

Form No.
913241

RS5-34

RS6-34

Telescopic Handler



SERVICE MANUAL

GEHL[®]

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DECAL LOCATIONS**GENERAL INFORMATION****WARNING**

ALWAYS read and follow the safety precautions on decals. Replace decals if they are damaged, or if the unit is repainted. If repainting, **BE SURE** that all applicable decals are affixed in their proper locations.

Decal locations information is provided to assist in the proper selection and application of new decals, in the event the original decals become damaged or the machine is repainted.

For correct replacement of decals, compare the location illustrations to your machine before starting to refinish the unit. Check off each required decal using the illustration reference number to find the part number, description and quantity in the list. Refer to the appropriate illustrations for replacement locations.

NEW DECAL APPLICATION
















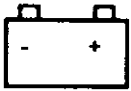













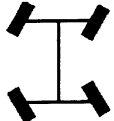

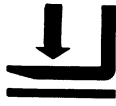


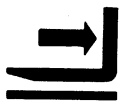






Before applying the new decals, surfaces must be free from dirt, dust, grease and other foreign material. To apply a solid-formed decal, remove the smaller portion of the decal backing paper and apply this part of the exposed adhesive backing to the clean surface while maintaining proper position and alignment. Slowly peel off the other portion of the backing paper while applying hand pressure to smooth out decal surface. To apply a die-cut decal, first remove the backing paper. Then, properly orient and position the decal onto the clean mounting surface. After the decal is firmly applied and smoothly pressed down, remove any front covering paper.

Decal Kits

103369	RS5-34 Telescopic Handler without PWP
103372	RS5-34 Telescopic Handler with PWP

NOTE: *Decals may be purchased in kits or individually.*

Indicator and Operation Symbols

					
Read Operator's Manual	Parking Brake	Brake Failure	Safety Alert	Turn Signals	Hazard Flasher
					
Ignition Off	Ignition ON	Engine Start	Hydraulic Oil	Horn	Engine Oil Pressure
					
Volume Full	Volume Half Full	Volume Empty	Battery	Fuel	Transmission Temperature
					
Engine Coolant Temperature	Starting Aid Injection	Wiper/Washer	Hourmeter	Lights	Work Lights
					
Fan	Clutch Disengaged	Clutch Engaged	Crab Steer	2-Wheel Steer	4-Wheel Steer
					
Raise Load	Lower Load	Tilt Rearward	Tilt Forward	Retract Load	Extend Load
					
Outriggers Up	Outriggers Down	Diesel Fuel	Frame Level Left	Frame Level Right	

MANDATORY SAFETY SHUTDOWN PROCEDURE

BEFORE cleaning, adjusting, lubricating, or servicing this unit:

1. Stop machine on a level surface. (AVOID parking on a slope, but if necessary, park across the slope and block the tires.)
2. Fully retract the boom and lower the attachment tool to the ground. Idle engine for gradual cooling.
3. Place controls in neutral and apply parking brake.
4. Shut off the engine and remove the key.

ONLY when you have taken these precautions can you be sure it is safe to proceed. Failure to follow the above procedure could lead to death or serious injury.

RELIEVE HYDRAULIC OIL PRESSURE:

1. Engage the park brake.
2. Lower equipment to the ground. Return the engine to idle for 30 seconds then shut down the engine.
3. Turn the key switch on. Operate the joystick in each direction. Confirm that there is no attachment or unit movement. This should ensure there is no residual pressure trapped in the control circuit.

ENGINE REMOVAL

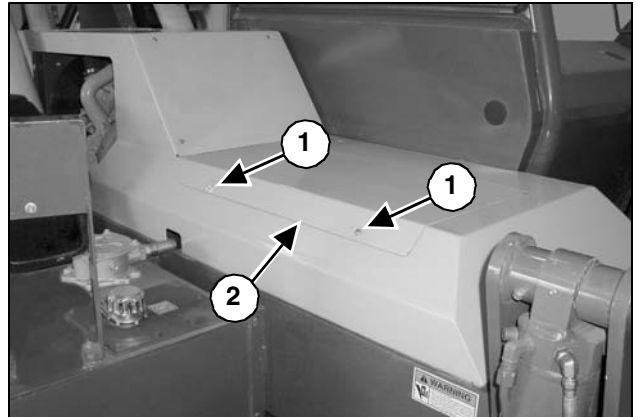
STEP 1



G0805189

Raise the telescopic boom approximately 60 inches (1.5 m) to allow a hoist to be used for removal and installation. Support the boom on a support stand.

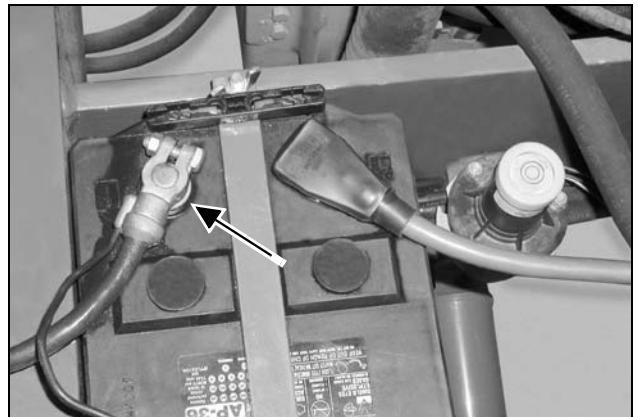
STEP 2



G0805075

Loosen the two thumbscrews and remove the battery access cover (2).

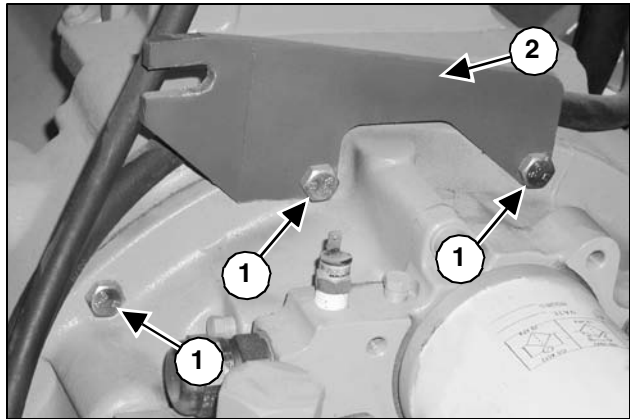
STEP 3



G0905001

Disconnect the negative (-) battery cable from the battery.

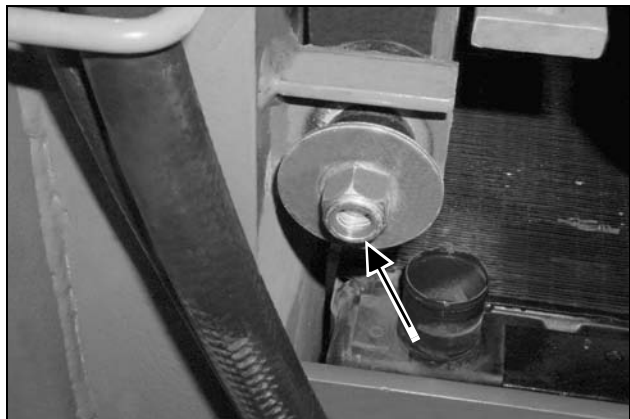
STEP 48



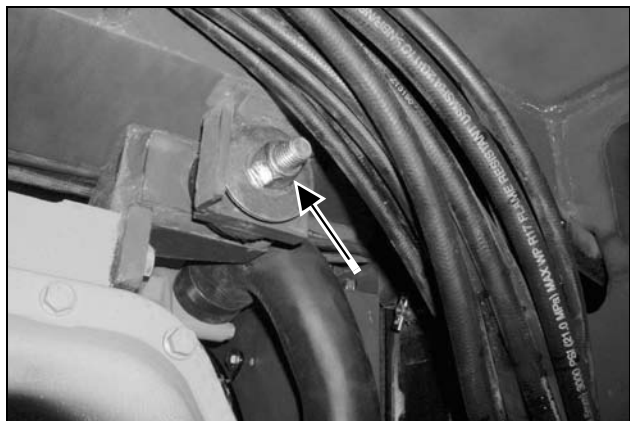
G0905122

Remove the upper housing bell bolts (1) and the throttle cable mounting bracket (2).

STEP 49



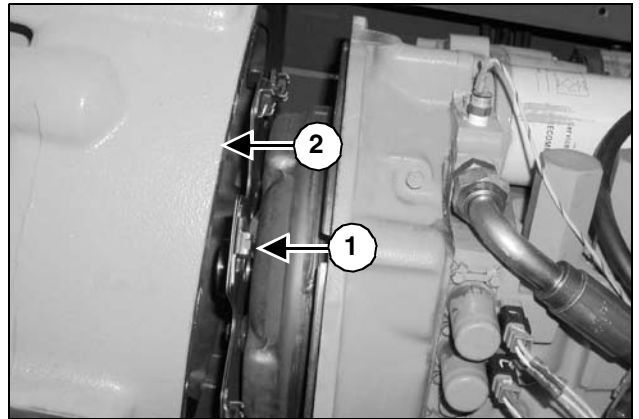
G0605124



G0705035

Remove the center bolt from the front two engine mounts.

STEP 50



G0905181

Move the engine rearward until the flexplate (1) is clear of the housing bell (2).

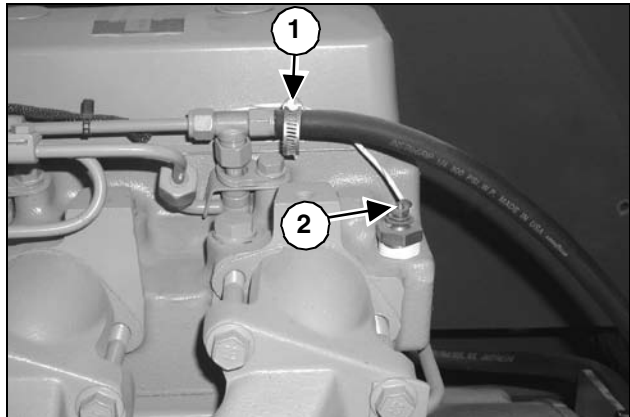
STEP 51



G0905184

Lift the engine until the oil pan clears the frame rail. Remove the engine from the machine.

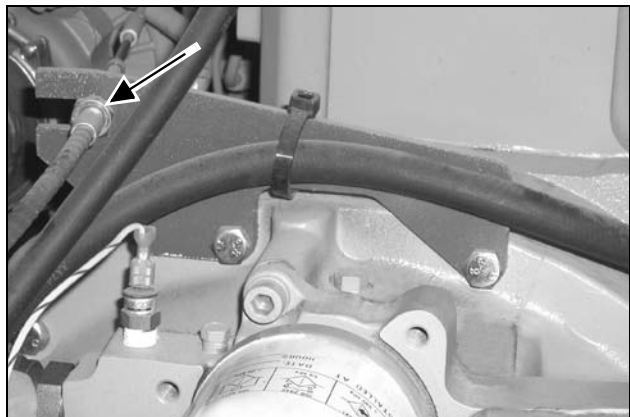
STEP 90



G0905137

Install the fuel return line (1) and the engine coolant temperature sender wire (2).

