



2109
SKID-STEER
LOADER
(with Cummins Engine)

SERVICE
MANUAL

PART # 917229

Revision A - 05/06



Mustang Manufacturing Company, Inc.,

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SPECIFICATIONS

	2109
Make of Engine	Cummins (Turbo)
Model	4B4.5T
Fuel	Diesel
Displacement	275 CID (4,5 L)
Horsepower - Net	99 hp (73,8 kW) @ 2200 rpm
Peak Torque	305 lbf-ft (414 N•m) @ 1500 rpm
*SAE Rated Operating Load	3850 lbs (1746 kg)
Operating Weight	10520 lbs (4772 kg)
Shipping Weight	9297 lbs (4217 kg)

2109 models	
Capacities	
Hydraulic Reservoir	15 US gal (56,8 L)
Chaincases (each)	11.5 US qts (10,9 L)
Engine Oil	11 US qts (10,4 L)
Fuel Tank	30.5 US gal (115,4 L)
Electrical	
Battery	12-volt DC, 950 CCA
Starter	12-volt DC (4,8 kW)
Alternator	85 A
Hydraulic System	
Hydraulic System Pressure	3300 psi (228 bar)
Standard Auxiliary Flow Rate (Single)	2-29 gpm (8-110 L/min)
High-Flow Auxiliary Flow Rate (Dual)	41 gpm (155,2 L/min)
Travel Speed - Single-Speed	0 to 7.5 mph (0 to 12 km/h)
Travel Speed - Two-Speed	0 to 12.5 mph (0 to 20,1 km/h)

Tire Options	
14 x 17.5 - 14 ply	Foam-Filled tires
14 x 17.5 - 14 ply	High Clearance Flotation tires
14 x 17.5 - 14 ply	Severe Duty tires
15 x 17.5 - 14 ply	Foam-Filled tires - Severe Duty
33 x 15.5 x 16.5 - 12 ply	Extra Wide Heavy Duty tires
12 x 35	Solid Rubber tires

Buckets and Capacities			
Width - inches (millimeters)	Bucket Description	Capacity (Heaped)	
84 inches (2134 mm)	Dirt/Construction	22.0 cubic feet	0,62 cubic meters
84 inches (2134 mm)	Dirt/Construction	28.0 cubic feet	0,79 cubic meters
90 inches (2286 mm)	Dirt/Construction	29.3 cubic feet	0,83 cubic meters
48 inches (1219 mm)	Pallet Fork	N/A	N/A

*Operating load rated with a 84 inch (2134 mm) dirt/construction bucket in accordance with SAE J818.



General Information

The above safety alert symbol means: ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! It stresses an attitude of “Heads Up for Safety” and can be found throughout this service manual and on the decals on the machine.

Before operating or working on this machine, read and study the following safety information. In addition, be sure that every one who operates or works on this equipment is familiar with these safety precautions. It is essential to have competent and careful operators, who are not physically or mentally impaired, and who are thoroughly trained in the safe operation of the machine and the handling of loads. It is recommended that the operator be capable of obtaining a valid motor vehicle operator's license.

The use of skid steer loaders is subject to certain hazards that cannot be eliminated by mechanical means, but only by exercising intelligence, care and common sense. Such hazards include, but are not limited to, hillside operation, overloading, instability of the load, poor maintenance and using the equipment for a purpose for which it is not intended or designed.

The Mustang Company ALWAYS considers the operator's safety when designing its machinery and guards exposed moving parts for the operator's protection. However, some areas cannot be guarded or shielded in order to assure proper operation. Furthermore, the Operator's Manual and the decals on the machine warn of additional hazards and should be read and observed closely.

This section of the manual includes procedures, which when followed, will allow safe performance of service procedures: Mandatory Safety Shutdown Procedure, Lift Cylinder Lift Arm Support Device, Roll Over Protective Structure (ROPS)/Falling Object Protective Structure (FOPS) Lock Mechanism, Loader Raising and Lowering Procedures, and Relieving Hydraulic Pressure.

