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TEREX®

R070T

Service Repair Manual

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1. Product Safety

Chapter Overview

This chapter contains product safety information for Terex Compact Track Loaders. Read and understand all product safety information before attempting to service any Compact Track Loader.



Safety Alert Symbol

This symbol means: **Attention! Be alert! Your safety is involved!**

The safety alert symbol is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

This symbol is used as an attention-getting device throughout this manual as well as on decals and labels fixed to the machinery to assist in potential hazard recognition and prevention.

Property or equipment damage warnings in this publication are identified by the signal word "NOTICE".

NOTICE

"NOTICE" Indicates a hazardous situation which, if not avoided, could result in property or equipment damage.

The word "Note" is used throughout this manual to draw your attention to specific topics or to supplement the information provided in that section.



Improper or incomplete maintenance/repair of a Compact Track Loader can be dangerous and may result in machine damage, injury or death.

Do not attempt to perform any type of repair or maintenance on a Compact Track Loader until you have read and fully understood both this manual and the machine specific operation and maintenance manual.

Refer to the Operation and Maintenance manual for instructions regarding proper machine operation and maintenance techniques before operating or servicing any Compact Track Loader.

The person(s) in charge of servicing a Compact Track Loader may be unfamiliar with many of the systems on the machine. This makes it especially important to use caution when performing service tasks. Familiarize yourself with the affected system(s) and components before attempting any type of maintenance or service.



It is not possible to anticipate every potential hazard. The safety messages included in this document and displayed on the machine are not all-inclusive. They are intended to make you aware of potential risks and encourage a safe approach to performing service work.

If you use a tool, procedure, work method or operating technique that is not specifically recommended by Terex, you must satisfy yourself that it is safe for you and others. You must also ensure that the machine will not be damaged or be made unsafe by the operation, lubrication, maintenance or repair procedures that you choose.

Basic Precautions

Safety Labels

Safety labels have been included and are displayed in various places throughout the machine to serve as warnings of potentially dangerous conditions. Read and understand all "Safety" labels on any Compact Track Loader before attempting to operate, maintain or repair it. Replace any damaged, illegible or missing labels immediately, prior to service.

Personal Protective Equipment

Personal protection equipment is recommended when performing maintenance or service on a machine. Always wear appropriate protective equipment for working conditions when working on or around the machine. Loose clothing should not be worn and long hair should be restrained. Wear hard hats, protective face/eyewear, safety shoes and any other equipment necessary to ensure your safety and the safety of others around you as you work.

Entering and Exiting

Always use steps and handholds when entering or exiting a Compact Track Loader. Clean any foreign materials from steps or work platforms before using them. Always face the machine when using steps and handholds. When it is not possible to use the designed entry/exit system, utilize appropriate ladders, scaffolds, or work platforms to safely gain access to the machine.

Lifting

Use a hoist when lifting components that weigh 50 lb (23 kg) or more, to avoid back injury. Make sure all chains, hooks, slings, etc., are in good condition and are of the correct capacity. Be sure hooks are positioned correctly and equipped with a spring latch. Lifting eyes are not to be side loaded during a lifting operation.

Hot Fluids and Components

Stay clear of hot components and system fluids of the engine, exhaust, radiator/oil cooler and hydraulic lines/tubes. Also, use caution when removing fill caps, breathers and plugs on the machine. Hold a rag over the cap or plug to prevent being sprayed or splashed by liquids under pressure. Be especially careful if the machine has been operated recently, fluids may still be hot.



To ensure your safety, allow the machine to cool before attempting any service procedure that involves hot fluids or components.

Corrosion Inhibitor

Corrosion inhibitor contains alkali. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Do not take internally. In case of contact, wash skin immediately with soap and water. For eyes, flush with large amounts of water for at least 15 minutes. Call Physician. Keep out of reach of children.

Batteries

Do not smoke when inspecting the battery electrolyte level. Never disconnect any charging unit circuit or battery circuit cable from the battery when the charging unit is operating. A spark can cause an explosion from the flammable vapor mixture of hydrogen and oxygen that is released from the electrolyte through the battery outlets. Do not let electrolyte solution make contact with skin or eyes. Electrolyte solution is an acid. In case of contact, immediately wash skin with soap and water. For eyes, flush with large amounts of water for at least 15 minutes. Call Physician. Keep out of reach of children.

Pressurized Items

1. Do not use hands or any other body part to check for fluid leaks in the hydraulic system. Always use a solid material like wood or metal to check for this type of leak. Leaking fluid under pressure can penetrate body tissue. Fluid penetration can cause serious injury or death.



Fluid injected into skin must be surgically removed within a few hours by a doctor familiar with this type of injury or gangrene will result.

2. Relieve pressure from the hydraulic system before disconnecting or removing any lines, fittings or related items. Do this by relaxing all hydraulic actuators. If the lift arms are raised, make sure they are securely braced. Be alert for possible pressure release when disconnecting any device from a pressurized system.
3. Lower the lift arms before performing any work on the machine. If this cannot be done, make sure they are securely braced to prevent them from dropping unexpectedly during service.
4. Loose or damaged fuel, oil, hydraulic, lines, tubes and hoses can cause fires. Do not bend or strike high pressure lines or install ones that have been bent or damaged. Check lines, tubes and hoses carefully. See item 1 for precautions on checking for fluid leaks.
5. Pressurized air or water can also cause injury. When pressurized air or water is used for cleaning, wear a protective face shield, protective clothing, and protective shoes. The recommended maximum air pressure for cleaning purposes is 30 psi (205 kPa). When using a pressure washer, keep in mind that nozzle pressures are typically very high. Generally, pressures are well above 2000 psi (13790 kPa). Follow all recommended practices provided by the pressure washer manufacturer.

Repair



Accidental machine starting can cause injury or even death to personnel working on a Compact Track Loader.

As a precaution, disconnect the battery cables from the battery terminals, tape the battery clamps and remove the key from the ignition switch prior to performing any service work on a Compact Track Loader.

Place a “Do Not Operate” tag prominently on the machine to inform personnel that the machine is being serviced.

1. Disconnect the battery and discharge any capacitor before beginning work on a machine. Attach a **Do Not Operate** tag in the cab to alert any operator that service is in progress.
2. If possible, make all repairs with the machine parked on a level, hard surface. Use blocks to prevent the machine from rolling while working on or under the machine.
3. Do not work on or under any machine that is supported only by a hydraulic jack or hoist. Always use suitable mechanical supports to ensure that the machine will not fall.
4. Make sure the work area around the machine is safe and make yourself aware of any hazardous conditions that may exist. If the engine needs to be started inside an enclosure, make sure that the engine's exhaust is properly vented.
5. Be sure all protective devices including guards and shields are properly installed and functioning correctly before beginning any service task. If a guard or shield must be removed to perform the repair work, use extra caution.
6. Always use the appropriate tools for the work to be performed. Tools should be in good condition and you should understand how to use them properly before performing any service work.
7. When replacing fasteners, use parts of equivalent grade and size. Do not use a lesser quality fastener if replacements are necessary.
8. Be prepared to stop an engine if it has been recently overhauled or the fuel system has been recently serviced. If the engine has not been assembled correctly, or if the fuel settings are not correct, the engine can possibly overspeed and cause bodily injury, death or property damage. Be prepared to shut off the fuel and air supply to the engine in order to stop the engine.
9. Be careful when removing cover plates. Back off the last two bolts or nuts located on opposite sides of the cover slightly, but leave them threaded in place. Then, pry the cover loose to relieve any spring or other pressure before removing the last two nuts or bolts completely.
10. Repairs requiring welding should be performed only by personnel adequately trained and knowledgeable in welding procedures and with the guidance of appropriate reference information. Determine the type of metal being welded and select the correct welding procedure and filler material to provide a weld that is as strong or stronger than the original weld.
11. Take precautions to avoid damaging wiring during removal and installation operations. Carefully route wires so that they will not contact sharp corners, objects or hot surfaces during operation.
12. When performing service that requires the lift arms to be in the raised position, always utilize the lift arm brace located on the rear of the loader tower.
13. Relieve hydraulic system pressure by relaxing all hydraulic actuators prior to attempting any hydraulic maintenance or repair.
14. Always tighten connections to the correct torque specification. Make sure that all shields, clamps and guards are installed correctly to avoid excessive heat, vibration or unwanted contact between parts during operation. Shields that protect exhaust components from oil spray in event of a line, tube or seal failure must be correctly installed.
15. Do not operate a machine if any rotating part is damaged or contacts other parts during operation. Any high speed rotating component that has been damaged or altered should be checked for balance before reusing. Make sure all protective devices, including guards and shields, are properly installed and functioning correctly before starting the engine or operating the machine.



When replacement parts are required for your machine, use only genuine Terex replacement parts or parts that meet or exceed original specifications including, but not limited to physical dimensions, type, strength and material.

Installing lesser components can lead to premature failures, product damage, personal injury or death.

Attachments

Only use compatible attachments as defined by the machine specific operation and maintenance manual.

Make sure that all necessary guards and protective equipment are in place and functioning prior to operating any attachment.

Wear protective glasses and protective equipment as required by conditions or as recommended in the attachment specific operation manual.

Ensure that all personnel are far enough away from the work area so they will not be struck by flying objects.

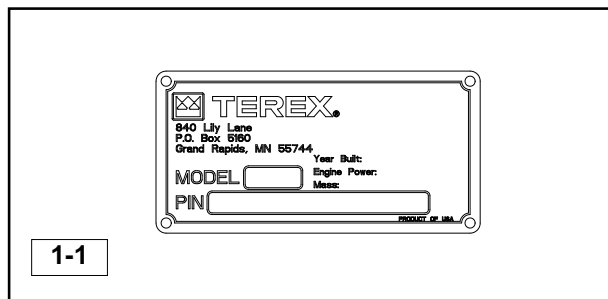
Stay clear of the cutting edges, pinching surfaces or crushing surfaces of the attachment while performing any attachment maintenance, testing or adjustments.

Machine Labels and Decals

Labels and decals placed on the machine provide safety information and operating instructions. Familiarize yourself with the location and significance of these labels to ensure your safety.

Product Identification Number








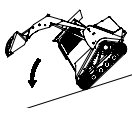


The Product Identification Number (PIN) is located on the front of the cab enclosure (figure 1-1). Always provide the PIN when contacting the dealer about parts, service, warranty or accessories. No warranty claims will be processed unless the PIN is provided.

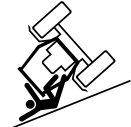




Safety Label Examples (ANSI)

Examples of the labels and decals displayed on the machine are shown on this page.



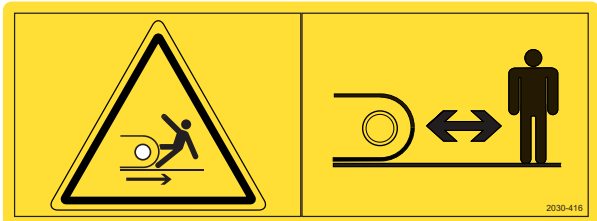
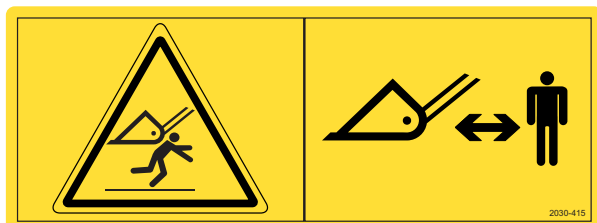
 WARNING  Improper operation or maintenance can result in serious injury or death.  Read Operator's Manual Read and understand the operator's manual and all safety signs prior to operating or maintaining the machine.	 WARNING  Fall Hazard Falling from a machine can result in serious injury or death.  No Riders	 WARNING  Rollover/Ejection Hazard Serious injury or death can result.   Carry loads low. Load unload and turn on level ground. Travel on inclines with heaviest end of machine uphill. 2030-598
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 WARNING  Crush Hazard Rollover can crush and result in serious injury or death.  Fasten Seat Belt	 WARNING  Fall Hazard Falling can result in serious injury or death.  Do not use the bucket/attachment as a work platform. 2030-596
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 NOTICE  Fire Hazard Flammable debris can collect near hot components and lead to a fire.	 Read Operator's manual Keep engine, exhaust and chassis areas free of debris. 2030-599
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Safety Label Examples (ISO)

Examples of the labels and decals displayed on the machine are shown on this page.





2. Technical Specifications & Service Tools

R070T Specifications

Engine

- Model: Perkins 403-D15
- Displacement: 1.5 liter
- Gross horsepower: 32.7 hp (24.4 kW)
- Peak Torque: 70.81 lb-ft. (96 Nm)
- Idle rpm: 1175 (low idle), 2800 (high idle)
- Average water /thermostat temperature: 190°F, 87.8°C

Transmission

- Model: HPP2 tandem (Bandioli & Pavesi)

Drive Pumps

- Displacement: 1.159 in3/rev (19 cc/rev)
- Relief pressure: 4350 psi (29,992 kPa)
- Flow: 14 gpm (53 lpm) @ 2800 rpm (per pump)

Charge Pumps (2)

- Displacement: .33 in3/rev (5.4 cc/rev) x2
- Relief pressure (idle): 360 +/- 30 psi (24.82 bar)
- Flow: 3 gpm (11.4 lpm combined) @1175 rpm
- Flow: 8.1 gpm (30.7 lpm combined) @2800 rpm

Drive Motors

- Model: Rexroth
- Displacement: 17.087 in3/rev (280 cc/rev)

Pilot Controls (Joysticks)

- Model: Rexroth 4TH6

Auxiliary Pump

- Make: Rexroth
- Type: Gear
- Displacement: 0.87 in3/rev (14.3 cc/rev)
- Max Flow: 10 gpm (37.9 lpm) @ 2800 rpm
- Relief pressure: 3000 psi (20,684 kPa)
- Cooling/filtering: Oil is filtered and cooled at all times. In auxiliary mode, the oil is filtered after the attachment to protect the machine if the attachment motor fails or contaminants are introduced from the quick couplers.

Lift Arm Control Valve

- Make: Husco
- Relief Pressure: 3000 psi (20,684 kPa)
- Pilot pressure required to move spools: 180-220psi (1241-1517 kPa)

Oil Cooler

- Operating pressure: 250 psi (1724 kPa)
- Bypass relief pressure: 80 psi (551.6 kPa)
- Hot oil sending unit: 225°F (107.2°C)
- Avg. oil operating temp. 50-60°F (10-16°C) above ambient. (extreme application 80°F , 27°C above ambient.)

Critical Torque Specs

- Transmission Mounting Bolts
 - 80 ft-lb (108 Nm). w/Blue Loctite
- Drive Sprocket Drive Teeth Bolts
 - 62 ft-lb (84 Nm). -Dry
- Bogie Wheel Retaining Nuts
 - 110 ft-lb (149 Nm). - Dry
- Drive Sprocket Retaining Nuts
 - 129 ft-lb (174.9 Nm). Dry

Service Tools

Listed below are common service tools which are identified and utilized in the service procedures described in this manual. Use tools recommended by Terex whenever possible to reduce risk of injury and or machine damage during service.

- Heavy Duty Hydraulic Jack (5-ton rating)
- Test Gauge Kit (P/N: 0402-935)
- Long Pry Bar(s)

3. Circuit Diagrams

Chapter Overview

This chapter contains diagrams for the following Compact Track Loader systems.

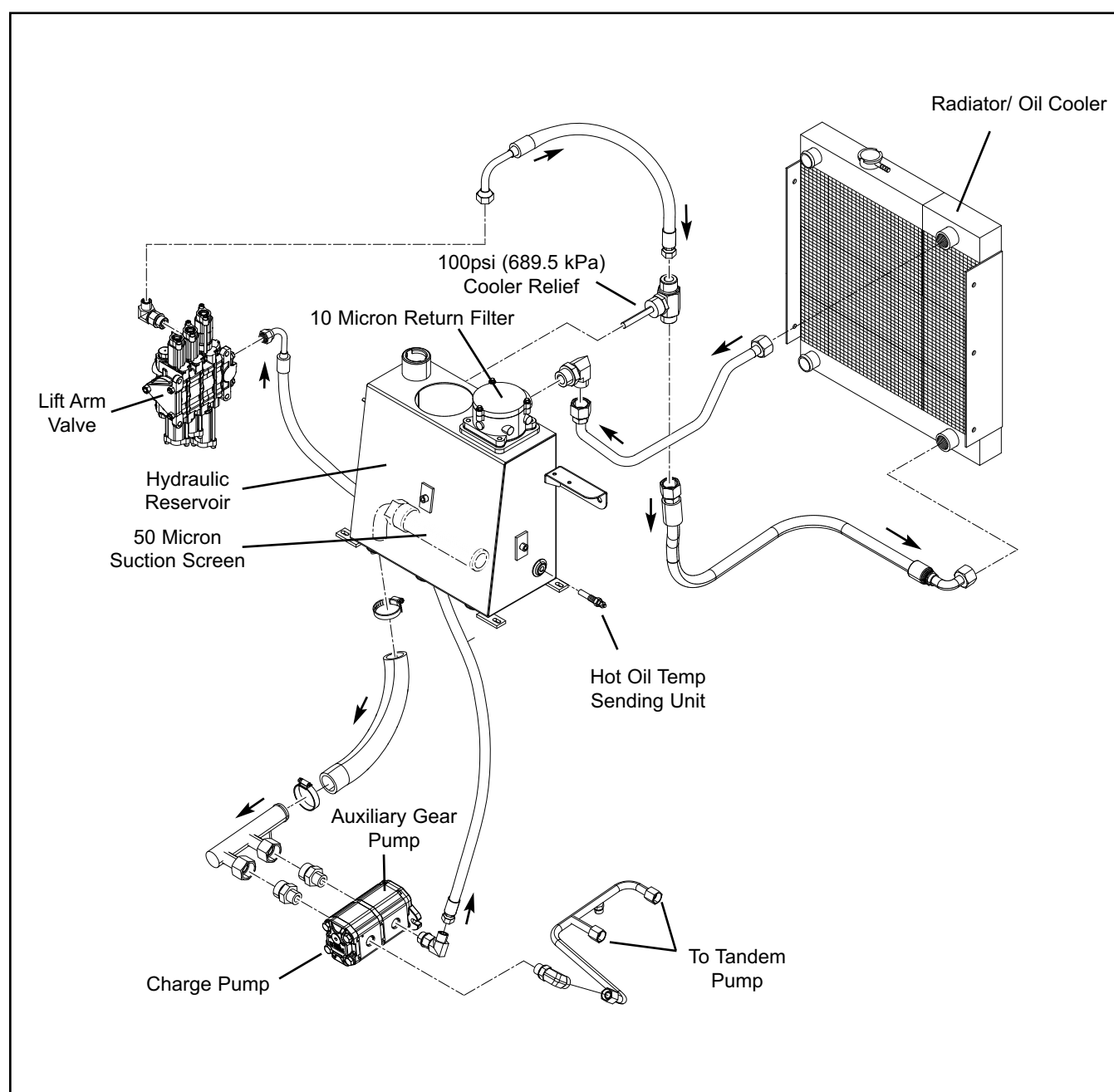
- Filtering and cooling system
- Auxiliary circuit system
- Drive loop system

Filtering and Cooling System

The filtering and cooling system (Figure 3-1) contains the following major components.

- Hydraulic reservoir
- Radiator/oil cooler
- Lift Arm valve
- Auxiliary gear pump

Figure 3-1 R070T Filtering and Cooling System

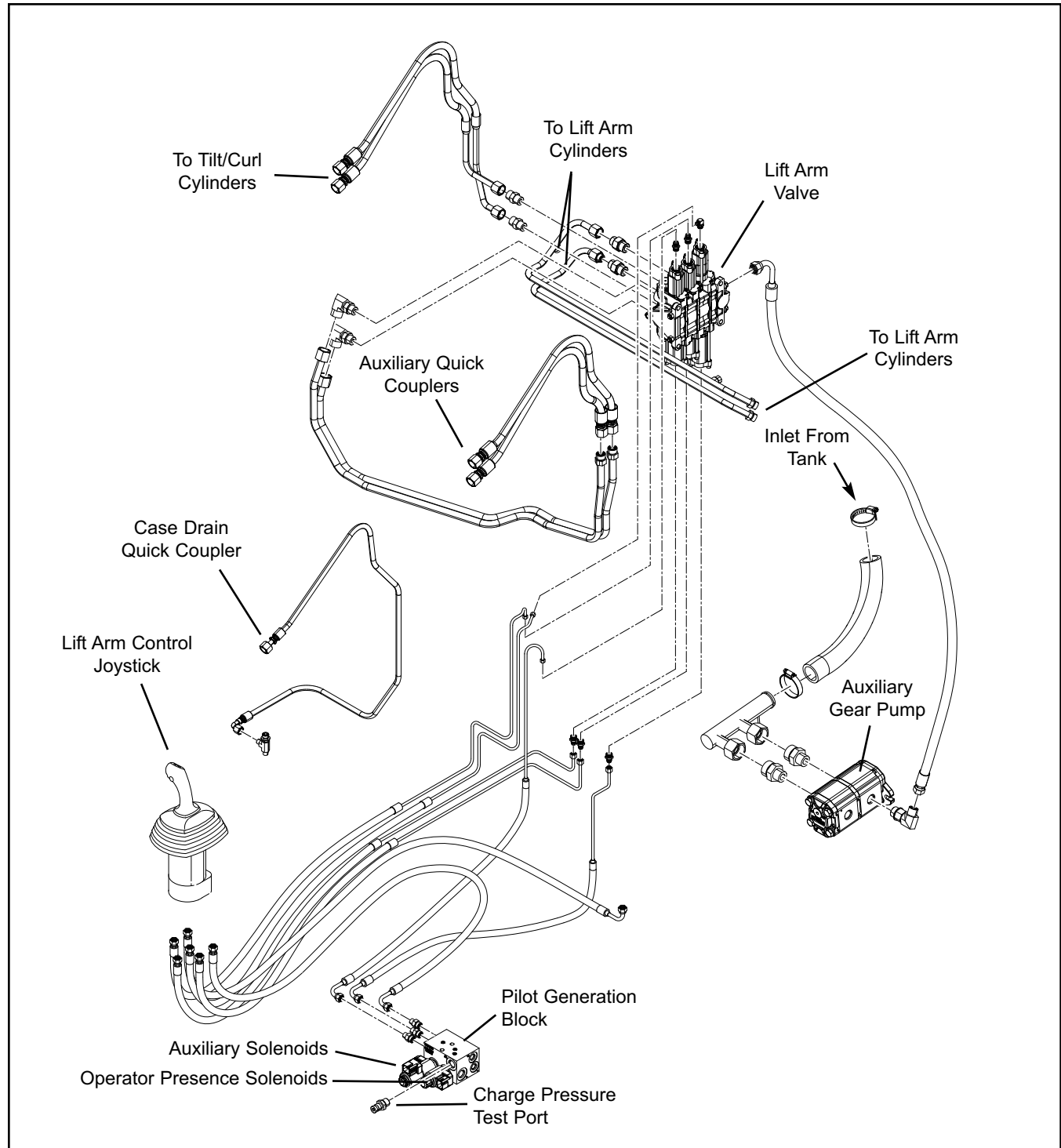


Auxiliary Circuit System

The auxiliary circuit system (Figure 3-2) contains the following major components.

- Lift Arm valve
- Pilot generation block
- Auxiliary gear pump
- Lift Arm control joystick

Figure 3-2 R070T Auxiliary Circuit System

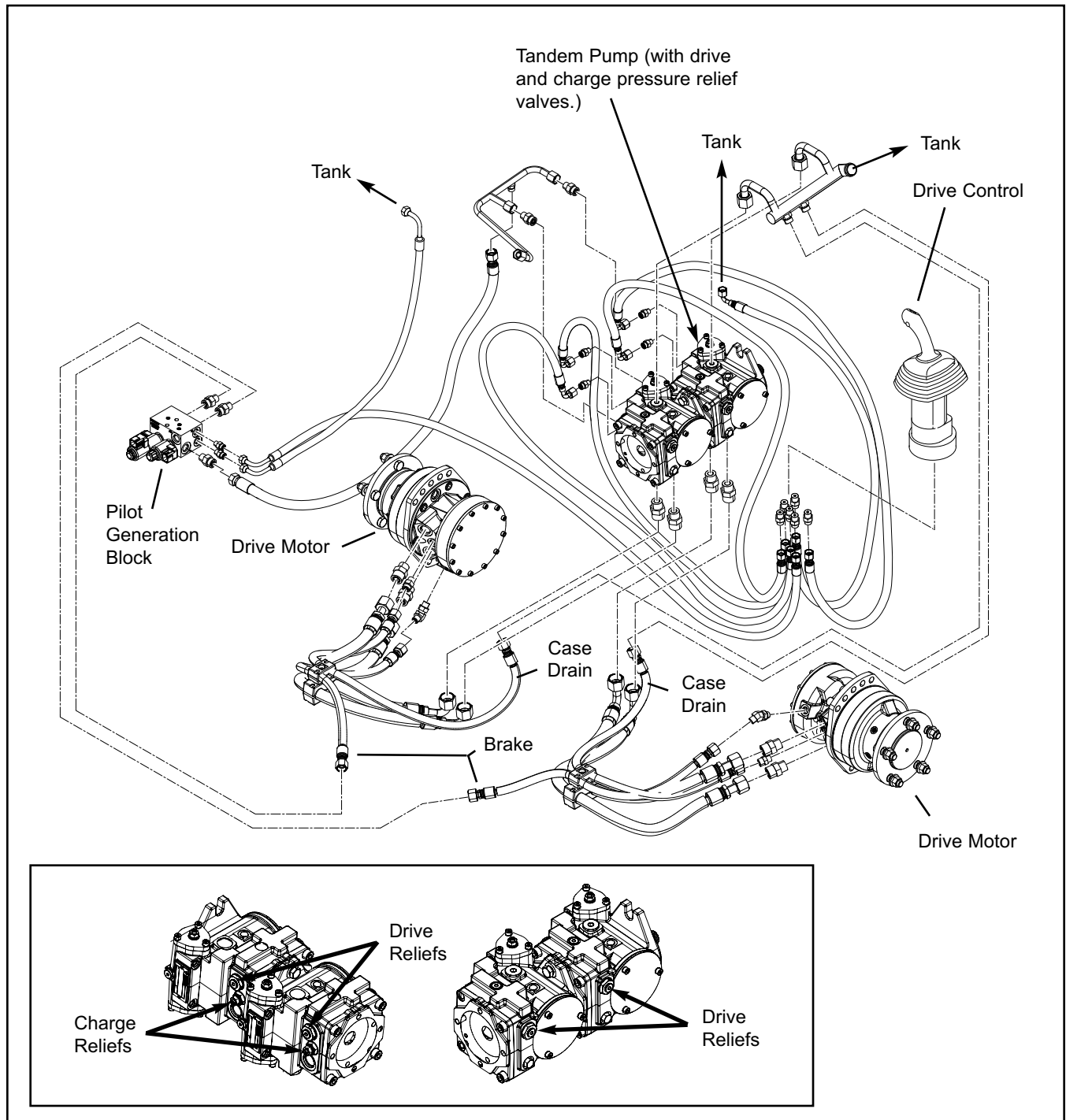


Drive Loop System

The drive loop system (Figure 3-3) contains the following major components.

- Tandem pump
- Drive motors
- Pilot generation block
- Drive control joystick

Figure 3-3 R070T Drive Loop System



4. Machine Controls and Instrumentation

Chapter Overview

This chapter contains an overview of the machine controls and instrumentation. For further information regarding machine controls, instrumentation or operation, refer to the operation and maintenance manual for your particular machine. Included here are illustrations of the following controls and instrumentation components and a description of their functions.

- Machine Controls
- Instrument Location and Function
- Switch Location and Function

Machine Controls (fig. 4-1)

There are three primary machine controls: loader control (1), drive control (2) and throttle (3).

Loader Control

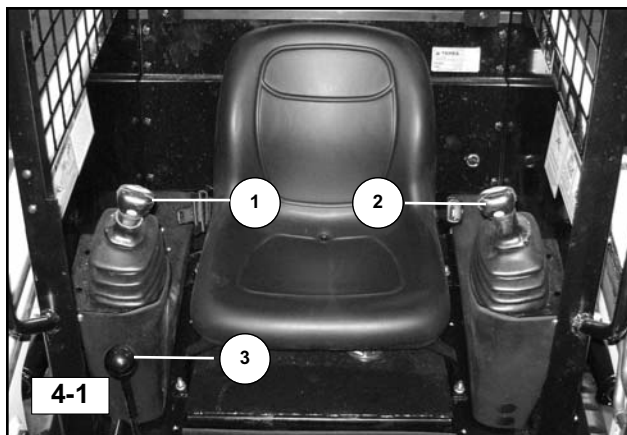
The loader control (1) is a pilot operated joystick that allows the operator to raise or lower the loader and dump or curl the quick attach mechanism.

Drive Control

The drive control (2) is also a pilot operated joystick. It allows the operator to change the direction and speed of the machine.

Throttle

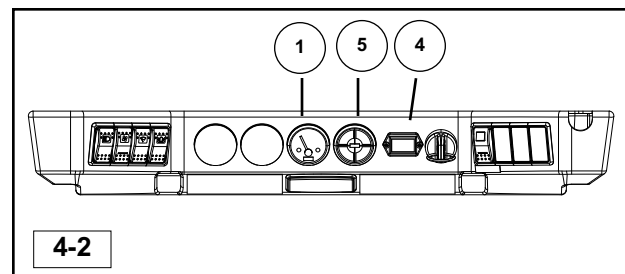
The hand throttle (3) controls engine rpm.



Instrumentation

The Instruments (Figure 4-2) are positioned in the overhead dash panel for ease of access and visibility when seated inside the operator enclosure. Instruments include the following components.