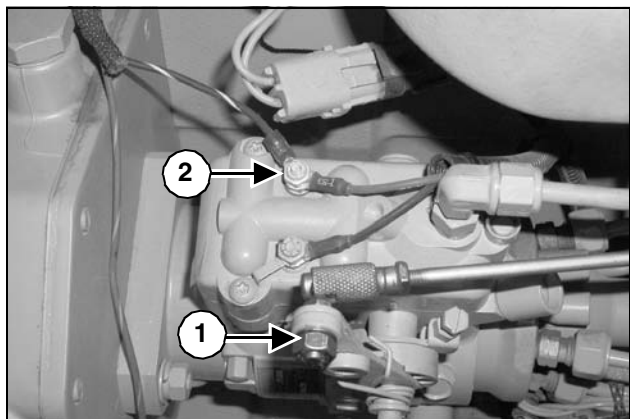
STEP 91



G0905086

Install the throttle cable onto the throttle cable mount bracket.

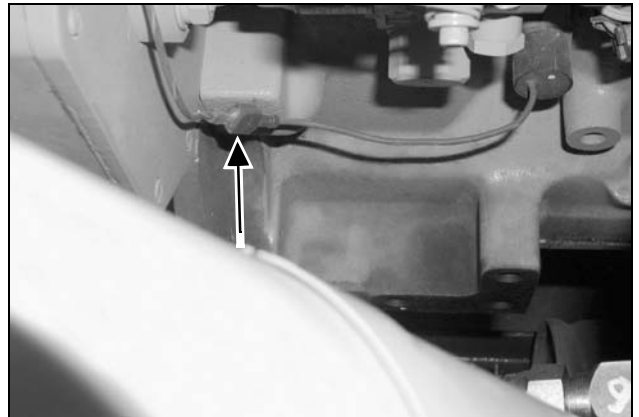
STEP 92



G0905139

Install the throttle linkage (1) and the fuel shut-off solenoid wire (2) on the fuel injector pump.

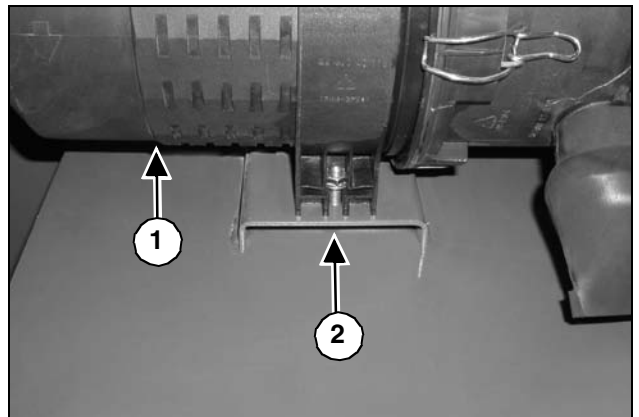
STEP 93



G0905138

Reconnect the wire to the oil pressure sender on the engine.

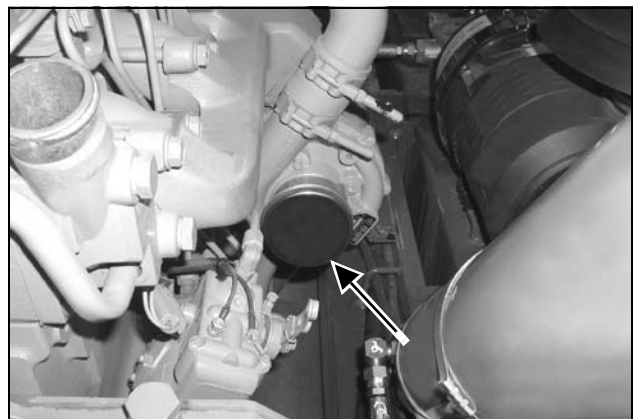
STEP 94



G1005011

Install the air cleaner assembly (1) using the two bolts (2).

STEP 95

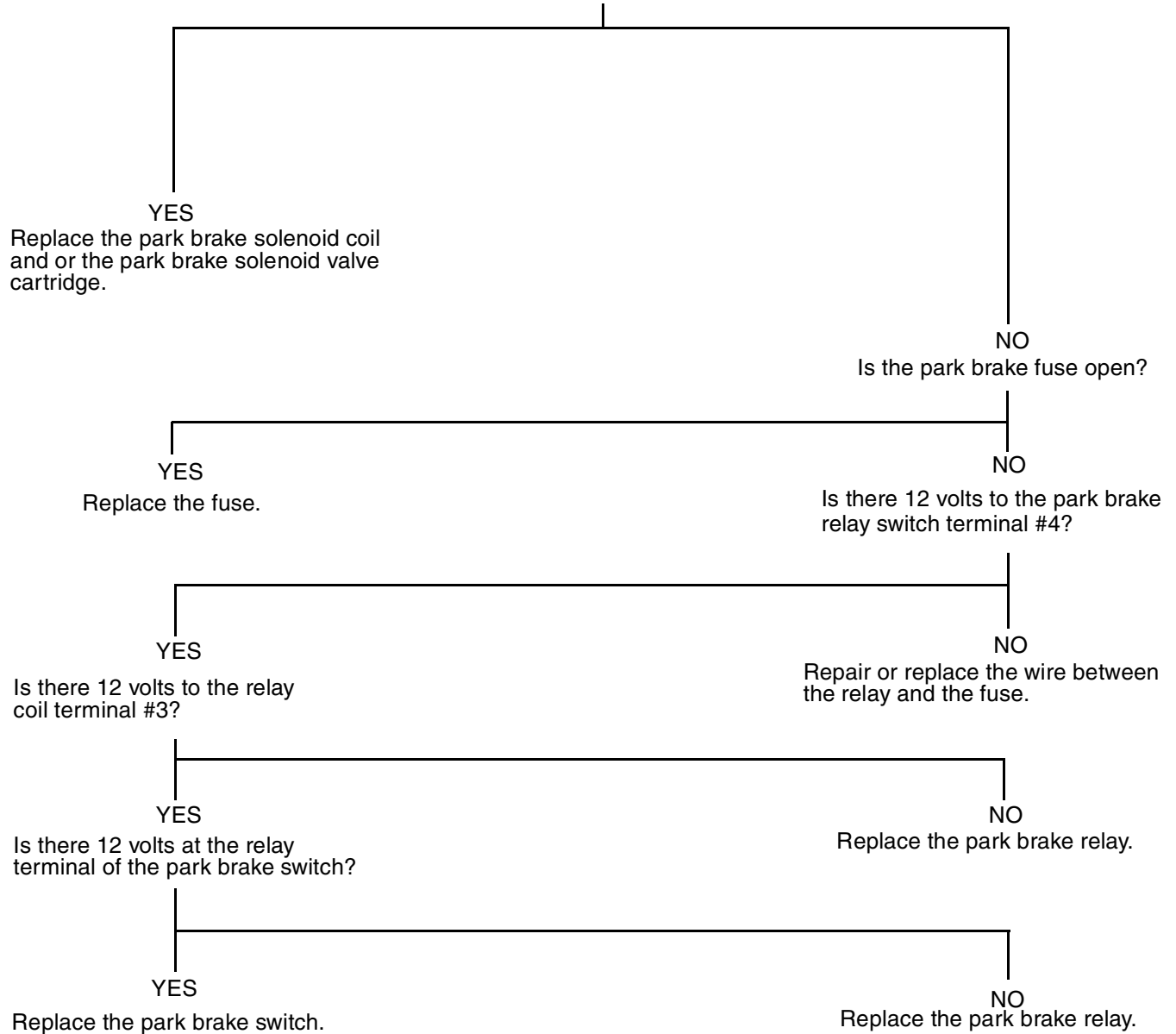


G0905175

Remove the cap or plug from the turbocharger inlet.

PARK BRAKE CIRCUIT TROUBLESHOOTING

The park brake switch is OFF, but the brakes do not release.
Is there 12 volts at the park brake solenoid?



STEP 8



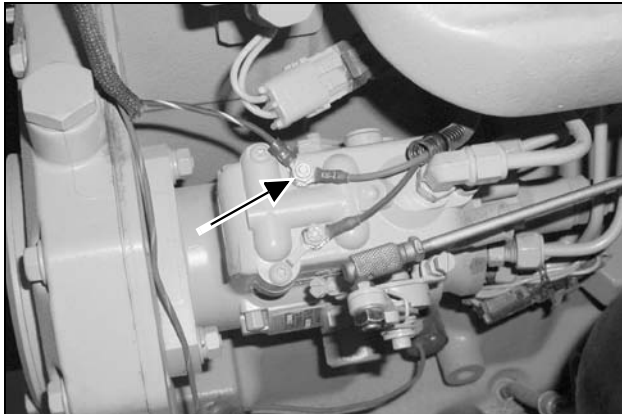
G0805156

Connect the positive (+) test lead to the battery terminal of the starter relay. The multimeter should read 12 to 13 volts.

If there is no voltage, replace the wire between the starter relay battery terminal and the starter.

If there is 12 to 13 volts, proceed to the next step.

STEP 9



G0805158

Remove the wire from the fuel shut off solenoid.



WARNING

When a test involves turning over the engine or starting the engine, use test leads long enough to read the multimeter from the operator's seat or standing clear of the machine.

STEP 10



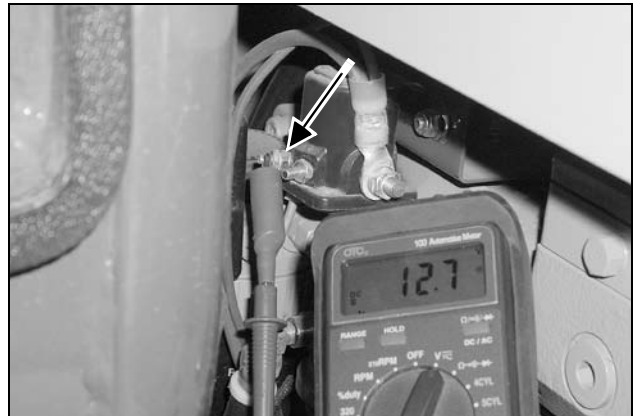
G0805184

Connect the positive (+) test lead to the starter terminal of the starter relay. Turn the key switch to the ON position and press the starter button. The multimeter should read 12 to 13 volts.

If there is no voltage, proceed to the next step.

If there is 12 to 13 volts and the starter does not turn over the engine, repair or replace the starter and/or the starter solenoid.

