MANITOU

MT 6642
MT 8044
MT 10044
MT 10055
MT 12042

Telescopic Handler

Service Manual

Catalog 50960082 Revision A

- DO NOT fill the fuel tank completely. Allow room for expansion. Maintain control of the fuel filler nozzle when filling the tank. Use the correct fuel grade for the operating season.
- NEVER use fuel for cleaning purposes.
- DO NOT remove the radiator cap after the engine has reached operating temperature or if it is overheated. At operating temperatures, the engine coolant will be extremely HOT and under pressure. ALWAYS wait for the engine to cool before attempting to relieve pressure and remove the radiator cap. Failure to heed this warning could result in severe burns.
- DO NOT loosen or disconnect any hydraulic lines, hoses or fittings without first relieving hydraulic circuit pressure. Also, be careful not to touch any hydraulic components that have been in recent operation because they can be extremely hot and can burn you!
- Avoid lubrication or mechanical adjustments with the machine in motion or the engine running. If the engine must be running to make certain adjustments, place the transmission in neutral, apply the parking brake, place the equipment in a safe position, securely block the tires and use extreme caution.
- To ensure continued safe operation, replace damaged or worn-out parts with genuine Manitou service parts before using this equipment.

WARNING

Construction equipment can be dangerous if improperly operated or maintained. This machine should be operated and maintained only by trained and experienced people who have read, understood and complied with the Operator's Manual.

Modifications, Nameplates, Markings and Capacities

- Modifications and additions that affect capacity or safe operation must never be performed without the manufacturer's prior written approval. Where such authorization is granted, any applicable markings are to be changed accordingly.
- All attachment tools MUST be marked to identify the attachment tool and the total capacity with the attachment tool at maximum elevation with the load laterally centered.
- ALWAYS be sure all nameplates, warnings and instruction markings are in place and legible. Local government regulations may require specific decals, which are the responsibility of the owner to provide.

Safety Guards and Warning Devices

- This machine is fitted with a Roll-Over Protective Structure (ROPS) and Falling Object Protective Structure (FOPS) in accordance with industry standards. It is intended to offer protection to the operator from falling objects and in case of an overturn, but it cannot protect against every possible hazard. Therefore it should not be considered a substitute for good judgment and safe practices in operating the machine. If the ROPS / FOPS structure is damaged, it must be replaced to restore the protection it provides.
- This machine is equipped with a horn and backup alarm. The user must determine if operating conditions require the machine to be equipped with additional devices (mirrors, rotating beacon, etc.) and be responsible for providing and maintaining such devices.

Section 101

GENERAL INFORMATION AND SPECIFICATIONS

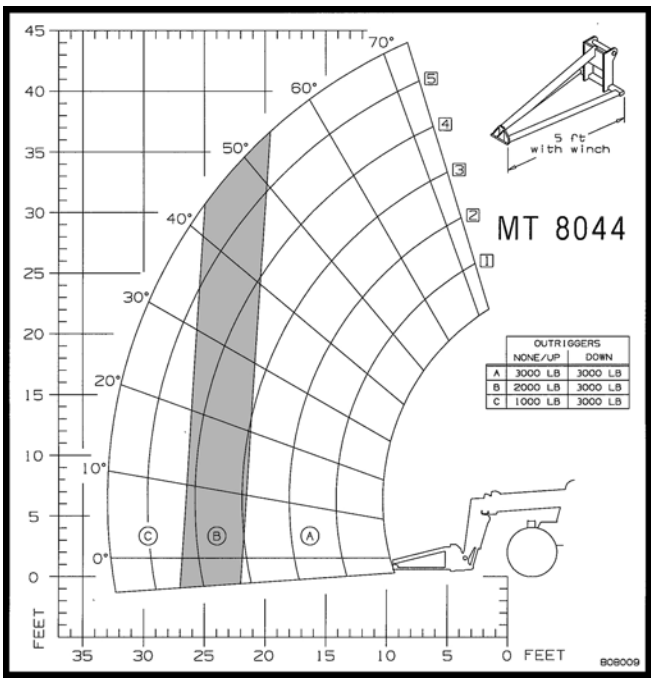
MT Series Telescopic Handlers

PRINTED IN U.S.A.

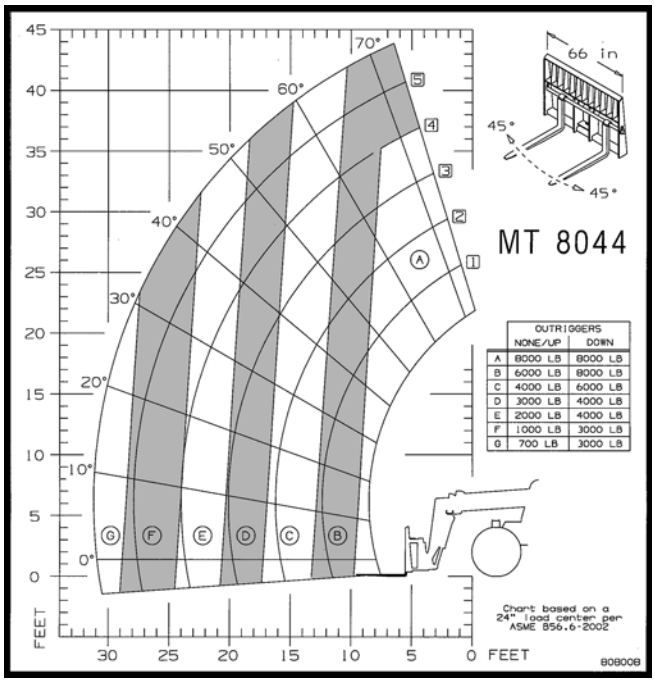
50960082AP0114

Load Zone Charts
MT8044XT

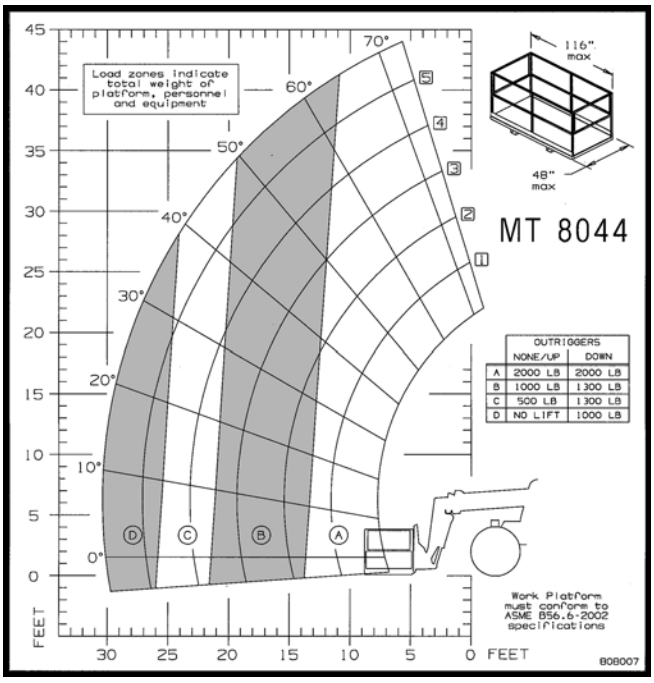
Decal 808009
5-Ft. Winch Boom



Decal 808008
90° Swing Carriage



Decal 808007
PWP



STARTER CIRCUIT TROUBLESHOOTING

The engine does not start. Does the starter engage and turn over the engine?