- (1) Fuel Gauge
- (2) Tachometer (optional)
- (3) Engine Coolant Temp. Gauge (optional)
- (4) Hour Meter
- (5) Warning Indicator Display
 - Engine Oil Pressure Warning Light
 - Engine Temperature Warning Light
 - Hydraulic Oil Temperature Warning Light
 - Battery Voltage Warning Light



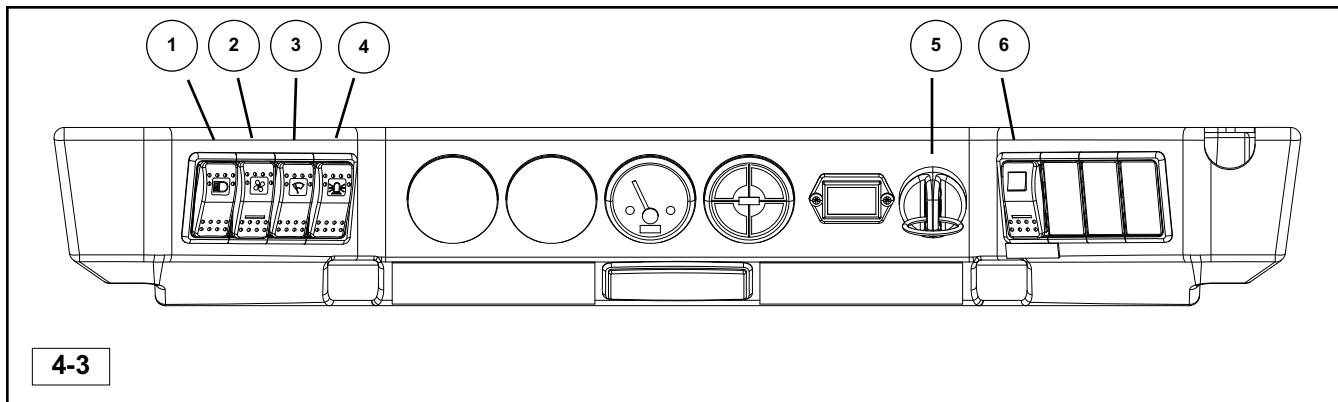
NOTICE

If the engine temperature, engine oil pressure or hydraulic oil temperature lights illuminate or should the eng. coolant temp. gauge read excessive temperatures during normal machine operation, shut the machine down immediately (in a safe location). Diagnose the problem and make any necessary repairs before resuming normal operation.

If the battery low-voltage light should illuminate during operation, drive the machine to a suitable location and shut the engine off. Diagnose the problem and make any needed repairs before resuming operation.

NOTICE

The glow plug operation light illuminates only when the key switch is turned to engine pre-heat, showing normal operation.

R070T Switches

The various switches (Figure 4-3) are positioned to provide good access and visibility. The standard and optional switches are listed below.

- (1) Work lights
- (2) Heater fan (optional)
- (3) Front wiper (optional)
- (4) Beacon light (optional)
- (5) Ignition, glow plug (pre-heat)
- (6) Auxiliary hydraulics

5. Operator Enclosure Disassembly and Assembly

Chapter Overview

This chapter provides disassembly and assembly procedures for the operator enclosure assembly.

Personal Safety

Improper or incomplete maintenance/repair of a Compact Track Loader can be dangerous and may result in machine damage, injury or death.

Do not attempt to perform any type of repair or maintenance on a Compact Track Loader until you have read and fully understood the information in this manual.

Refer to the Operation and Maintenance manual for instructions regarding proper machine operation techniques before operating any Compact Track Loader.

Prior to performing any type of service work on a Compact Track Loader, read and understand Chapter 1 (Product Safety) for personal safety information.

Machine Preparation

Accidental machine starting can cause injury or death to personnel working on a Compact Track Loader.

As a precaution, disconnect the battery cables from the battery terminals, tape the battery clamps and remove the key from the ignition switch prior to performing any service work on a Compact Track Loader.

Place a "Do Not Operate" tag prominently on the machine to inform personnel that the machine is being worked on.

Operator Enclosure Disassembly and Assembly Procedures

Disassembly and assembly procedures are provided for the following operator enclosure components.

- Light Bar
- Ignition Switch
- Gauges
- Lap Bar Gas Assist Spring

Note: Procedures are provided for only those operator enclosure components listed above. However, information for removal and installation of other operator enclosure components can be obtained from the machine specific parts manual.

Light Bar Removal and Installation

The tools required for light bar console removal and installation are listed in Table 5-1. Use manufacturer recommended tools whenever possible.

Table 5-1

Required Tools
Combination Wrench

Light Bar Removal



Figure 5-1

1. Loosen the two cap screws that attach the light bar to the cab frame.



Figure 5-2

2. Carefully lower the light bar with the wire harness attached.



Figure 5-3

3. View of light bar interior components. Interior components are now accessible for servicing.



Figure 5-4

4. View of dome light. If removal is required, simply insert a lever (blade-type screw driver) at opposite end of switch in pry-pocket, and gently pry the light assembly out of the light bar.

Light Bar Installation



Figure 5-5

1. Carefully position the light bar, without pinching the wiring harness against the cab roof.



Figure 5-6

2. Secure the light bar to the cab roof with the two capscrews

Ignition Switch Removal and Installation

The tools required for ignition switch removal and installation are listed in Table 5-2. Use manufacturer-recommended tools whenever possible.

Table 5-2

Required Tools
Combination Wrench

Ignition Switch Removal

1. Lower the light bar. Refer to *Chapter 5. Light Bar Removal* procedure.



Figure 5-7

2. Remove the nut that secures the ignition switch to the dash panel.

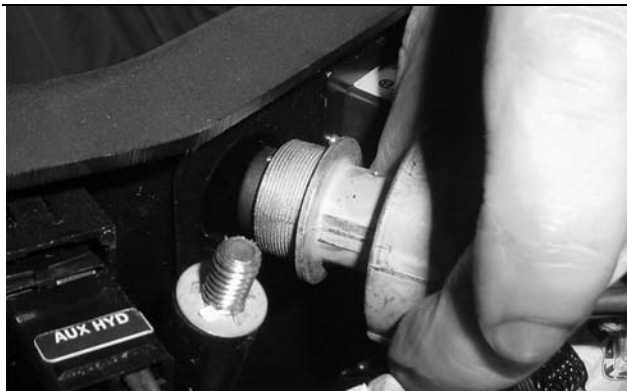


Figure 5-8

3. Pull the ignition switch out from the rear of the dash panel.



Figure 5-9

4. Unplug the ignition switch connector.

Ignition Switch Installation

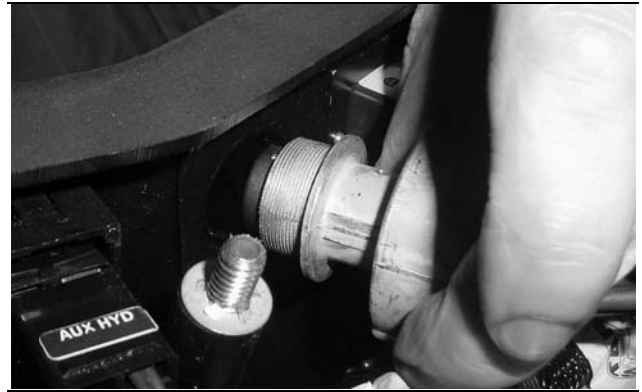


Figure 5-10

1. Insert the ignition switch from the rear of the dash panel.



Figure 5-11

2. Install the nut that secures the ignition switch to the dash panel.



Figure 5-12

3. Plug in the ignition switch connector.

4. Install the light bar. Refer to *Chapter 5. Light Bar Installation* procedure.

Gauge Removal and Installation

The tools required for gauge removal and installation are listed in Table 5-3. Use manufacturer-recommended tools whenever possible.

Table 5-3

Required Tools
Combination wrench

Gauge Removal

1. Lower the light bar. Refer to *Chapter 5. Light Bar Removal* procedure.



Figure 5-13

2. Disconnect the connector from the gauge.



Figure 5-14

3. Remove the two nuts that secure the gauge to the retaining bracket.



Figure 5-15

4. Pull the gauge out from the front of the dash panel.

Gauge Installation



Figure 5-16

1. Insert the gauge from the front of the dash panel.



Figure 5-17

2. Install the two nuts that secure the gauge to the retaining bracket.



Figure 5-18

3. Reconnect the gauge connector.
4. Install the light bar. Refer to *Chapter 5. Light Bar Installation* procedure.

Lap Bar Gas Assist Spring Removal and Installation

The tools required for gas assist spring removal and installation are listed in Table 5-4. Use manufacturer-recommended tools whenever possible.

Table 5-4

Required Tools
Screwdriver

Lap Bar Gas Assist Spring Removal

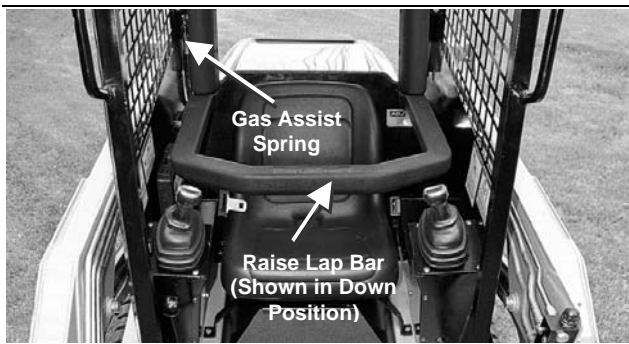


Figure 5-19

1. Put the lap bar in the UP position to relieve tension on the lap bar gas assist spring.

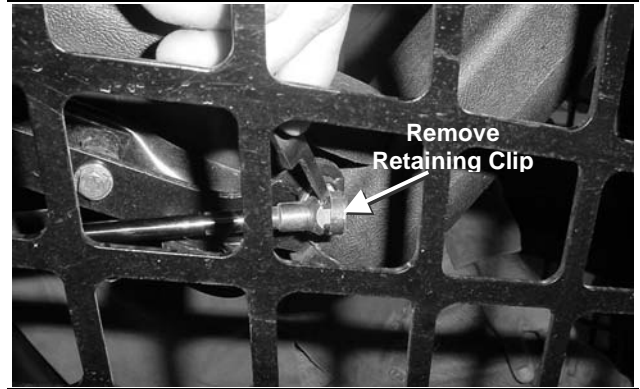


Figure 5-20

2. Using a small screwdriver, remove the retaining clip from each end of the gas assist spring.



Figure 5-21

3. Remove the gas assist spring by pulling both ends out from the ball joints.

Lap Bar Gas Assist Spring Installation

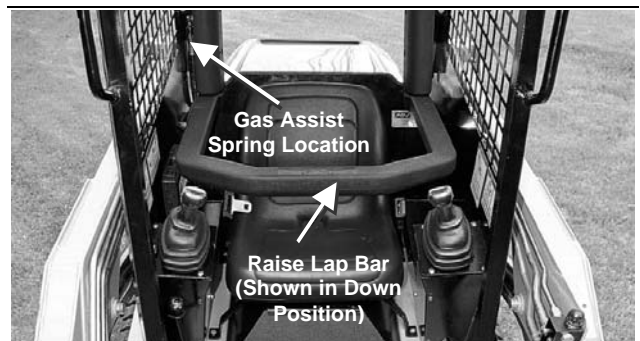


Figure 5-22

1. Put the lap bar in the UP position to minimize tension on the lap bar gas assist spring during installation.

5. Operator Enclosure Disassembly and Assembly

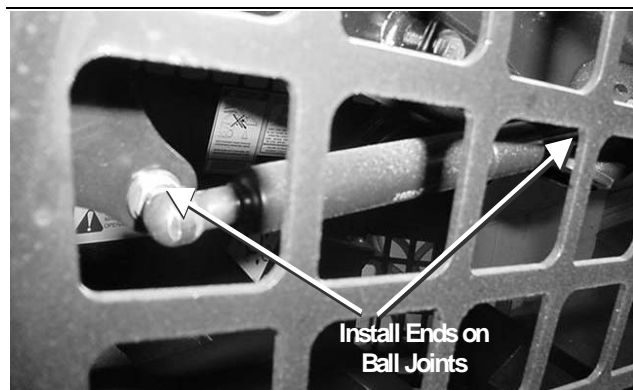


Figure 5-23

2. Install the ends of the lap bar gas assist spring onto the ball joints.

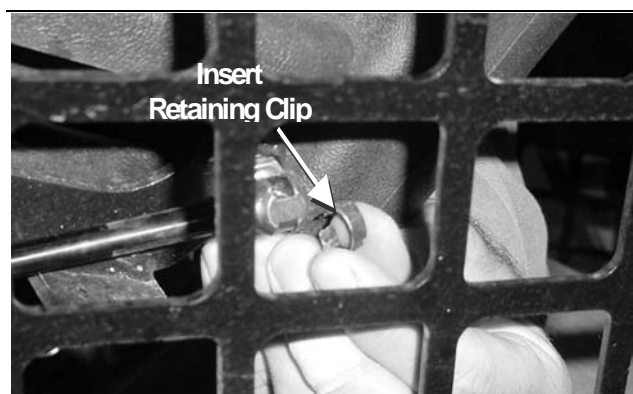


Figure 5-24

3. Slide the retaining clip on to each end of the gas assist spring.

6. Chassis Disassembly and Assembly

Chapter Overview

This chapter provides disassembly and assembly procedures for the chassis assembly.

Personal Safety

Improper or incomplete maintenance/repair of a Compact Track Loader can be dangerous and may result in machine damage, injury or death.

Do not attempt to perform any type of repair or maintenance on a Compact Track Loader until you have read and fully understood the information in this manual.

Refer to the Operation and Maintenance manual for instructions regarding proper machine operation techniques before operating any Compact Track Loader.

Prior to performing any type of service work on a Compact Track Loader, read and understand Chapter 1 (Product Safety) for personal safety information.

Machine Preparation

Accidental machine starting can cause injury or death to personnel working on a Compact Track Loader.

As a precaution, disconnect the battery cables from the battery terminals, tape the battery clamps and remove the key from the ignition switch prior to performing any service work on a Compact Track Loader.

Place a "Do Not Operate" tag prominently on the machine to inform personnel that the machine is being worked on.

Chassis Disassembly and Assembly Procedures

Disassembly and assembly procedures are provided for the following chassis components.

- Seat
- Fuel Sending Unit
- Fuel Sending Unit Hose
- In-Tank Weight
- Fuel Tank

Note: Procedures are provided for only those chassis components listed above. However, information for removal and installation of other chassis components can be obtained from the exploded view illustration provided in the machine specific parts manual.

Seat Removal and Installation

The tools required for seat removal and installation are listed in Table 6-1. Use manufacturer-recommended tools whenever possible.

Table 6-1

Required Tools
Socket Wrench

Seat Removal

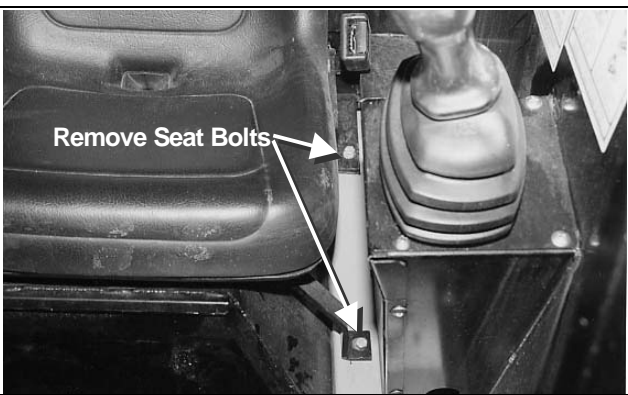


Figure 6-1

1. Remove the four bolts that fasten the seat mounts to the frame.

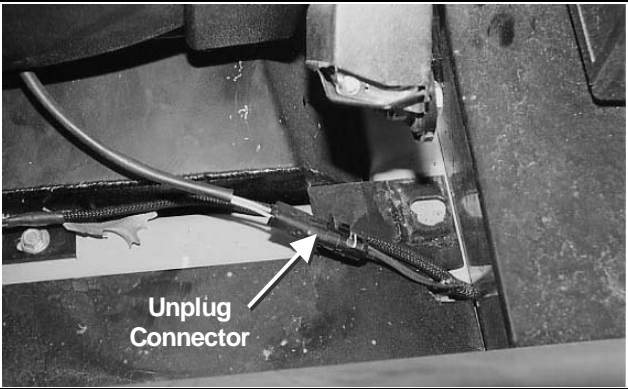


Figure 6-2

2. Tilt the seat forward and reach behind the seat to unplug the seat switch wiring harness.



Figure 6-3

3. Remove the seat. Be careful not to scratch the control panel or sides of the cab.

Seat Installation



Figure 6-4

1. With the seat mounts attached, place the seat in the cab. Be careful not to scratch the control panel or sides of the cab.

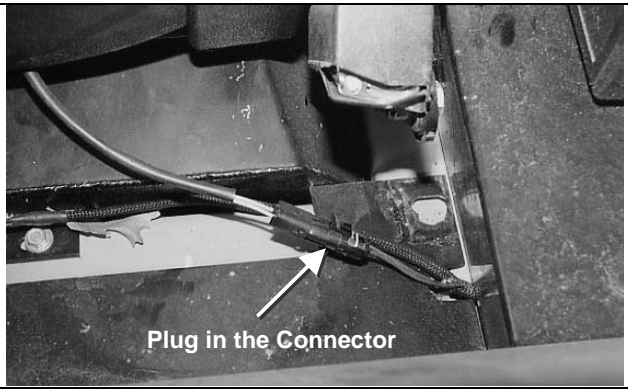


Figure 6-5

2. Tilt the seat forward and reach behind the seat to plug in the seat switch connector

Note: The machine will not operate unless the seat switch connector is plugged in.

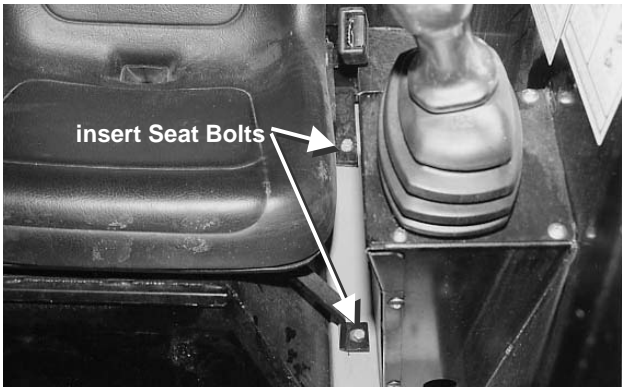


Figure 6-6

3. Position the seat so the holes in the seat mounts are aligned with the holes in the frame. Insert the four seat mount bolts and washers.

Fuel Sending Unit Removal and Installation

The tools required for fuel sending unit removal and installation are listed in Table 6-2. Use manufacturer-recommended tools whenever possible.

Table 6-2

Required Tools
Screwdriver
Combination Wrench
Socket Wrench

Fuel Sending Unit Removal

1. Remove the seat. Refer to *Chapter 6. Seat Removal* procedure.
2. Pump fuel from the tank until there is no fuel remaining above the sending unit.

! Collect and contain liquids in a suitable container. Dispose of all liquids according to local regulations and mandates.

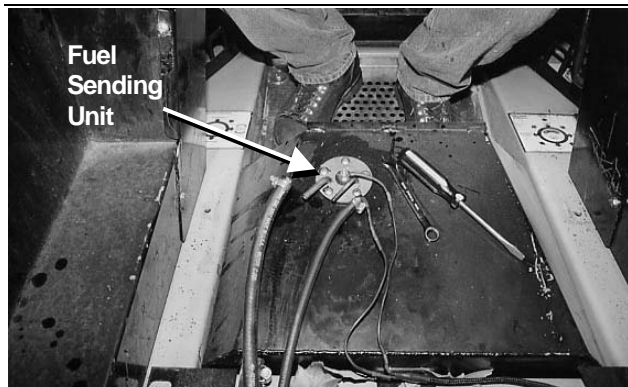


Figure 6-7

3. Remove the hoses and wires from the fuel sending unit, then remove the screws that fasten the unit to the tank. Mark the wires and hoses.

Note: If the fuel sending unit wires are crossed, the fuel gauge will not work. If the hoses are crossed, the engine will not run.



Figure 6-8

4. Remove the fuel sending unit. Be careful not to damage the float mechanism when pulling it through the opening in the fuel tank.

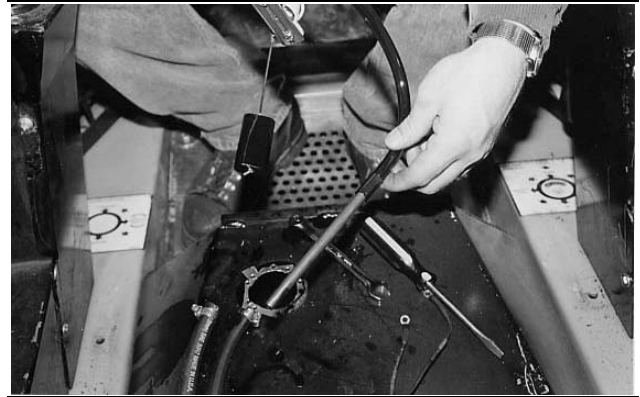


Figure 6-9

5. The fuel pickup line will also come out with the fuel sending unit.

Fuel Sending Unit Installation



Figure 6-10

1. Insert the fuel pickup line into the fuel tank opening. The pickup line is attached to the fuel sending unit.

Note: The weight on the end of the fuel pickup line must rest on the bottom of the tank for proper operation.



Figure 6-11

2. Insert the fuel sending unit float mechanism into the fuel tank opening. Be careful not to damage the float when pushing it through the opening.

Note: Make sure that the wire on the sending unit is not bent and the fuel pickup line does not interfere with the movement of the float.

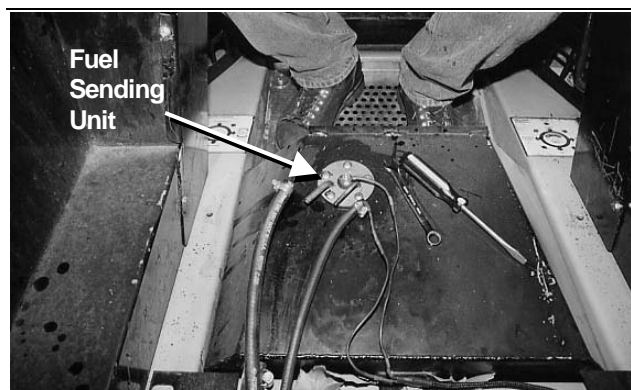


Figure 6-12

3. Connect the hoses and wires to the fuel sending unit, then install the screws that fasten the unit to the tank.

Note: Be careful not to cross the wires or hoses. If the fuel sending unit wires are crossed, the fuel gauge will not work. If the hoses are crossed, the engine will not run.

4. Install the seat. Refer to *Chapter 6. Seat Installation* procedure.

Fuel Tank Removal and Installation

The tools required for fuel tank removal and installation are listed in Table 6-3. Use manufacturer-recommended tools whenever possible.

Table 6-3

Required Tools
Screwdriver
Combination Wrench
Socket Wrench

Fuel Tank Removal

1. Remove the seat. Refer to *Chapter 6. Seat Removal* procedure.

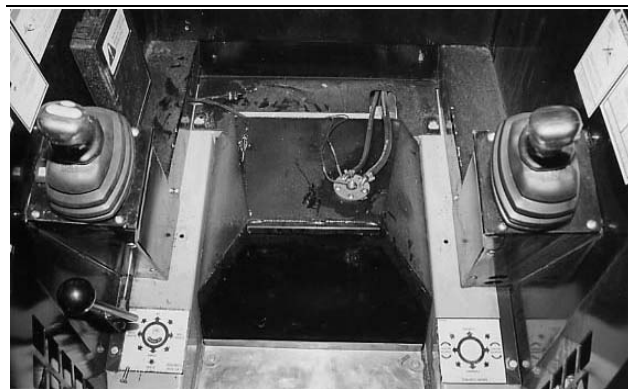


Figure 6-13

2. View of fuel tank with seat removed.
3. Pump all fuel from the fuel tank.

⚠ Collect and contain liquids in a suitable container. Dispose of all liquids according to local regulations and mandates.



Figure 6-14

4. Remove the four bolts that hold the floor pan to the frame.

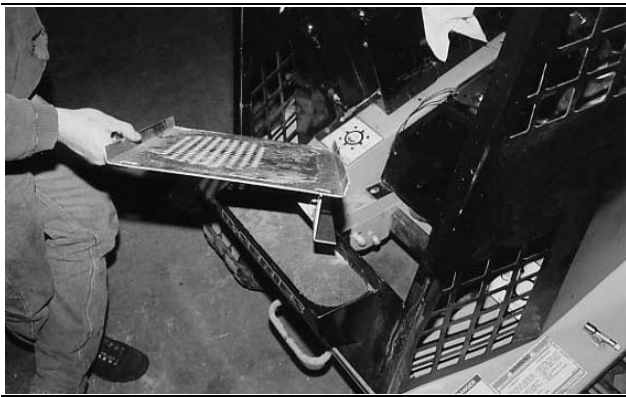


Figure 6-15

5. Remove the floor pan.

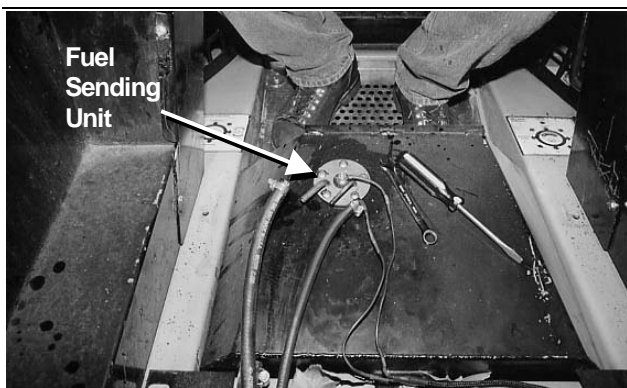


Figure 6-16

6. Remove the hoses and wires from the fuel sending unit.

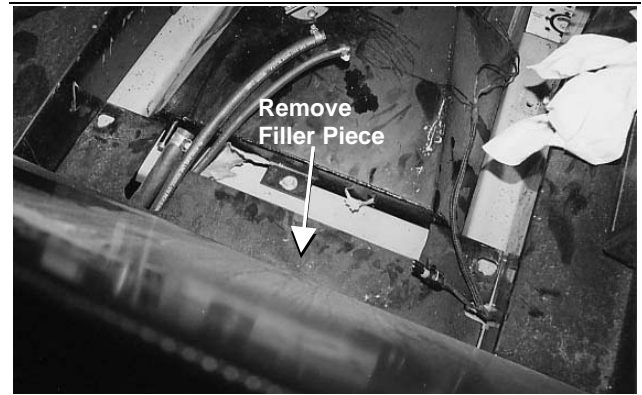


Figure 6-17

7. Remove the steel filler piece behind the fuel tank.

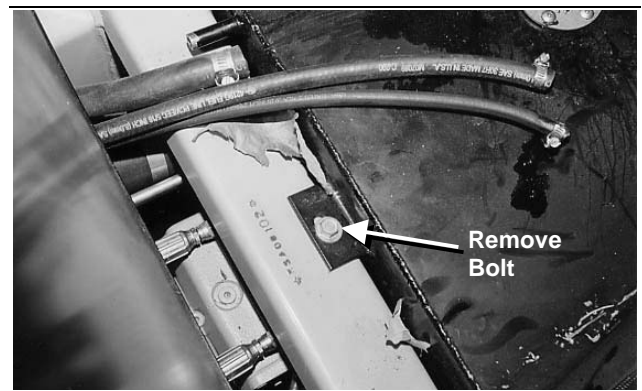


Figure 6-18

8. Remove the bolt that fastens the fuel tank to the frame.



Figure 6-19

9. Disconnect the Compact vent hose from the fuel tank.

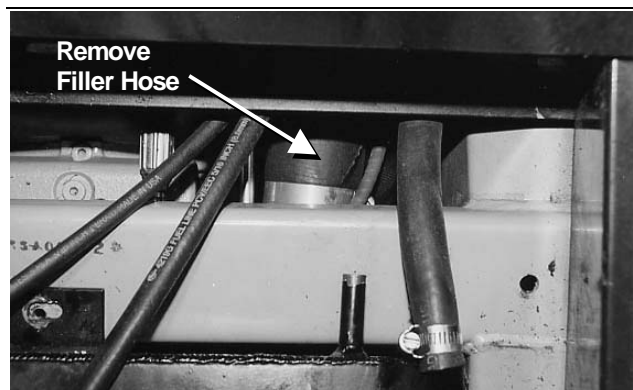


Figure 6-20

10. Remove the Compact filler hose from the back end of the tank.

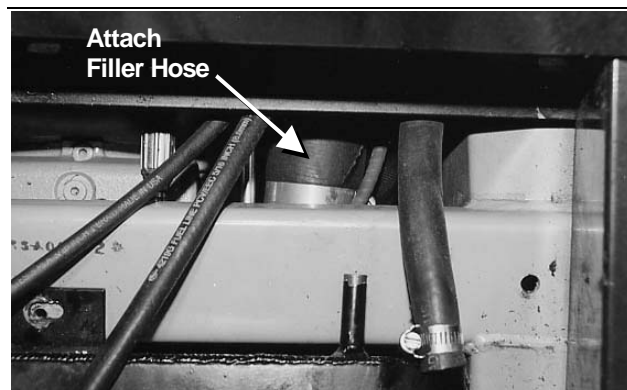


Figure 6-23

2. Attach the filler hose to the rear of the tank.



Figure 6-21

11. Remove the tank carefully from the machine.

Fuel Tank Installation



Figure 6-22

1. Place the fuel tank in the machine in approximately its normal position.

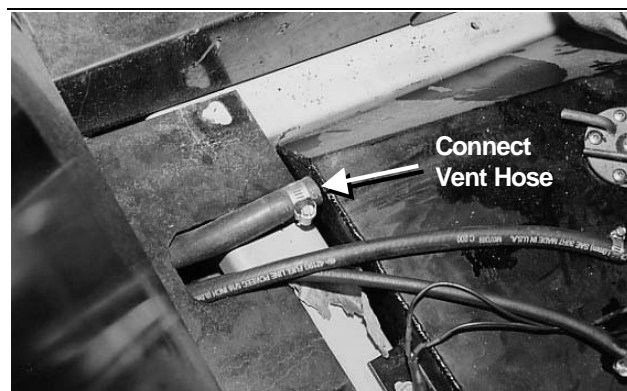


Figure 6-24

3. Connect the vent hose to the fuel tank.

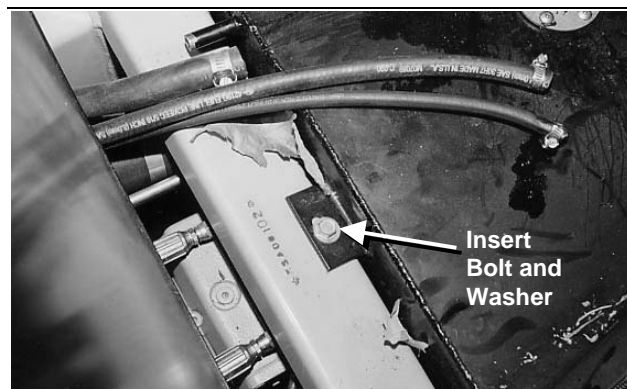


Figure 6-25

4. Insert the bolt and washer that connect the fuel tank to the frame.

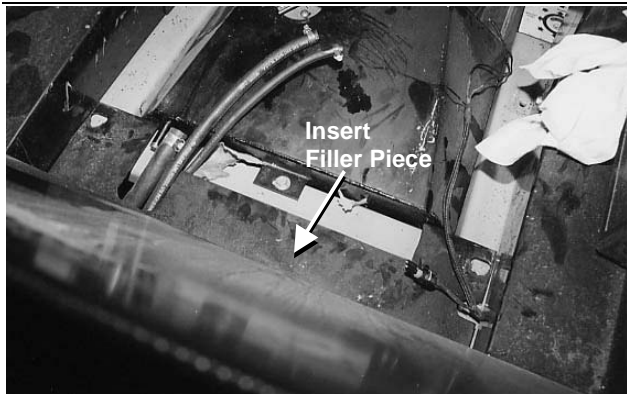


Figure 6-26

5. Insert the steel filler piece behind the fuel tank.

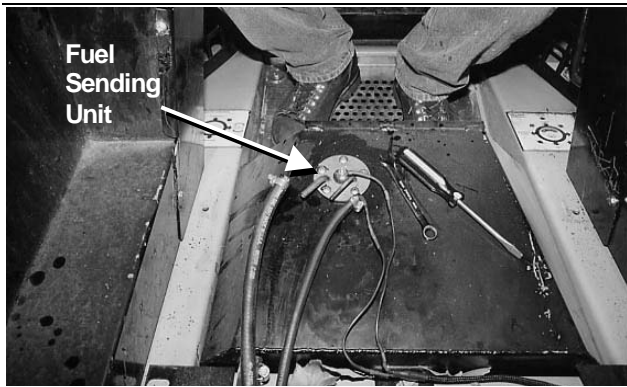


Figure 6-27

6. Attach the hoses and wiring to the fuel sending unit.



Figure 6-28

7. Replace the floor pan.



Figure 6-29

8. Install the four floor pan bolts and washers.
9. Install the seat. Refer to *Chapter 6. Seat Installation* procedure.

7. Radiator/Oil Cooler Disassembly and Assembly

Chapter Overview

This chapter provides disassembly and assembly procedures for the radiator/oil cooler assembly. Adjustment procedures are also included for selected radiator/oil cooler components.