STEP 11



G0805183

Turn the key switch to the OFF position. Connect the positive (+) test lead to the ignition terminal of the starter relay. Turn the key switch to the ON position and press the starter switch. The multimeter should read 12 to 13 volts.

If there is no voltage, proceed to the next step.

If there is 12 to 13 volts, but the starter does not turn over the engine, turn the key switch to the OFF position and replace the starter relay.

Install the wire on the fuel shutoff solenoid.

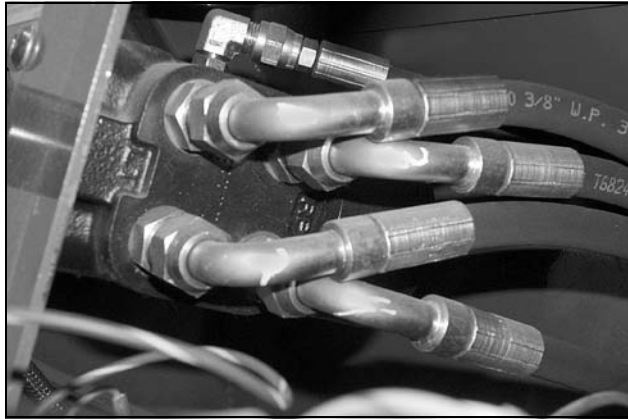
Section

302

BATTERY REMOVAL AND INSTALLATION

RS5-34 Telescopic Handler

STEP 9



G0905037

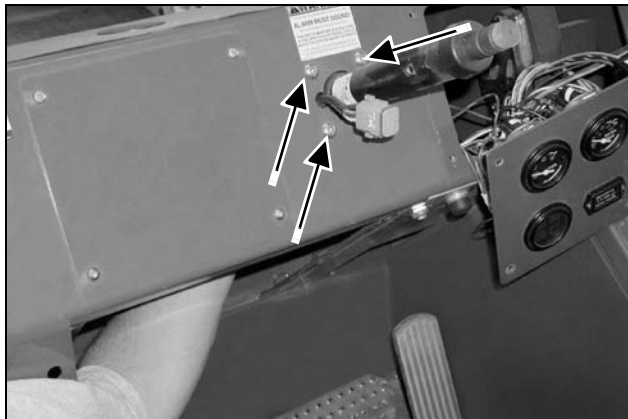
Mark the hydraulic hoses and fittings for correct installation. Remove the hydraulic hoses from the steering control valve.

NOTE: Place a drip pan under the steering control valve before removing hoses.

STEP 10

Install caps and plugs on all hoses and hydraulic fittings to prevent contaminating the hydraulic system.

STEP 11

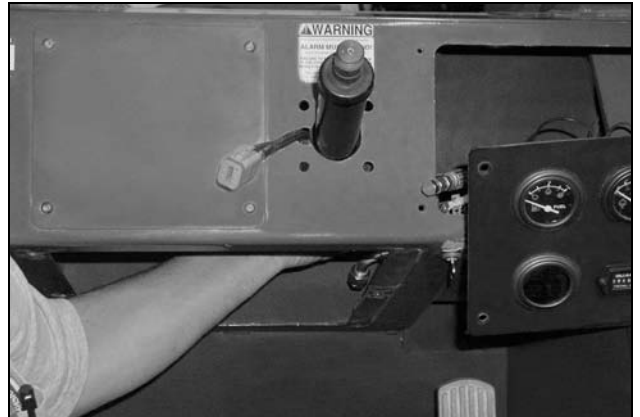


G0905038

Support the steering control valve and remove the four mounting bolts. Remove the steering control valve from the machine.

STEERING CONTROL VALVE INSTALLATION

STEP 12



G0505026

Position the steering control valve in place. Make sure the fittings are in the proper position for hose installation.

STEP 13



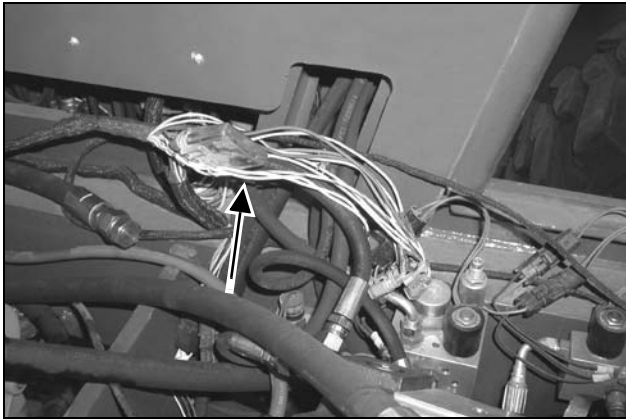
G0905039

Install the four mounting bolts.

STEP 14

Remove the caps and plugs from the hydraulic hoses and fittings.

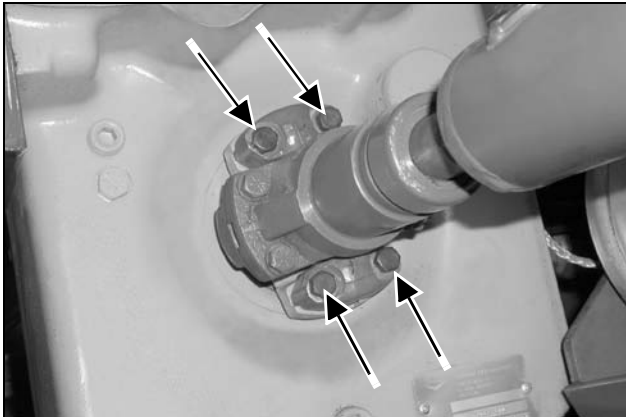
STEP 23



G0905125

Position the wire harness on the left frame rail so it will not interfere with removal or installation of the transmission.

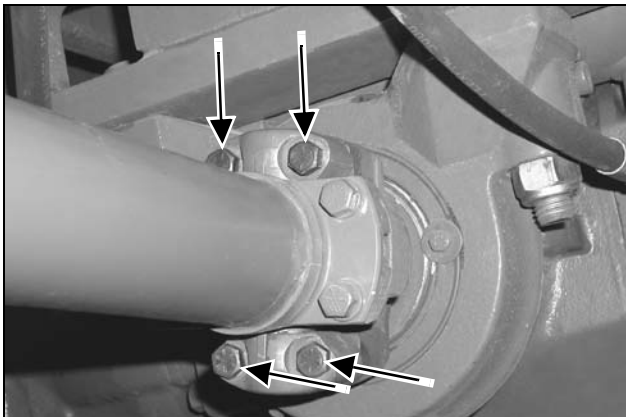
STEP 24



G0905095

Remove the four bolts securing the rear drive shaft to the transmission.

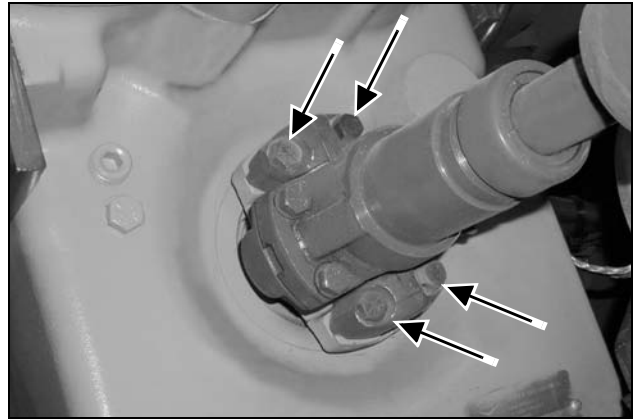
STEP 25



G0905096

Remove the four bolts securing the rear drive shaft to the rear axle and remove the rear drive shaft.

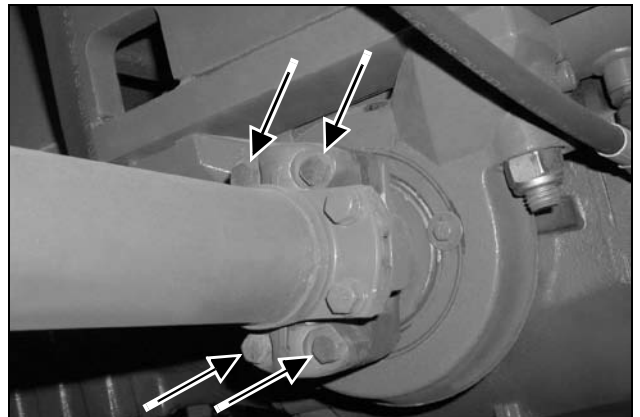
STEP 26



G0905045

Remove the four bolts securing the front drive shaft to the transmission.

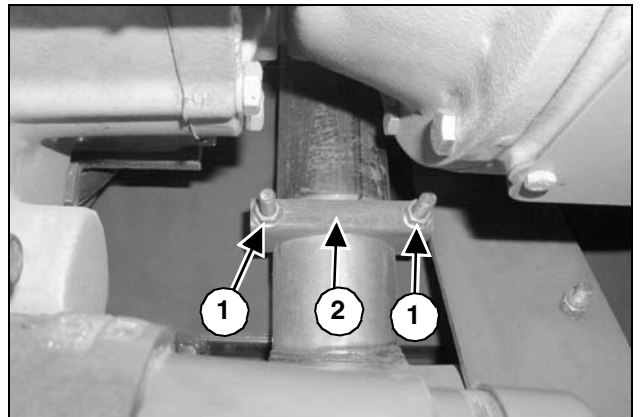
STEP 27



G0905044

Remove the four bolts securing the front drive shaft to the front axle and remove the drive shaft.

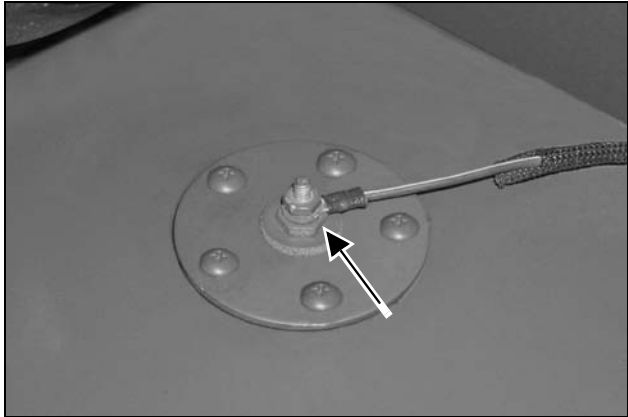
STEP 28



G0905097

Remove the two nuts (1) and muffler clamp (2) securing the muffler to the exhaust pipe.