YES

Is there 12 volts of current at the fuel shut off solenoid?

YES

Check the fuel system pressure before replacing the fuel solenoid.

NO

Is the fuel shut off solenoid fuse open?

YES

Replace the fuel shut off fuse.

NO

Repair or replace the wires between the fuel shut offsolenoid and the fuse.

NO

Is the transmission shift lever in neutral?

YES

Is the battery fully charged?

NO

Move the shift lever to the neutral position.

YES

Is the battery properly grounded?

NO

Charge or replace the battery.

YES

Is the ignition fuse open?

NO

Replace the battery ground cable.

YES

Replace the ignition fuse.

NO

Is there 12 volts at the power terminal of the ignition fuse?

YES

Is the gear selector fuse open?

NO

Replace the 60 amp in-line fuse between the battery terminal of the starter relay and the fuse box.

YES

Replace the gear selector fuse.

NO

With the key switch ON, is there 12 volts to the power terminal of the gear selector fuse?

STEP 6

G0705098 Connect the positive (+) test lead to the bottom terminal (#2) of the relay socket. Turn the key to the ON position. The multimeter should read 12 to 13 volts.

If there is no voltage, proceed to Step 12.

If there is 12 to 13 volts, but the relay does not work, replace the relay.

STARTER AND STARTER RELAY TESTS

STEP 7

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

If there is no voltage, clean or replace the positive (+) battery cable between the starter and the battery.

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

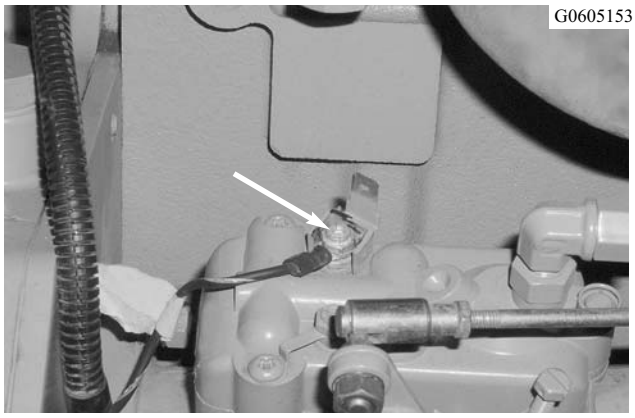
STEP 8

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



Remove the wire from the fuel shutoff solenoid.

WARNING

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

STEP 42

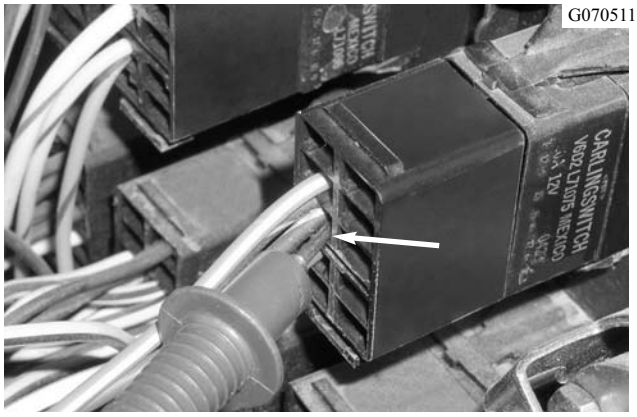
Disconnect the crab steer wire harness (orange/white and black wires) from the steer mode solenoid connector. Install the positive (+) test lead in the orange/white wire prong of the wire harness. With the key switch in the ON position and the steer mode switch in the crab steer position, the multimeter 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 crab steer mode does not function, replace the solenoid valve.

Connect the wire harness to the crab-steer mode solenoid connector.

STEP 43

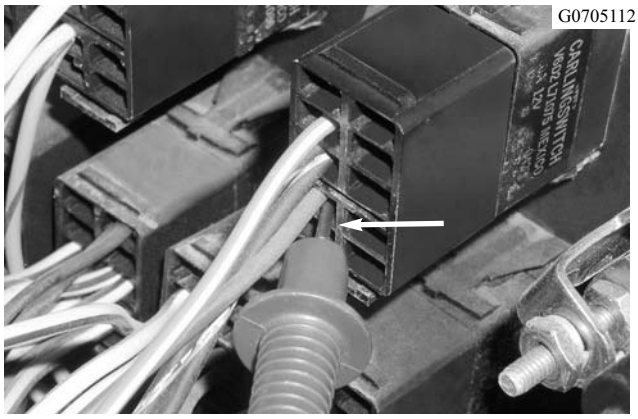


Complete step 13 to remove the instrument panel. Connect the positive (+) test lead to the black/yellow wire terminal of the steer mode switch located on the left side of the instrument panel. With the key switch in the ON position the multimeter should read 12 to 13 volts.

If there is no voltage, repair or replace the black/yellow wire between the switch and the fuse panel.

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

STEP 44



Connect the positive (+) test lead to the green wire terminal of the steer mode switch. With the keyswitch in the ON position and the steer mode switch in the 4-wheel steer position, the multimeter should read 12 to 13 volts.

If there is no voltage replace the steer mode switch.

If there is 12 to 13 volts, but no voltage in Step 41, repair or replace the green wire between the switch and the solenoid valve.

MANDATORY SAFETY SHUTDOWN PROCEDURE

BEFORE cleaning, adjusting, lubricating or servicing the 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 bodily injury.

STEP 1

Disconnect the battery ground cable.

STEP 2

Pry the center cap from the center of the steeringwheel.

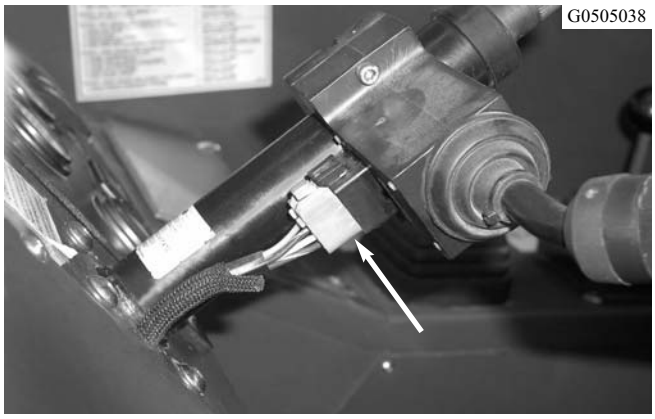
STEP 3

Loosen and remove the steering wheel nut.