Personal Safety

Improper or incomplete maintenance/repair of a Compact Track Loader can be dangerous and may result in machine damage, injury or death.

Do not attempt to perform any type of repair or maintenance on a Compact Track Loader until you have read and fully understood the information in this manual.

Refer to the Operation and Maintenance manual for instructions regarding proper machine operation techniques before operating any Compact Track Loader.

Prior to performing any type of service work on a Compact Track Loader, read and understand Chapter 1 (Product Safety) for personal safety information.

Machine Preparation

Accidental machine starting can cause injury or death to personnel working on a Compact Track Loader.

As a precaution, disconnect the battery cables from the battery terminals, tape the battery clamps and remove the key from the ignition switch prior to performing any service work on a Compact Track Loader.

Place a "Do Not Operate" tag prominently on the machine to inform personnel that the machine is being worked on.

Radiator/Oil Cooler Disassembly and Assembly Procedures

Disassembly and assembly procedures are provided for the following radiator/oil cooler components.

- Fan Guard
- Fan Shroud
- Fan
- Multi-Wing Fan
- Radiator/Cooler

Note: Procedures are provided for only those radiator/oil cooler components listed above. However, information for removal and installation of other radiator/oil cooler components can be obtained from the machine specific parts manual.

Note: Refer to Figure 3-1 for an overview of the filtering and cooling system.

Fan Guard Removal and Installation

The tools required for fan guard removal and installation are listed in Table 7-1. Use manufacturer-recommended tools whenever possible.

Table 7-1

Required Tools
Combination Wrench

Fan Guard Removal

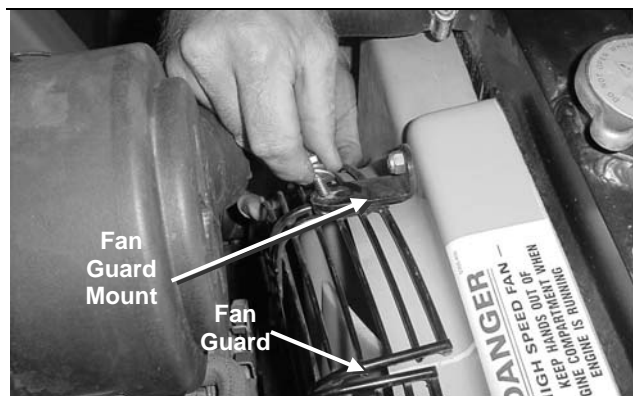


Figure 7-1

1. Remove the capscrews that secure the fan guard to the fan guard mounts.
2. Remove the fan guard from the engine compartment.

Fan Guard Installation

1. Position the fan guard over the fan and against the fan shroud.

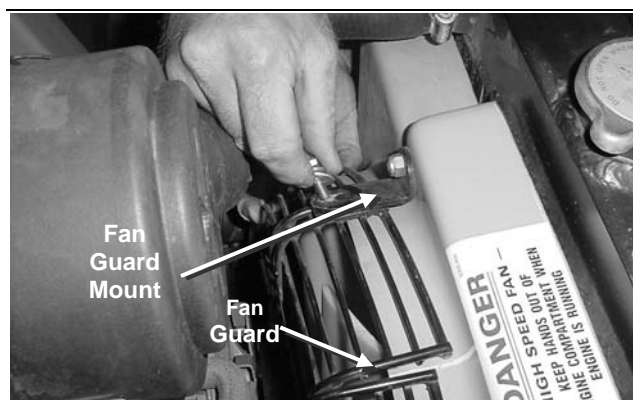


Figure 7-2

2. Install the capscrews that secure the fan guard to the fan guard mounts.

Fan and Fan Shroud Removal and Installation

The tools required for fan and fan shroud removal and installation are listed in Table 7-2. Use manufacturer-recommended tools whenever possible.

Table 7-2

Required Tools
Combination Wrench
Socket Wrench

Fan and Fan Shroud Removal

⚠ Hot fluids can cause burns. Allow the machine to cool thoroughly prior to proceeding.



Figure 7-3

1. Remove the upper hose from the oil cooler section. Cap the hose and fitting.
2. Remove the fan guard. Refer to *Chapter 7. Fan Guard Removal*.

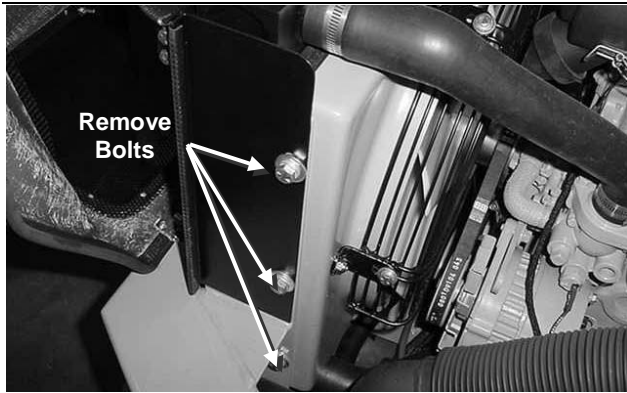


Figure 7-4

3. Remove the three bolts from each side of the fan shroud that secure the shroud to the radiator/cooler.

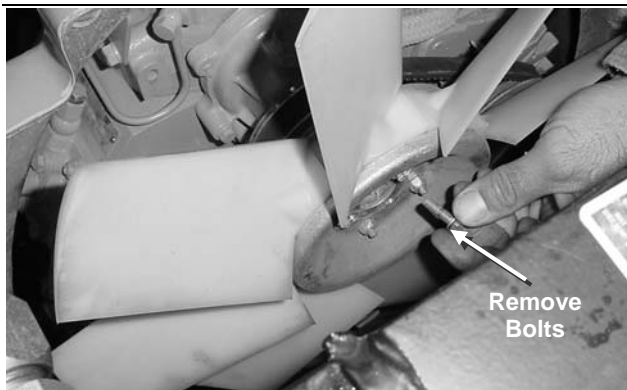


Figure 7-5

4. With the shroud pulled back, reach between the radiator/cooler and the fan and remove the four bolts that secure the fan to the engine.

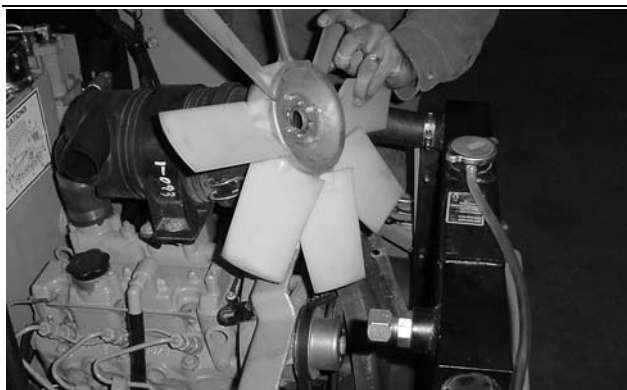


Figure 7-6

5. Remove the fan from the engine compartment.

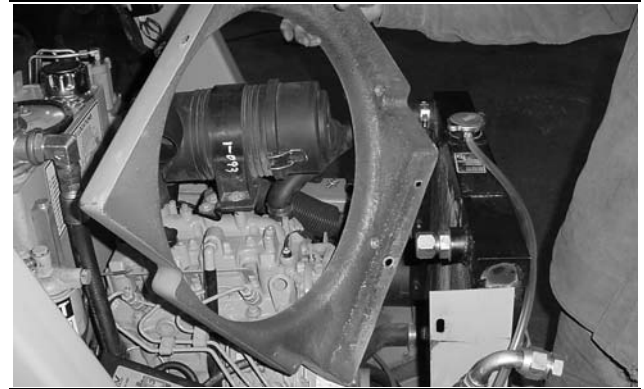


Figure 7-7

6. Remove the shroud from the engine compartment.

Fan and Fan Shroud Installation

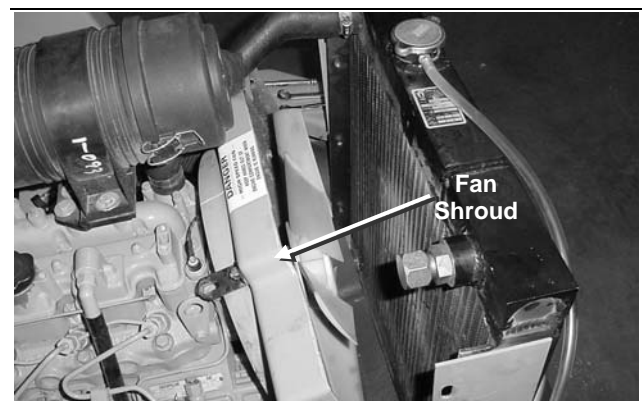


Figure 7-8

1. Place the fan shroud in the engine compartment.

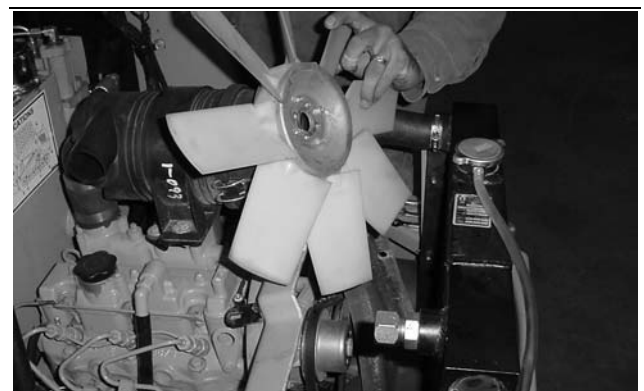


Figure 7-9

2. Place the fan in the engine compartment.

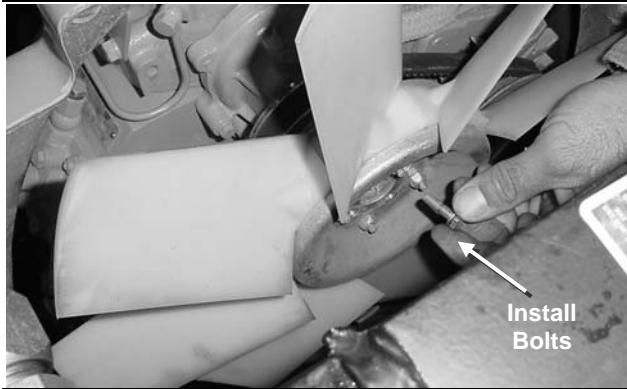


Figure 7-10

3. Holding the fan in position between the radiator/cooler and the fan shroud, install the four bolts that secure the fan to the fan drive motor.

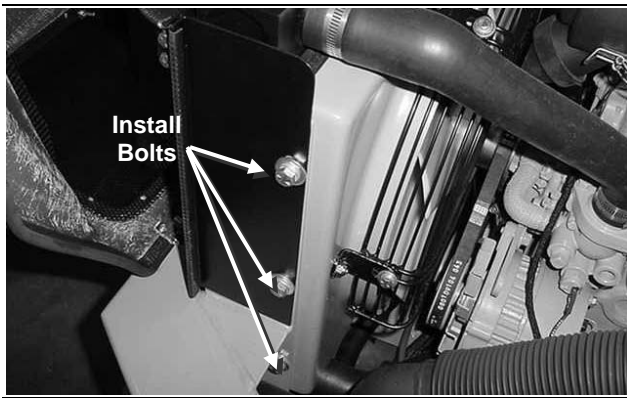


Figure 7-11

4. Pull the shroud over the fan and install the three bolts on each side of the fan shroud that secure the shroud to the radiator/cooler.
5. Install the fan guard. Refer to *Chapter 7. Fan Guard Installation*.

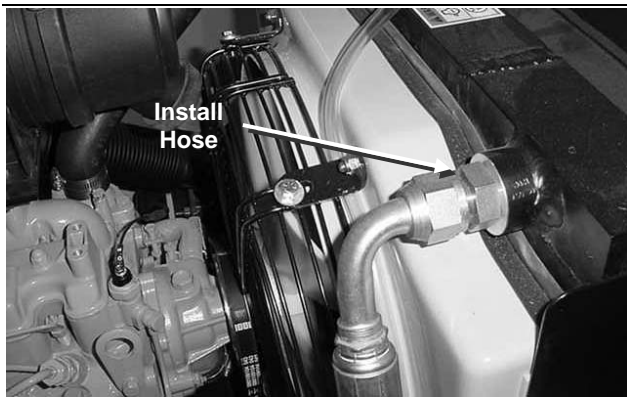


Figure 7-12

6. Install the upper hose on the oil cooler section.

Radiator/Cooler Removal and Installation

The tools required for radiator/cooler removal and installation are listed in Table 7-3. Use manufacturer-recommended tools whenever possible.

Table 7-3

Required Tools
Combination Wrench
Socket Wrench
Screwdriver

Radiator/Cooler Removal

⚠ Hot oil can cause personal injury. Make sure the oil is cool before removing any components or lines.

Remove the oil filler cap only when the engine is stopped and has been allowed to cool thoroughly.

⚠ Personal injury can result from hot coolant, steam and alkali.

At operating temperature, engine coolant is hot and under pressure. The radiator and hoses contain hot coolant and steam. Allow the machine to cool thoroughly prior to performing service or repair procedures to avoid burns.

Remove the filler cap slowly to relieve pressure only when the engine is stopped and the machine has been allowed to cool thoroughly.

Cooling system conditioner contains alkali. Avoid contact with skin and eyes.

⚠ Collect and contain liquids in a suitable container. Dispose of all liquids according to local regulations and mandates.

1. Remove fan and shroud. Refer to *Chapter 7*.
2. Drain the hydraulic fluid. Refer to *Chapter 16. Hydraulic Fluid and Filter Change*.



Figure 7-13

3. Remove the bolts from the lower engine compartment screen.



Figure 7-14

4. Remove the lower engine compartment screen and drain the coolant using the petcock on the bottom of the radiator.



Figure 7-15

5. Remove the lower hose from the oil cooler section. Cap the hose and fitting.



Figure 7-16

6. Remove the upper hose from the oil cooler section. Cap the hose and fitting.

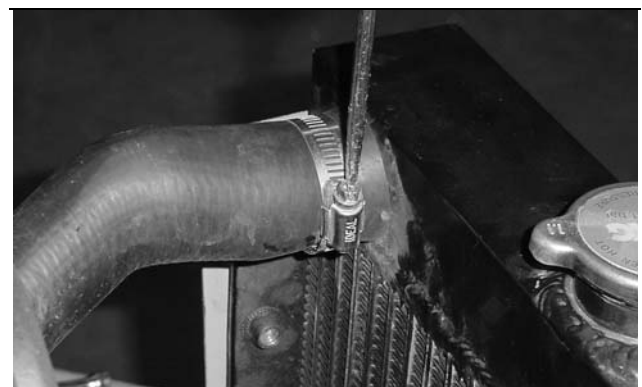


Figure 7-17

7. Remove the upper hose from the radiator section. Cap the hose and fitting.



Figure 7-18

8. Remove the lower hose from the radiator section. Cap the hose and fitting.

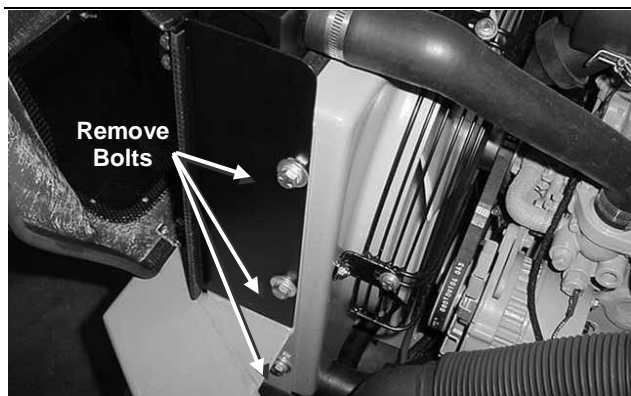


Figure 7-19

9. Remove the three mounting bolts on each side of the radiator/cooler.

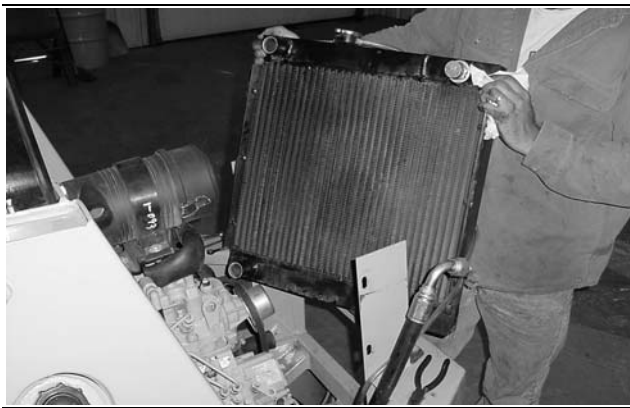


Figure 7-20

10. Remove the radiator/cooler from the engine compartment.

Radiator/Cooler Installation

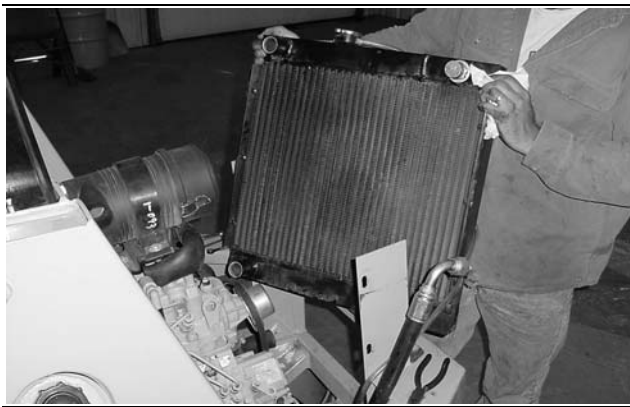


Figure 7-21

1. Position the radiator/cooler in the engine compartment.

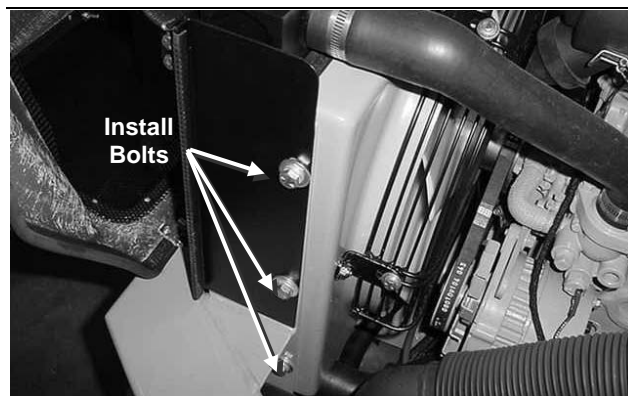


Figure 7-22

2. With the radiator/cooler in position, install the three mounting bolts on each side of the radiator/cooler.



Figure 7-23

3. Remove the hose and fitting caps and install the lower hose on the radiator section.

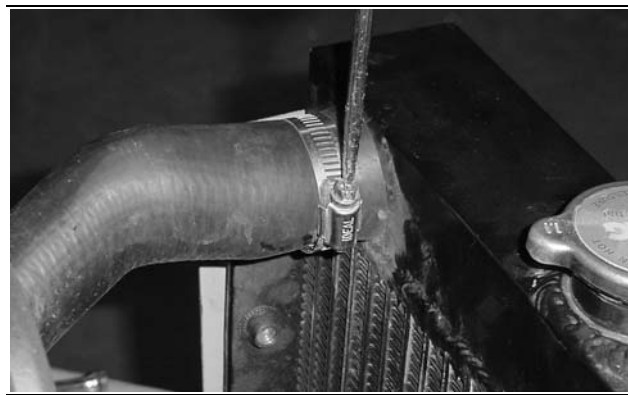


Figure 7-24

4. Remove the hose and fitting caps and install the upper hose on the radiator section.

7. Radiator/Oil Cooler Disassembly and Assembly

Figure 7-25

5. Remove the hose and fitting caps and install the upper hose on the oil cooler section.



Figure 7-26

6. Remove the hose and fitting caps and install the lower hose on the oil cooler section.



Figure 7-27

7. Position the lower engine compartment screen and secure with the mounting bolts.

8. Fill the radiator with coolant and the hydraulic reservoir with oil.

Radiator/Oil Cooler Adjustment Procedures

Adjustment procedures are provided for the following radiator/oil cooler components.

- Fan Shroud
- Fan Guard

Fan Shroud Adjustment

The tools required for fan shroud adjustment are listed in Table 7-4. Use manufacturer-recommended tools whenever possible.

Table 7-4

Tool Name
Combination Wrench

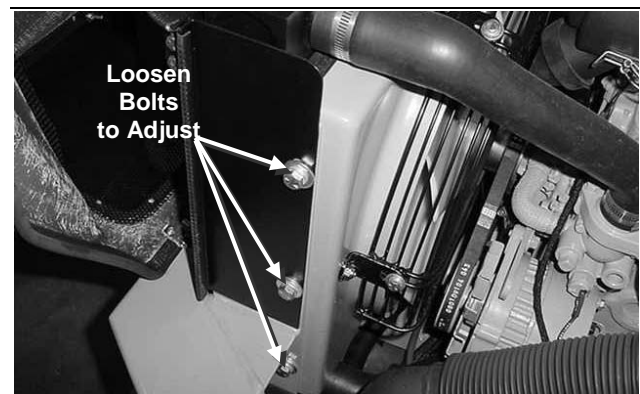


Figure 7-28

1. The fan shroud can adjusted upward or downward. To adjust, loosen the bolts on each side of the shroud and move the shroud in the desired direction. Tighten the bolts when finished.

Fan Guard Adjustment

The tools required for fan guard adjustment are listed in Table 7-5. Use manufacturer-recommended tools whenever possible.

Table 7-5

Tool Name
Combination Wrench

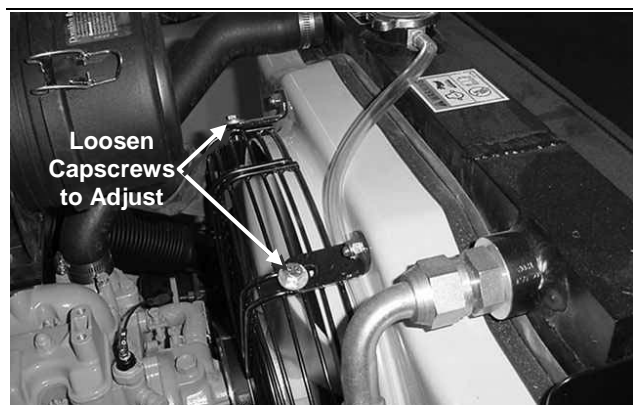


Figure 7-29

1. The fan guard can adjust forward or rearward. To adjust, loosen the capscrews that fasten the fan guard to the fan guard mounts. Tighten the capscrews when finished.

8. Hydraulic Reservoir Disassembly and Assembly

Chapter Overview

This chapter provides disassembly and assembly procedures for the hydraulic reservoir assembly. Cleaning procedures are also included for the hydraulic reservoir.

Personal Safety

Improper or incomplete maintenance/repair of a Compact Track Loader can be dangerous and may result in machine damage, injury or death.

Do not attempt to perform any type of repair or maintenance on a Compact Track Loader until you have read and fully understood the information in this manual.

Refer to the Operation and Maintenance manual for instructions regarding proper machine operation techniques before operating any Compact Track Loader.

Prior to performing any type of service work on a Compact Track Loader, read and understand Chapter 1 (Product Safety) for personal safety information.

Machine Preparation

Accidental machine starting can cause injury or death to personnel working on a Compact Track Loader.

As a precaution, disconnect the battery cables from the battery terminals, tape the battery clamps and remove the key from the ignition switch prior to performing any service work on a Compact Track Loader.

Place a "Do Not Operate" tag prominently on the machine to inform personnel that the machine is being worked on.

Hydraulic Reservoir Disassembly and Assembly Procedures

Disassembly and assembly procedures are provided for the following hydraulic reservoir components.

- Filter Element
- Filter Assembly
- Filler Cap Assembly
- Access Cover Assembly
- Reservoir Gauge
- Suction Screen

Note: Procedures are provided for only those hydraulic reservoir components listed above. However, information for removal and installation of other hydraulic reservoir components can be obtained from the Compact Track Loader Parts List manual.

Note: Refer to Figure 3-1 for an overview of the filtering and cooling system.

Filter Element Removal and Installation

Refer to *Chapter 16. Maintenance – Hydraulic Fluid and Filter* for removal and installation of the filter.

Filter Assembly Removal and Installation

The tools required for filter assembly removal and installation are listed in Table 8-1. Use manufacturer-recommended tools whenever possible.

Table 8-1

Required Tools
Combination/Socket Wrenches
Needle Nose Pliers

Filter Assembly Removal

⚠ Hot oil can cause personal injury. Make sure the oil is cool before removing any components or lines.

Remove the oil filler cap only when the engine is stopped and the machine has been allowed to cool thoroughly

Note: During disassembly, cap all hoses and fittings to prevent fluid loss and contamination of the system fluids.



Figure 8-1

1. Remove the screws securing the cover to the filter assembly.



Figure 8-2

2. Remove the cap from the filter assembly as shown.



Figure 8-3

3. Remove the filter from the reservoir as shown.



Figure 8-4

4. Disconnect the hose from the filter assembly.



Figure 8-5

5. Remove the bolts securing the filter head assembly to the reservoir.

8. Hydraulic Reservoir Disassembly and Assembly

Figure 8-6

6. Remove the filter head and gasket from the reservoir.

Filter Assembly Installation

Figure 8-7

1. Place the filter assembly gasket in position on top of the reservoir. Replace if damaged.



Figure 8-8

2. Position the filter head onto the gasket with the mounting holes aligned, install bolts.



Figure 8-9

3. Reconnect the hose to the filter head and secure.

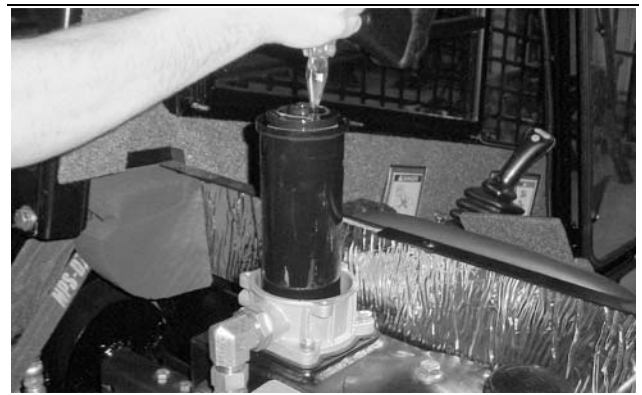


Figure 8-10

4. Reinstall the filter and filter tube into the reservoir as shown.



Figure 8-11

5. Install the cap onto the filter head as shown.



Figure 8-12

6. Install the cap bolts and tighten to secure.

Access Cover Removal and Installation

The tools required for access cover removal and installation are listed in Table 8-2. Use manufacturer-recommended tools whenever possible.