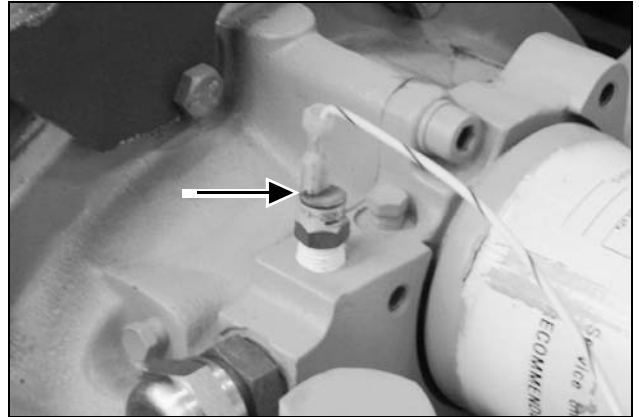
STEP 72



G0905094

Position the transmission wire harness and reconnect the wire to the fuel gauge sender.

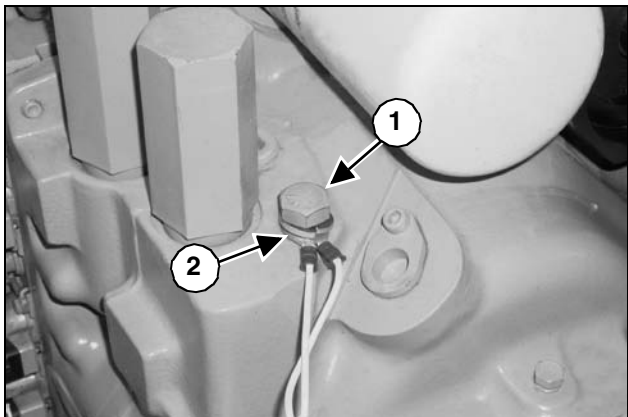
STEP 75



G0905091

Reconnect the transmission temperature sender wire.

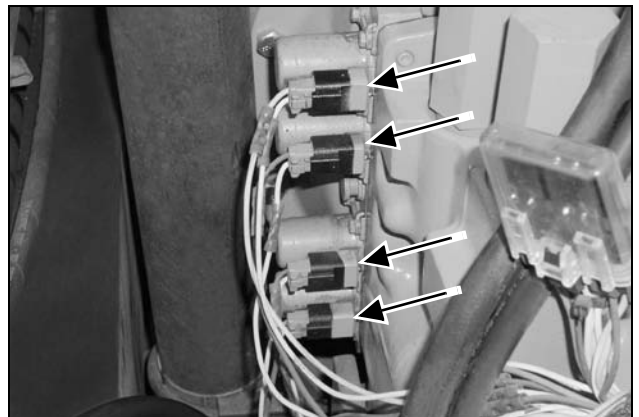
STEP 73



G0905124

Install the bolt (1) securing the two ground wires (2).

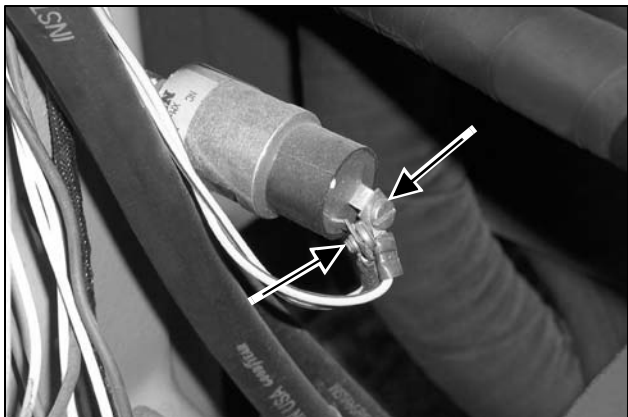
STEP 76



G0905092

Reconnect the four electrical plugs to the gear selection solenoids.

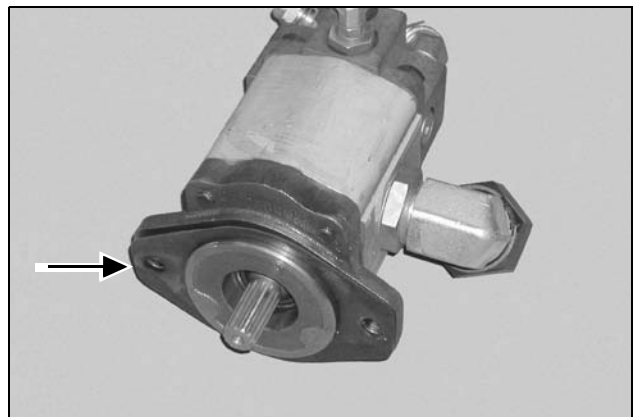
STEP 74



G0905093

Reconnect the two wires to the reverse pressure switch.

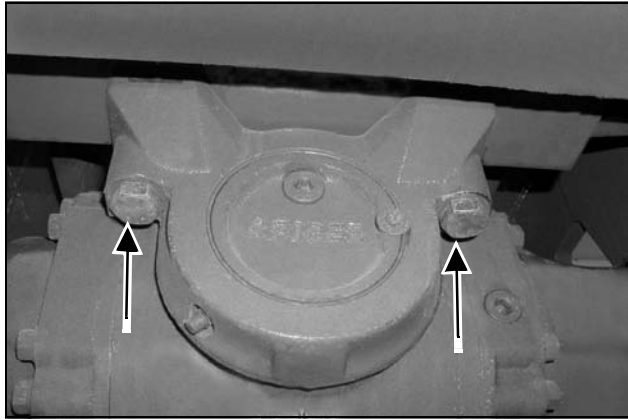
STEP 77



G0905113

Install a new gasket on the hydraulic pump mounting flange.

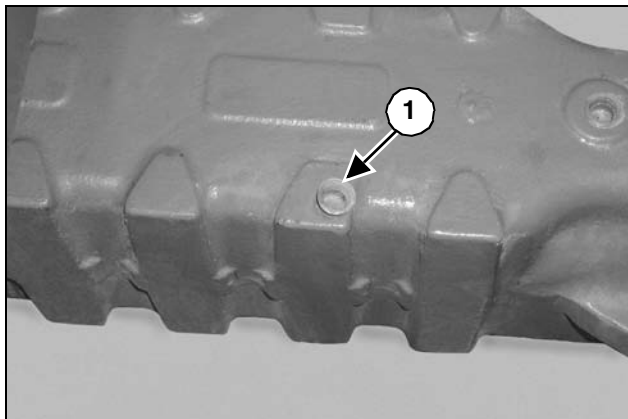
STEP 9



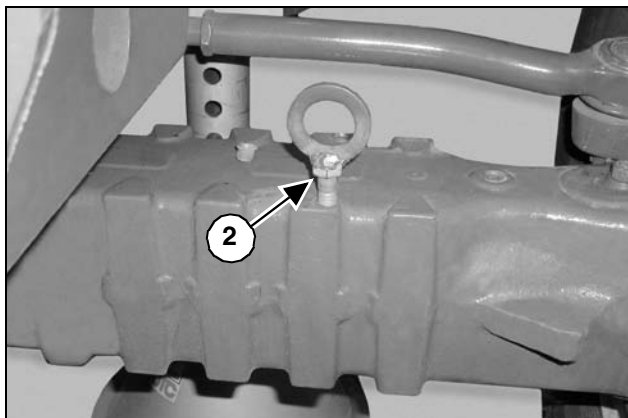
G0905046

Loosen the two axle mounting bolts located in back of the axle. Do not remove the nuts at this time.

STEP 10



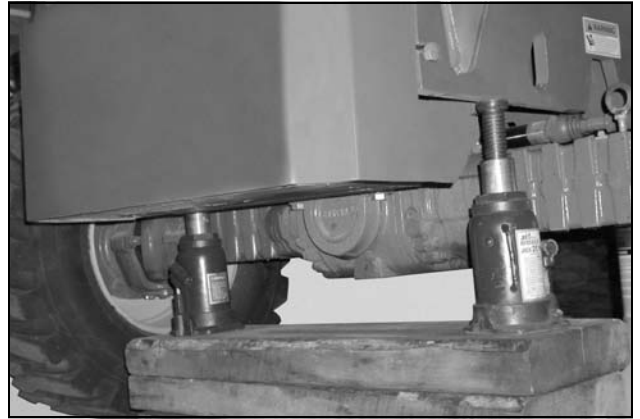
G0905033



G0905054

Remove the protective plug (1) and install an eye-bolt (2) in the rear axle.

STEP 11



G0905060

Place two 10-ton hydraulic bottle jacks under the frame in the location shown.

STEP 12



G0905055

Have an assistant balance the axle assembly using a long pipe or bar inserted through the eye-bolt installed in Step 10.

STEP 13

Remove the four axle mounting bolt nuts from the bolts front and rear. Discard the Nylock® nuts.

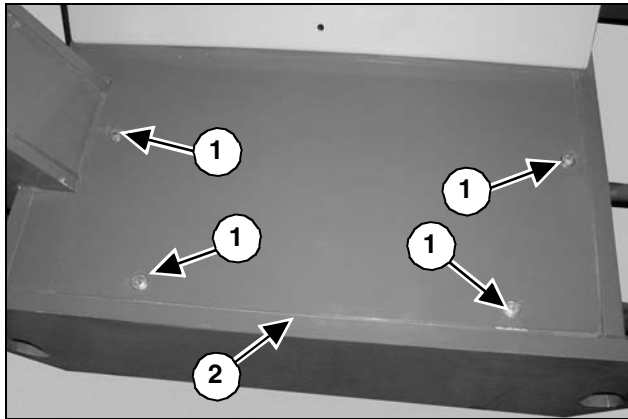
STEP 14

Jack the machine equally from side to side on each jack until the chassis is high enough to clear the rear axle. Adjust the jack stands to support the chassis.

STEP 8

Install caps and plugs on all hoses and hydraulic fittings to prevent contaminating the hydraulic system.

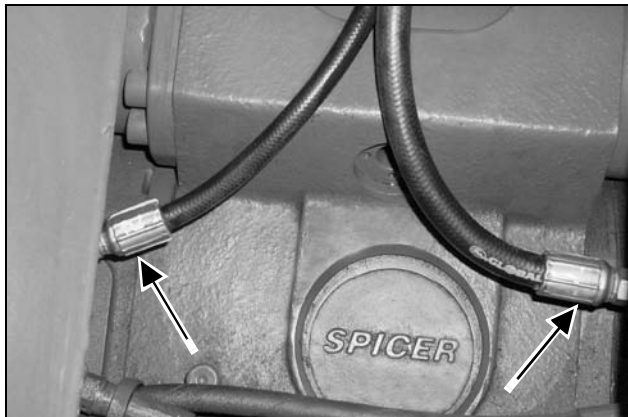
STEP 9



G0905061

Remove the four bolts (1) and the front cover (2).