STEP 4

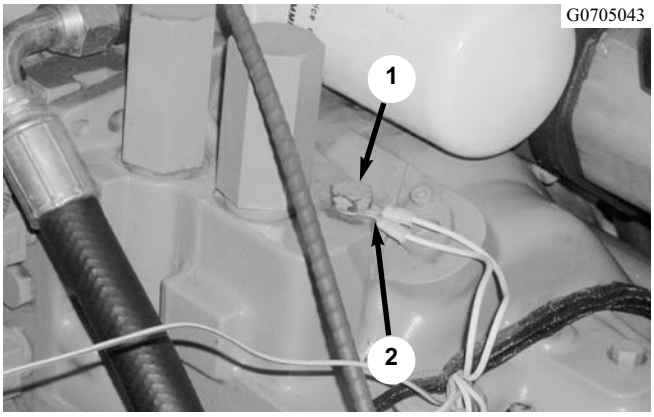
Remove the steering wheel from the steering column.

STEP 5



Unplug the wire harness from the gear selector.

STEP 11



Remove the bolt (1) and the two ground wires (2).

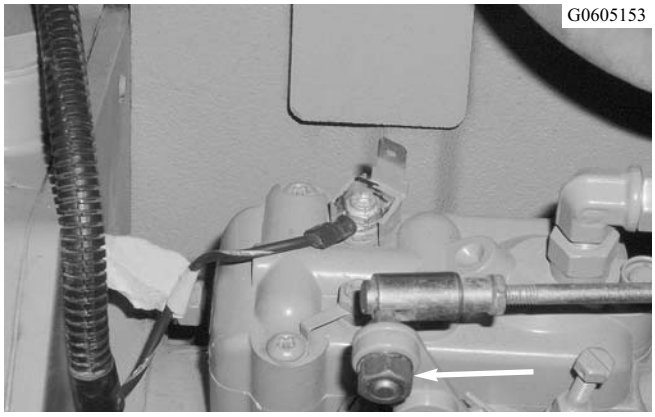
STEP 12

Note the routing of the fuel gauge sender wire through the battery compartment and remove the fuel gauge sender wire.

STEP 13

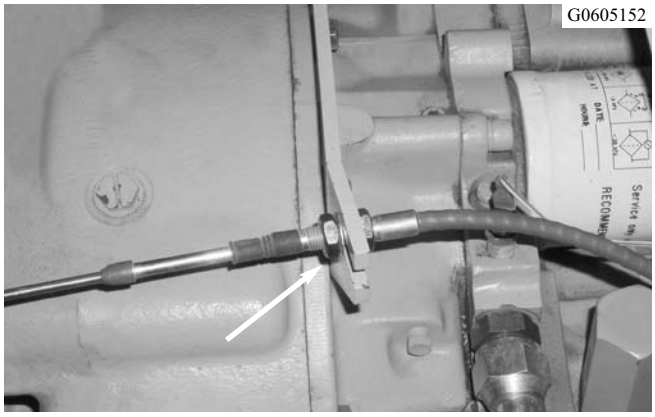
Lay the transmission wire harness on the left side frame rail so it will not interfere with transmission removal.

STEP 14



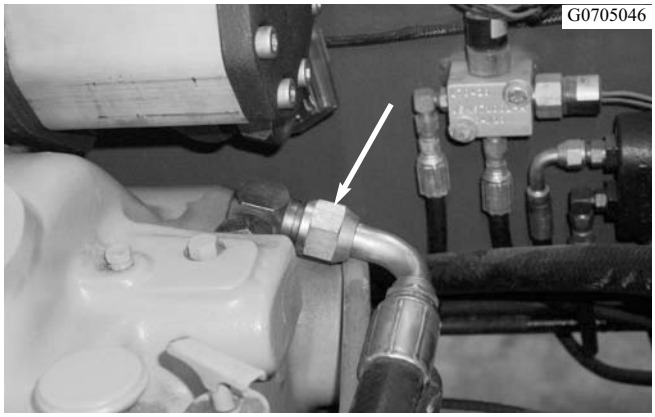
Disconnect the throttle linkage from the injector pump.

STEP 15



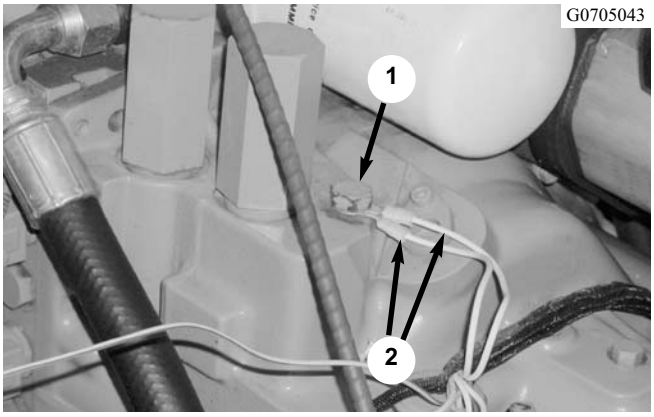
Loosen the lock nut and remove the throttle linkage from the mounting bracket.

STEP 16



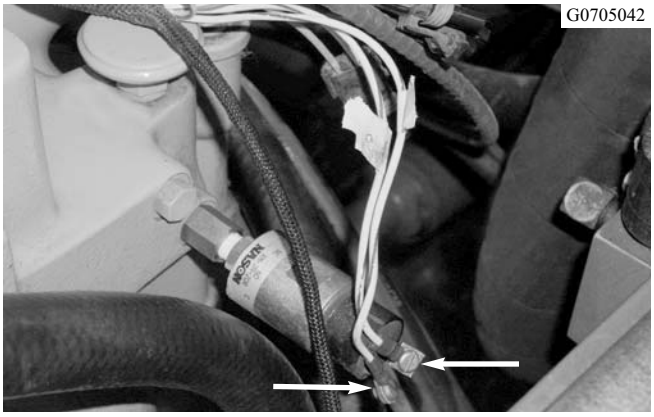
Remove the lower transmission cooling line from the transmission. Install a cap on the fitting and a plug in the line.

STEP 65



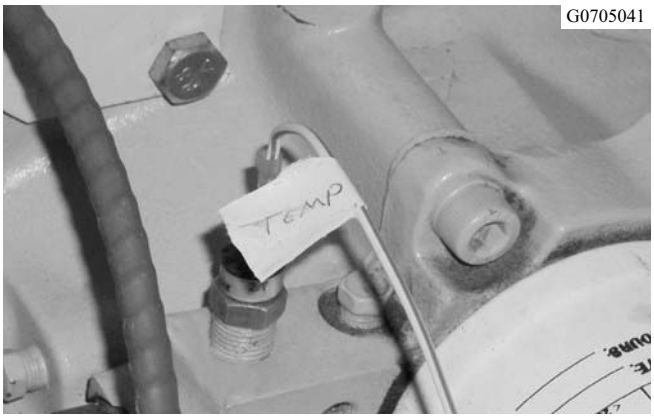
Install the bolt (1) securing the two ground wires (2).