Table 8-2

Required Tools
Combination Wrench

Access Cover Assembly Removal

⚠ Hot oil can cause personal injury. Make sure the oil is cool before removing any components or lines.

Remove the oil filler cap only when the engine is stopped and the machine has been allowed to cool thoroughly



Figure 8-13

1. Slightly loosen the access cover bolt to separate the upper cap from the oval-shaped clamping disk on the underside of the assembly. This will allow the assembly to be removed. Do not remove the bolt entirely or the oval-shaped clamp will fall into the reservoir.



Figure 8-14

2. Remove the access cover assembly from the reservoir.

Access Cover Assembly Installation



Figure 8-15

1. Insert the access cover assembly with the clamping disk extending completely through the opening in the top of the reservoir and into the tank.

8. Hydraulic Reservoir Disassembly and Assembly



Figure 8-16

2. Tighten the access cover bolt.

Reservoir Gauge Removal and Installation

The tools required for reservoir gauge removal and installation are listed in Table 8-3. Use manufacturer-recommended tools whenever possible.

Table 8-3

Required Tools
Combination Wrenches

Reservoir Gauge Removal

⚠ Hot oil can cause personal injury. Make sure the oil is cool before removing any components or lines.

Remove the oil filler cap only when the engine is stopped and the machine has been allowed to cool thoroughly

⚠ Collect and contain liquids in a suitable container. Dispose of all liquids according to local regulations and mandates.

Note: During disassembly, cap all hoses and fittings to prevent fluid loss and contamination of the system fluids.

1. Drain the hydraulic fluid. Refer to *Chapter 16. Hydraulic Fluid and Filter Change*.
2. Remove the filter assembly. Refer to *Chapter 8. Filter Assembly Removal*.

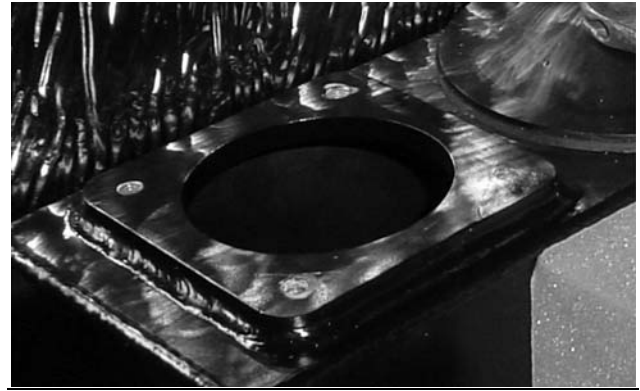


Figure 8-17

3. View of hydraulic reservoir with filter assembly removed.



Figure 8-18

4. Reach inside the reservoir and remove the two nuts that fasten the reservoir gauge to the reservoir.



Figure 8-19

5. Pull the reservoir gauge and the two mounting bolts/washers off the reservoir. DO NOT misplace the Compact washers or the reservoir will leak.

Reservoir Gauge Installation

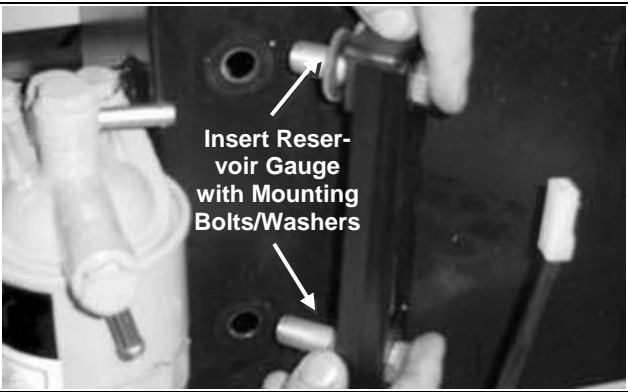


Figure 8-20

1. Install the reservoir gauge in the reservoir using the two mounting bolts/washers.

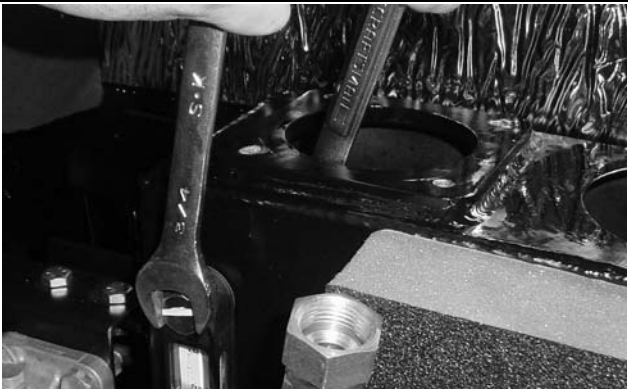


Figure 8-2113

2. Reach inside the reservoir and install the two nuts that secure the reservoir gauge to the reservoir.
3. Install the filter assembly. Refer to *Chapter 8. Filter Assembly Installation*.
4. Add manufacturer-approved hydraulic fluid.

Suction Screen Removal and Installation

The tools required for suction screen removal and installation are listed in Table 8-4. Use manufacturer-recommended tools whenever possible.

Table 8-4

Required Tools
Combination Wrench

Suction Screen Removal

⚠ Hot oil can cause personal injury. Make sure the oil is cool before removing any components or lines.

Remove the oil filler cap only when the engine is stopped and the machine has been allowed to cool thoroughly

⚠ Collect and contain liquids in a suitable container. Dispose of all liquids according to local regulations and mandates.

Note: It is normally not necessary to replace the suction screen unless there has been a catastrophic failure and there is debris in the reservoir.

1. Drain the hydraulic fluid. Refer to *Chapter 16. Hydraulic Fluid and Filter Change*.
2. Remove the access cover assembly. Refer to *Chapter 8. Access Cover Assembly Removal*.



Figure 8-22

3. With a magnet centered in an absorbent rag, thoroughly clean the interior of the reservoir to prevent any debris from entering the system when you remove the suction filter.

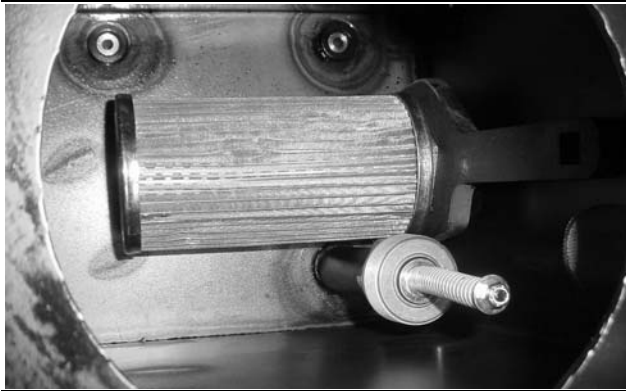


Figure 8-23

4. Reach inside the reservoir and unscrew the suction screen. Remove the suction screen from the reservoir.

Suction Screen Installation

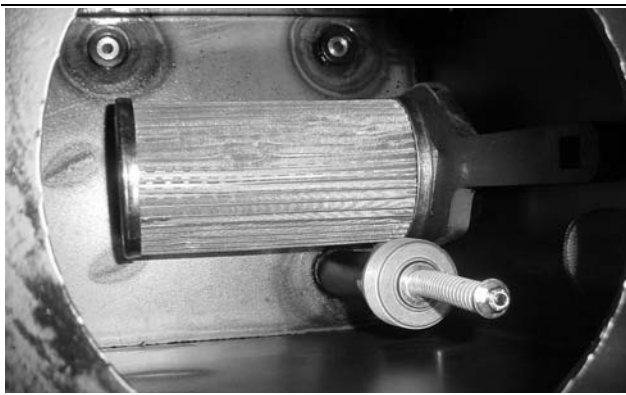


Figure 8-24

1. Insert the suction screen in the reservoir through the access cover opening.
2. Reach inside the reservoir and screw the suction screen into the bottom of the reservoir.
3. Install the access cover assembly. Refer to *Chapter 8. Access Cover Assembly Installation*.
4. Add manufacturer-approved hydraulic fluid.

Hydraulic Reservoir Cleaning Procedures

Cleaning procedures are provided for the following hydraulic reservoir components.

- Hydraulic Reservoir

Hydraulic Reservoir Cleaning

The tools required for hydraulic reservoir cleaning are listed in Table 8-5. Use manufacturer-recommended tools whenever possible.

Table 8-5

Tool Name
Combination Wrench

⚠ Hot oil can cause personal injury. Make sure the oil is cool before removing any components or lines.

Remove the oil filler cap only when the engine is stopped and the machine has been allowed to cool thoroughly

⚠ Collect and contain liquids in a suitable container. Dispose of all liquids according to local regulations and mandates.

1. Drain the hydraulic fluid. Refer to *Chapter 16. Hydraulic Fluid and Filter Change*.
2. Remove the access cover assembly. Refer to *Chapter 8. Access Cover Assembly Removal*.
3. Thoroughly wipe out the interior of the hydraulic reservoir with a magnet and a clean rag.
4. Install the access cover assembly. Refer to *Chapter 8. Access Cover Assembly Installation*.
5. Add manufacturer-approved hydraulic fluid.

9. Loader/Transmission Controls Disassembly and Assembly

Chapter Overview

This chapter provides disassembly and assembly procedures for the loader and transmission controls.

Personal Safety

Improper or incomplete maintenance/repair of a Compact Track Loader can be dangerous and may result in machine damage, injury or death.

Do not attempt to perform any type of repair or maintenance on a Compact Track Loader until you have read and fully understood the information in this manual. Refer to the Operation and Maintenance manual for instructions regarding proper machine operation techniques before operating any Compact Track Loader.

Prior to performing any type of service work on a Compact Track Loader, read and understand Chapter 1 (Product Safety) for personal safety information.

Machine Preparation

Accidental machine starting can cause injury or death to personnel working on a Compact Track Loader.

As a precaution, disconnect the battery cables from the battery terminals, tape the battery clamps and remove the key from the ignition switch prior to performing any service work on a Compact Track Loader.

Place a "Do Not Operate" tag prominently on the machine to inform personnel that the machine is being worked on.

Loader/Transmission Controls Disassembly and Assembly Procedures

Disassembly and assembly procedures are provided for the following loader/transmission control components.

- Drive Control Joystick
- Loader Control Joystick
- Loader Float Magnet
- Loader Valve

Note: Procedures are provided for only those loader/transmission control components listed above. However, information for removal and installation of other loader/transmission control components can be obtained from the Compact Track Loader Parts List manual.

Note: Refer to Figure 3-2 for an overview of the auxiliary circuit system and Figure 3-3 for an overview of the drive loop system.

Loader Control Joystick/Drive Control Joystick Removal and Installation

There are two joysticks that control the operation of the machine: a drive control joystick and a loader control joystick.

Drive Control Joystick Operation – The left-hand joystick controls the speed and direction of the machine. The further the joystick is pushed, the faster the machine travels. The joystick operates on hydraulic charge pressure. When the joystick is moved, oil is sent to the hydrostatic transmission. The transmission then delivers oil, in the correct amount, to the drive motors.

9. Loader/Transmission Controls

Loader Control Joystick Operation – The right-hand joystick controls the loader arm and the at-attachment tilt cylinder. It allows the operator to raise, lower and pivot the attachment. The joystick operates on hydraulic charge pressure.

The loader control also has a float position, which is activated by moving the joystick completely forward until it is held in detent. The joystick is held in the forward float position by an electromagnet.

The tools required for loader/drive control joystick removal and installation are listed in Table 9 1. Use manufacturer recommended tools whenever possible.

Table 9-1

Required Tools
Combination/Socket Wrenches
Screwdriver (phillips)

Loader Control Joystick/Drive Control Joystick Removal

Note: The procedures for removing both joystick controls are nearly identical, as a result, only the right control joystick procedure is described below.

Note: During disassembly, cap and plug all hoses and fittings to prevent fluid loss and contamination of the system fluids.



Relax all hydraulic circuits/controls and make sure the oil is cool before disconnecting any component or line from the system.

Pressurized and or hot hydraulic fluid can cause personal injury.

1. Remove the seat from the machine according to the procedure in chapter 6, seat removal.
2. Lower the lift arms to the ground.
3. Turn the ignition switch to the OFF position.
4. Relax all hydraulic circuits.



Figure 9-1

5. Remove the various screws holding the plastic side consoles to the cab enclosure as shown.



Figure 9-2

6. Pivot the panel away from the joystick, then lift and remove it from the machine.



Figure 9-3

7. Remove the three nuts securing the joystick mount to the cab enclosure from the outside of the machine.



Figure 9-4

8. Pull the joystick away from the cab wall as shown.

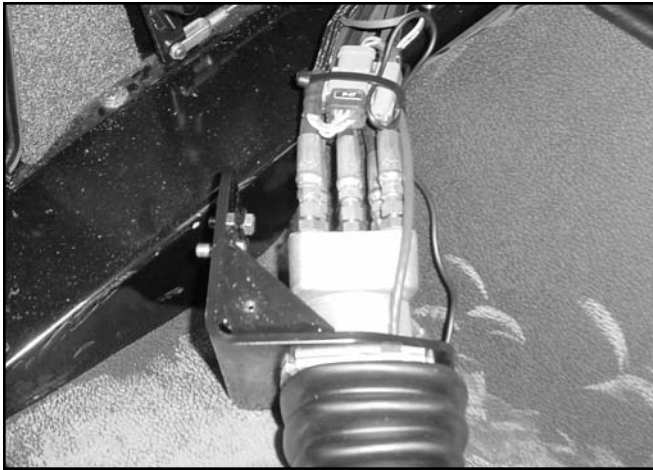


Figure 9-5

9. The hydraulic hoses are now accessible. Label them and the ports they connect to to aid during reassembly, then disconnect them and cap and plug the openings to prevent spills.



Figure 9-6

10. Disconnect the electrical connections shown to free the joystick from the machine, then remove.
11. Reverse the removal procedure to reinstall the joystick. Take care to ensure all connections are to the appropriate ports on the joystick and that they are tight and leak free.

Note: If it is necessary to remove the left joystick on a machine equipped with a heater, you must disconnect the heater lines at the heater unit in order to remove the side panel. Cap and plug hoses and ports to minimize coolant loss.

Loader Float Magnet Removal and Installation

The tools required for loader float magnet removal and installation are listed in Table 9-2. Use manufacturer recommended tools whenever possible.

Table 9-2

Required Tools

<p>Allen (hex) Wrenches Combination Wrenches Screwdriver</p>
--

Loader Float Magnet Removal



Figure 9-7

1. Remove the zip tie securing the lower portion of the joystick boot to the joystick as shown.

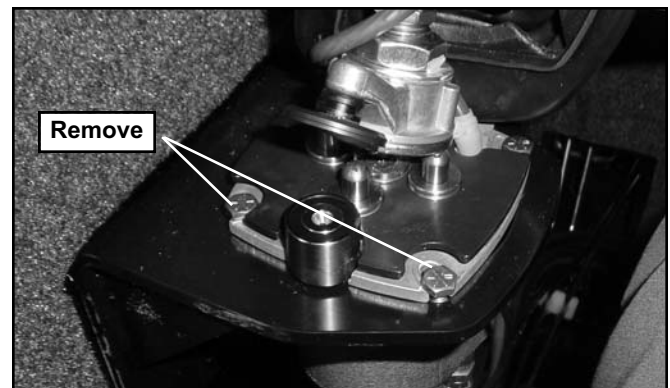


Figure 9-8

2. Lift the boot to expose the magnet and joystick mounting bolts. Remove the joystick mounting bolts to allow the joystick to be moved upward within the bracket.

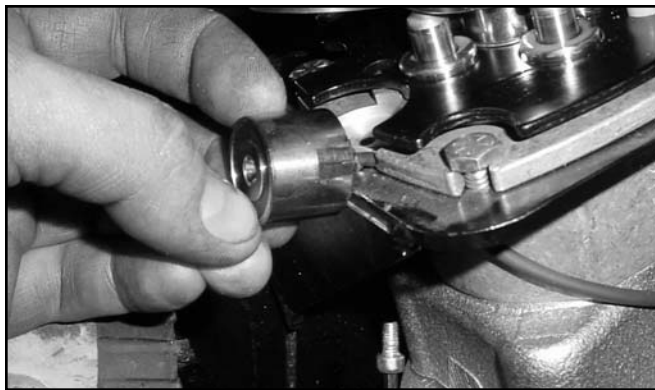


Figure 9-9

3. Use an allen (hex) wrench to remove the bolt securing the magnet to the joystick.



Figure 9-10

4. Lift the joystick out of the mounting bracket slightly to allow the magnet connector to pass between them, then remove the magnet.
5. To install the float magnet, reverse the removal procedure.

Loader Valve Removal and Installation

The tools required for loader valve removal and installation are listed in Table 9-3. Use manufacturer-recommended tools whenever possible.

Table 9-3

Required Tools
Combination Wrenches

Loader Valve Removal



Hot oil can cause personal injury. Lower all attachments and make sure the oil is cool before removing any components or lines.

Remove the oil filler cap only when the engine is stopped and the filler cap is cool enough to touch with your hands.



Collect and contain liquids in a suitable container. Dispose of all liquids according to local regulations and mandates.

Note: During disassembly, cap all hoses and fittings to prevent fluid loss and contamination of the system fluids.

1. Lower the lift arms to the ground.
2. Turn the engine start switch to the OFF position.
3. Relieve hydraulic pressure from the auxiliary circuit.
4. Drain the hydraulic fluid. Refer to Chapter 16. Hydraulic Fluid and Filter Change.

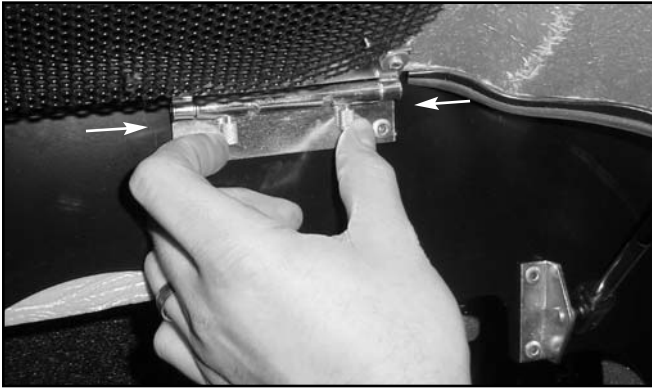


Figure 9-11

5. Disconnect the gas springs, then press the spring latches inward as shown to remove the hood.



Figure 9-14

8. Carefully remove the rear valance from the machine to allow access to the loader valve.



Figure 9-12

6. Carefully remove the hood from the machine and set it aside.

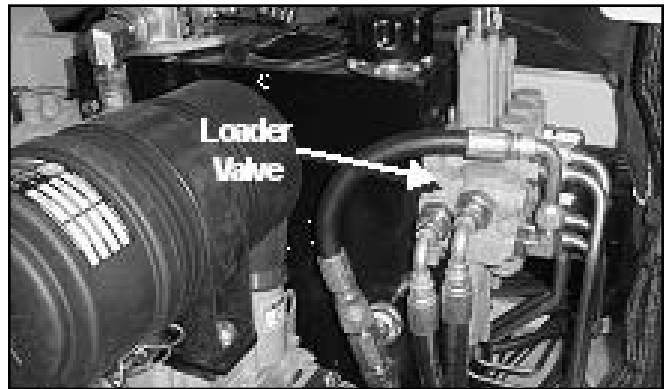


Figure 9-15

9. Locate the loader valve on the side of the hydraulic reservoir.

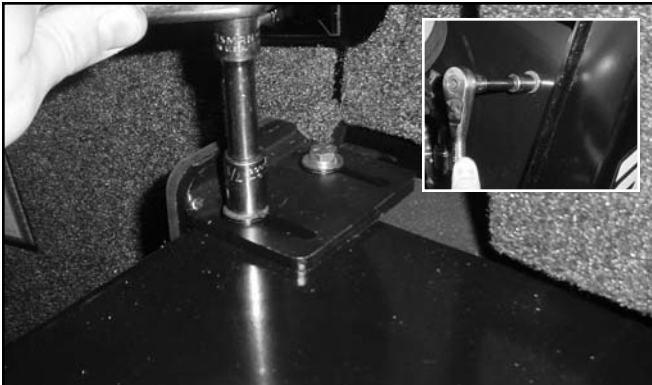


Figure 9-13

7. Remove the bolts securing the rear valance panel to the chassis to allow for removal.

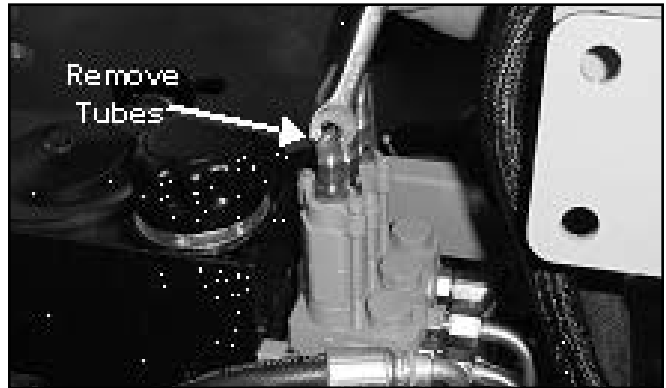


Figure 9-16

10. Disconnect the tubes from the top and bottom of the loader valve. Cap and plug all openings to prevent fluid loss.

9. Loader/Transmission Controls



Figure 9-17

11. Disconnect the tubes from the side of the loader valve. Cap and plug all openings to prevent fluid loss.



Figure 9-18

12. Disconnect the hoses from the rear and side of the loader valve. Cap and plug all openings to prevent fluid loss.



Figure 9-19

13. Remove the nuts securing the valve to the reservoir as shown.



Figure 9-20

14. Remove the valve from the machine.

15. Installation is the reverse of the removal procedure.

16. Once all components have been reinstalled and are secure, add manufacturer approved hydraulic fluid until full mark is reached on the level gauge.

Note: To eliminate trapped air from the system, activate all hydraulic circuits and run machine through its paces including moving the lift arms up and down, curling and tilting the Q/A, driving forward and in reverse, and activating the auxiliary circuit. Then, check hydraulic fluid level and add as required to reach full mark.

10. Transmission and Drive Disassembly and Assembly

Chapter Overview

This chapter provides disassembly and assembly procedures for the transmission and drive assembly.

Personal Safety

Improper or incomplete maintenance/repair of a Compact Track Loader can be dangerous and may result in machine damage, injury or death.

Do not attempt to perform any type of repair or maintenance on a Compact Track Loader until you have read and fully understood the information in this manual.

Refer to the Operation and Maintenance manual for instructions regarding proper machine operation techniques before operating any Compact Track Loader.

Prior to performing any type of service work on a Compact Track Loader, read and understand Chapter 1 (Product Safety) for personal safety information.

Machine Preparation

Accidental machine starting can cause injury or death to personnel working on a Compact Track Loader.

As a precaution, disconnect the battery cables from the battery terminals, tape the battery clamps and remove the key from the ignition switch prior to performing any service work on a Compact Track Loader.

Place a "Do Not Operate" tag prominently on the machine to inform personnel that the machine is being worked on.

Transmission and Drive Disassembly and Assembly Procedures

Disassembly and assembly procedures are provided for the following transmission and drive components.

- Drive Motors
- Auxiliary Gear Pump
- Tandem Pump
- Pump Drive Coupler

Note: Procedures are provided for only those transmission and drive components listed above. However, information for removal and installation of other transmission and drive components can be obtained from the machine specific parts manual.

Note: Refer to Figure 3-2 for an overview of the auxiliary circuit system and Figure 3-3 for an overview of the drive loop system.

Drive Motor Removal and Installation

Refer to *Chapter 12. Undercarriage Disassembly and Assembly – Drive Motor Removal and Installation* for removal and installation of the drive motors.

Auxiliary Gear Pump Removal and Installation

The tools required for auxiliary gear pump removal and installation are listed in Table 10-1. Use manufacturer-recommended tools whenever possible.

Table 10-1

Required Tools
Screwdriver
Combination Wrench
Socket Wrench

Auxiliary Gear Pump Removal

⚠ Hot oil can cause personal injury. Make sure the oil is cool before removing any components or lines.

Remove the oil filler cap only when the engine is stopped and has been allowed to cool thoroughly.

⚠ Collect and contain liquids in a suitable container. Dispose of all liquids according to local regulations and mandates.

Note: During disassembly, cap all hoses and fittings to prevent fluid loss and contamination of the system fluids.

1. Lower the lift arms to the ground.
2. Turn the engine start switch to the OFF position.
3. Relieve hydraulic pressure from the auxiliary circuit.
4. Drain the hydraulic fluid. Refer to *Chapter 16. Hydraulic Fluid and Filter Change*.
5. Remove the seat. Refer to *Chapter 6. Seat Removal*.
6. Remove the fuel tank. Refer to *Chapter 6. Fuel Tank Removal*.



Figure 10-1

7. With the seat and fuel tank removed, disconnect the outlet hose from the auxiliary pump.

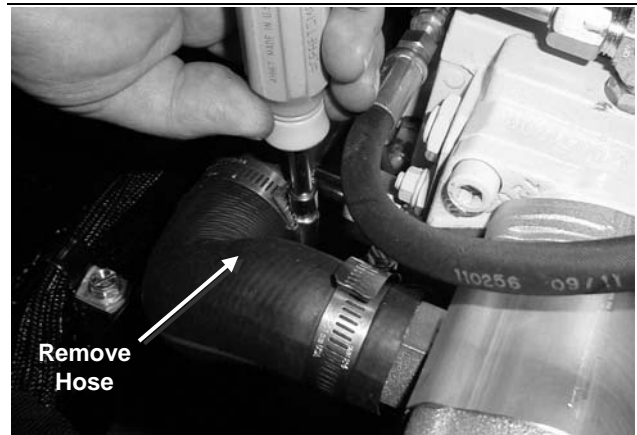


Figure 10-2

8. Loosen the clamps securing the inlet hose to the auxiliary pump..

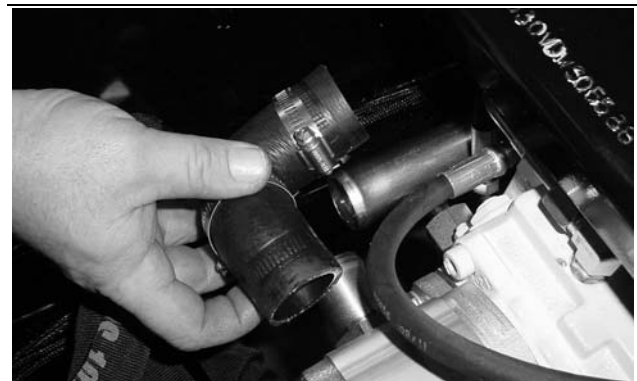


Figure 10-3

9. Remove the inlet hose from the auxiliary pump fitting and inlet pipe weldment.

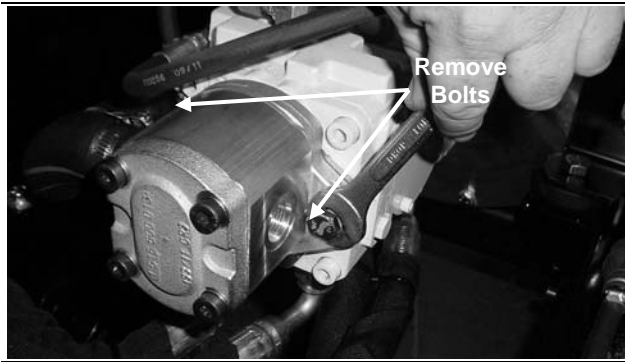


Figure 10-4

10. Remove the bolts securing the auxiliary pump to the tandem drive pump.



Figure 10-5

11. Remove the auxiliary gear pump as shown.

Auxiliary Gear Pump Installation

12. To install the auxiliary gear pump, reverse the removal procedure.
13. Add fuel and manufacturer-approved hydraulic fluid.

Tandem Pump Removal and Installation

The tools required for tandem pump removal and installation are listed in Table 10-2. Use manufacturer-recommended tools whenever possible.

Table 10-2

Required Tools
Screwdriver
Combination Wrench
Socket Wrench

Tandem Pump Removal

⚠ Hot oil can cause personal injury. Make sure the oil is cool before removing any components or lines.

Remove the oil filler cap only when the engine is stopped and has been allowed to cool thoroughly.

⚠ Collect and contain liquids in a suitable container. Dispose of all liquids according to local regulations and mandates.

Note: During disassembly, cap all hoses and fittings to prevent fluid loss and contamination of the system fluids.

1. Lower the lift arms to the ground.
2. Turn the engine start switch to the OFF position.
3. Relieve hydraulic pressure from the auxiliary circuit.
4. Drain the hydraulic fluid. Refer to *Chapter 16. Hydraulic Fluid and Filter Change*.
5. Remove the seat. Refer to *Chapter 6. Seat Removal*.
6. Remove the fuel tank. Refer to *Chapter 6. Fuel Tank Removal*.
7. Remove the auxiliary gear pump. Refer to *Chapter 10. Auxiliary Gear Pump Removal*.