Signal Words

DANGER

“DANGER” indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

“WARNING” indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

“CAUTION” indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. May also alert against unsafe practices.

Additional Safety Reminders



Read and understand the Service Manual and all decals before maintaining, adjusting or servicing this equipment.

Doors, Guards and Shields - Some photographs in this manual may show doors, guards and shields open or removed for illustrative purposes only. BE SURE all doors, guards and shields are in their proper operating positions BEFORE starting engine to operate unit.

Damaged or Worn-out Parts - For safe operation, replace damaged or worn-out parts with genuine Mustang service parts, BEFORE operating this equipment.

Attachments - Mustang loaders are designed and intended to be used only with Mustang Company attachments or approved referral attachments. The Mustang Company cannot be responsible for operator safety if the loader is used with a non-approved attachment.



Battery Safety - To avoid injury from a spark or short circuit, disconnect the negative battery cable (-) before servicing any part of the electrical system. Do not tip the battery more than 45° to avoid spilling electrolyte.

Troubleshooting Guide

The following troubleshooting guide lists potential hydrostatic system problems, as well as possible causes and remedies, for Mustang 2109 skid-steer loaders.

When a problem occurs, don't overlook simple causes. A malfunction can be caused by something as simple as low oil level. After a mechanical failure has been corrected, be sure to locate and correct the cause of the problem.

IMPORTANT

DO NOT attempt to service or repair major hydrostatic system components, such as the hydrostatic pumps or drive motors, unless authorized to do so by your Mustang dealer. Any unauthorized repair will void the warranty.

Problem	Possible Cause	Remedy
No response from the hydrostatic drive or the lift/tilt systems.	Hydraulic oil viscosity is too high.	Allow longer warm-up or replace oil with the proper viscosity oil.
	Restraint bar is in its UP position.	Lower the restraint bar.
	Hydraulic oil supply is too low.	Check for low oil level in reservoir. Add oil as needed.
	Hydrostatic pump drive is disconnected. Drive coupling failure.	Check for broken or worn pump Drive Coupling and replace, as needed.
Traction drive will not operate in either direction.	Parking brake is engaged.	Disengage parking brake.
	Hydraulic oil supply too low.	Check for low oil level in reservoir. Add oil if necessary.
	Control rod linkage disconnected.	Check linkage connection at control levers and neutral centering mechanisms. Reconnect linkage.
	Broken charge line, low or no charge pressure.	See hydrostatic pump manual.
	Hydrostatic pump relief valves are malfunctioning.	Inspect and clean the relief valves. Replace them as needed.
	Inadequate pilot supply pressure to joystick control	Check supply oil pressure.
Drive wheels do not turn in proper direction for movement.	High pressure hydraulic hoses between hydrostatic pump and drive motors are connected wrong.	Reconnect hoses to proper ports on the drive motors. Refer to schematic and figures in hydrostatic chapter.
	Joystick pilot controller hoses connected wrong.	Reconnect hoses to proper ports on the hydrostatic tandem pump. Refer to schematic and figures in <i>Hydrostatic System</i> chapter.

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NOTES

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Rollover & Falling Object - Protective Structure (ROPS/FOPS)