STEP 66



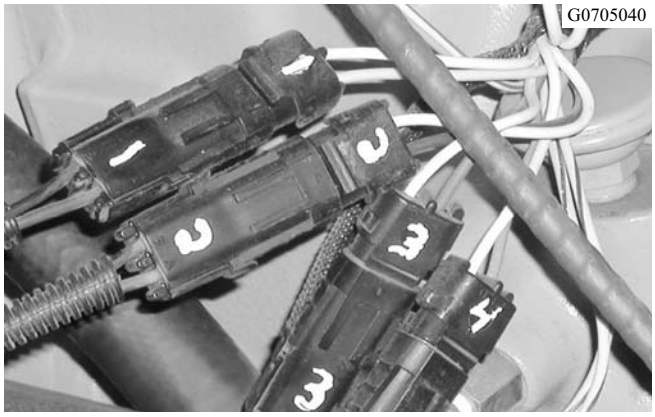
Reconnect the two wires to the reverse pressure switch.

STEP 67



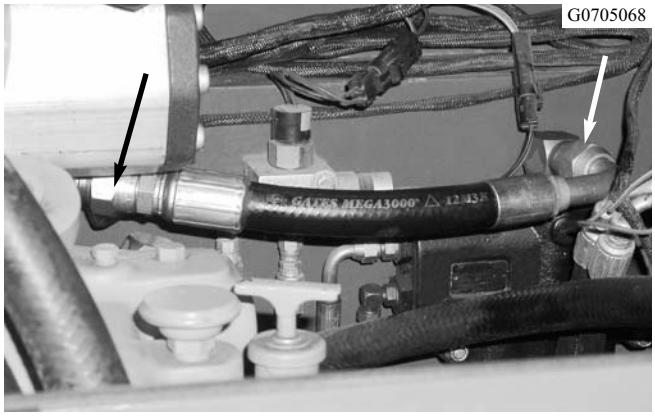
Reconnect the transmission temperature sender wire.

STEP 68



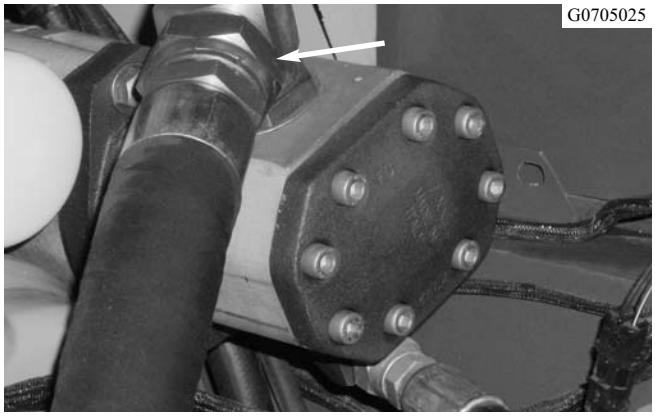
Reconnect the four electrical plugs to the gear selection solenoids.

STEP 69



Remove the caps and plugs and install the hydraulic fluid pressure line between the hydraulic pump and priority valve.

STEP 70



Remove the cap and plug and connect the hydraulic fluid supply line to the hydraulic pump.

STEP 34

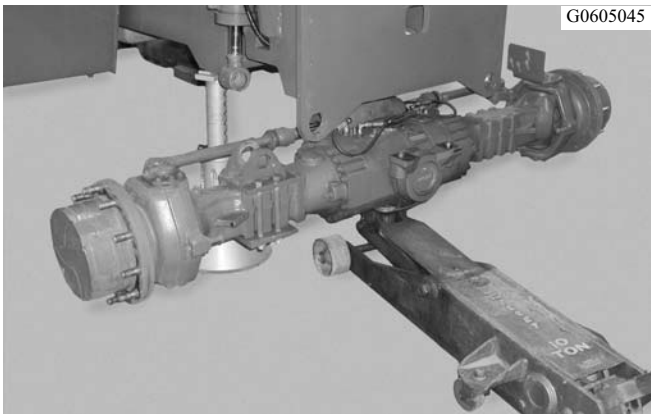
Start the engine, apply the park brake. Move the steer mode switch to the 4-wheel steering position. Turn the steering wheel in one direction until the wheels reach their travel limits and back the other way to its travel limit. Repeat this procedure several times until the air is removed from the circuit.

STEP 35

Shut down the engine. Check for leaks. Correct any leakage found. Check fluid level, add fluid if needed.

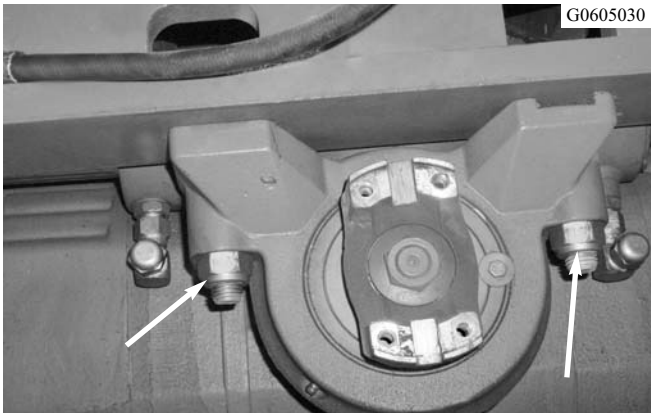
FRONT AXLE INSTALLATION

STEP 26



Carefully roll the axle and floor jack under the machine. Apply upward pressure to raise the axle up into position.

STEP 27



Align the four bolt holes in the axle with the holes in the frame. Install and tighten the four bolts and nuts to 380 ft.-lbs. (515 Nm).

STEP 28

Lower and remove the floor jack.

STEP 29

Install both wheels and tires on the axle.

STEP 30

Install the wheel nuts and hand tighten.

STEP 31

Place two 10-ton hydraulic jacks under the frame in the location shown and apply upward pressure equally from side to side on each jack.

BOOM LIFT TROUBLESHOOTING

NOTE: *If the boom will lift but will not lower, replace the counterbalance valve on the lift cylinders.*

Does the boom lift without a capacity load?

YES

Test the pressure at the test port MP on the flow divider. Retract the boom to the end of the cylinder stroke and hold. Does the pressure gauge read 3000 psi (207 bar).

YES

Use an in-line flowmeter to test the pressure at the RH lift cylinder right side hose. Does the pressure gauge read 3000 psi (207 bar)?

YES

Repair or replace the right side lift cylinder.

YES

Repair or replace the left side lift cylinder.

YES

Repair or replace the RH and LH lift cylinders.