10. Transmission and Drive Disassembly and Assembly

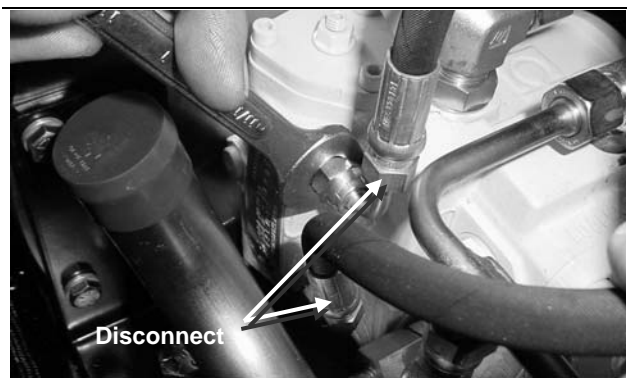


Figure 10-6

8. Disconnect the four control hoses from the tandem pump.



Figure 10-7

9. Disconnect the charge pressure hose from the tube assembly.

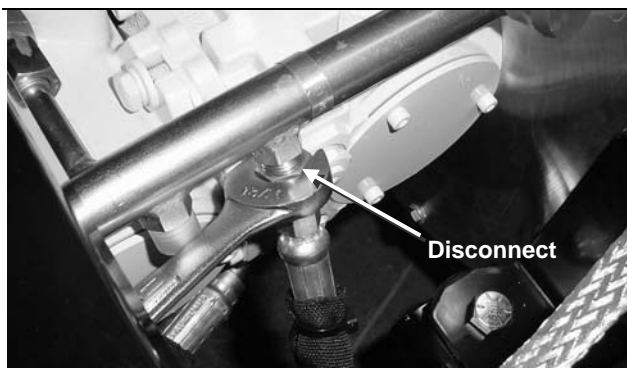


Figure 10-8

10. Disconnect the drive motor case drain hoses from the return tube.

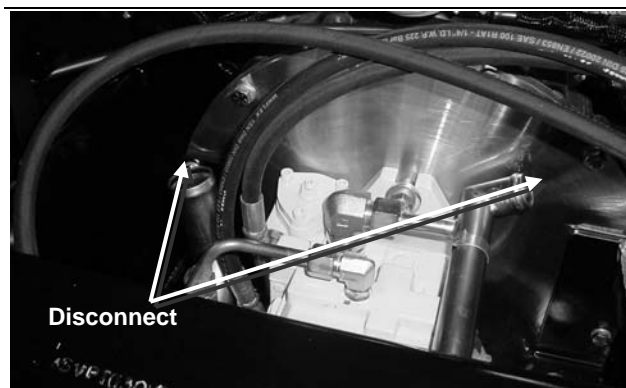


Figure 10-9

11. Disconnect the large rubber hoses (coming from the reservoir) at these connection points.

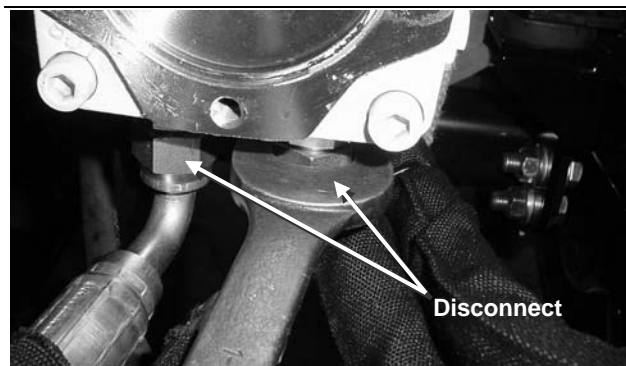


Figure 10-10

12. Disconnect the drive hoses from the bottom of the pump. If you haven't already, remove the belly pan beneath the pump for access.



Figure 10-11

13. Using a suitable strap and lifting device, support the weight of the pump, then remove the mounting bolts on top and bottom as shown.

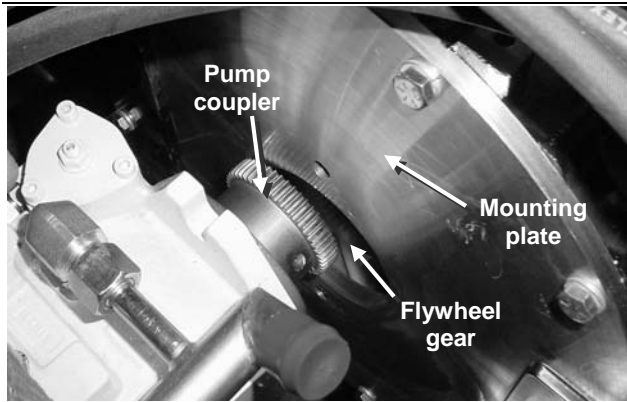


Figure 10-12

14. Slide the pump forward away from the engine, then lower through the lower opening to remove.

Tandem Pump Installation

1. To reinstall, reverse the removal procedure.

Note: When installing pump, position the tandem pump against the pump mounting plate. Make sure the teeth on the pump drive coupler mesh properly with the flywheel gear teeth prior to inserting pump.

2. Add fuel and manufacturer-approved hydraulic fluid.

Pump Drive Coupler Removal and Installation

The tools required for pump drive coupler removal and installation are listed in Table 10-3. Use manufacturer-recommended tools whenever possible.

Table 10-3

Required Tools
Screwdriver
Combination Wrench
Socket Wrench

Pump Drive Coupler Removal

⚠ Hot oil can cause personal injury. Make sure the oil is cool before removing any components or lines.

Remove the oil filler cap only when the engine is stopped and has been allowed to cool thoroughly.

⚠ Collect and contain liquids in a suitable container. Dispose of all liquids according to local regulations and mandates.

Note: During disassembly, cap all hoses and fittings to prevent fluid loss and contamination of the system fluids.

1. Lower the lift arms to the ground.
2. Turn the engine start switch to the OFF position.
3. Relieve hydraulic pressure from the auxiliary circuit.
4. Drain the hydraulic fluid. Refer to *Chapter 16. Hydraulic Fluid and Filter Change*.
5. Remove the seat. Refer to *Chapter 6. Seat Removal*.
6. Remove the fuel tank. Refer to *Chapter 6. Fuel Tank Removal*.
7. Remove the auxiliary gear pump. Refer to *Chapter 10. Auxiliary Gear Pump Removal*.
8. Remove the tandem pump. Refer to *Chapter 10. Tandem Pump Removal*.

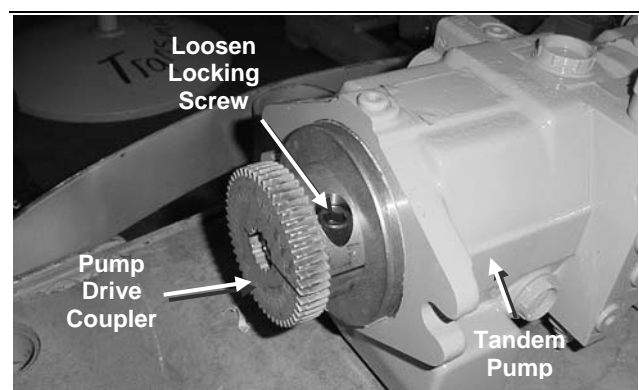


Figure 10-13

9. Loosen the locking screw that secures the pump drive coupler to the drive shaft extending from the end of the tandem pump.

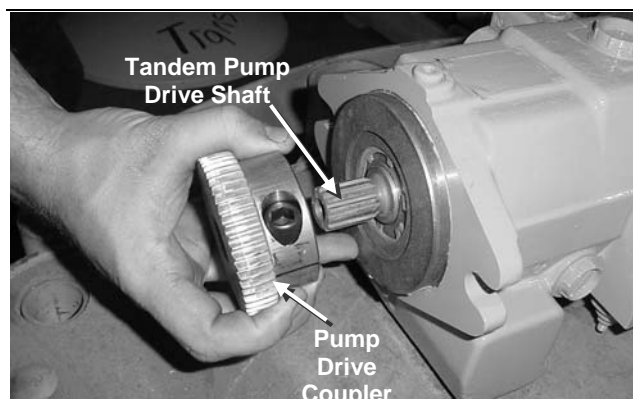


Figure 10-14

- 10.** Slide the pump drive coupler off the tandem pump drive shaft.

Pump Drive Coupler Installation

- 1.** Reverse the removal procedure.

11. Engine Components Disassembly and Assembly

Chapter Overview

This chapter provides disassembly and assembly procedures for the engine components.

Personal Safety

Improper or incomplete maintenance/repair of a Compact Track Loader can be dangerous and may result in machine damage, injury or death.

Do not attempt to perform any type of repair or maintenance on a Compact Track Loader until you have read and fully understood the information in this manual.

Refer to the Operation and Maintenance manual for instructions regarding proper machine operation techniques before operating any Compact Track Loader.

Prior to performing any type of service work on a Compact Track Loader, read and understand Chapter 1 (Product Safety) for personal safety information.

Machine Preparation

Accidental machine starting can cause injury or death to personnel working on a Compact Track Loader.

As a precaution, disconnect the battery cables from the battery terminals, tape the battery clamps and remove the key from the ignition switch prior to performing any service work on a Compact Track Loader.

Place a "Do Not Operate" tag prominently on the machine to inform personnel that the machine is being worked on.

Engine Components Disassembly and Assembly Procedures

Disassembly and assembly procedures are provided for the following engine components.

- Muffler
- Battery
- Exhaust Pipe
- Bleeding the Fuel System

Note: Procedures are provided for only those engine components listed above. However, information for removal and installation of other engine components can be obtained from the machine specific parts manual.

Primary Air Filter Removal and Installation

Refer to *Chapter 16. Maintenance – Air Cleaner* for removal and installation of the primary air filter.

Safety Air Filter Removal and Installation

Refer to *Chapter 16. Maintenance – Air Cleaner* for removal and installation of the safety air filter.

Engine Oil Filter Removal and Installation

Refer to *Chapter 16. Maintenance – Engine Oil* for removal and installation of the engine oil filter.

Fuel Filter Removal and Installation

Refer to *Chapter 16. Maintenance – Fuel Filter* for removal and installation of the fuel filter.

Muffler Removal and Installation

The tools required for muffler removal and installation are listed in Table 11-1. Use manufacturer-recommended tools whenever possible.

Table 11-1

Required Tools
Socket/Combination Wrenches
Pry Bar
Penetrating Lubricant
Rubber Mallet/Plastic Hammer

Muffler Removal

⚠ The exhaust system gets very hot during operation! Allow the machine to cool thoroughly prior to performing service on the exhaust system.

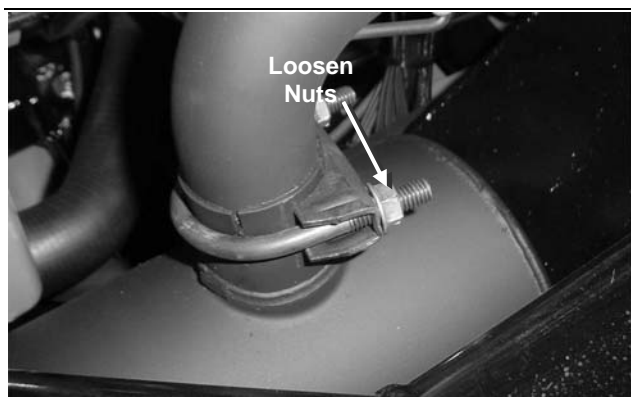


Figure 11-1

1. Loosen the nuts on the muffler clamp.



Figure 11-2

2. Spray the joint with penetrating lube, then slide the curved pipe out of the muffler inlet. A pry bar may be helpful in removing this pipe section.

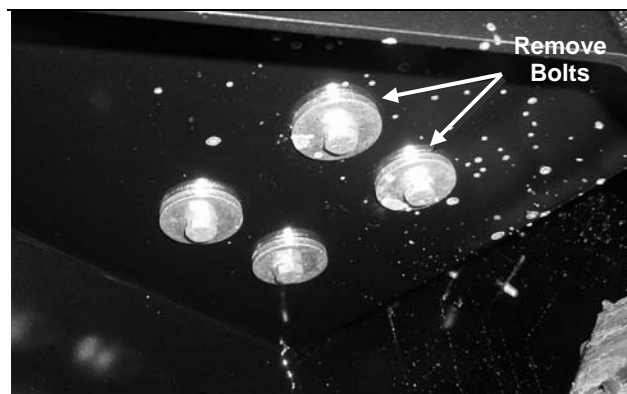


Figure 11-3

3. Remove the four bolts that fasten the muffler to the chassis. They can be accessed from the underside of the machine (right rear corner).
4. Carefully guide the muffler out of the engine compartment.

Muffler Installation



Figure 11-4

1. Guide the muffler outlet pipe into its opening at the rear of the engine compartment, then position the muffler over the mounting locations.

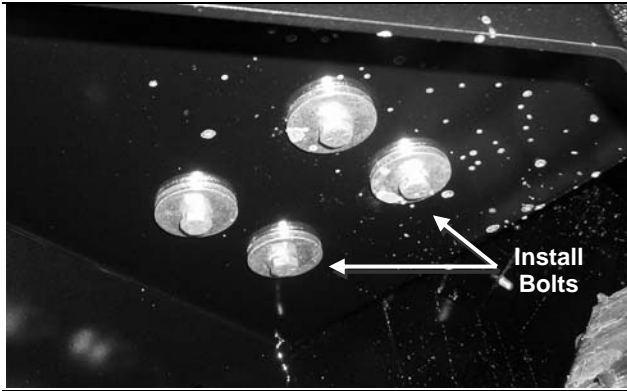


Figure 11-5

2. From the underside, install the four muffler mounting bolts and washers/shims as found up-on disassembly.



Figure 11-6

3. Carefully slide the curved pipe into the muffler inlet. You may need to tap it into place with a rubber mallet or similar device.

NOTICE

If it is necessary to tap the pipe section into the muffler, do so carefully as the pipe walls are thin and easily distorted. Use caution and care as you install the pipe section.

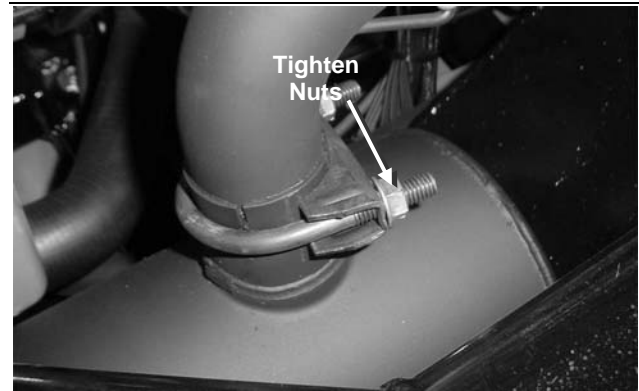


Figure 11-7

4. Install the muffler clamp and secure in place.

Exhaust Pipe Removal and Installation

The tools required for exhaust pipe removal and installation are listed in Table 11-2. Use manufacturer-recommended tools whenever possible.

Table 11-2

Required Tools
Socket/Combination Wrench
Pry Bar
Penetrating Lubricant
Rubber Mallet/Plastic Hammer

Exhaust Pipe Removal

⚠ The exhaust system gets very hot during operation! Allow the machine to cool thoroughly prior to performing service on the exhaust system.

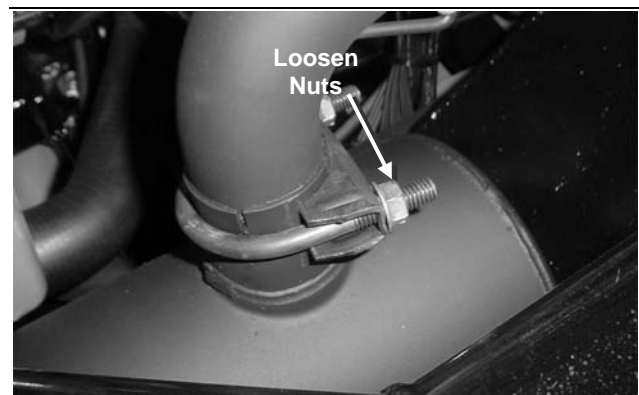


Figure 11-8

1. Loosen the nuts on the muffler clamp

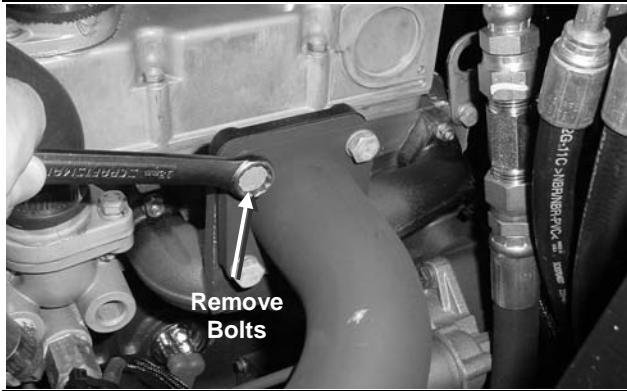


Figure 11-9

2. Remove the four bolts that secure the exhaust pipe to the exhaust manifold.



Figure 11-10

3. Remove the exhaust pipe gasket from the exhaust manifold, then remove the retaining springs and center pipe from the assembly.

Note: The gasket may come off with the exhaust pipe.



Figure 11-11

4. Spray the joint with penetrating lube, then slide the curved pipe out of the muffler inlet. A pry bar may be helpful in removing this pipe section.

Exhaust Pipe Installation



Figure 11-12

5. Carefully slide the curved pipe into the muffler inlet. You may need to tap it into place with a rubber mallet or similar device.

NOTICE

If it is necessary to tap the pipe section into the muffler, do so carefully as the pipe walls are thin and easily distorted. Use caution and care as you install the pipe section.



Figure 11-13

6. Install the center section of pipe as found upon disassembly and install the retaining springs. Then, position the exhaust gasket for reinstallation and start one bolt to hold it in place.

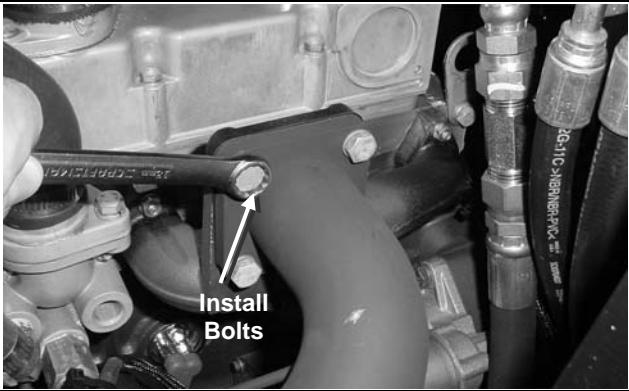


Figure 11-14

7. With the exhaust pipe gasket in place, install the remaining bolts that secure the exhaust pipe to the exhaust manifold.

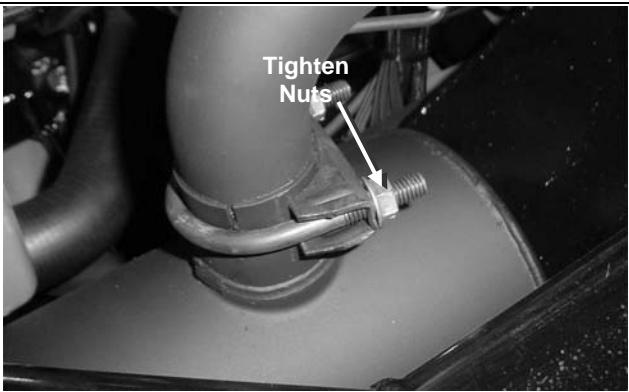


Figure 11-15

8. Reinstall the muffler clamp, then tighten the nuts to secure.

Battery Removal and Installation

The tools required for battery removal and installation are listed in Table 11-3. Use manufacturer-recommended tools whenever possible.

Table 11-3

Required Tools
Combination Wrench
Socket Wrench

Battery Removal

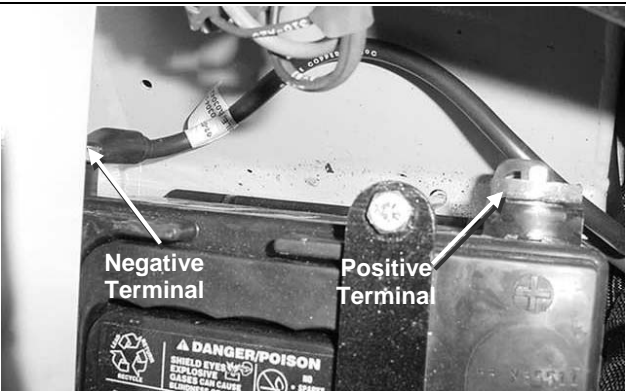


Figure 11-16

1. Identify the positive and negative battery terminals.

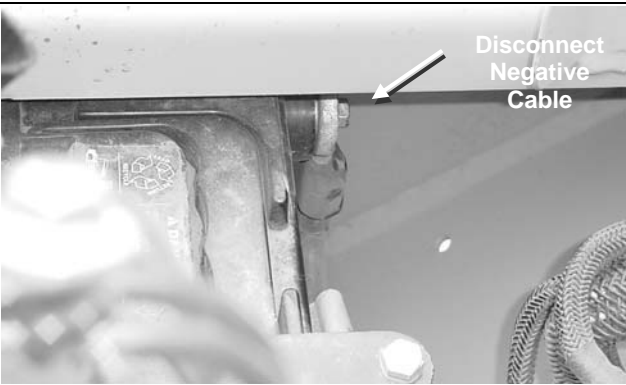


Figure 11-17

2. Disconnect the battery cable from the negative battery terminal.

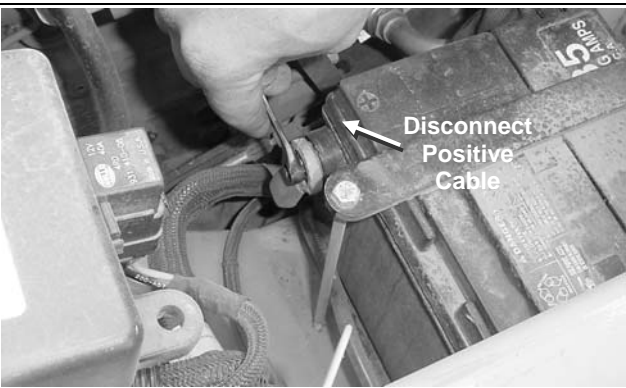


Figure 11-18

3. Disconnect the battery cable from the positive battery terminal.

11. Engine Components Disassembly and Assembly

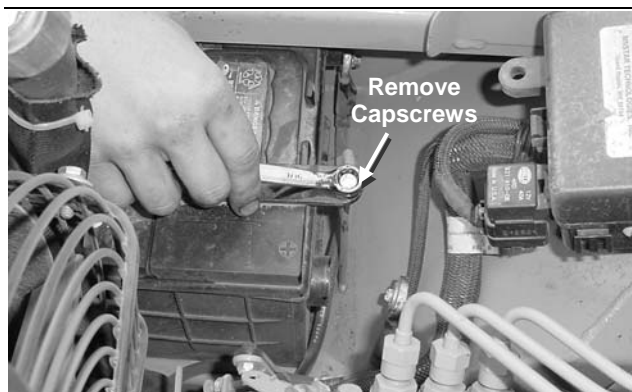


Figure 11-19

4. Remove the two capscrews from the battery holddown bracket and remove the bracket.



Figure 11-20

5. Rotate the battery 90 degrees counter-clockwise. Tilt up the front of the battery and remove the battery from the machine.

Battery Installation



Figure 11-21

1. Place the battery in position in the engine compartment.

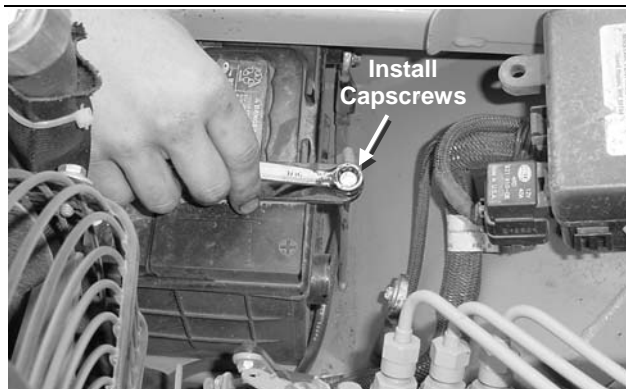


Figure 11-22

2. Position the battery holddown bracket and install the two capscrews and nuts.

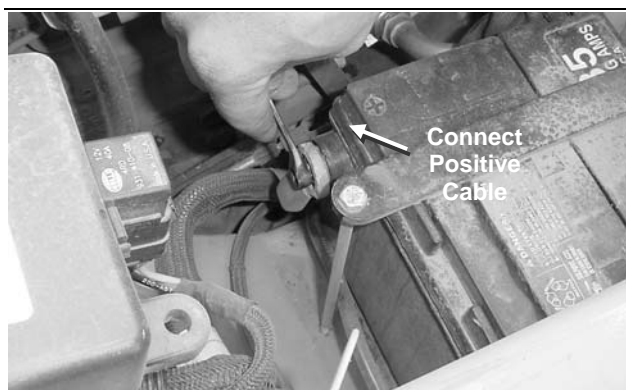


Figure 11-23

3. Connect the battery cable to the positive battery terminal.

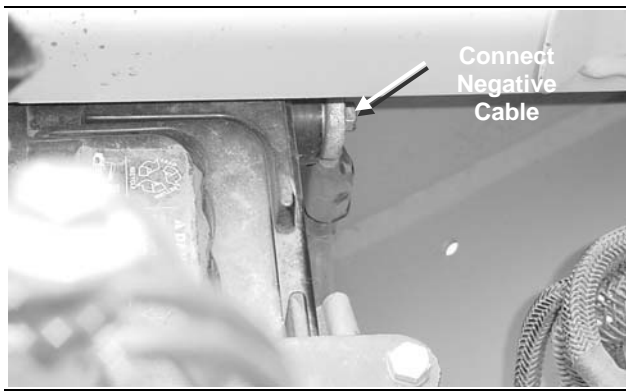


Figure 11-24

4. Connect the battery cable to the negative battery terminal.

Bleeding the Fuel System

The tools required for muffler removal and installation are listed in Table 11-1. Use manufacturer-recommended tools whenever possible.

Table 11-4

Required Tools
Combination Wrench

If the machine has been run out of fuel, it may be necessary to bleed the fuel system. There are two types of bleeding methods depending on the serial number of your machine.

For serial numbers 001 through 1357.

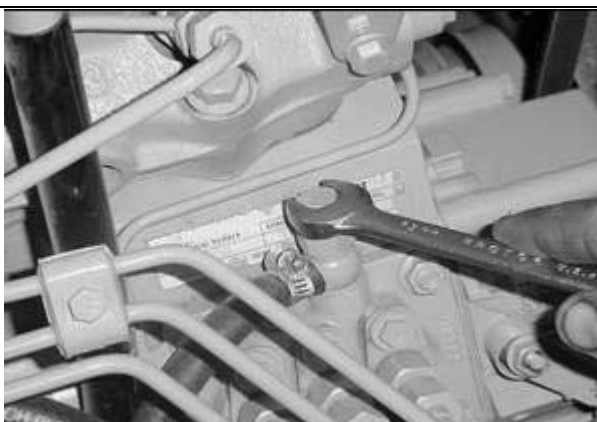


Figure 11-25

1. Locate the bleed screw directly above the fuel injectors.
2. Loosen the bleed screw two full turns
3. Turn-over the engine from the operators compartment until fuel is flowing from the bleed screw without any air bubbles.
4. Tighten the bleed screw.
5. Engine should now start within 10 seconds.

For serial numbers 1358 and higher.

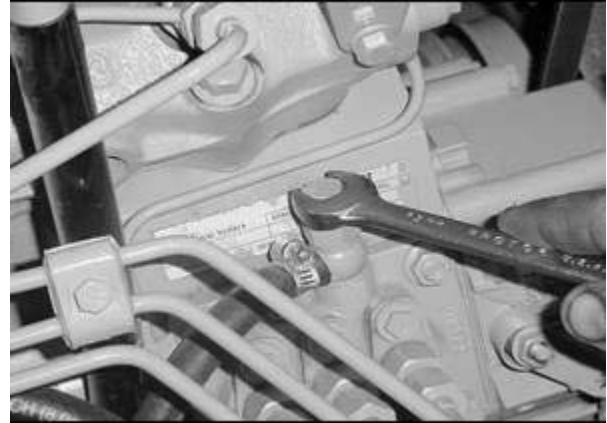


Figure 11-26

1. Locate the bleed screw directly above the fuel injectors.
2. Loosen the bleed screw two full turns.



Figure 11-27

3. Pump the bulb primer with your hand until fuel flows from the bleed screw without any air bubbles.
4. Tighten the bleed screw.

12. Undercarriage Disassembly and Assembly

Chapter Overview

This chapter provides disassembly and assembly procedures for the following undercarriage assemblies.

- Track
- Suspension

Personal Safety

Improper or incomplete maintenance/repair of a Compact Track Loader can be dangerous and may result in machine damage, injury or death.

Do not attempt to perform any type of repair or maintenance on a Compact Track Loader until you have read and fully understood the information in this manual.

Refer to the Operation and Maintenance manual for instructions regarding proper machine operation techniques before operating any Compact Track Loader.

Prior to performing any type of service work on a Compact Track Loader, read and understand Chapter 1 (Product Safety) for personal safety information.

Machine Preparation

Accidental machine starting can cause injury or death to personnel working on a Compact Track Loader.

As a precaution, disconnect the battery cables from the battery terminals, tape the battery clamps and remove the key from the ignition switch prior to performing any service work on a Compact Track Loader.

Place a “Do Not Operate” tag prominently on the machine to inform personnel that the machine is being worked on.

Undercarriage Disassembly and Assembly Procedures

Disassembly and assembly procedures are provided for the following undercarriage components.

- Wheels (also see track procedure)
- Sprockets
- Sprocket rollers
- Tracks
- Drive motors

Note: Procedures are provided for only those undercarriage components listed above. However, information for removal and installation of other undercarriage components can be obtained from the machine specific parts manual.

Wheel Removal and Installation

The tools required for wheel removal and installation are listed in Table 12-1. Use manufacturer-recommended tools whenever possible.

Table 12-1

Required Tools
Wheel Extractor Channel Lock Pliers Socket Wrench Snap-ring Pliers

Wheel Removal

Note: If the track is to be removed, perform the track removal process on page 12-3 of this chapter.