STEP 10



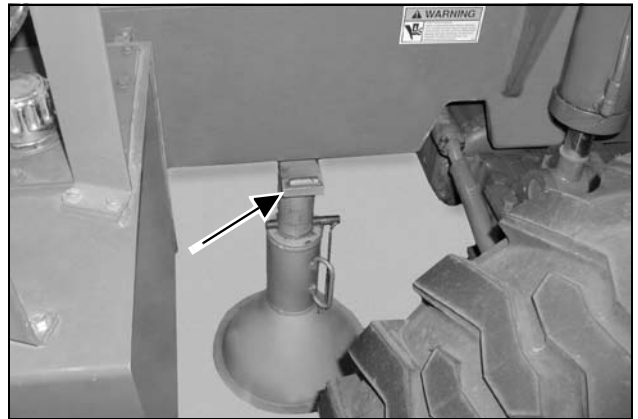
G0905063

Mark the two brake hoses for correct assembly. Loosen and remove the two brake hoses from the axle.

STEP 11

Install caps and plugs on all hoses and brake fittings to prevent contaminating the brake system.

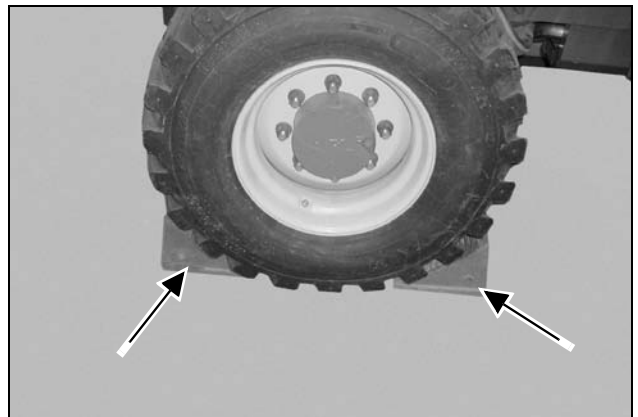
STEP 12



G0905064

Position jack stands under the frame in the location shown.

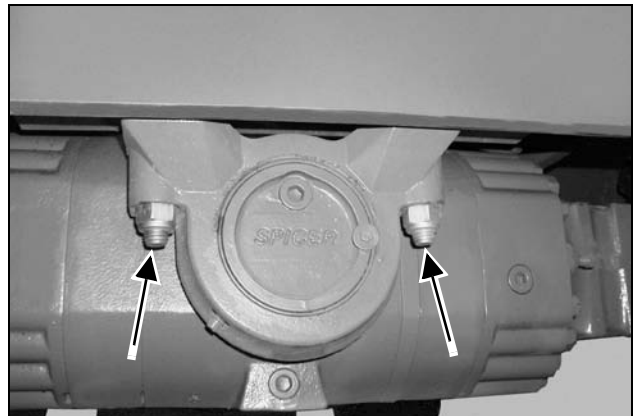
STEP 13



G0905065

Place a chock in front and behind the rear wheels to prevent the machine from rolling when lifted.

STEP 14



G0905066

Loosen the two axle mounting bolts located in front of the axle. Do not remove the nuts at this time.

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RELIEVE HYDRAULIC OIL PRESSURE:

1. Engage the park brake.
2. Lower equipment to the ground. Return the engine to idle for 30 seconds, then shut down the engine.
3. Turn the keyswitch on. Operate the joystick in each direction. This should ensure there is no residual pressure trapped in the control circuit. Confirm that there is no attachment or unit movement.



WARNING

All trapped hydraulic pressure must be relieved from the system before installing a gauge in any pressure tap. A sudden release of hot oil could cause burns or other serious injury.



WARNING

To prevent damage and/or personal injury when using an in-line flowmeter for testing, ALWAYS be sure the load valve on the flowmeter is fully OPEN before starting the engine.

PRESSURE CHECKING GUIDELINES:

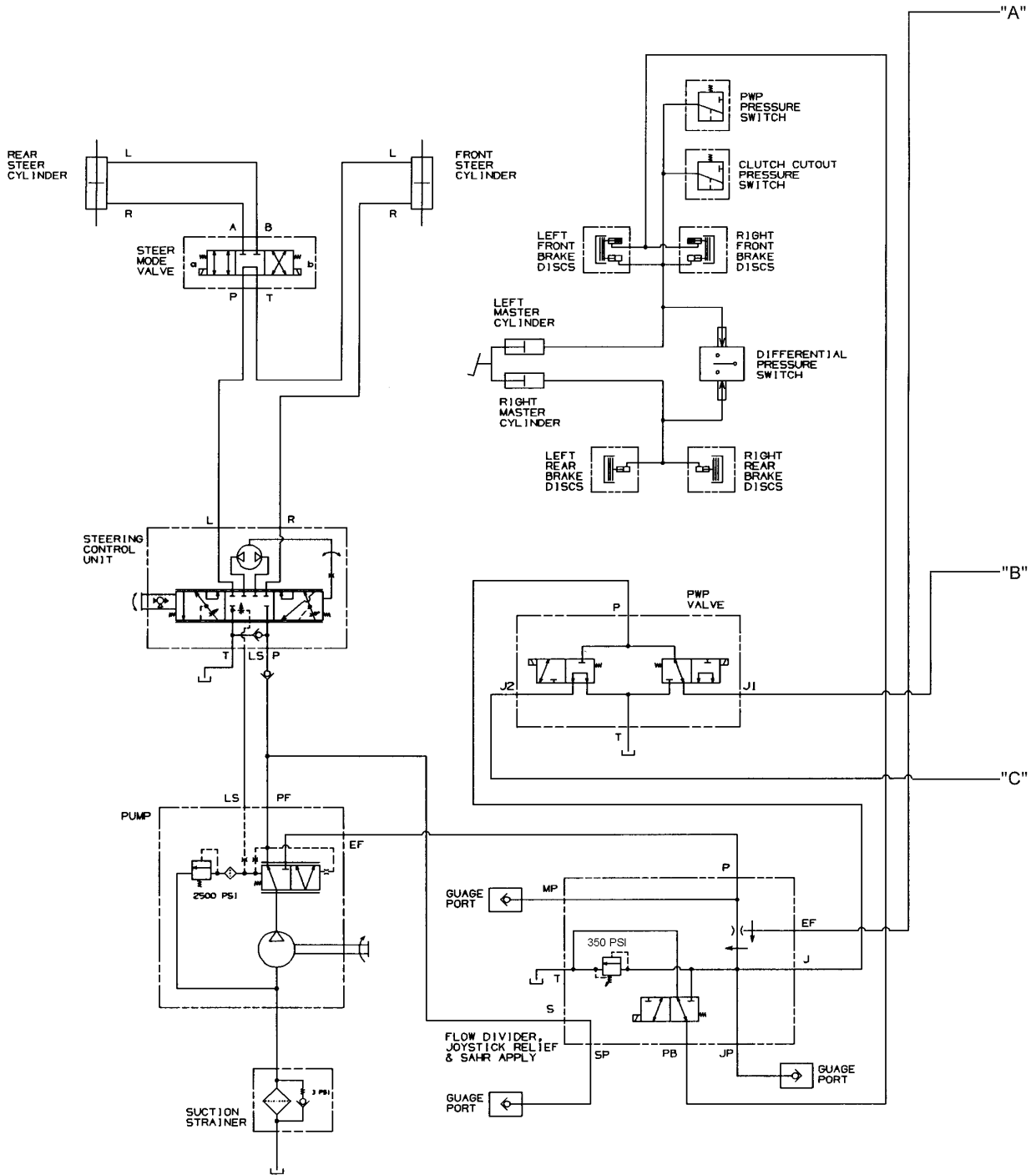
1. Use an accurate gauge.
2. Release hydraulic oil pressure before connecting and disconnecting any gauge.
3. Run the engine at 1000 RPM in the specified Mode Select position.
4. As applicable, fully engage the control for the circuit being tested.
5. If adjustment is necessary, obtain each final pressure by bringing the pressure up to the proper setting. Do not bring the pressure to a higher setting and then lower it to the desired setting.



WARNING

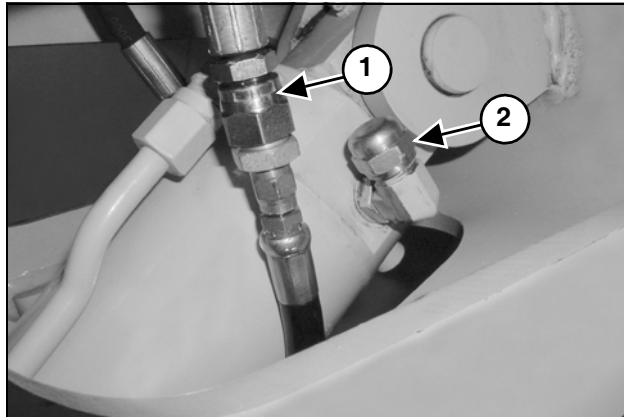
Relief valves are provided to protect the hydraulic system. Do not increase relief valve pressures above specifications or hydraulic system damage may occur.

HYDRAULIC SCHEMATIC WITH PWP



G0805237

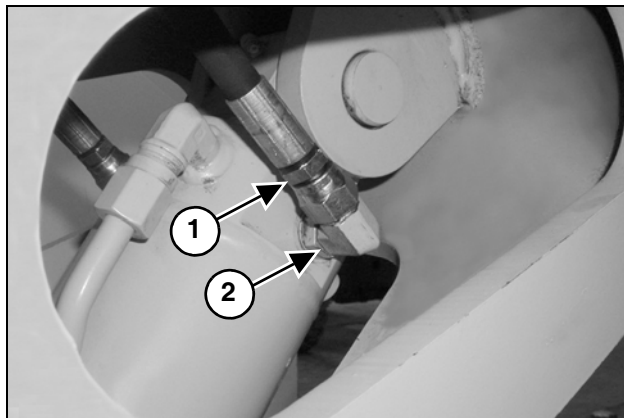
STEP 36



G0805097

Shut off the engine. Remove the pressure gauge from the tilt up supply hose (1) and remove the cap from the cylinder port (2). Install the hose on the cylinder.

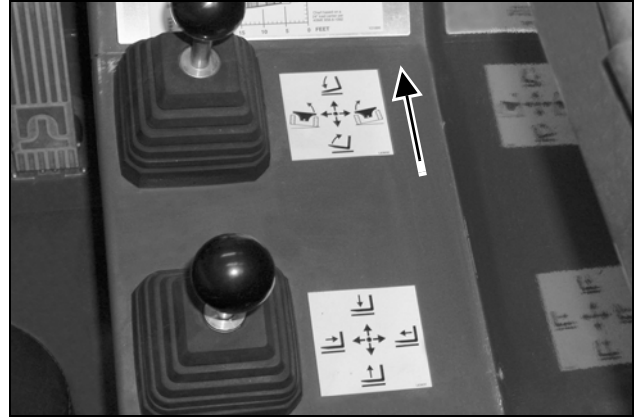
STEP 37



G0805095

Remove the supply hose (1) from the rod (tilt down) port (2) of the tilt cylinder. Cap the cylinder port and install a 5000 psi (345 bar) pressure gauge and hose on the cylinder supply hose.