YES

Adjust the relief valve in the Main Control Valve.Open the load control valve of the flowmeter andhold the joystick in the boom lower position. Doesthe pressure gauge read 3000 psi (207 bar)?

YES

Remove the flowmeter.

YES

Replace the priority flow divider.

NO

Follow the Control and Park Brake Pilot Pressure Troubleshooting procedure. Is the problem in the controls?

YES

Repair or replace the control components.

NO

Test the pressure at the LH lift cylinder left side hose. Does the pressure gauge read 3000 psi (207 bar).

NO

Block the LOWERING ports on both the RH and LH lift cylinders. Does the pressure gauge read 3000 psi (207 bar)?

NO

Repair or replace the control valve.

NO

Use an in-line flowmeter to test the pressure at the EF port of the priority flow divider. Does the pressure gauge read 3000 psi (207 bar)?

NO

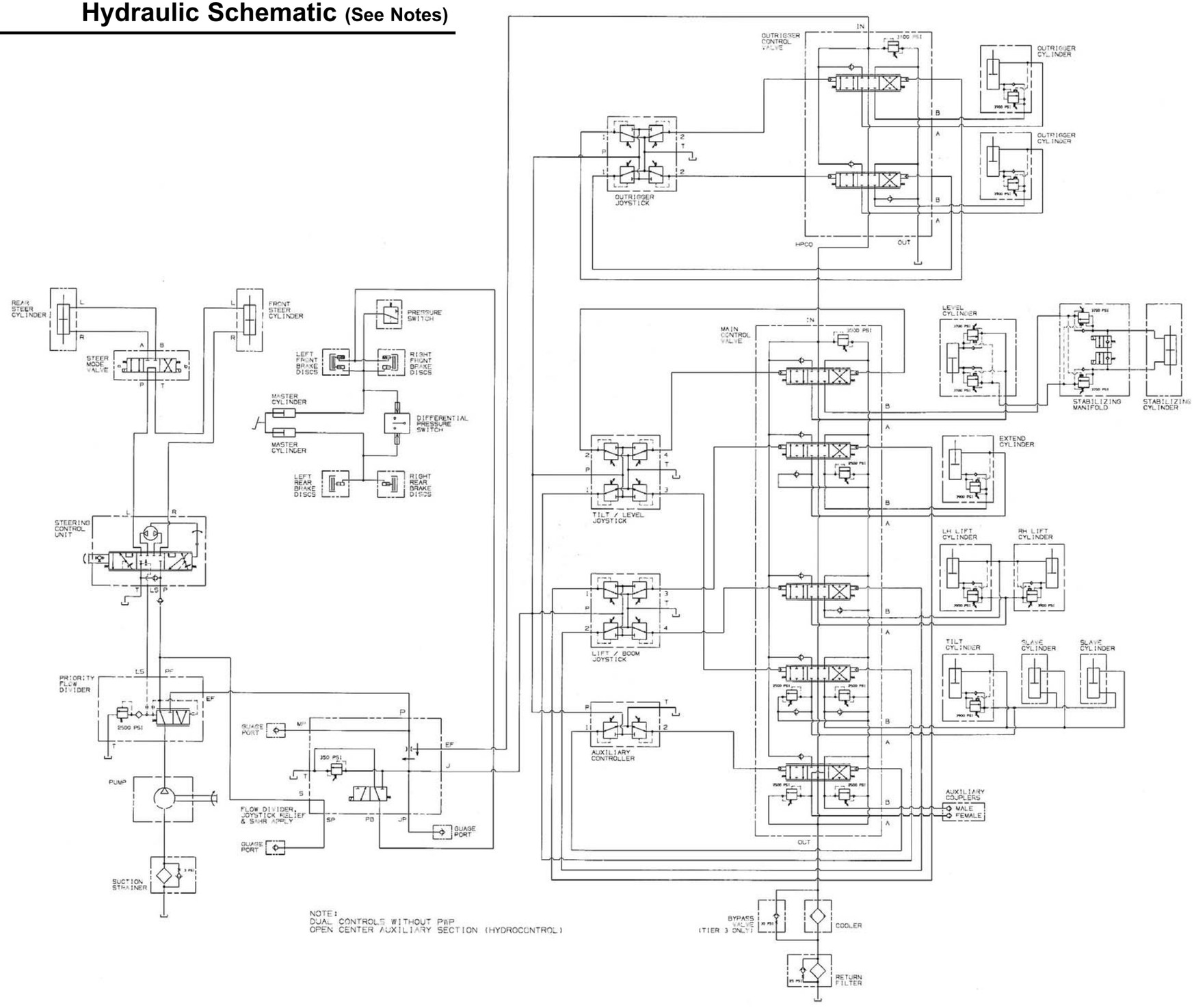
Remove and bench test the hydraulic pump. Does the hydraulic pump meet specifications?

NO

Repair or replace the relief valve in the Main Control Valve.

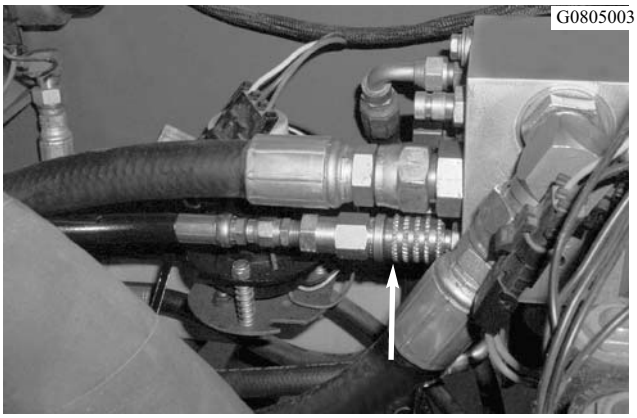
NO

Repair or replace the hydraulic pump.



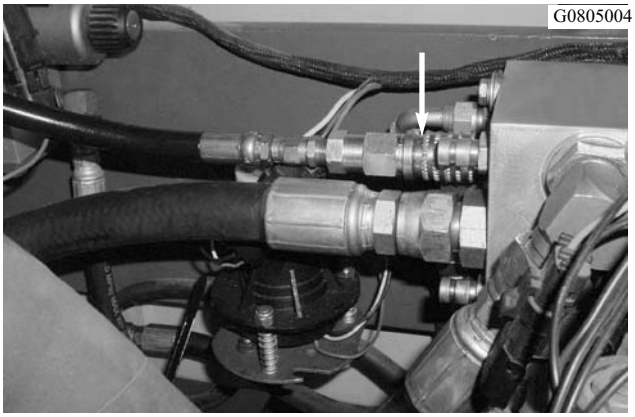
NOTE:
DUAL CONTROLS WITHOUT PWP
OPEN CENTER AUXILIARY SECTION (HYDROCONTROL)

STEP 6



Plug a 3000 psi (207 bar) pressure gauge into the test port labeled “SP” on the flow divider. Start the engine and cramp the steering fully to the right or left. The gauge should read 2500 psi (172 bar). Record the pressure, shut the engine off and disconnect the gauge.