Note: For important wheel and bearing information, see “Bearings” in the track removal procedure on page 12-4, prior to removing or reinstalling the idler wheels.

Note: The procedure for removing the Idler wheels and Bogie wheels are similar. Only the front outside idler wheel is described here. Any exception will be explained in the instructions as a note. See figure 12-1 for wheel diagram.

12. Undercarriage Disassembly and Assembly

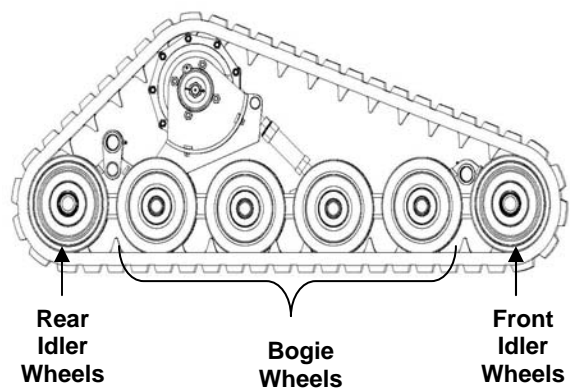


Figure 12-1

1. Loosen up the track tensioner as described in the track removal procedure on page 12-4, steps 1-4.



Figure 12-2

2. Remove the snap ring securing the wheel cap with snap ring pliers.



Figure 12-3

3. Remove the wheel cap using a large channel lock pliers.



Figure 12-4

4. Remove the nut that fastens the wheel to the shaft with the correct size socket.



Figure 12-5

5. Remove the washer.



Figure 12-6

6. Remove the bearing.



Figure 12-7

7. Remove the idler wheel with a wheel extractor as shown in figure 12-7.
8. Inspect the exposed axle(s) for wear or damage.
9. To remove any idler wheels, or bogie wheels, located on the inside of the suspension nearest the chassis; position the machine securely on suitable mechanical supports. Repeat the wheel removal procedure.

Wheel Installation

Note: Refer to bearing illustration in figure 12-9 of this chapter to ensure proper installation of each style of bearing.



Figure 12-8

1. Mount the outer front idler wheel onto the axle as shown.

Note: During installation carefully slide the wheel onto the axle shaft to prevent seal damage.

2. Install the bearing, washer, and wheel nut to the axle. Torque the nut to 110 ft-lbs (149Nm).
3. Install the cap and secure it with the snap-ring. Make sure the snap-ring is fully seated in its groove.

Track Removal and Installation

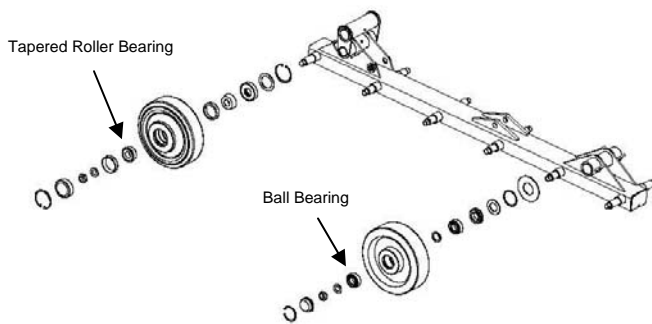
The tools required for track removal and installation are listed in Table 12-2. Use manufacturer-recommended tools whenever possible.

Table 12-2

Required Tools	
Socket Wrench	Heavy Duty Floor Jack
Combination Wrench	Straight Edge
Pry bar	Tape Measure
Mechanical Supports	

Track Removal

! To remove the tracks, the machine must be jacked up and placed on suitable mechanical supports sturdy enough to support the weight of the machine.

NOTE: Bearings

In the illustration above, the rear wheel is shown with a tapered roller style bearing while the center wheel is shown with a ball type bearing. It is important to note that these bearings are positioned within the undercarriage as they are, in order to adequately bear the differing loads/forces applied to them.

When replacing bearings or removing wheels, always make sure the front and rearmost wheels in the undercarriage are equipped with tapered “roller” type bearings, while the eight interior wheels are to be equipped with “ball” type bearings. They are not interchangeable in this application.

Figure 12-9

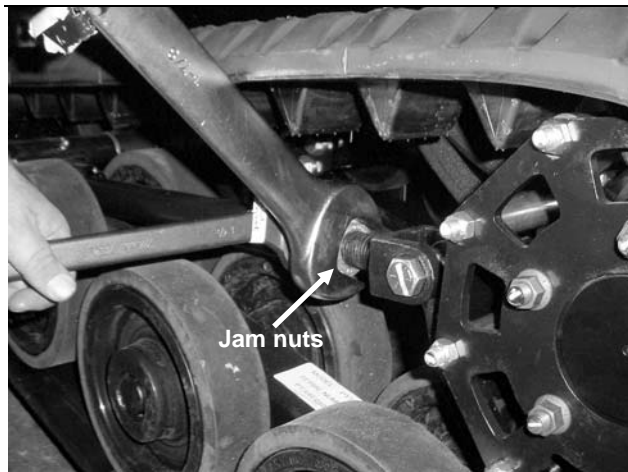


Figure 12-10

1. Loosen the jam nuts located on the track tensioner using the correct size wrenches. Loosen them until drive sprocket rests on the bogie wheels.

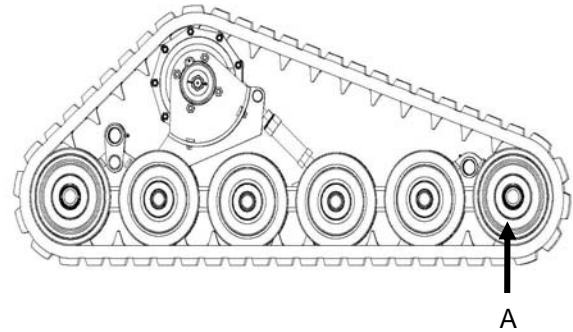


Figure 12-11

2. Locate the wheel marked “A” in fig. 12-11.



Figure 12-12

3. Perform steps 1-7 of the wheel removal procedure in this chapter to remove the outer front idler wheel.



Figure 12-13

4. With the wheel removed and the drive sprocket table lowered, the track is ready for removal.
5. Pull the track outward as shown.

Track Installation

1. To install the track, reverse the removal procedure.

Note: Take extra care when reinstalling the front wheel not to damage the rear wheel seal or axle threads during installation.

Note: Applying soapy water to the outer surface of the inner front wheel and to the inner track surface helps the track to slide more easily over the wheel during installation.

2. Check for proper track tension. Refer to *Chapter 16. Maintenance – Checking for Proper Track Adjustment*

Sprocket Roller Removal

Table 12-3

Required Tools

Socket/Combination Wrench

Note: The rollers should be inspected every 50 hours for rotation and wear-through. The rollers on the drive sprocket are easily replaceable. The track DOES NOT need to be removed to replace these rollers.

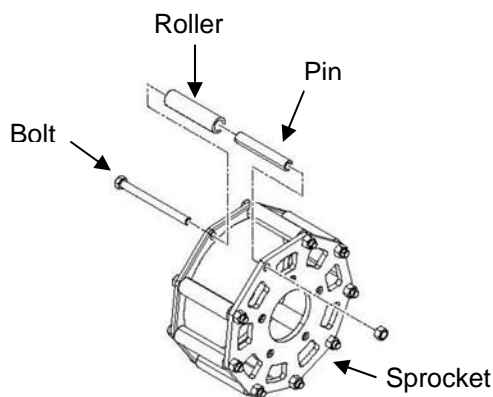


Figure 12-14

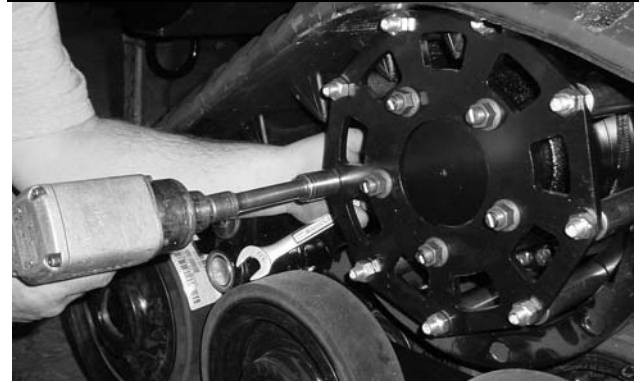


Figure 12-15

1. Rotate the drive sprocket to allow access to the sprocket roller bolt. Remove the bolt.



Figure 12-16

2. Remove the roller and steel pin from the drive sprocket.

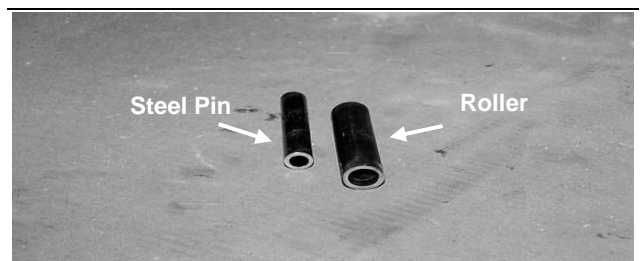


Figure 12-17A

3. Inspect the rollers for wear and replace as necessary. The steel pin will normally not need replacing unless the roller has worn completely away and the steel pin is worn from engaging the track (fig. 12-17A & B).

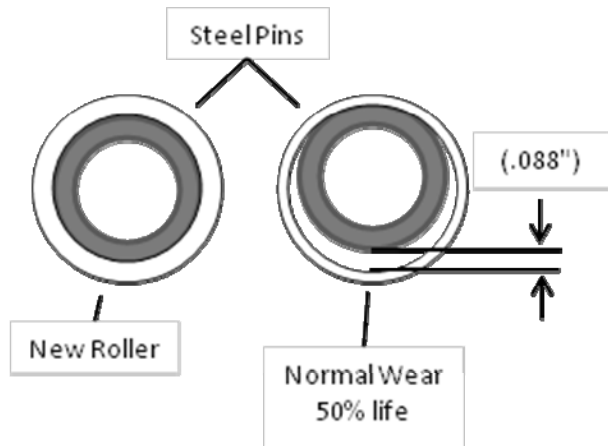


Figure 12-17B

Sprocket Removal and Installation

The tools required for sprocket removal and installation are listed in table 12-4 below. Use manufacturer-recommended tools whenever possible.

Sprocket Removal

Table 12-4

Required Tools	
Socket Wrench	Impact Wrench

1. Remove the track according to the procedure in this chapter.

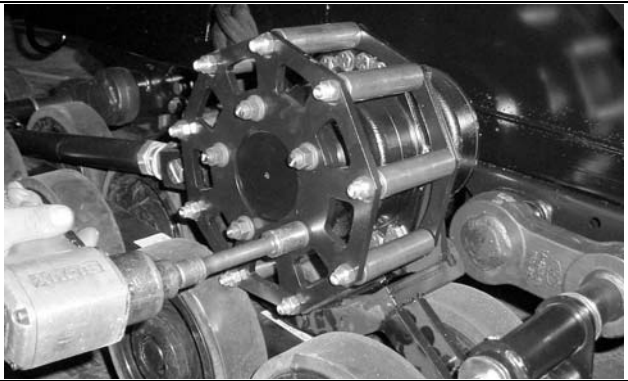


Figure 12-18

2. Remove the sprocket retaining bolts as shown.

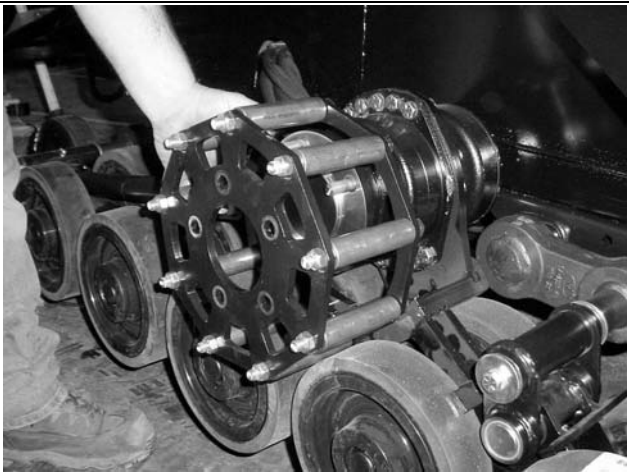


Figure 12-19

3. Lift and remove the drive sprocket from the undercarriage.

Sprocket Installation

1. Reverse the sprocket removal procedure. Torque mounting nuts to specifications found in chapter 2.

Drive Motor Removal and Installation

Use manufacturer-recommended tools whenever possible.

Table 12-5

Required Tools
Socket/Combination Wrench

Note: During disassembly, cap all hoses and fittings to prevent fluid loss and contamination of the system fluids.

Drive Motor Removal

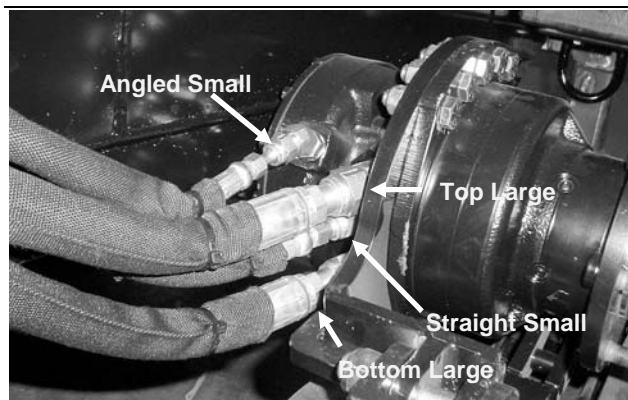


Figure 12-20

1. Locate four drive motor hoses attached to the rear of the drive motor.

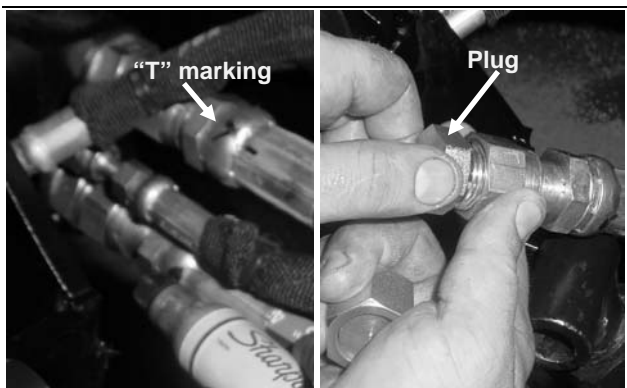


Figure 12-21

2. Mark the top (T) and bottom (B) large hoses to ensure proper re-installation. Disconnect all hoses from the motor. Remove fittings from the drive motor at this time also. **Plug drive motors and hoses to keep hydraulic systems free from contaminants.**



Figure 12-22

3. Remove the bolts that secure the drive motor to the drive table as shown.

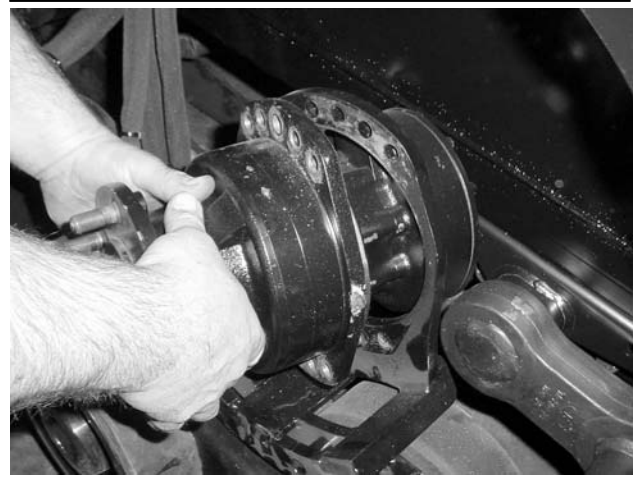


Figure 12-23

4. Remove drive motor from the drive table.

Drive Motor Installation

1. Reverse the installation procedure.

Note: Make sure to install the drive motors so that the ports face forward as found upon removal. Torque mounting bolts according to specifications found in chapter 2.

13. Lift Arm Disassembly and Assembly

Chapter Overview

This chapter provides disassembly and assembly procedures for the loader assembly.

Personal Safety

Improper or incomplete maintenance/repair of a Compact Track Loader can be dangerous and may result in machine damage, injury or death.

Do not attempt to perform any type of repair or maintenance on a Compact Track Loader until you have read and fully understood the information in this manual.

Refer to the Operation and Maintenance manual for instructions regarding proper machine operation techniques before operating any Compact Track Loader.

Prior to performing any type of service work on a Compact Track Loader, read and understand Chapter 1 (Product Safety) for personal safety information.

Machine Preparation

Accidental machine starting can cause injury or death to personnel working on a Compact Track Loader.

As a precaution, disconnect the battery cables from the battery terminals, tape the battery clamps and remove the key from the ignition switch prior to performing any service work on a Compact Track Loader.

Place a "Do Not Operate" tag prominently on the machine to inform personnel that the machine is being worked on.

Lift Arm Disassembly and Assembly Procedures

Disassembly and assembly procedures are provided for the following loader components.

- Lift Cylinders
- Tilt Cylinders
- Pressure Release Valve
- Lift Arm Bushings

Note: Procedures are provided for only those loader components listed above. However, information for removal and installation of other loader components can be obtained from the machine specific parts manual.

Lift Cylinder/Tilt Cylinder Removal and Installation


The tools required for lift cylinder and tilt cylinder removal and installation are listed in Table 13-1. Use manufacturer-recommended tools whenever possible.

Table 13-1

Required Tools
Combination Wrench
Socket Wrench

Lift Cylinder/Tilt Cylinder Removal

Note: The procedures for removing the lift cylinders and tilt cylinders are very similar, as a result only the lift cylinder procedure is described below.

 **Hot oil can cause personal injury. Make sure the oil is cool before removing any components or lines.**

13. Loader Disassembly and Assembly

⚠ Collect and contain liquids in a suitable container. Dispose of all liquids according to local regulations and mandates.

Note: During disassembly, cap all hoses and fittings to prevent fluid loss and contamination of the system fluids.

1. To remove lift cylinders raise the lift arms and support them with the lift arm brace as described in Ch 16 of this manual.

Note: When removing tilt cylinder(s), lower the loader arms onto a mechanical support with the arms resting about 6 inches off the ground.

2. Turn the ignition switch to the OFF position and remove the key to avoid accidental start.

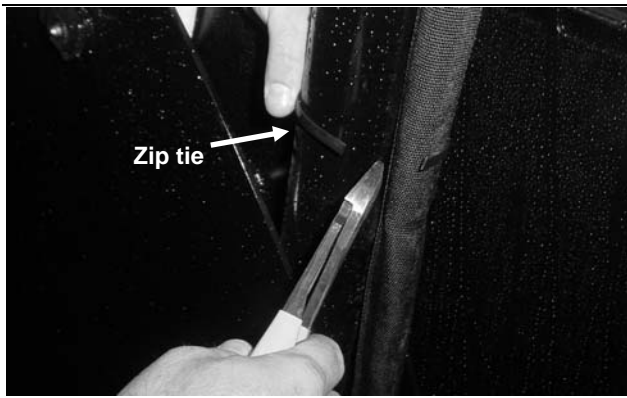


Figure 13-1

3. Remove the zip tie that secures the hydraulic hose to the lift cylinder.
4. Release hydraulic pressure by performing step 3 on page 13-6 of this chapter.

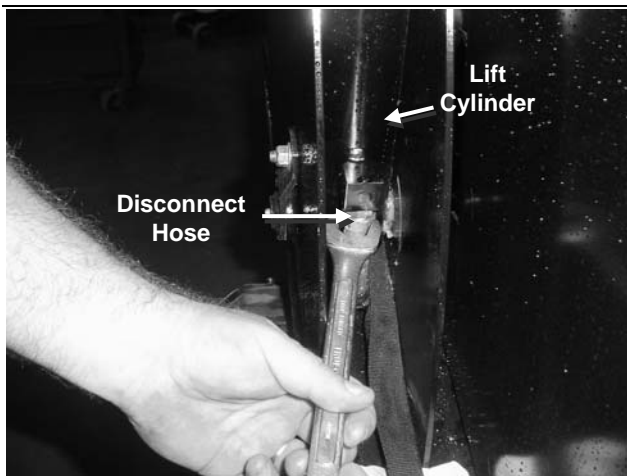


Figure 13-2

5. Disconnect and cap the hose on the rear end of the cylinder.

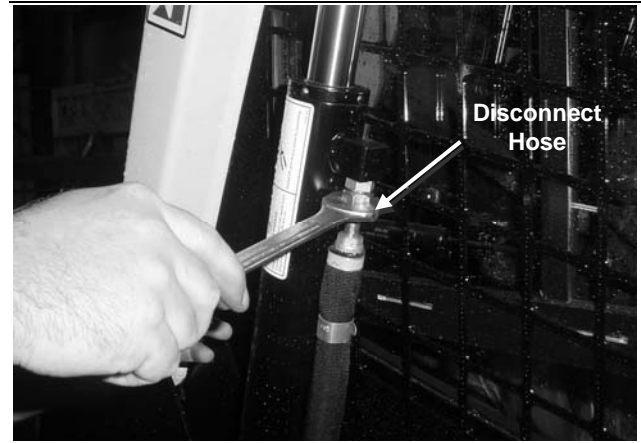


Figure 13-3

6. Disconnect and cap the hose on the forward end of the cylinder.

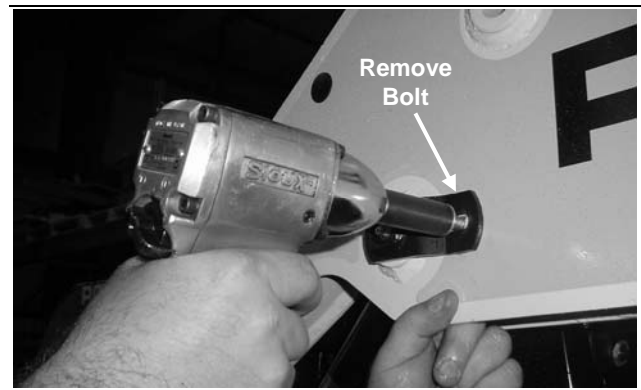


Figure 13-4

7. Remove the forward pin assembly bolt.



Figure 13-5

8. Support the cylinder from the underside then remove the forward pin assembly.



Figure 13-6

9. Remove the bolt and pin from the loader tower.
10. Again support the cylinder from the underside then remove the lift cylinder from the machine.

Lift Cylinder/Tilt Cylinder Installation

1. To install the lift/tilt cylinder, reverse the removal procedure.
2. Add removable locktite to all fittings.
3. Add grease to loader pin zerks to ensure lubrication of bushings.

Lift Cylinder/Tilt Cylinder Seals Removal

Table 13-2

Required Tools
Channel Lock Pliers
Bench Vice
Blade Type Screwdriver
Socket
Rubber Mallet

Lift Cylinder / Tilt Cylinder Seal Removal

Note: The procedures for removing seals on the lift cylinders and tilt cylinders are similar, only the lift cylinder procedure is described below.



Figure 13-7

1. Secure the cylinder into a vice and remove the end gland by turning counter clockwise with channel lock pliers. Be sure to have a container to catch draining hydraulic fluid.



Figure 13-8

2. Remove the rod from cylinder by pulling outward using both hands as shown.



Figure 13-9

3. Secure the rod in the bench vice as shown.



Figure 13-10

4. Remove the nut from the rod end using the correct size socket.

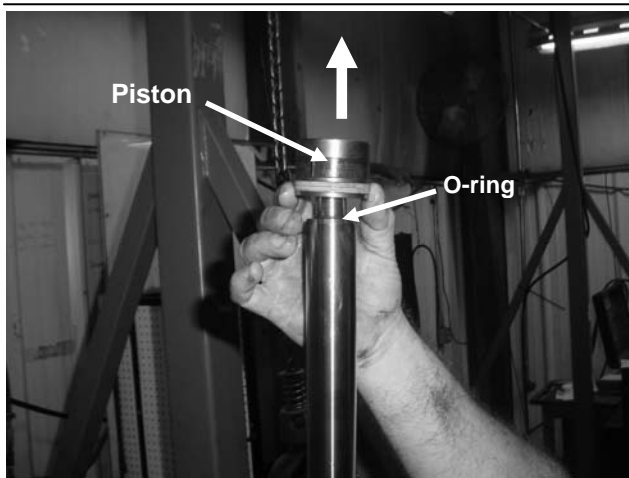


Figure 13-11

5. Remove the piston and the o-ring off the rod by sliding them upward and off.

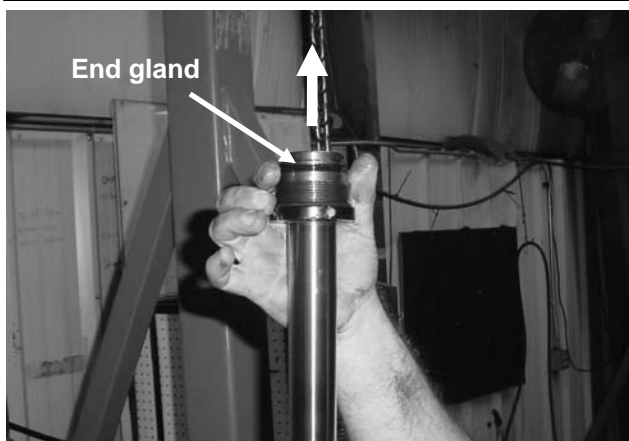


Figure 13-12

6. Remove the end gland by sliding upward and off the rod.



Figure 13-13

7. Remove the three o-rings located on the outside of the end gland with a small blade type screwdriver paying close attention to the order they are removed to aid during installation of new seals.

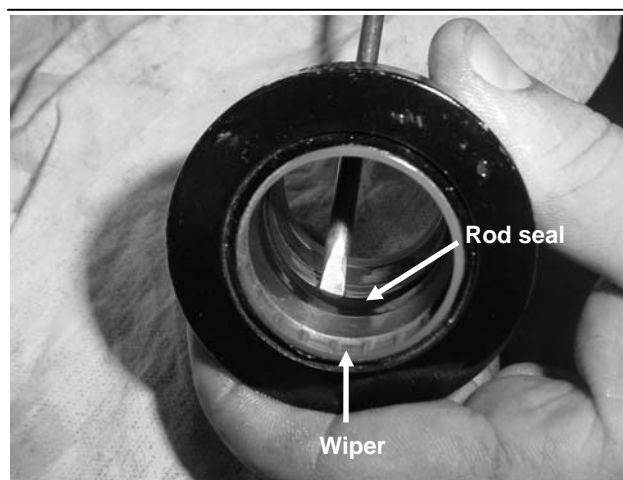


Figure 13-14

8. Remove the shaft wiper and then the rod seal from the inside of the end gland with a small blade type screwdriver. Pay attention to seal orientation upon removal to aid during installation of new seals.

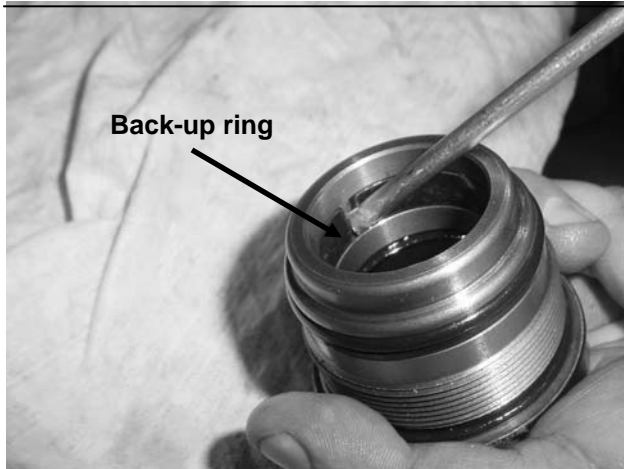


Figure 13-15

9. Remove the back-up ring on the inside of the end gland with a small blade type screwdriver.

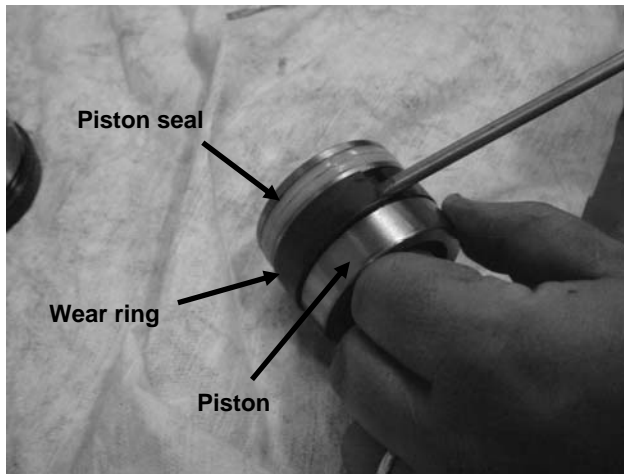


Figure 13-16

10. Remove piston seal and wear ring from piston using a blade type screwdriver.



Figure 13-17

11. To remove cylinder bushings, place cylinder in vice and find a socket the same diameter as the bushing. Remove the bushing with a rubber mallet and the socket. You may need to use a punch tool to complete the removal of the bushing.
12. Thoroughly clean and dry all parts prior to installation of new seals to prevent contamination of hydraulic oil when cylinders are reassembled and installed.

Lift Cylinder/Tilt Cylinder Seal Kit Install

Note: The procedures for installing the seal kits on the lift cylinders and tilt cylinders are similar, only the lift cylinder procedure is described below.

Lift Cylinder Seal Kit: P/N 2010-552

Tilt Cylinder Seal Kit: P/N 2010-548

1. Reverse the cylinder seal removal procedure to install seal kits on both the lift and tilt cylinders.
2. Make sure your work area is clean and that all tools are clean before beginning seal install. Lubricate all seals with new hydraulic oil prior to install.

