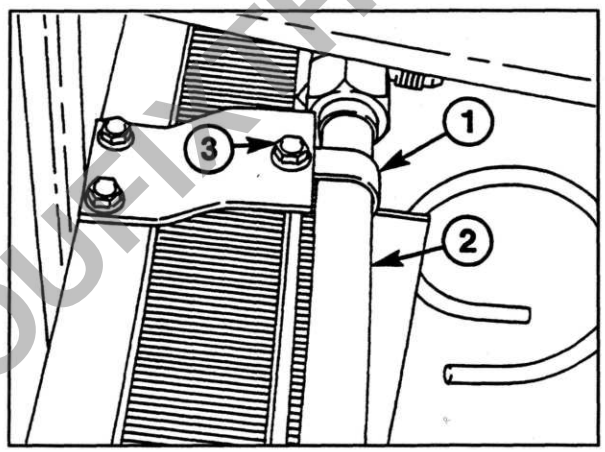


Figure 8-578

6. Reinstall the implement cooler outlet hose, O, and the four steering cooler hoses, 1 - 4, according to the labels made during removal.

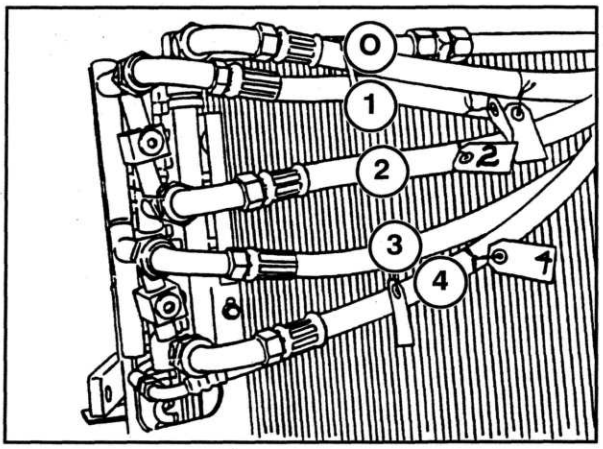


Figure 8-579

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2. Remove the four shoulder bolts, 1, that retain the top plate, 2, of the pivoting seat base to the bottom plate, 3. Separate the halves of the pivot base.

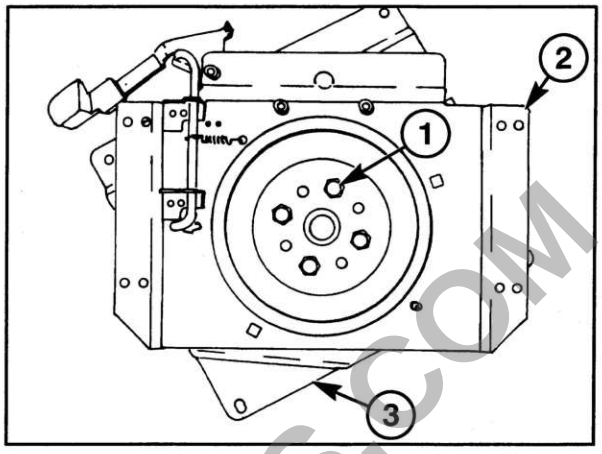


Figure 11-209

3. Remove the spring, 1, from the swivel lever lock rod, 2, on the top pivot base plate.

   Remove the pivot handle bolt, 3, and remove the handle from the top plate.

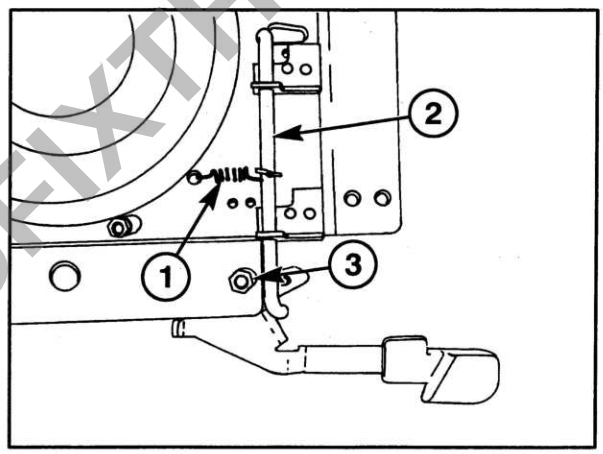


Figure 11-210

4. Move the inner portion of the fore/aft slide rails, 1, out of the way by lifting on the adjustment handle, 2, and sliding the assembly. This will expose the four bolts, 3, (front and rear of the rails) that attach the slide rails to the lateral isolator, 4.

   Remove the four bolts and spacers that attach the slide rail assembly to the lateral isolator.

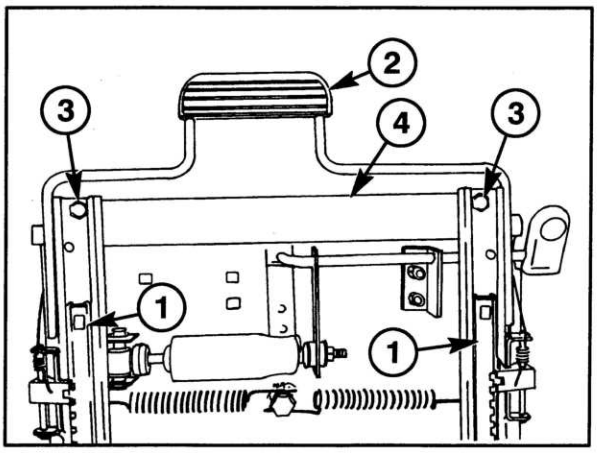


Figure 11-211

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