STEP 7



Plug a 1000 psi (70 bar) pressure gauge into the test port labeled “JP” on the flow divider. With the engine running the gauge should read 350 psi (24 bar). Record the pressure, shut the engine off and disconnect the gauge.

STEP 8

If the pressure readings recorded in Steps 5 or 6 were incorrect, perform Steps 1-3. If the correct pressure was found in Step 3, replace the priority flow divider, if not perform step 4.

STEP 9

If the pressure recorded in Step 7 was incorrect and the pressure recorded in Step 5 was correct, replace the flow divider.

LIFT CYLINDER TEST

STEP 10

Start the engine, set the park brake and raise the boom approximately 3 feet or 1 meter. Shut off the engine.

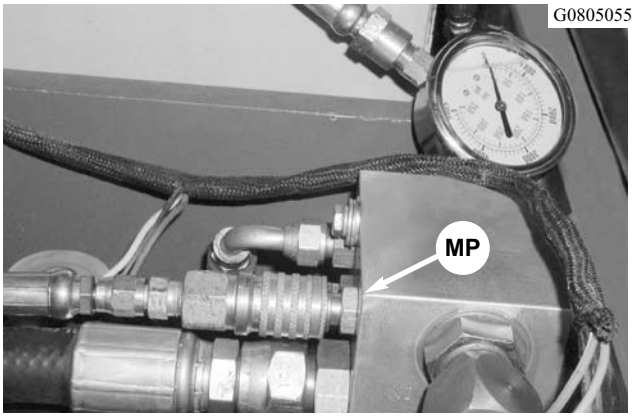
NOTE: *If the boom lowers while the engine is OFF proceed to Step 16.*

STEP 11

Place a support stand under the attachment end of the boom.

EXTENSION CYLINDER QUICK TEST

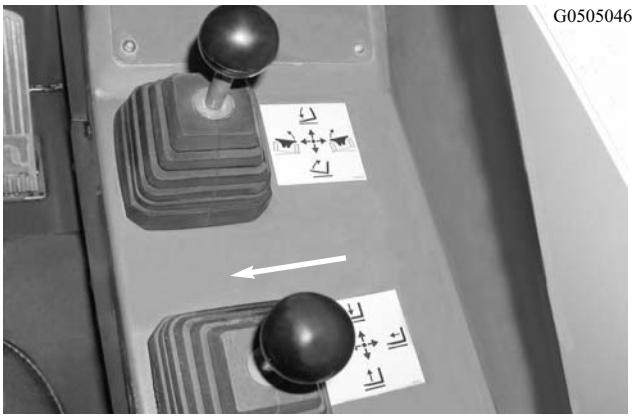
STEP 44



Install a 5000 psi pressure gauge and hose on the port labeled “MP” of the flow divider.

NOTE: *The hose must be long enough to observe the pressure gauge from inside the cab or standing clear of the forklift.*

STEP 45



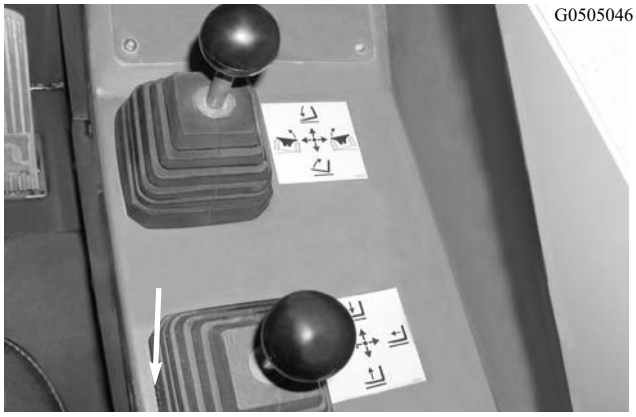
Start the engine and run at 1000 RPM. Retract the boom until the boom extension cylinder is at the end of its stroke and hold the joystick in the RETRACT position. The pressure gauge should read 3000 psi (207 bar).

If the pressure is more than 3000 psi (207 bar), proceed to the Main Control valve Pressure Relief Test and Adjustment section of this manual.

If the pressure is less than 3000 psi (207 bar), proceed to the next step.

If the pressure is 3000 psi (207 bar), but the extension cylinder is not working properly, check the boom or extension cylinder barrel for damage.

STEP 46



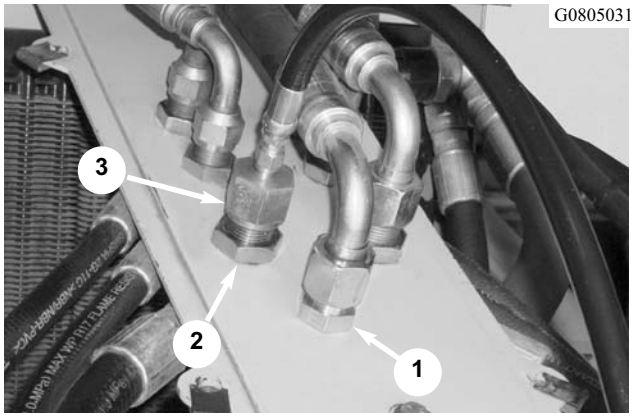
Lower the boom until the lift cylinders are at the end of their stroke and hold the joystick in the BOOM LOWER position. The pressure gauge should read 3000 psi (207 bar).

If the pressure is less than 3000 psi (207 bar), proceed to the Main Control Valve Pressure Relief Test and Adjustment section of this manual before proceeding to the next step.

If the pressure is 3000 psi (207 bar), proceed to the next step.

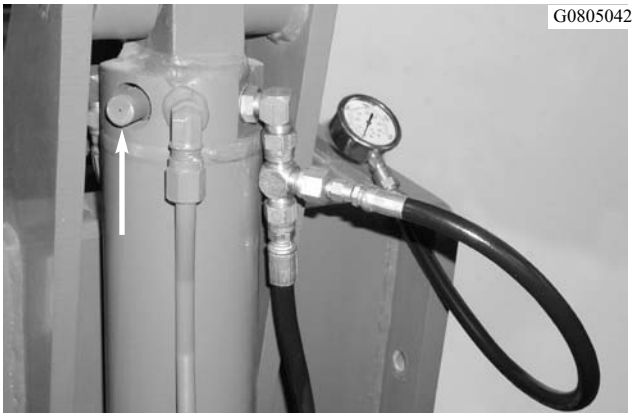
EXTENSION CYLINDER DIRECT TEST

STEP 47



Shut off the engine. Remove the hose (1) from the retract bulkhead fitting (2). Install a 5000 psi pressure gauge and adaptor (3) on the bulkhead fitting (2) and plug the hose (1) end.