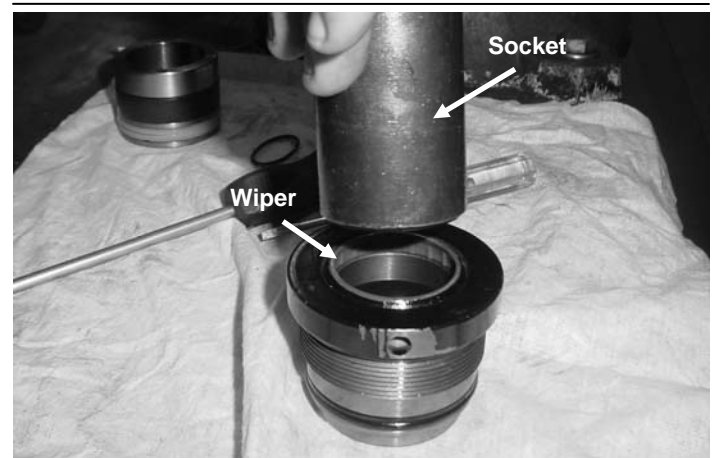


Figure 13-18

3. Use a rubber mallet and a socket or section of pipe with the same outside diameter as the seal to drive into place.
4. Reverse steps 1-6 of the seal removal procedure to reassemble the cylinder.
5. Add removable locktite to the nut and torque to 75 ft. lbs.
6. Torque the cap gland to 100 ft. lbs.

Lift Arm Bushing Removal and Installation

The tools required for lift arm and lift arm bushing removal and installation are listed in Table 13-3. Use manufacturer-recommended tools whenever possible.

Table 13-3

Required Tools
Socket
Dead Blow Hammer
Combination Wrench
Crescent Wrench
Mechanical Support
Lifting Device
Pry Bar

Lift Arm Bushing Placement

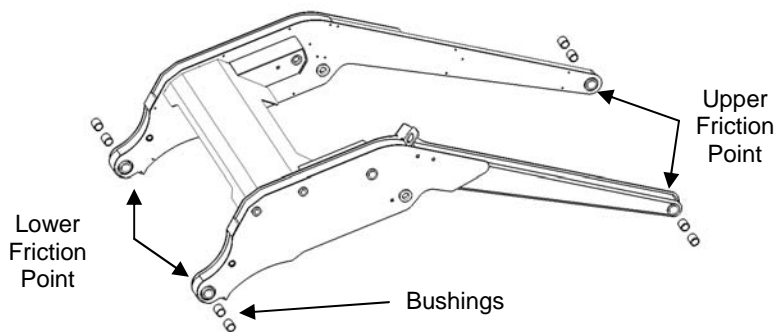


Figure 13-19

Upper Friction Points:

Note: Each worn bushing will be removed one at a time.



Figure 13-20

1. Lower the lift arm to the chassis stops. Then attach suitable lifting device to them as shown, to secure them during the procedure.

2. Turn the engine start switch to the OFF position and remove the key to avoid accidental start.



Figure 13-21

3. Remove the bolts from each side of the lift arm that secure the pins to the chassis.



Figure 13-22

4. Remove the pins from each side of the chassis.



Figure 13-23

5. Raise the lifting device until arm has cleared the chassis and the hydraulic hoses. Use a pry bar to guide the lift arm upward if necessary.
6. Inspect the bushings for wear according to the procedure in page 16-6, step 3. If it is determined that replacement is needed, continue onto step 7 of this procedure.



Figure 13-24

7. Compress a replacement bushing to fit the hole size and start the insertion with a dead blow hammer as shown. As you drive the new bushings into the lift arm, the old bushings will be forced out of the opposite side of the lift arm.

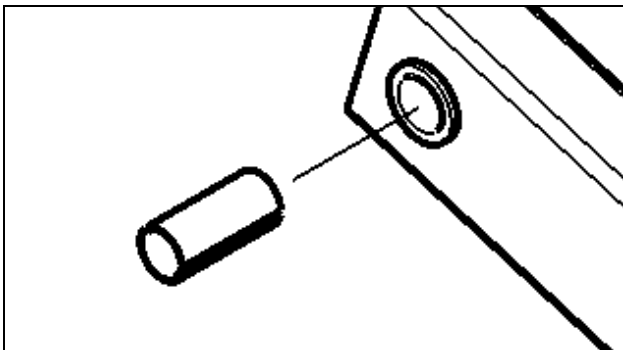


Figure 13-25

8. Complete the insertion of the first bushing with a suitable driving tool until the bushing is flush with the surface of the lift arm.
9. Repeat Step 8 to install the second bushing. This action will force the remaining worn bushing out and drive the first replacement bushing to its permanent position.
10. Clean and remove any debris, then apply anti-seize to the inside of the bushings.
11. Perform steps 7-10 on opposite side of lift arm to remove remaining bushings.



Figure 13-26

12. With an assistant, lower lifting device to drop lift arm back into position to re-install pins. A pry bar may be used to aid in aligning chassis and lift arm pin holes.

 Do not use fingers to align pin holes.



Figure 13-27

13. Insert the pin into the chassis and through the lift arm.



Figure 13-28

14. Install bolt and nut to secure pin to chassis.
15. Perform steps 12-13 for opposite side of lift arm.



Figure 13-29

16. Add grease to the zerks located on each of the lift pins to lubricate them.

Lower Friction Points:

Note: Each worn bushing will be removed one at a time.



Figure 13-30



Figure 13-31

1. Lower lift arms onto a mechanical support, with quick attach resting about 1 ft. off the ground. Then attach a lifting device to secure the lift arm in position.



Figure 13-32

2. Remove bolt from pins that secure the tilt cylinder to the quick attach.



Figure 13-33

3. Remove pin from the cylinder and quick attach.

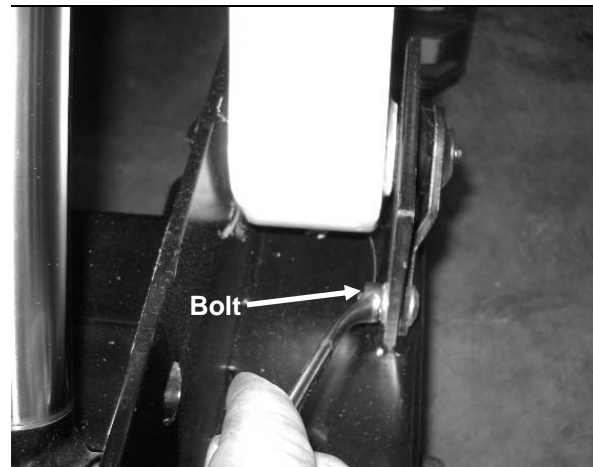


Figure 13-34

4. Remove bolt from pins that secure the quick attach to the lift arm.

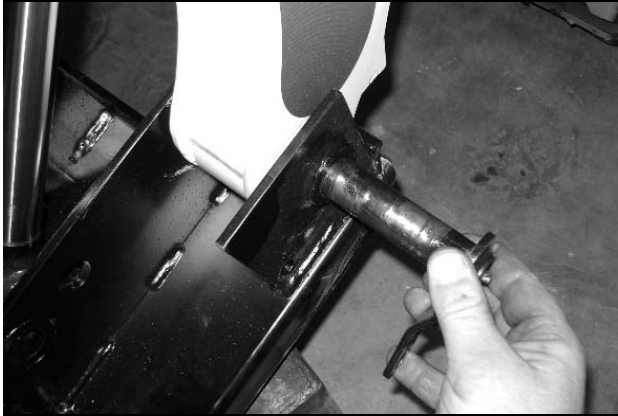


Figure 13-35

5. Remove pin.
6. Perform steps 2-5 on opposite side of quick attach.
7. Inspect the lower lift arm bushings for wear according to the procedure in page 16-6, step 3. If it is determined that replacement is needed, continue onto step 8 of this procedure.



Figure 13-36

8. Compress a replacement bushing to fit the hole size and start the insertion with a dead blow hammer.

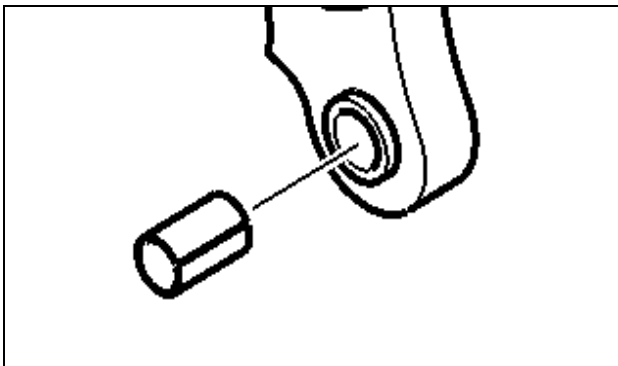


Figure 13-37

9. Complete insertion of the bushing with a suitable driving tool until the bushing is flush with the surface of the lift arm. This action will force the worn bushing out the opposite side of the lift arm for removal.
10. Repeat steps 7-9 for opposite side of lower lift arm.
11. Clean and remove any debris, then apply anti-seize to the inside of the bushings
12. Reverse steps 2-6 to install the pins and bolts.



Figure 13-38

13. Add grease to the zercks located on each of the lift pins and lubricate them.

Quick-Coupler Block / Pressure Release Valve Removal and Installation

The tools required for quick coupler block removal and installation are listed in Table 13-4. Use manufacturer-recommended tools whenever possible.

Table 13-4

Required Tools
Combination Wrench
Socket Wrench

Quick Coupler Block Removal

⚠ Hot oil can cause personal injury. Make sure the oil is cool before removing any components or lines.

Remove the oil filler cap only when the engine is stopped and the machine has been allowed to cool thoroughly.

13. Loader Disassembly and Assembly

⚠ Collect and contain liquids in a suitable container. Dispose of all liquids according to local regulations and mandates.

Note: During disassembly, cap all hoses and fittings to prevent fluid loss and contamination of the system fluids.

1. Lower the lift arms to the ground.
2. Turn the engine start switch to the OFF position and remove the key to avoid accidental start.



Figure 13-39

3. Press the button on top of the quick coupler block to release hydraulic pressure.

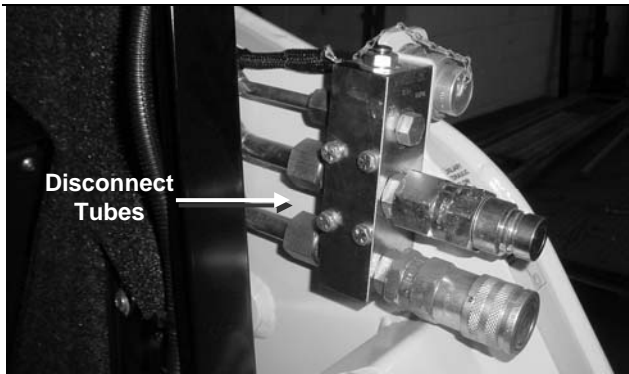


Figure 13-40

4. Disconnect and cap all three hydraulic tubes.

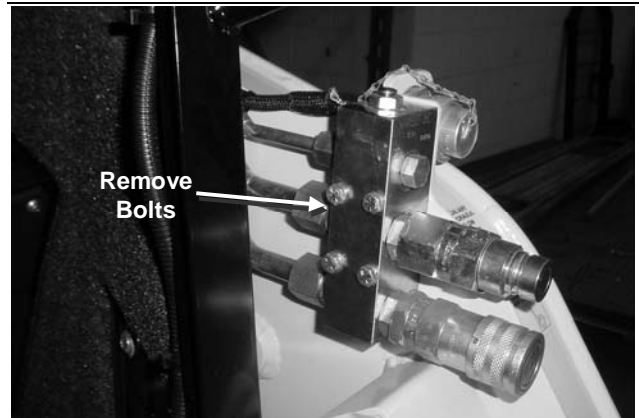


Figure 13-41

5. Remove the four bolts that secure the quick coupler block to the loader frame and remove the block.

Quick Coupler Block / Pressure Release Valve Installation

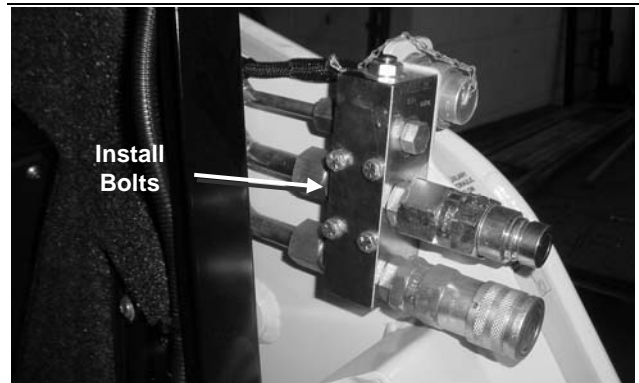


Figure 13-42

1. Install the four bolts that secure the quick coupler block to the loader frame.

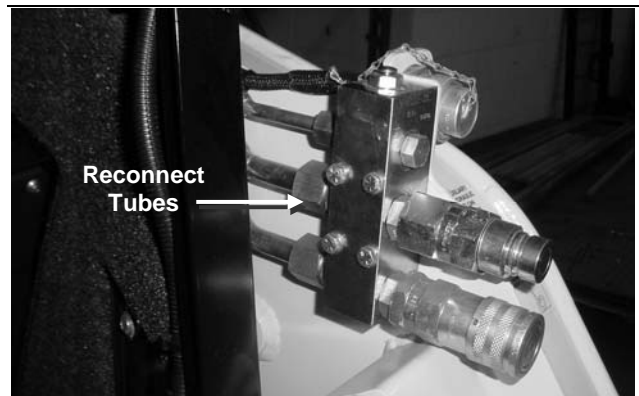


Figure 13-43

2. Reconnect all three hydraulic tubes.

14. Quick Attach Disassembly and Assembly

Chapter Overview

This chapter provides disassembly and assembly procedures for the quick attach assembly.

Personal Safety

Improper or incomplete maintenance/repair of a Compact Track Loader can be dangerous and may result in machine damage, injury or death.

Do not attempt to perform any type of repair or maintenance on a Compact Track Loader until you have read and fully understood the information in this manual.

Refer to the Operation and Maintenance manual for instructions regarding proper machine operation techniques before operating any Compact Track Loader.

Prior to performing any type of service work on a Compact Track Loader, read and understand Chapter 1 (Product Safety) for personal safety information.

Machine Preparation

Accidental machine starting can cause injury or death to personnel working on a Compact Track Loader.

As a precaution, disconnect the battery cables from the battery terminals, tape the battery clamps and remove the key from the ignition switch prior to performing any service work on a Compact Track Loader.

Place a "Do Not Operate" tag prominently on the machine to inform personnel that the machine is being worked on.

Quick Attach Disassembly and Assembly Procedures

Disassembly and assembly procedures are provided for the following quick attach components.

- Latch Mechanism
- Quick Attach Assembly

Note: Procedures are provided for only those quick attach components listed above. However, information for removal and installation of other quick attach components can be obtained from the machine specific parts manual.

Latch Mechanism Removal and Installation

The tools required for latch mechanism removal and installation are listed in Table 14-1. Use manufacturer recommended tools whenever possible.

Table 14-1

Required Tools
Socket/Combination Wrench

Latch Mechanism Assembly Removal

1. Remove any attachments and place support blocks beneath the quick attach. Then tilt the quick attach assembly forward and lower the lift arms until the quick attach assembly rests securely on the blocks (approximately 6 inches off the ground).

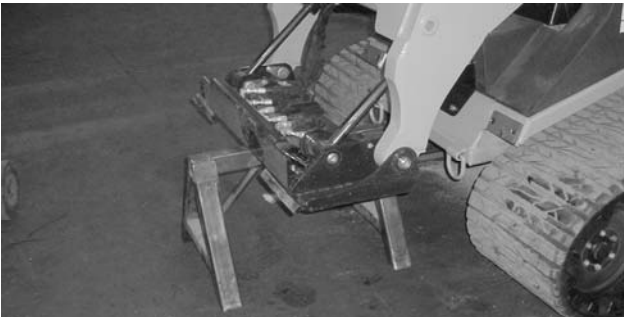


Figure 14-1

14. Quick Attach Disassembly and Assembly

2. Turn the engine start switch to the OFF position.

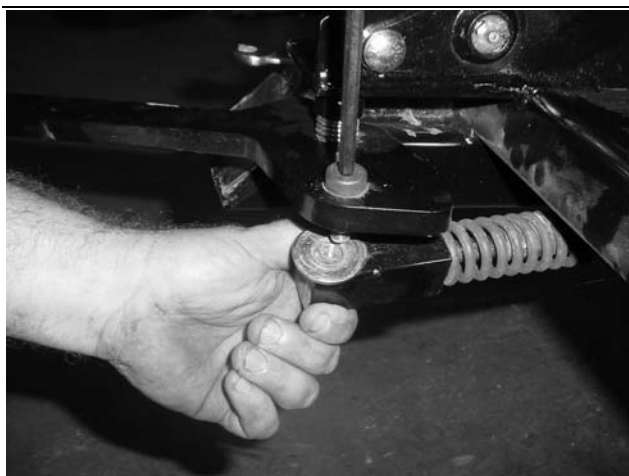


Figure 14-2

3. Remove the bolt securing the latch mechanism to the quick attach spring block using an allen wrench.



Figure 14-3

4. Remove the bolt and nut using to two wrenches.
5. Slide the latch mechanism out for parts inspection.

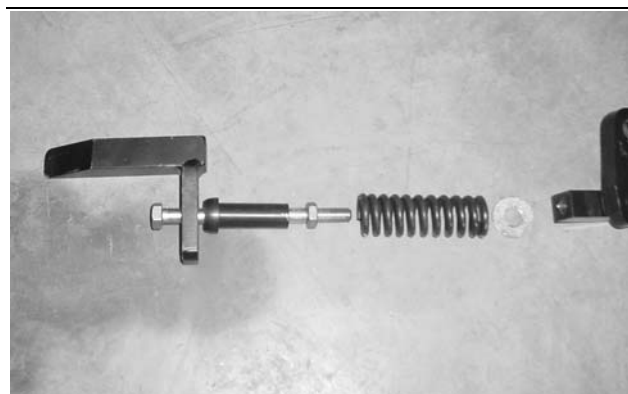


Figure 14-4

6. Disassemble as necessary and replace worn components to ensure proper function.

Latch Mechanism Installation

1. Latch installation is the reverse of the removal procedure.
2. Add removable lock tite to allen bolt threads.

Quick Attach Assembly Removal and Installation

The tools required for quick attach assembly removal and installation is listed in Table 14-2. Use manufacturer-recommended tools whenever possible.

Table 14-2

Required Tools
Combination Wrench

Quick Attach Assembly Removal

1. Remove any attachments and place support blocks beneath the quick attach. Then tilt the quick attach assembly forward and lower the lift arms until the quick attach assembly rests securely on the blocks (approximately 6 inches or 15.24 cm off the ground).
2. Turn the engine start switch to the OFF position.

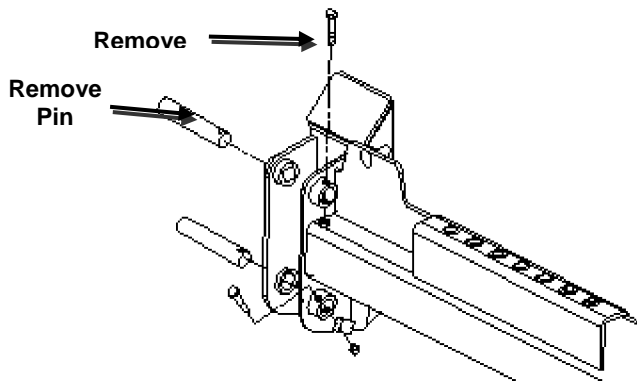
14. Quick Attach Disassembly and Assembly

Figure 14-5

3. Remove the bolt and push out the pin that secures each end of the quick attach assembly to the tilt cylinders.

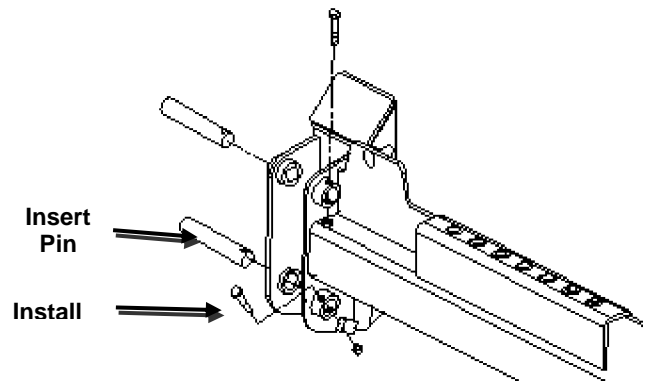


Figure 14-7

2. Insert the pin and install the bolt that secures each end of the quick attach assembly to the loader frame.

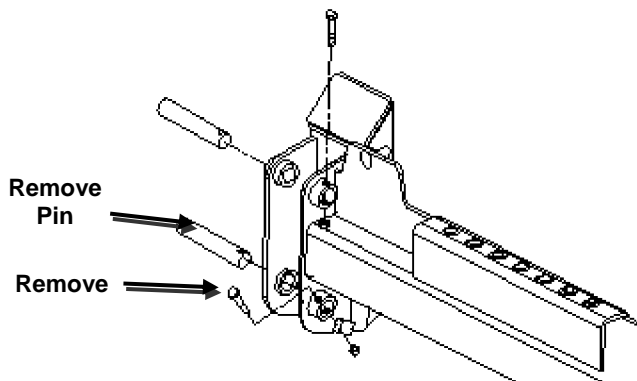


Figure 14-6

4. Remove the bolt and push out the pin that secures each end of the quick attach assembly to the loader frame.
5. The quick attach assembly is now free and ready to be moved by a forklift.

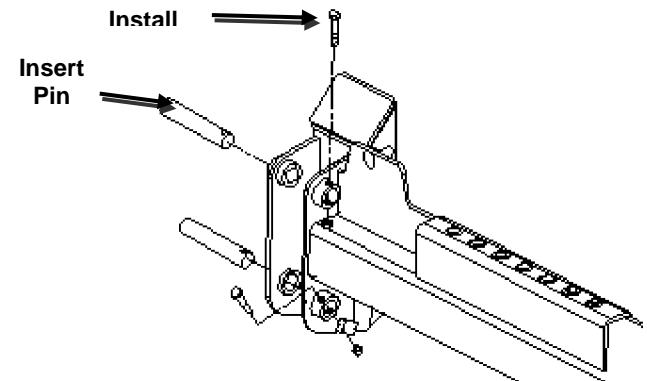


Figure 14-8

3. Insert the pin and install the bolt that secures each end of the quick attach assembly to the tilt cylinders.

Quick Attach Assembly Installation

1. With a forklift, move the quick attach assembly in position to be secured to the loader frame and tilt cylinders.

15. Troubleshooting

Chapter Overview

This chapter contains basic troubleshooting procedures for the Compact Track Loader.

Additional troubleshooting aids are provided in *Chapter 3. System Diagrams* and in those chapters containing disassembly and assembly procedures for the appropriate component or assembly.

Personal Safety

Improper or incomplete maintenance/repair of a Compact Track Loader can be dangerous and may result in machine damage, injury or death.

Do not attempt to perform any type of repair or maintenance on a Compact Track Loader until you have read and fully understood the information in this manual.

Refer to the Operation and Maintenance manual for instructions regarding proper machine operation techniques before operating any Compact Track Loader.

Prior to performing any type of service work on a Compact Track Loader, read and understand Chapter 1 (Product Safety) for personal safety information.

Machine Preparation

Accidental machine starting can cause injury or death to personnel working on a Compact Track Loader.

As a precaution, disconnect the battery cables from the battery terminals, tape the battery clamps and remove the key from the ignition switch prior to performing any service work on a Compact Track Loader.

Place a "Do Not Operate" tag prominently on the machine to inform personnel that the machine is being worked on.

Preliminary Inspection

A simple visual inspection and operational check can identify many problems without the need for extensive troubleshooting. If these checks indicate a problem that requires further analysis, proceed to *Troubleshooting* in this section.

Visual Inspection

Prior to troubleshooting, perform a visual inspection of the machine. Look for missing, loose or worn parts. Perform the following visual checks.

- Track tension
- Fluid levels
- Fan belt tension and condition
- Hoses (no visible sign of wear)
- Fittings (no leaks)
- Battery cables
- Fuse box (fuses in place and operational)
- Controls (for neutral)

Troubleshooting

This section identifies selected problems and suggests probable causes.

Problem 1

Machine will not crank over.

Probable cause

1. Auxiliary hydraulic switch activated.
2. Weak or dead battery.
3. Battery cables loose or corroded.
4. Ignition fuse blown.
5. Main starter fuse blown.
6. Starter relay malfunctioning.
7. Bad ignition switch.
8. Bad starter.
9. Poor wire connections at key, relay, or starter.

Problem 2

Machine cranks but will not start.

Probable cause

1. Injection pump fuse blown.
2. Main power fuse B blown.
3. Main power relay B not activating.
4. Poor wire connection at injection pump or fuse.
5. Glow plugs not heating. (Will see black smoke.)
 - a) Main glow plug fuse blown.
 - b) Glow plug relay not activating.
 - c) Poor wire connections at ignition switch, relay, or glow plug strip.
 - d) Failed glow plugs.
 - e) Bad ignition switch.

Problem 3

Machine starts but hydraulics will not operate.

Probable cause

1. Lap bar must be in down position, operator must be seated in seat, and front door (if installed) must be closed.
2. Safety fuse blown.
3. Faulty operator presence switch.
 - a) Test continuity through seat, lap bar, and door switch. Adjust or replace as necessary. Lap bar and door switch are magnetic switches and should be adjusted to approximately 1/16 inch (.16 cm) away from steel pickup bracket.
4. Poor ground (check ground wires on bottom left rear side of hydraulic reservoir).
5. Safety relay is not activating.
6. Faulty safety solenoid or safety solenoid spool.
7. Poor wire connections on fuse, relay, or safety solenoid.
8. Low charge pressure.

Problem 4

Loader operates but tracks will not move.

Probable cause

1. Leak in feed line to pilot control.
2. Pilot control malfunctioning.

Problem 5

Tracks operate but loader will not operate.

Probable cause

1. Auxiliary direction switch activated sending oil over relief.
2. Check to see if auxiliary flow works. (If auxiliary flow works, skip to number 5).
3. Main auxiliary relief malfunction.
4. Auxiliary pump bad.
5. Leak in feed line to loader control pilot.
6. Loader control pilot malfunctioning.

Problem 6

Auxiliary flow does not work. Loader works.

Probable cause

1. Auxiliary hydraulic fuse blown.
2. Faulty ground wire.
 - a) Clean ground connections on left rear side of hydraulic tank.
3. Auxiliary hydraulic direction switch failure.
4. Poor wire connections at fuse, direction switch, or pin connector P17.
5. Auxiliary hydraulic pilot generation spool stuck.
6. Bad or not fully connected Quick-Coupler

Problem 7

Auxiliary hydraulic part-time thumb switch operates but full-time flow direction switch will not operate.

Probable cause

1. Auxiliary direction switch faulty.
2. Poor wire connections at mode switch or direction switch.

Problem 8

Auxiliary hydraulic full-time direction switch operates but part-time thumb switch will not operate.

Probable cause

1. Auxiliary hydraulic thumb switch malfunction.
2. Poor wire connections at direction switch, thumb switch, or pin connector P17.

Problem 9

Auxiliary hydraulics will only flow one way.

Probable cause

1. Auxiliary hydraulic relay 1 or 2 failure.
2. Auxiliary hydraulic pilot generation coil faulty.
3. Auxiliary hydraulic pilot generation spool faulty.
4. Poor wire connections at relay, pilot generation solenoid, pin connector P16 or P21.
5. Loader valve malfunction.

Problem 10

No power to numerous auxiliary functions or accessories in ON or RUN position.

Probable cause

1. Main power relay A or B fuse blown.
2. Main relay A or B faulty.
3. Ignition switch malfunction.
4. Poor wire connections at ignition switch, fuse, or relay.

Problem 11

Battery will not charge and/or battery goes dead.

Probable cause

1. Alternator fuse blown.
2. Alternator diode defective or inserted backwards.
3. Poor wire connections at battery, alternator, diode, or fuse.
4. Excessive draw in off position.
 - a) Fuel gauge and hour meter should draw only 0.01 amps in off position.
5. Bad battery.
6. Bad alternator.

Problem 12

Loader control will not lock in float position.

Probable cause

1. Float magnet fuse blown.
2. Poor wire connections at fuse, float detent magnet, or pin connector P18.
3. Faulty float detent magnet.

Problem 13

Loader will not float; labors engine and has down pressure when detented into float.

Probable cause

1. Engine RPM too low.
 - a) Float must be operated at a minimum of half throttle.
2. Low charge pressure.
3. Pilot control malfunction.
4. Loader valve malfunction.

Problem 14

Hot oil light illuminates; hydraulic system operating hot.

Probable cause

1. Auxiliary hydraulic switch activated sending oil over relief.
2. Low oil level.
3. Debris plugging oil cooler limiting airflow.
4. Broken fan blades.
5. Loose fan belt.
6. Improper attachment.
 - a) Attachment must be rated at a minimum of 10 gallons per minute (37.8 lpm) and 3000 psi (20,680 kPa).
 - b) Attachment hose size must be a minimum of 3/8 inch (.95 cm).
7. Faulty hot oil sending unit.
 - a) Hot oil light should illuminate at 225°F (107.2 °C).
8. Faulty quick coupler.
9. Cooler bypass relief.
 - a) Cooler bypass relief should open at 100 psi (689.5 kPa).

Problem 15

Track makes popping noise.

Probable cause

1. Track too loose. (Refer to track adjustment section.)
2. Worn or stuck drive teeth. Outer roller should pivot as lug comes into sprocket.
3. Loose or worn sprocket.
4. Worn track lugs.

16. Maintenance

Chapter Overview

This chapter contains maintenance requirements and procedures for the following Compact Track Loader components.