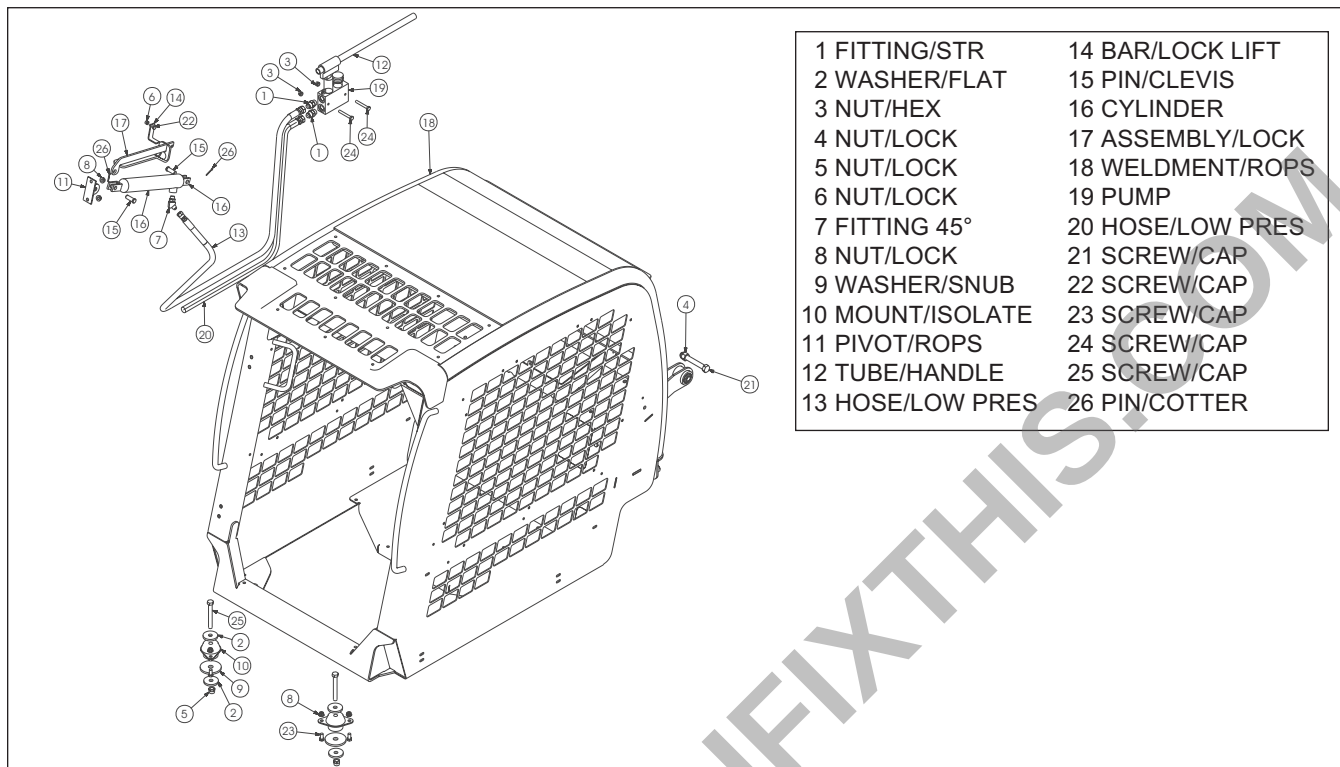


Fig. 4-4 Exploded view of ROPS/FOPS components.