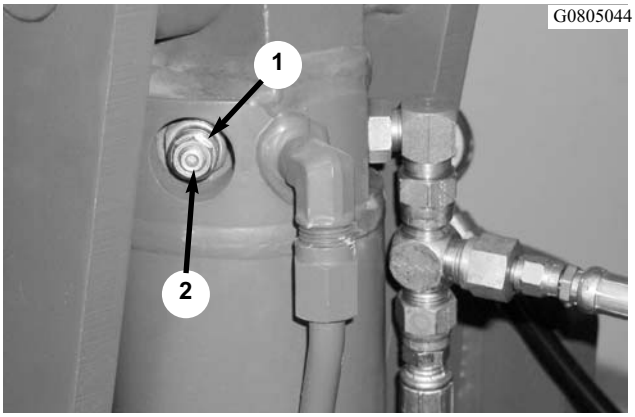
STEP 80



Shut off the engine. Remove the cover from the tilt right counterbalance valve.

NOTE: *The cover is friction fit and can be loosened by twisting the cover on the valve cartridge.*

STEP 81



Loosen the lock nut (1) and turn the adjusting screw (2) counterclockwise to increase and clock wise to decrease the counterbalance release pressure.

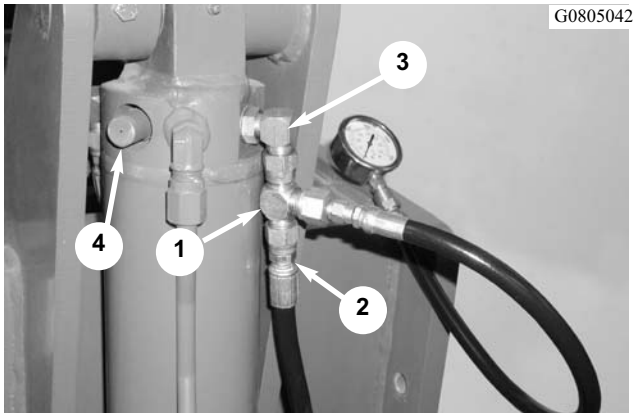
NOTE: *One turn of the adjusting screw can change the pressure up to 500 psi (34 bar).*

Hold the adjusting screw from turning and tighten the lock nut. Repeat Steps 79 and 81 until the pressure gauge reads 1500 psi (103 bar).

If the adjusting screw does not change the pressure, replace the counterbalance valve.

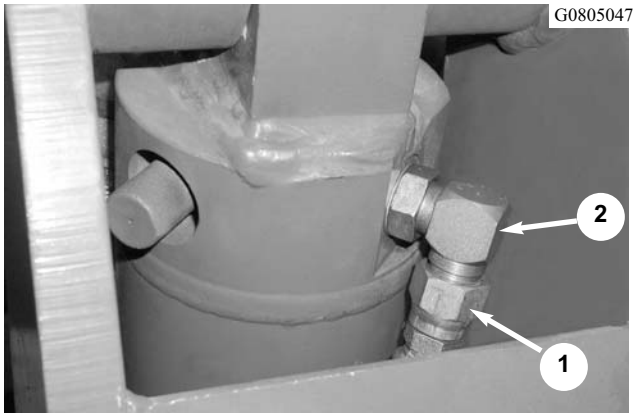
If a new load check valve was installed, repeat Steps 79 and 81 to set the counterbalance release pressure.

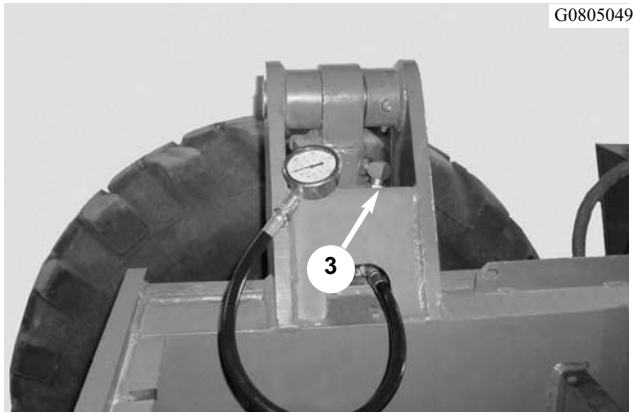
STEP 82



Remove the pressure gauge (1) from the cylinder and install the tilt right supply hose (2) to the cylinder port (3). Install the cover on the counterbalance valve(4).

STEP 83





Remove the supply hose (1) from the tilt left port (2) of the frame leveling cylinder. Install the pressure gauge (3) and hose between the cylinder port (2) and the supply hose (1).

Section
602

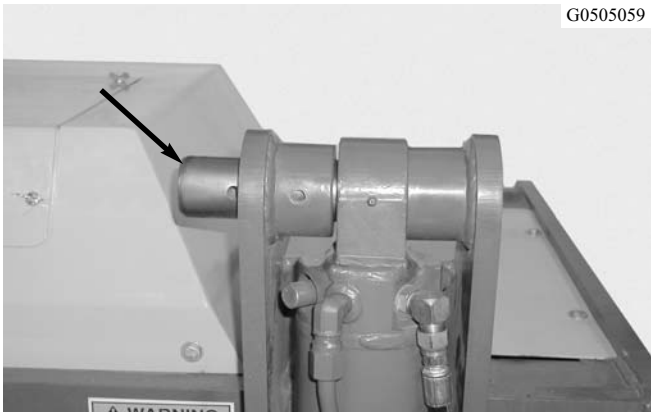
HYDRAULIC PUMP
REMOVAL AND INSTALLATION

MT Series Telescopic Handlers

PRINTED IN U.S.A.

50960082AP0114

STEP 8



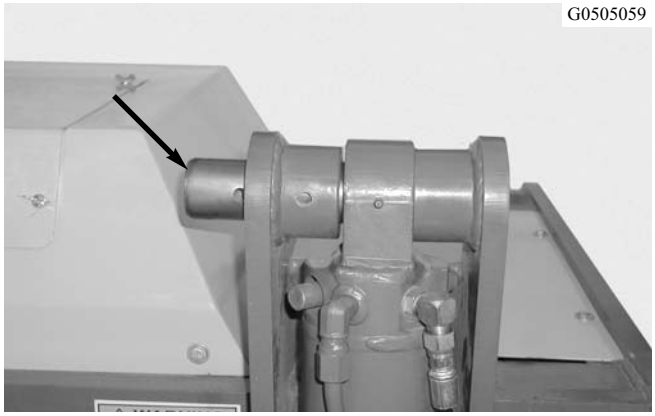
With the cylinder supported, remove the upper pivot pin from the frame leveling cylinder.

STEP 9

Remove the frame leveling cylinder.