STEP 38



G0805077

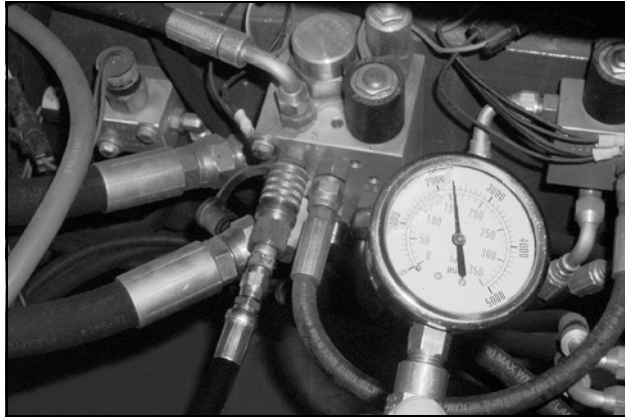


G0805098

Start the engine and run at 1000 RPM. Hold the joystick in the TILT DOWN position until the cylinder reaches the end of its stroke. Hold the joystick in the TILT DOWN position. The pressure gauge should read 3000 PSI (207 Bar).

If the pressure gauge reads less than 3000 psi (207 bar), repeat Steps 33, 34 and 35 for the tilt down relief valve.

STEP 69



G0805117

Hold the joystick in the TILT RIGHT or TILT LEFT Position until the frame leveling cylinder reaches the end of its stroke. The pressure gauge should read 2000 psi (138 bar).

If the pressure is less than 2000 psi (138 bar) go to the Frame Leveling Cylinder Direct Test.

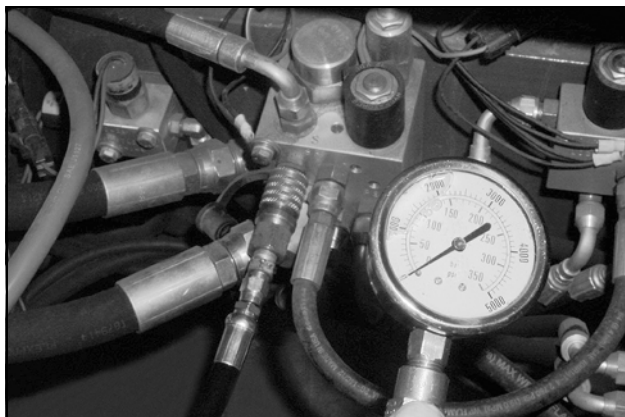
If the pressure is 2000 psi (138 bar) proceed to Step 76.

STEP 70

Repeat Steps 73 and 74 in the opposite direction.

FRAME LEVELING COUNTERBALANCE VALVE DIRECT TEST

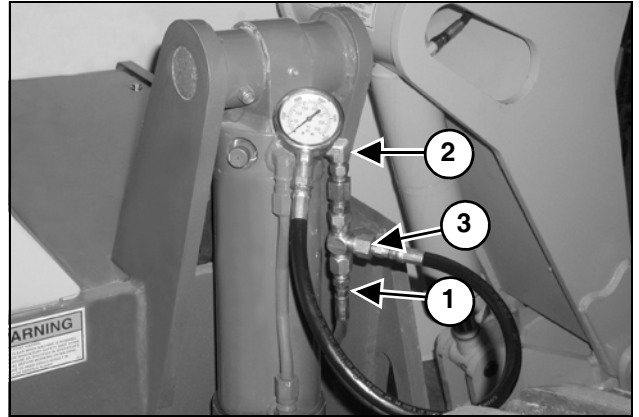
STEP 71



G0805193

Shut off the engine. Remove the pressure gauge from the SP test port on the flow divider.

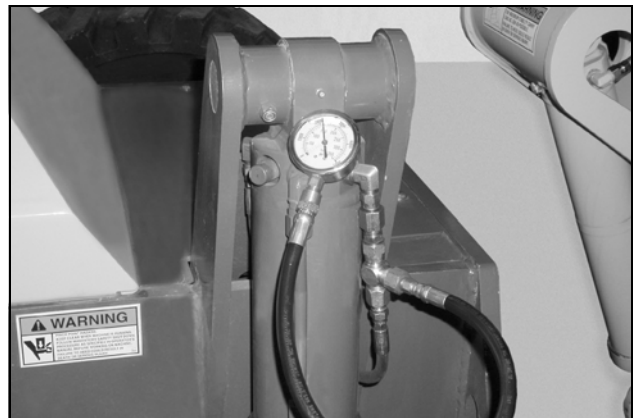
STEP 72



G0805121

Remove the supply hose (1) from the tilt right (rod) port (2) of the frame leveling cylinder. Install the 5000 psi (345 bar) pressure gauge (3) and hose between the cylinder port (2) and supply hose (1).

STEP 73



G0805196

Start the engine and run at 1000 RPM. Hold the frame leveling joystick in the TILT LEFT position (1) until the cylinder reaches the end of its stroke. Move and hold the joystick to the TILT RIGHT position (2). The pressure gauge should read 1500 psi (103 bar) when the frame is tilting (moving) right.

If the pressure is less than 1500 psi (103 bar), proceed to the next step.

Section

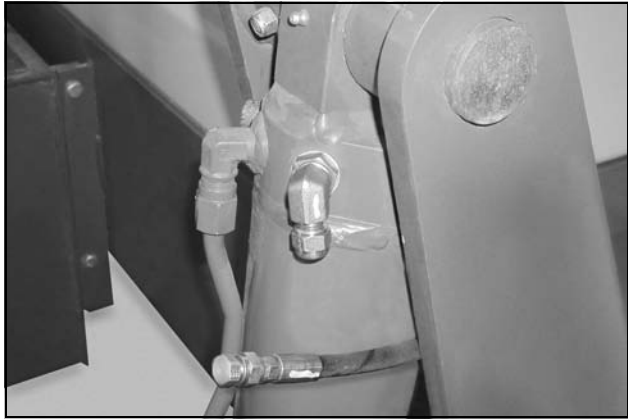
602

HYDRAULIC PUMP REMOVAL AND INSTALLATION

RS5-34 Telescopic Handler

RS5-34 Telescopic Handler **FRAME LEVELING CYLINDER**

STEP 5



G0805210

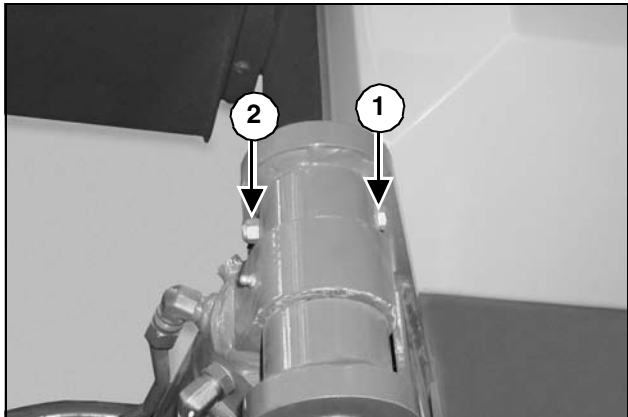
Disconnect both hydraulic hoses from the frame leveling cylinder.

NOTE: One hydraulic hose is behind the cylinder.

STEP 6

Install caps and plugs on all hoses and hydraulic fittings to prevent contaminating the hydraulic system.

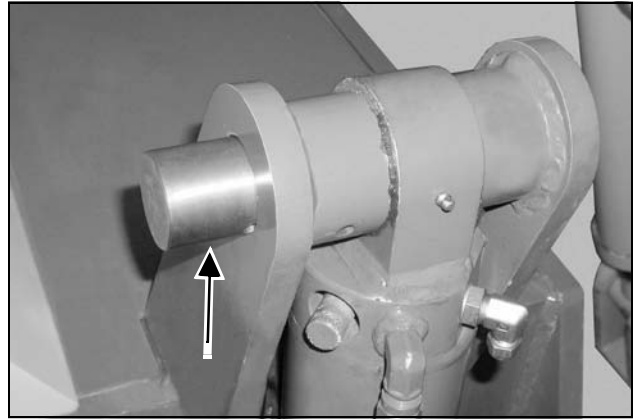
STEP 7



G0805211

Loosen and remove the retaining bolt (1) and nut (2) from the upper pivot pin.

STEP 8



G0805212

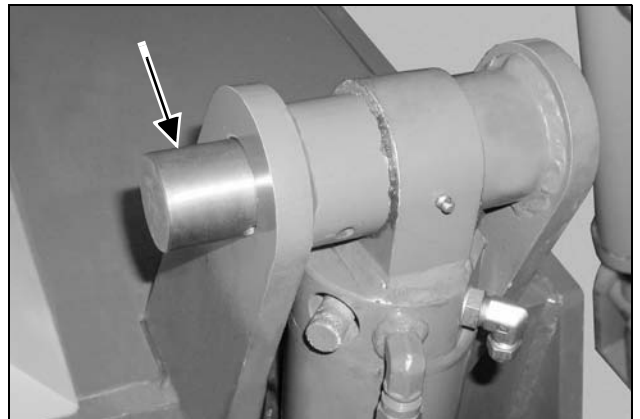
Remove the upper pivot pin from the frame leveling cylinder.

STEP 9

Remove the frame leveling cylinder.

FRAME LEVELING CYLINDER INSTALLATION

STEP 10



G0805212

Install the frame leveling cylinder in the upper pivot mounts and install the upper pivot pin.

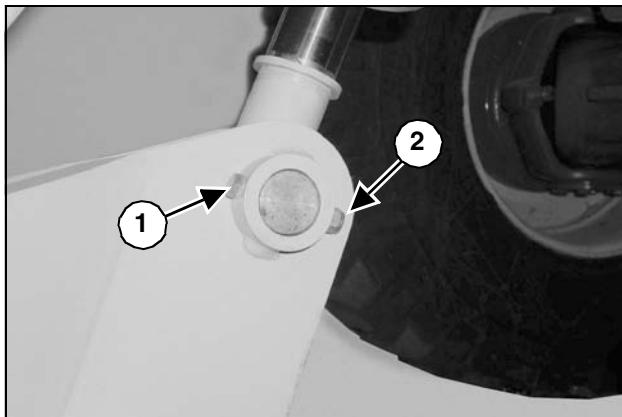
NOTE: Align the pivot pin holes with the holes in the cylinder mount.

STEP 16



Align the pivot pin retainer bolt hole with the holes in the cylinder mount. Install the lower pivot pin.