- Engine oil
- Hydraulic fluid and filter
- Fuel filter
- Track tension
- Lift arm bushings
- Air cleaner
- Fuse box
- Grease fittings
- Lift Arm Brace

Maintenance Schedule

Maintenance schedule is listed in Table 16-1.

Table 16-1

Item	Frequency	Lubricant	Capacity
Hydraulic Fluid	1000 hrs	Mobile DTE10 Excel Series	8 gal/30 l
Hydraulic Filter	250 hrs		
Engine Oil	250 hrs	HD Diesel Engine Oil , or equivalent	4 qt/3.79 l
Engine Filter	250 hrs		
Fuel Filter	500 hrs		
Primary Air Filter	Check daily, clean and reuse as needed up to 5 times; change at least once per year		
Secondary Air Filter	Every 3 cleanings of primary filter		
Grease Fittings	10 hrs	Lithium Grease	
Track Tension	As needed		

NOTICE

When replacing engine coolant, use **Terex Long Life 50/50 Antifreeze/Coolant** or equivalent antifreeze with the proper SCA (Supplemental Cooling Additive)


Lift Arm Brace

The lift arm brace is intended to keep service personnel safe when it is necessary to work on a machine with the lift arms in the raised position. It is not safe to rely on the hydraulic system to hold the lift arms in the raised position just as it is not safe to crawl under a machine support only by one jack. The lift arm brace is used support the weight of the lift arms much mechanical supports bear the vehicle weights.

To install the lift arm brace:

1. Park the machine on level ground in a safe area for performing service work.
2. Remove any attachments that may be fastened to the quick attach.
3. Have an assistant remove the retaining pins that secure the lift arm brace and remove it from the machine.
4. Make sure bystanders are clear of the lift arms, and then raise them to the upper limit.
5. Have an assistant install the brace around the cylinder shaft as shown and reinstall the pins to secure it to the cylinder as shown in Figure 16-1.
6. Lower the lift arms slowly until they come to rest on the brace.
7. It is now safe to shut the engine off and exit the machine.

To remove the lift arm brace:

 **Do not work on or near the machine with the lift arms in the raised position unless the lift arm brace has been correctly installed.**

1. Start the machine and raise the lift arms until they are clear of the brace.
2. Once clear, have an assistant remove the brace for the cylinder and stow it on the machine with the pins.
3. Once the brace has been stowed and the assistant is clear of the lift arms, lower the arms to the ground and shut the engine off to complete the procedure.

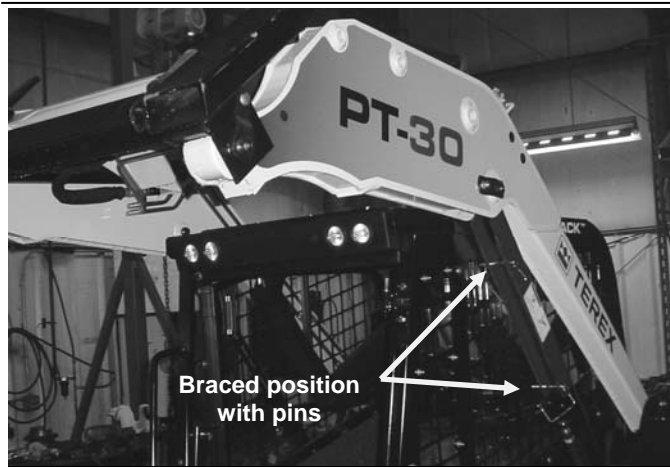


Figure 16-1

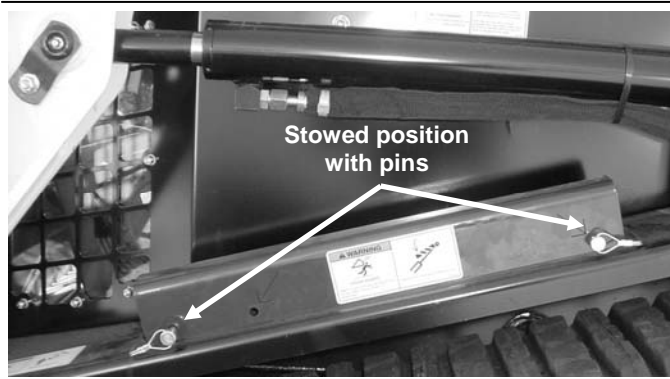


Figure 16-2

Engine Oil

Regular oil changes are necessary to maintain a strong running engine. A normal oil change interval of 250 hours or every six months is recommended. This recommendation has been made to help ensure proper lubrication during operation and to prolong engine life under typical operating conditions. Oil Change Procedures

1. Run the engine for a few minutes to warm the engine oil.

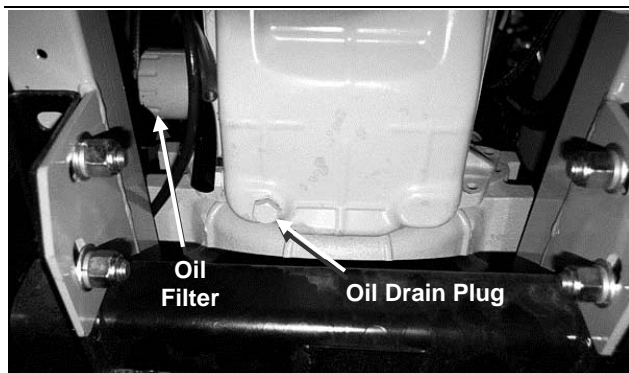


Figure 16-3

2. Remove drain plug from bottom of the engine.
3. Drain oil into suitable container.
4. Remove engine oil filter, making sure the gasket is also removed.
5. Apply a light coat of fresh oil to the new filter gasket, then install new filter.
6. Tighten filter to specifications on filter label or box.
7. Refill the engine to capacity with engine oil, as specified.

Engine Oil Specifications

Due to the variations in the quality and performance of commercially available oils, **Terex Heavy Duty Diesel Engine Oil – 10W30** is recommended. If Terex lubricants are not available, use a substitute meeting the following qualifications:

- API CH-4 multi-grade engine oil

Hydraulic Fluid and Filter

The hydraulic fluid should be changed every 500 service hours, and the hydraulic filter should be changed every 250 hours. Hydrostatic components require extremely clean oil for long service life.

Hydraulic Fluid and Filter Change Procedures

⚠ Hot oil can cause personal injury. Make sure the oil is cool before removing any components or lines.

Allow the machine to cool thoroughly and relax all hydraulic circuits before performing this procedure.

NOTICE

Extreme care must be taken when changing the hydraulic fluid. Before starting the procedure, make sure the machine is in a clean working environment. Precautions should be taken to prevent any debris from entering the hydrostatic system.

⚠ Collect and contain liquids in a suitable container. Dispose of all liquids according to local regulations and mandates.

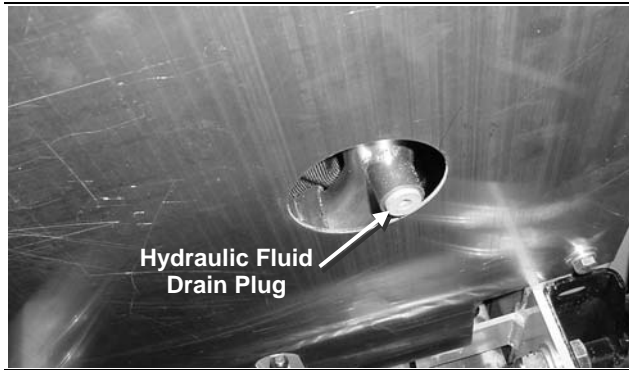


Figure 16-4

1. Locate and remove the hydraulic fluid drain plug and drain the fluid into a suitable container.

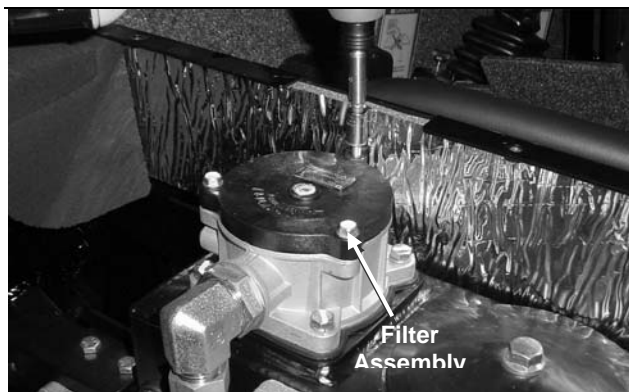


Figure 16-5

2. Clean the area around the filter assembly, which is located on the top of the hydraulic reservoir.

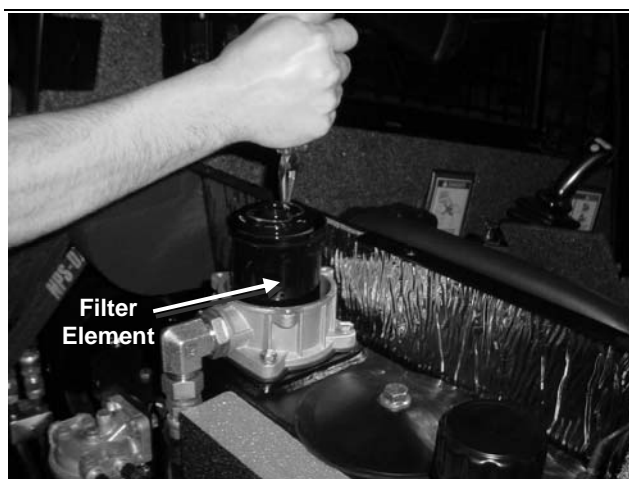


Figure 16-6

3. Remove the retaining bolts and cover, and then remove the cover to access the filter.

4. Remove the filter element and replace it. Install as found upon removal.
5. Fill with manufacturer-approved hydraulic fluid.

Fuel Filter

The fuel filter should be changed every 500 service hours, or as needed. A plugged fuel filter can cause loss of engine power, rough running, or no start.



Collect and contain liquids in a suitable container. Dispose of all liquids according to local regulations and mandates.

Fuel Filter Change Procedures



Figure 16-7

1. Clean the outside of the filter thoroughly.
2. Remove the retaining bolt (top of assembly) securing the filter to the head, then removes.
3. Pour diesel fuel into the new filter until it is full.
4. Install the new filter by reversing step 2.

Fuel Specifications

In North America, diesel fuel distilled from crude oil and identified as NO. 1-D or No. 2-D in "ASTM D975" generally meets the proper specifications.

Air Cleaner

The air cleaner is one of the most important maintenance items on the machine. A poorly maintained air cleaner can seriously shorten the life of the engine.

Air Filter Change Procedures

NOTICE

When working in dusty conditions, the air cleaner elements should be checked and changed more frequently than when working under normal conditions.

NOTICE

Do not clean the primary air cleaner element by bumping and tapping. This could damage the seals. Do not use elements with damaged pleat gaskets or seals.

1. Open the hood, release the latches on either side of the air cleaner, and then remove the cover.

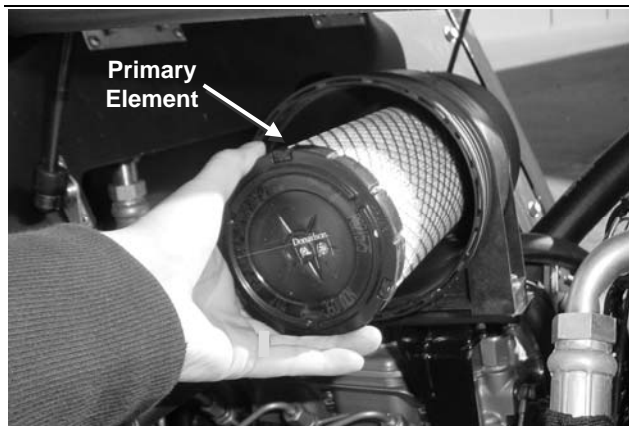


Figure 16-8

2. Remove the primary element. The primary element can be cleaned and reused up to five times, but it should be changed at least once a year.

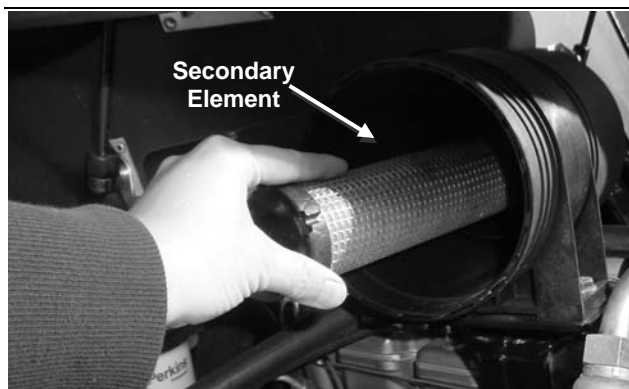


Figure 16-9

3. Remove the secondary element. The secondary element is not serviceable or washable. It should be replaced with every three cleanings of the primary element.

Track Tension

Proper track tension is very important for optimum performance and long track life. Tracks that are run too loose can cause mis-feeding and ratcheting possibly causing damage to the track. During the first 50 hours of operation, the tracks will “break in” and will most likely require adjustment.

Track Tension Adjustment Procedures

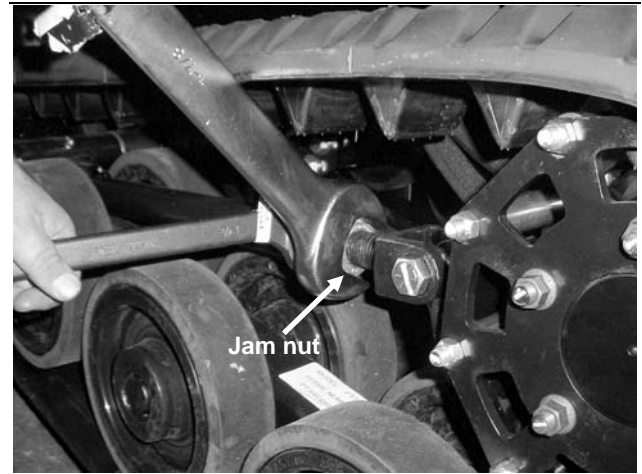


Figure 16-10

1. Locate the jam nut on the track tensioner and clean the threads thoroughly before proceeding.
2. Loosen the jam nut.



Figure 16-11

3. After loosening the jam nut, turn the lower tension nut until the track tension is within specifications.

4. Once proper tension is achieved, retighten the jam nut

Checking for Proper Track Adjustment

1. Drive the machine forward five feet to remove slack from the lower and rearward portions of the track.



Figure 16-12

2. Lay a straightedge along the top of the track between the sprocket and the front idler wheel.
3. Using a rope or wire, put 50 pounds (23.68 kg) of down force on the track at the midpoint of the straightedge.

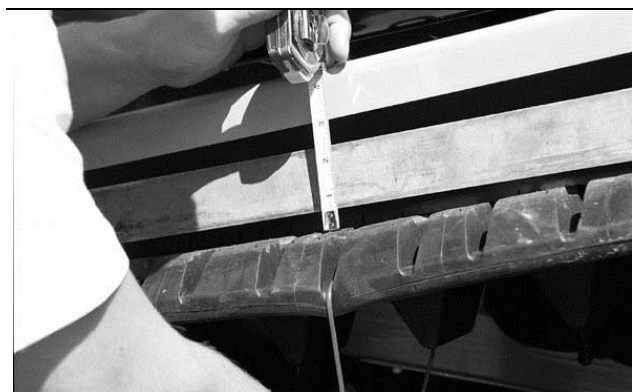


Figure 16-13

4. Using a ruler, measure the distance between the straightedge and track. The track should not deflect more than 0.75 inch (1.9 cm) between the top of the track and the straightedge.
5. If the track deflects more than 0.75 inch (1.9 cm), tighten the track.

Fuse Box



Figure 16-14

The fuse box is located on the left side of the engine compartment. The machine should never be operated with the fuse box cover removed.

Grease Fittings

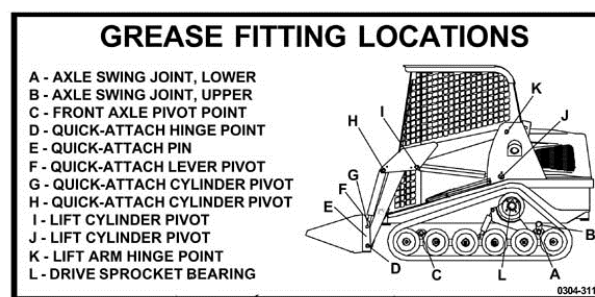


Figure 16-15

The locations of the grease fittings for the left side of the machine are shown above. An identical set of fittings is located on the right side of the machine. These fitting should be lubricated at least after every 10 hours of operation using **Terex Multi Purpose EP Lithium Grease**, or other high-quality, low-temperature grease.

Lift Arm Bushings

Quick Attach Wear Inspection

Daily inspection can be carried out by performing the following steps:

1. Lower the lift arm until it makes contact with the chassis stops. Rotate the bucket against the ground repeatedly. Have an assistant look for independent movement between the bucket and the lift arm. Any movement should be readily noticeable by the attendant. If movement is detected, bushing will need further inspection.
2. Rotate the bucket downward to approximately 45° from level. Then lower the lift arm until the bucket contacts the ground repeatedly. Have an assistant look for independent movement between the:
 - Lift arms & chassis
 - Lift arms & lift cylinder
 - Lift cylinder & chassis

Any movement will be readily noticeable by the attendant. If movement is detected, bushings will need further inspection as shown in the following step.

3. Refer to Chapter 13 of Lift Arm Bushing Removal and Installation procedure to access bushings for measurement inspection.

Note: Inspect the bushing for wear and replace as necessary. Maximum recommended wear on the bushing is 50% as shown in figure 16-16.

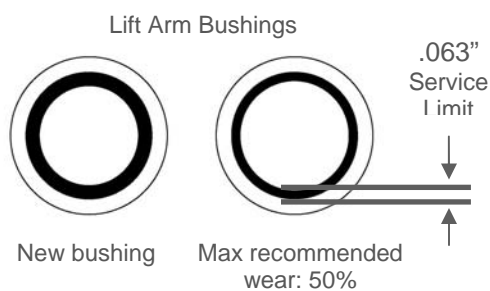


Figure 16-16

17. Hydraulic Pressure Check & Adjustment

Chapter Overview

This chapter provides an overview of checking and setting pressures. It is important to contact the manufacturer for assistance before beginning these procedures.

Personal Safety

Improper or incomplete maintenance/repair of a Compact Track Loader can be dangerous and may result in machine damage, injury or death.

Do not attempt to perform any type of repair or maintenance on a Compact Track Loader until you have read and fully understood the information in this manual.

Refer to the Operation and Maintenance manual for instructions regarding proper machine operation techniques before operating any Compact Track Loader.

Prior to performing any type of service work on a Compact Track Loader, read and understand Chapter 1 (Product Safety) for personal safety information.

Machine Preparation

Accidental machine starting can cause injury or death to personnel working on a Compact Track Loader.

As a precaution, disconnect the battery cables from the battery terminals, tape the battery clamps and remove the key from the ignition switch prior to performing any service work on a Compact Track Loader.

Place a “Do Not Operate” tag prominently on the machine to inform personnel that the machine is being worked on.

Hydraulic Pressure Adjustment Procedures

Adjustment and test procedures are provided for the following transmission and drive components.

- Charge Pressure Check & Adjustment
- Drive-Pressure Relief Valve Adjustment
- Auxiliary Valve Pressure Check & Adjustment

Charge Pressure Check

The service tools required for the charge pressure check are listed in Table 0-1. Use manufacturer-recommended tools whenever possible.

Table 0-1

Required Tools
Pressure Gauge Combination Wrench Socket Wrench

Note: The fuel tank SHOULD NOT be removed to perform this procedure.

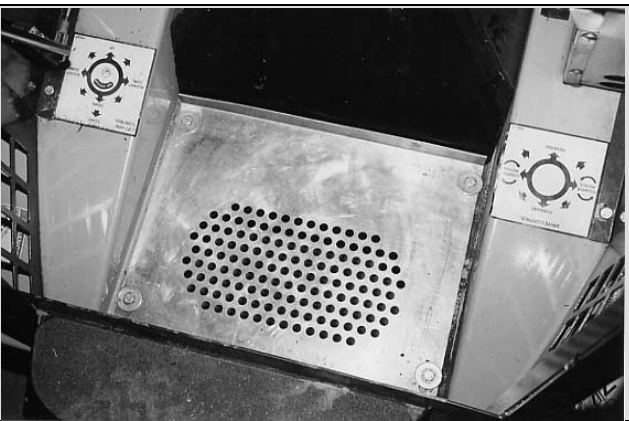


Figure 0-1

1. Remove the floor pan.

17. Hydraulic Pressure Check & Adjustment

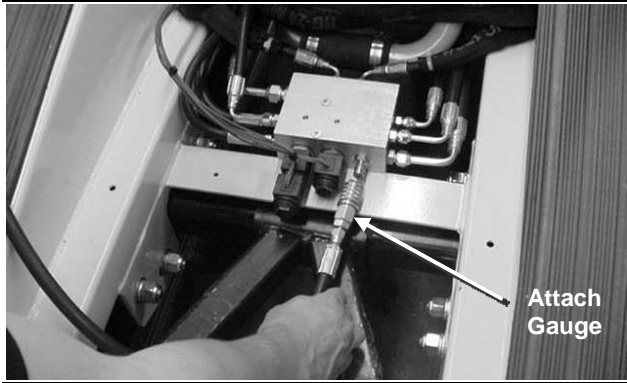


Figure 0-2

2. Attach the gauge to the pilot control manifold test port. Located under the fuel tank, you will not need to remove the fuel tank.
3. Start the engine.
4. Check the pressure with the engine running at idle. Make sure the engine is properly warmed up before performing this test.
5. Turn the engine start switch to the OFF position.
6. Remove the gauge from the pilot control manifold test port.
7. Install the floor pan

Charge Pressure Relief Valve Adjustment

The service tools required for charge pressure relief valve adjustment are listed in Table 0-2. Use manufacturer-recommended tools whenever possible.

Table 0-2

Required Tools
Combination Wrench
Allen Wrench

Note: In the following procedure, some components are shown detached from the machine to facilitate the description. However, the charge pressure check is normally performed from under the machine with only the center skid plate removed.

⚠ Hot oil can cause personal injury. Make sure the oil is cool before removing any components or lines.

Remove the oil filler cap only when the engine is stopped and has been allowed to cool thoroughly.

⚠ Collect and contain liquids in a suitable container. Dispose of all liquids according to local regulations and mandates.

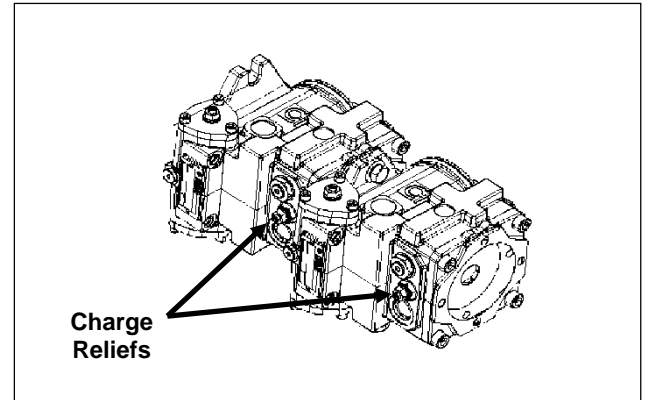


Figure 0-3

1. Remove belly pan and locate the charge pressure relief valves on the right side of the tandem pump.

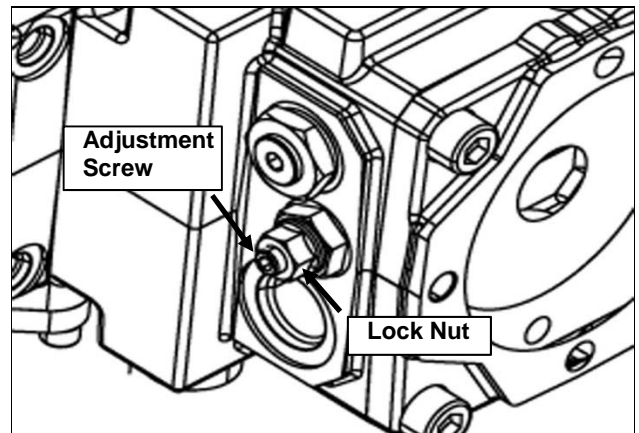


Figure 0-4

2. Unscrew the charge pressure relief valve lock nut. Adjust pressure setting by turning the Allen style adjustment screw. Turning the screw clockwise increases activation pressure. Turning the screw counter clockwise decreases activation pressure. Never adjust by more than a quarter turn before checking pressure.

3. Once set, hold the adjustment screw in place while you tighten the lock nut to secure.

4. Repeat procedure on remaining charge pressure relief valve. The charge pressure relief valves must be set at the same pressure.
5. Repeat the charge pressure check procedure to verify adjustments have had the desired effect.
6. Install the belly pan to complete the procedure.

Drive-Pressure Relief Valve Adjustment

The service tools required for drive-pressure relief valve adjustment are listed in Table 0-3. Use manufacturer-recommended tools whenever possible.

Table 0-3

Required Tools
Combination Wrench
Allen Wrench

⚠ Hot oil can cause personal injury. Make sure the oil is cool before removing any components or lines.

Remove the oil filler cap only when the engine is stopped and has been allowed to cool thoroughly.

⚠ Collect and contain liquids in a suitable container. Dispose of all liquids according to local regulations and mandates.

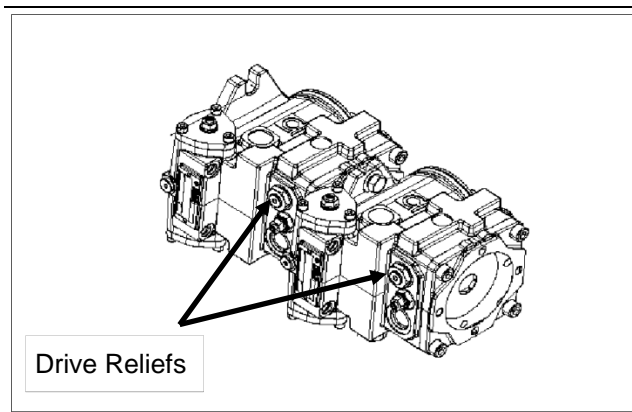


Figure 0-5

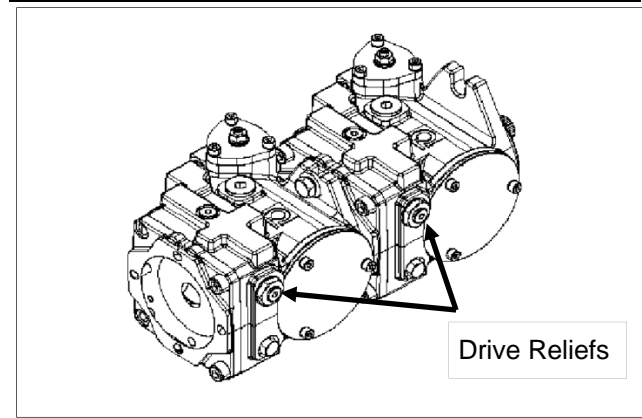


Figure 0-6

1. Remove belly pan and locate the drive pressure relief valves on the right and left sides of the tandem pump.

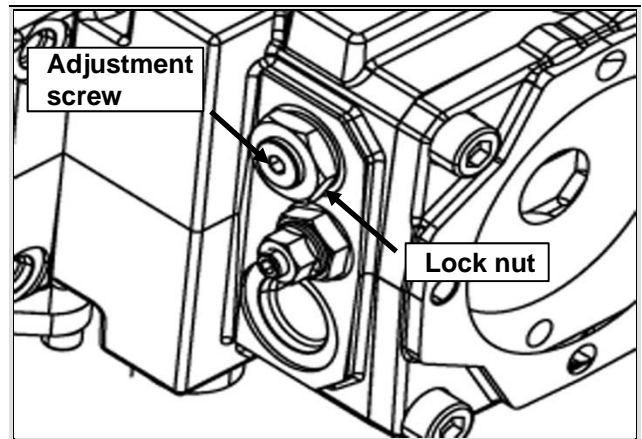


Figure 0-7

2. Unscrew the Drive pressure relief valve lock nut. Adjust pressure setting by turning the Allen style adjustment screw. Turning the screw clockwise increases activation pressure. Turning the screw counter clockwise decreases activation pressure. Never adjust by more than a quarter turn before checking pressure.
3. Once set, hold the adjustment screw in place while you tighten the lock nut to secure.

Auxiliary Pressure Check & Adjustment

The service tools required for the auxiliary pressure check and adjustment are listed in Table 0-4. Use manufacturer-recommended tools whenever possible.

Table 0-4

Required Tools
Pressure Gauge
Combination / Allen Wrenches



Figure 0-8

1. Insert the hydraulic gauge into one of the attachment quick couplers.



Figure 0-9

2. Engage the continuous flow switch located on the right side of the dash panel. Make sure it is in the direction that sends flow to the gage.

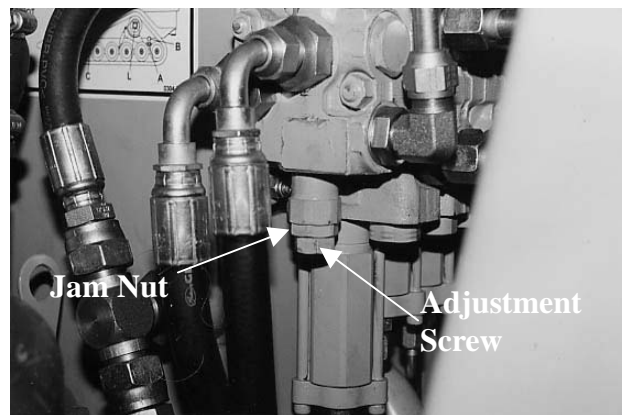


Figure 0-10

Loosen the jam nut and turn the adjustment screw in with an allen wrench to increase pressure and turn screw out to decrease pressure. Tighten jam nut when after adjustment has been made.

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