Rollover & Falling Object - Protective Structure (ROPS/FOPS) Interior

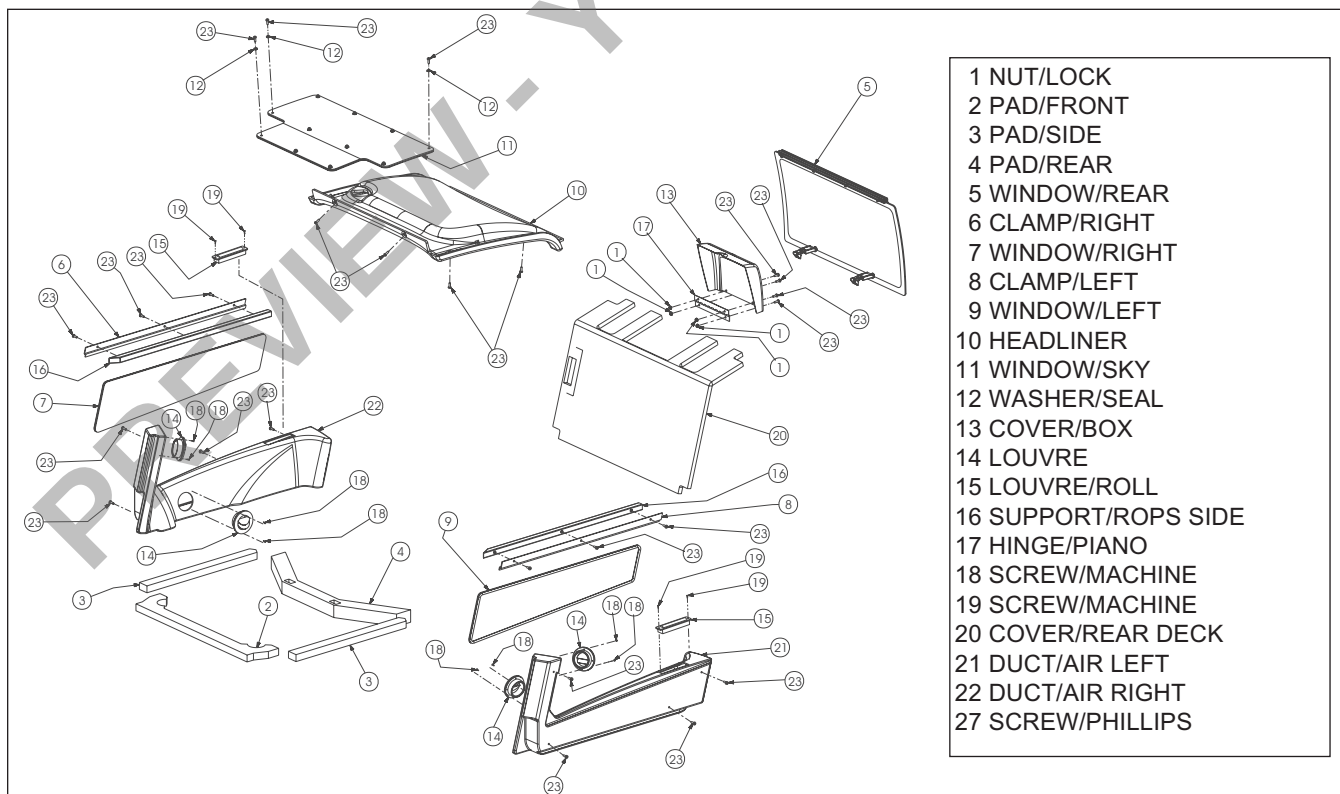


Fig. 4-5 Exploded view of ROPS/FOPS interior components.

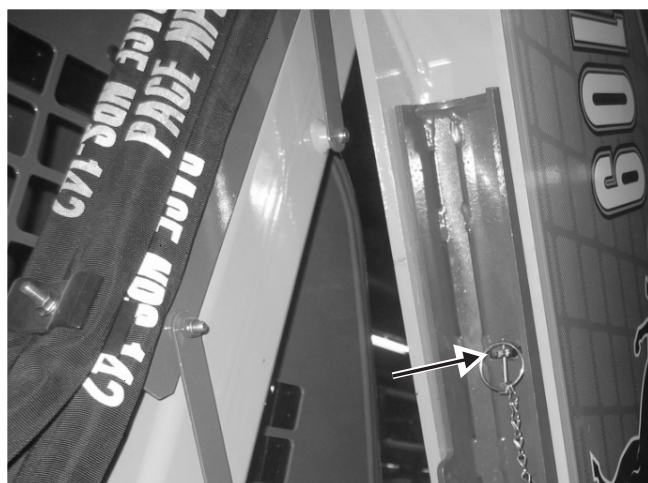


Fig. 2-1 The lock pin secures the lift arm support device underneath the lift arm.



Fig. 2-2 Pull on the lock pin ring to release the locking mechanism and then pull it off the welded tab to release the lift arm support device.