STEP 17

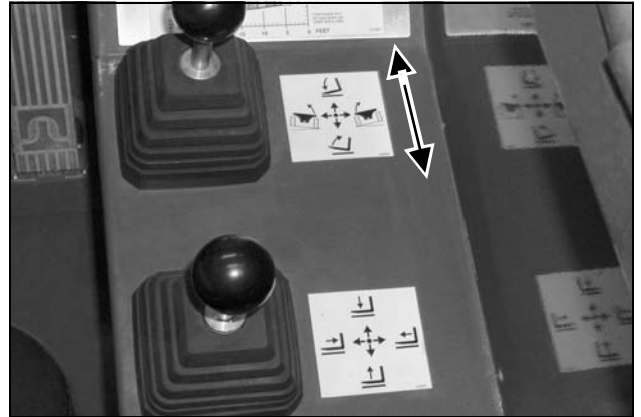


Install the retainer bolt (1) and nut (2) in the lower pivot pin.

STEP 18

Use a grease gun with the specified grease to lubricate the upper and lower pin grease fittings.

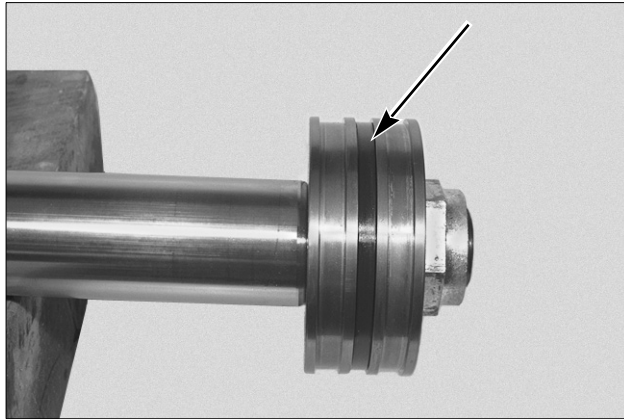
STEP 19



With the park brake on and the engine running, fully retract and extend the tilt cylinder several times to remove any air from the system.

Lower the boom and shut off the engine. Check for leaks. Correct any leakage found. Check the hydraulic fluid level. If necessary, fill to the correct level with the specified fluid.

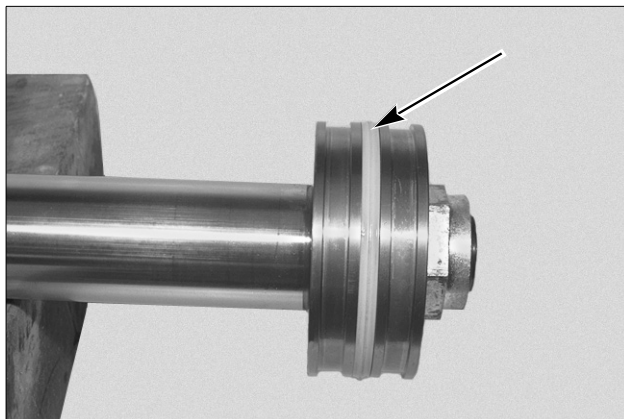
STEP 32



G1540MP

Install the inner seal in the center groove of the piston. Be sure the seal is not rolled or twisted.

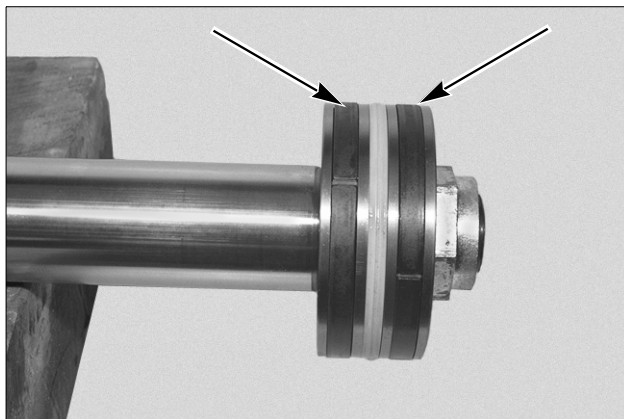
STEP 33



G1539MP

Install the outer seal over the inner seal in the center groove of the piston.

STEP 34



G1538MP

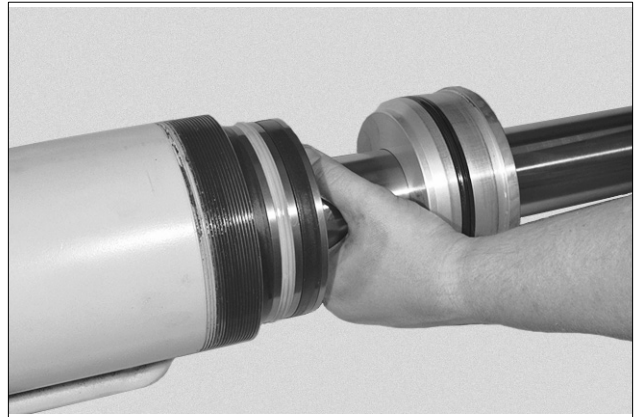
Install the two wear rings on the piston. Apply a thin coat of oil on the seal and wear rings prior to installation of the rod assembly.

STEP 35

Remove the rod from the vise.

Clamp the base end of the barrel in a vise or other holding fixture.

STEP 36

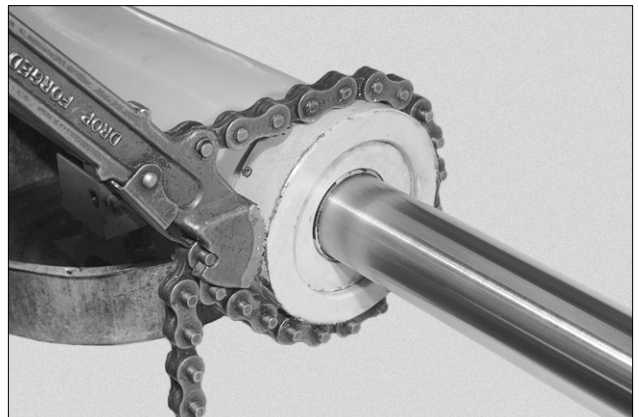


G1535MP

Carefully install the rod assembly into the cylinder barrel.

IMPORTANT: *Protect the chrome finish on the cylinder rod at all times. Damage to surface of the rod can cause premature seal failure.*

STEP 37



G1534MP

Install and tighten the gland ring nut on the cylinder barrel.

Section

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LIFT CYLINDER REMOVAL AND INSTALLATION

RS5-34 Telescopic Handler

RS5-34 Telescopic Handler

MANDATORY SAFETY SHUTDOWN PROCEDURE

BEFORE cleaning, lubricating, or servicing this equipment:

1. Bring the machine to a full stop on a level surface. (If parking on a slope or hillside cannot be avoided, park across the slope and block the tires.)
2. Fully retract the boom and lower the attachment to the ground.
3. Place controls in NEUTRAL and set the park brake.
4. Idle the engine for gradual cooling.
5. Turn the keyswitch to OFF position and remove the key. (Take the key with you for security reasons.)

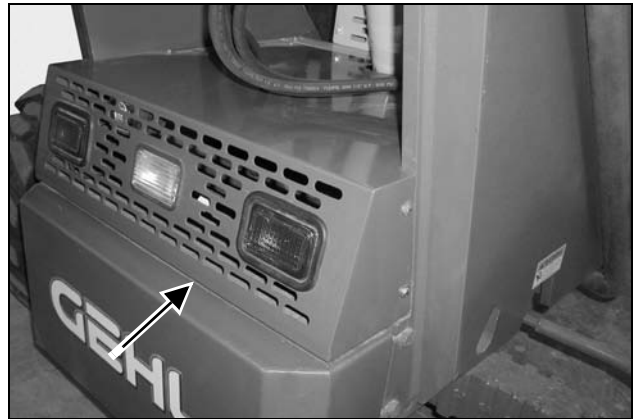
ONLY when you have taken these precautions can you be sure it is safe to proceed. Failure to follow the above procedure could lead to death or serious injury.

RELIEVE HYDRAULIC OIL PRESSURE

1. Engage the park brake.
2. Lower equipment to the ground. Return the engine to idle for 30 seconds then shut off the engine.
3. Turn the keyswitch on. Operate the joystick in each direction. This should ensure there is no residual pressure trapped in the control circuit. Confirm that there is no attachment or unit movement.

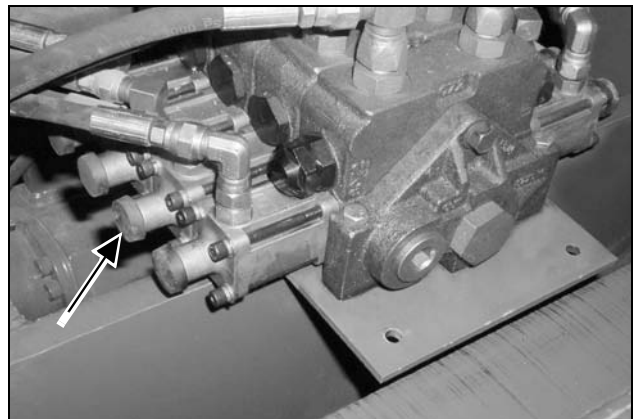
BOOM EXTEND CYLINDER

RELIEVING HYDRAULIC PRESSURE FOR THE EXTEND CYLINDER



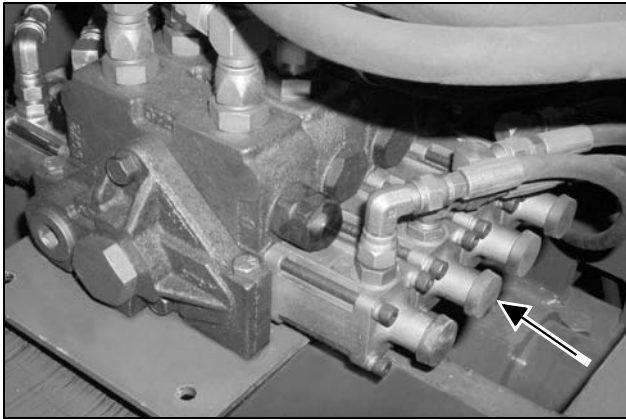
G0805076

1. Fully retract and lower the telescoping boom on a support stand.
2. Turn the keyswitch to the OFF position to shut off the engine. (See above Mandatory Safety Shutdown Procedure.)
3. Remove the rear hood to allow access to the main control valve.



G0805101

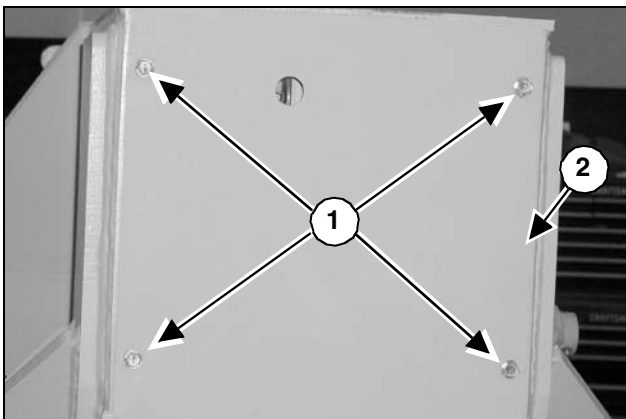
4. Locate the attachment boom "Extend" section on the left side of the control valve and remove the rubber boot. Using a screwdriver, turn the screw IN (clockwise) until it bottoms, then turn it OUT (counterclockwise) until it bottoms. Reinstall the rubber boot.



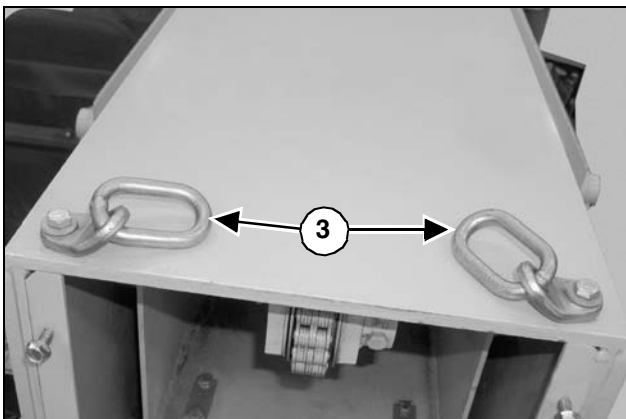
G0805102

8. Locate the attachment Boom Retract section (third section) on the right side of the control valve and remove the rubber boot. Using a screwdriver, turn the screw IN (clockwise) until it bottoms, then turn it OUT (counterclockwise) until it bottoms. Reinstall the rubber boot.

STEP 2



G0805199



G1005029

Loosen and remove the four bolts (1) and the rear cover (2).

Bolt two OEM 4129, 4000 lb. Lifting Brackets (3) (or equivalent) to the top rear of the outer boom section.

STEP 3



G1005027

Connect two equal length chains to the lifting links. Apply upward pressure with an adequate size hoist until the chains are tight.

NOTE: *If only the boom pivot shaft is to be replaced, it will not be necessary to disconnect any hydraulic lines or lift cylinders from the boom. Connect an overhead lifting device to the rear of the boom. Use the lifting device to take up the weight of the boom from the pivot shaft. Remove the pivot shaft retainer bolt from the end of the shaft. Use a large brass drift and heavy sledge hammer or a hydraulic ram pusher arrangement to drive the shaft approximately half way out.*

Lubricate the new pivot shaft with anti-sieze grease. Install the new shaft into place. Using the old pivot shaft as a pilot, install the retainer bolt and nut.

Section

703

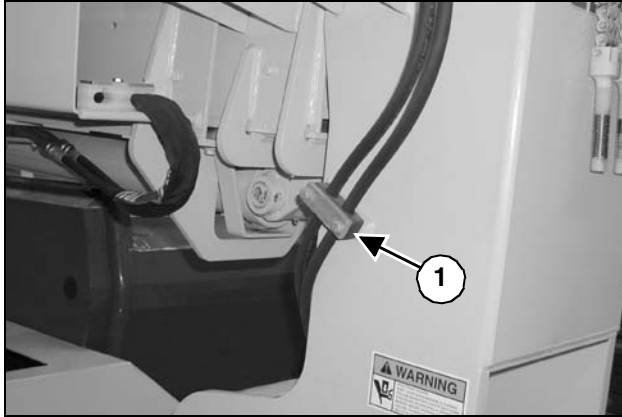
INNER BOOM SECTION REMOVAL AND INSTALLATION

RS5-34 Telescopic Handler

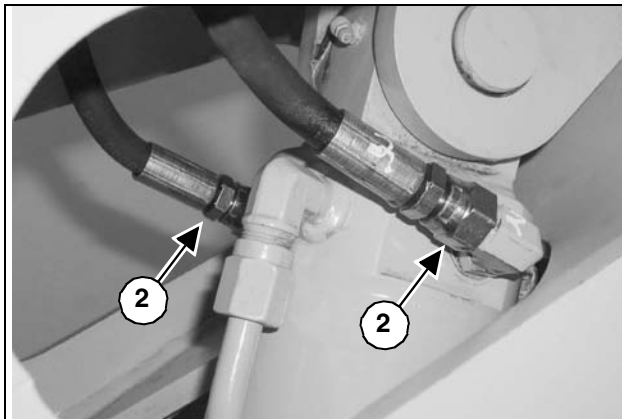
STEP 35

Remove the caps and plugs from the hydraulic fittings.

STEP 36



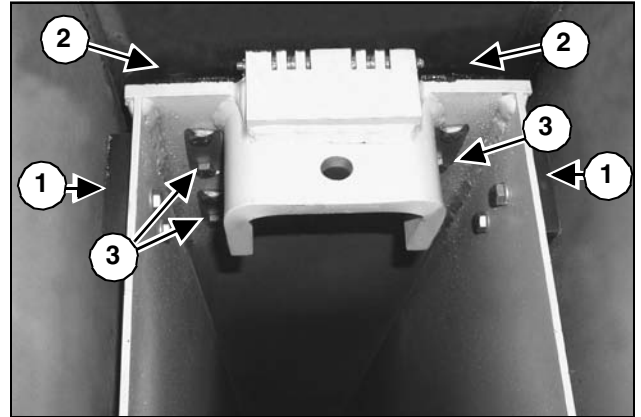
G1005044



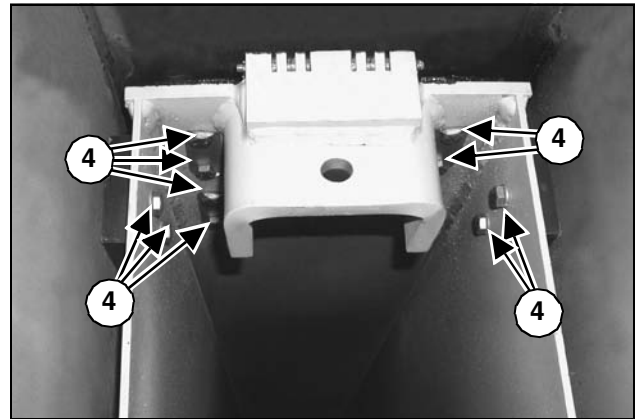
G0805216

Install the hose clamp (1) and reconnect the two hydraulic hoses (2) to the tilt cylinder.

STEP 37



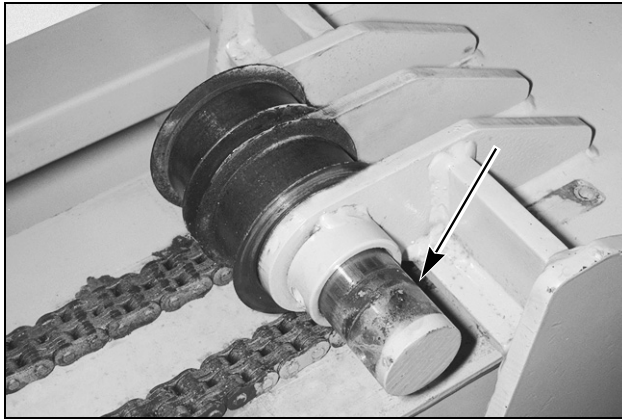
G1005089



G1005089

Reinstall the two side slide pads and shims (1) and the two top slide pads and shims (2) to the rear of the inner boom using the lock plates (3) and bolts (4). Use Loctite™ 271 (red) Thread Lock (or equivalent) on the threads of the bolts and torque to 30 ft.-lbs. (41 Nm). Bend up each end of the lock plates up.

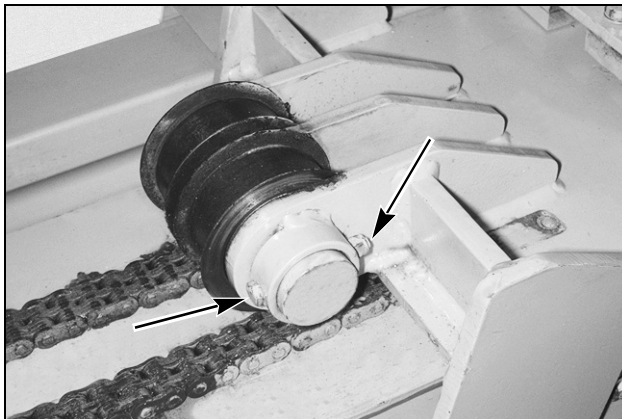
STEP 27



G1648MP

Place the roller bearing assemblies between the sections of the mount, then insert the pin. Be sure the retainer bolt holes are lined up.

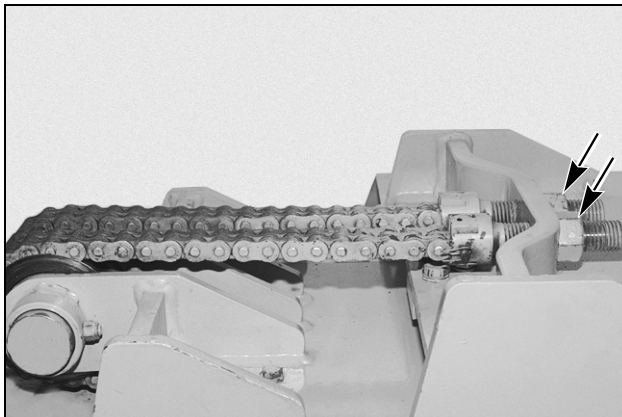
STEP 28



G1649MP

Install the retainer bolt and nut through the pin and tighten.

STEP 29



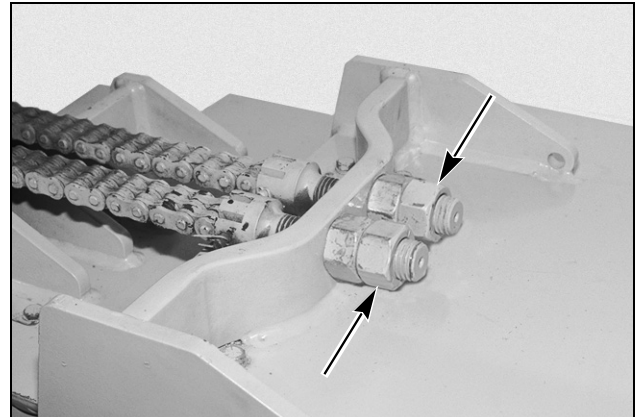
G1655MP

Pull the double chain assembly up and over the sheaves and place each clevis through the mounting holes in the outer boom securing it with one nut.

STEP 30

Torque the double chains. See Section 702 of this manual for correct procedure.

STEP 31



G1657MP

Install the lock nut on each clevis.

Section

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INTERMEDIATE BOOM SECTION REMOVAL AND INSTALLATION

RS5-34 Telescopic Handler

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