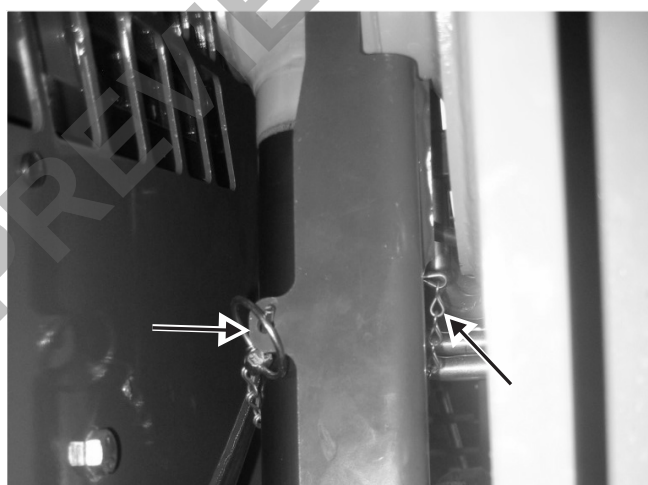


Fig. 2-3 The lift arm support device rests on top of the lift cylinder base on one end. Note the securing latch wraps around lift cylinder rod and secures to support device tab.

Lift Arm Support Device

⚠ WARNING

BEFORE leaving the operator's compartment to work on the loader with the lift arm raised, **ALWAYS** engage the lift arm support device. Turn the keyswitch to OFF, remove the key and take it with you.

Many service procedures require a raised lift arm to allow easier access to loader components. For operator and service personnel safety, a lift arm support device is standard on Mustang skid-steer loaders. Used as a cylinder block, it helps prevent a raised lift arm from unexpectedly lowering.

BE SURE to engage lift arm support device whenever the lift arm is raised. When the device is not being used, secure it to the left lift arm using the lock pin.

The lift arm support device is a safety device which must be kept in proper operating condition at ALL times.

The following procedures outline the correct way to engage and disengage the lift arm support device.

Lift Arm Support Device Engagement

1. Lower lift arm until contact with loader frame.
2. Turn the keyswitch to the OFF position to stop the engine.
3. Leave operator's compartment. Underneath, at the rear left lift arm, pull on the lock pin ring to release its locking mechanism. Remove lock pin holding the support device to its welded tab and remove the support device. **Figs. 2-1, 2-2**
4. Return to operator's compartment and restart engine. Use lift control to completely raise lift arm. Turn keyswitch to the OFF position to stop engine.
5. Leave operator's compartment. Vertically install support device around lift cylinder rod with u-shaped end up and out. Secure support device to lift cylinder rod with attached lock pin. **Fig. 2-3**
6. Return to operator's compartment and restart engine. Lower lift arm against support device. Then, stop the loader engine, remove the key and leave the operator's compartment.

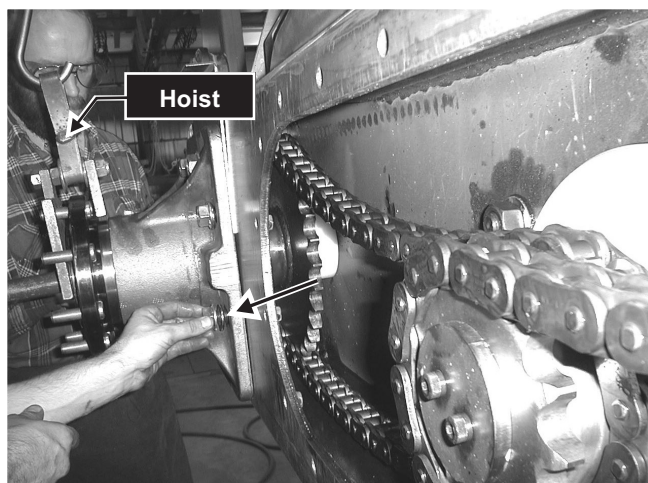


Fig. 5-5 Remove the locknuts and washers on the axle housing assembly.



Fig. 5-6 Remove axle housing assembly.

Axle Housing Assembly Removal and Installation

Removal Procedure

WARNING

BEFORE beginning this service procedure, perform the following **SAFETY** procedures:

- ☐ Shut off the engine.
- ☐ Raise and securely block the loader so all four tires are off the ground.

(For detailed instructions, refer to the **Safety** chapter of this manual.)

1. Remove wheels and tires on side of loader being serviced. Wheel nut torque is 240 ft-lbs (325 N•m).
2. Remove chaincase access cover.
3. Drain oil from chaincase. See the procedure in the *Lubrication* chapter.
4. Attach a suitable hoist to axle assembly to support weight of assembly. Remove eight locknuts and washers attaching axle housing to chassis. **Fig. 5-5**
5. Pull axle housing away from chassis. **Fig. 5-6**

NOTE: It may be necessary to insert a pry bar or chisel between chassis and axle housing to loosen axles.

Installation Procedure

1. Support axle housing assembly with a suitable hoist.
2. Install new o-ring on axle housing assembly and secure it with grease.
3. Align holes in axle housing with studs in chassis and push it in place.
4. Install eight washers and locknuts securing axle housing to chassis (hand tighten at this point).
5. Install and adjust drive chains per the procedure in this chapter. Axle nut torque is 280 ft-lbs (380 N•m).
6. Fill chaincase with motor oil to oil level check plug.
7. Reinstall chaincase access cover using oil-resistant RTV sealant (or equivalent) between cover and chaincase.

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All-Tach and Power-A-Tach are trademarks of the Gehl Company.

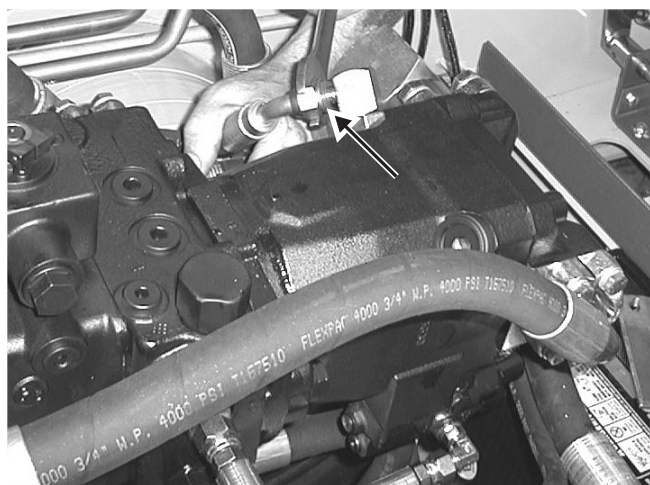


Fig. 7-10 Hoses to remove off axial-piston pump for pump removal.

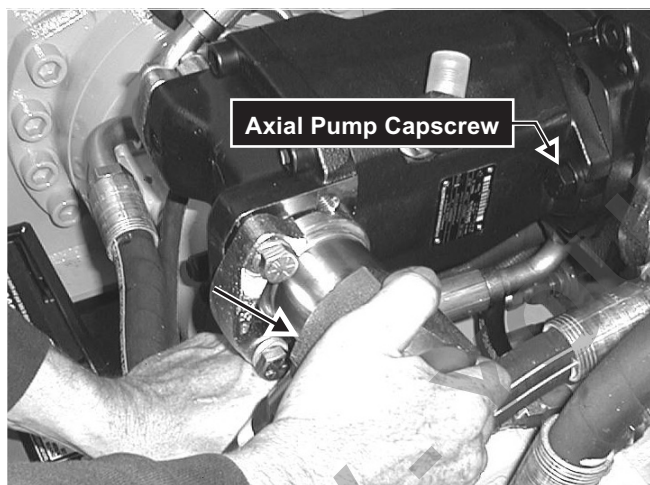


Fig. 7-11 Hoses to remove off axial pump for pump removal.

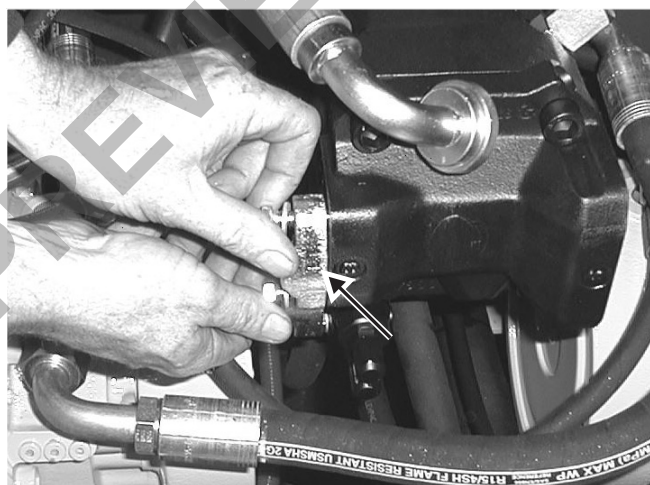


Fig. 7-12 Hoses to remove off axial pump for pump removal.

6. Position a hoist above hydrostatic pump. Attach lifting strap around pump and raise hoist just enough to remove slack from strap. The hoist should now be prepared to support weight of pump.
7. Remove two front capscrews on pump support plate. **Fig. 7-17**
8. Remove two capscrews (55 ft-lbs)(73 N•m) securing hydrostatic pump to flywheel housing. Lift pump slightly to remove capscrews. Pull pump out of flywheel housing. **Fig. 7-18**
9. Lift and maneuver hydrostatic pump out of loader.

Installation Procedure - Follow all warnings first, then reverse the removal steps.

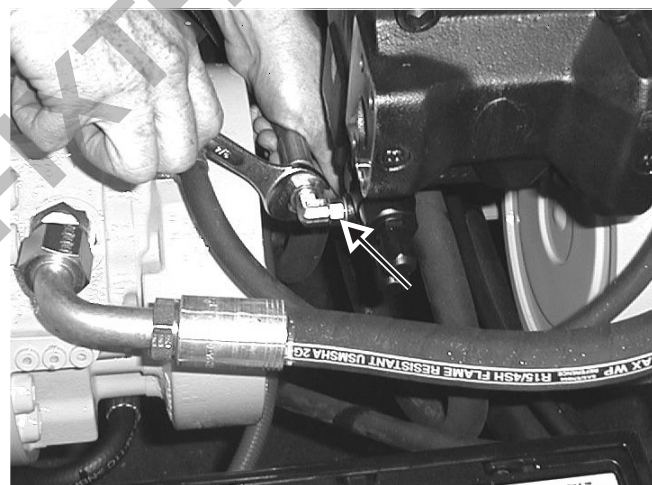


Fig. 7-13 Hoses to remove off axial pump for pump removal.

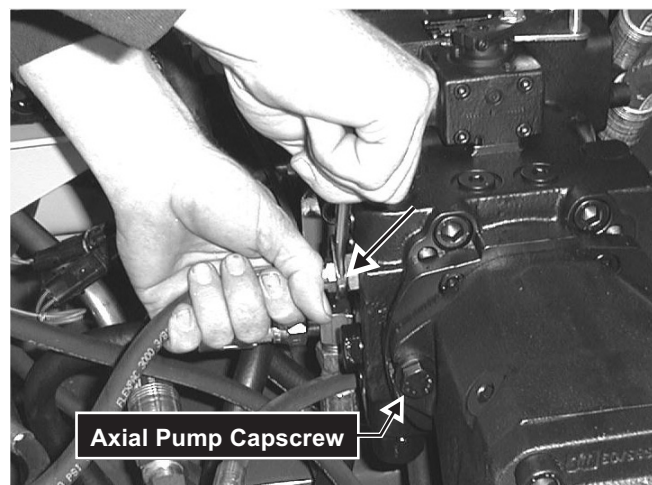


Fig. 7-14 Hoses to remove off hydrostatic pump for pump removal.

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