FRAME LEVELING CYLINDER INSTALLATION

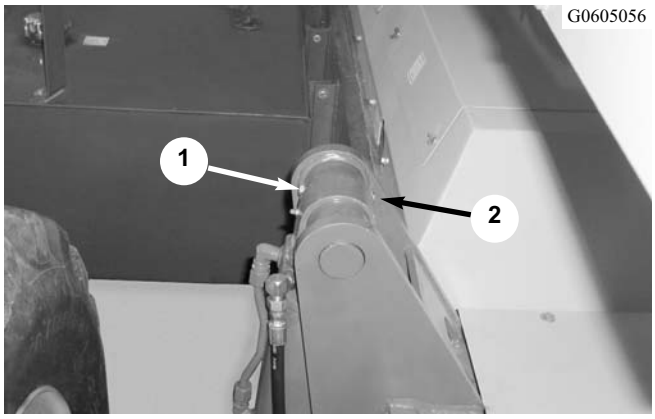
STEP 10



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

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

STEP 11



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

STEP 12

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

Section
605

HYDRAULIC CYLINDER REPAIR

MT Series Telescopic Handlers

PRINTED IN U.S.A.

50960082AP0114

Section
606

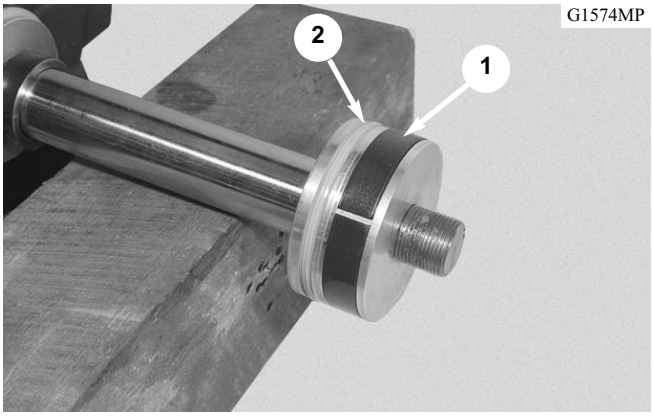
STABILIZER CYLINDER
REMOVAL AND INSTALLATION

MT Series Telescopic Handlers

PRINTED IN U.S.A.

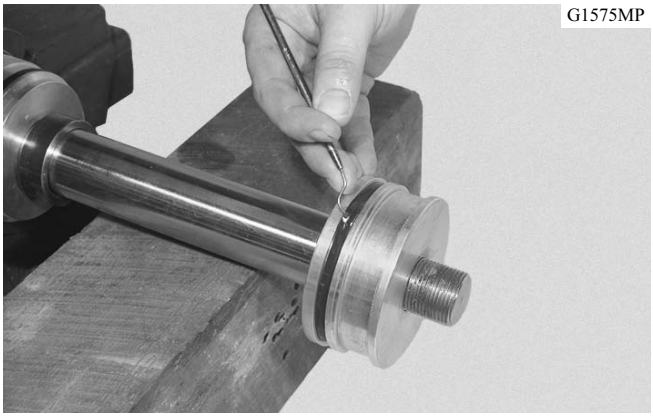
50960082AP0114

STEP 7



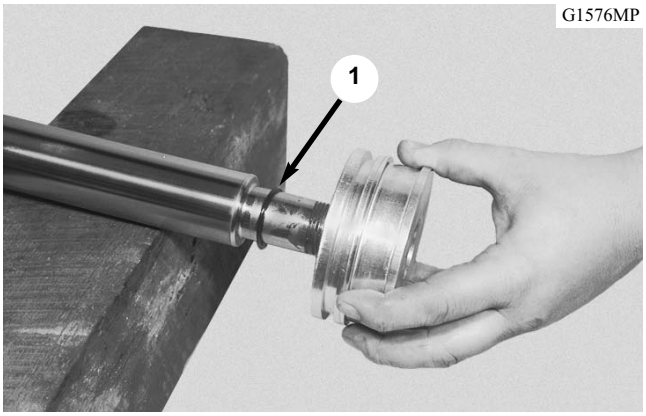
Remove and discard the wear ring (1) and seal (2) from the piston.

STEP 8



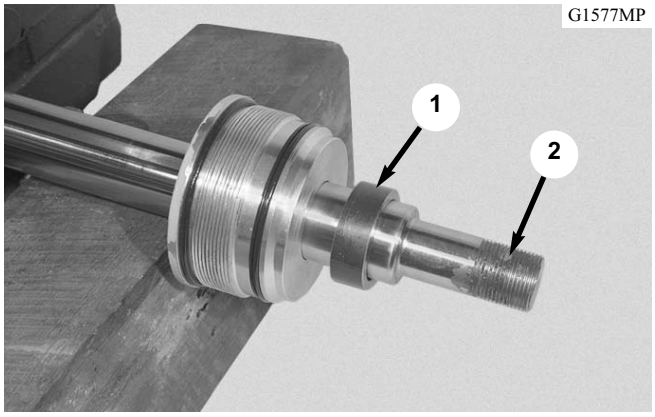
Remove and discard the inner seal from the piston.

STEP 9



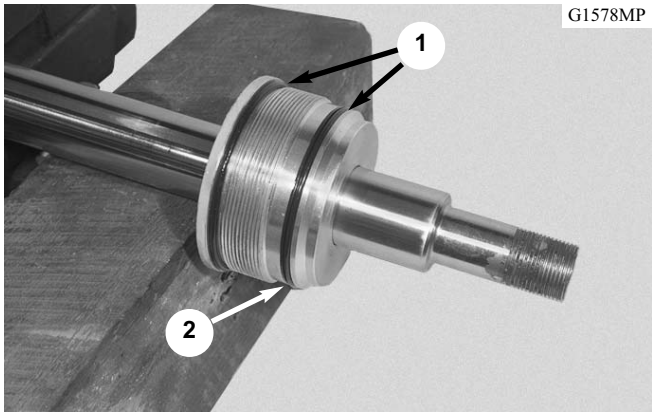
Remove the piston and O-ring (1) from the rod.

STEP 10



Remove the spacer (1) from the rod. Remove locking insert (2) from rod and discard.

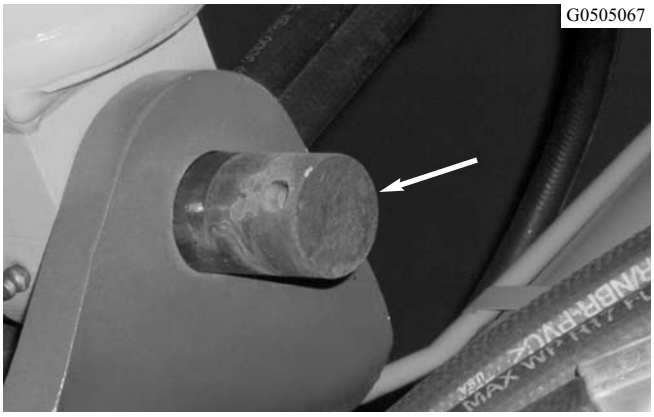
STEP 11



NOTE: *Record the position of the O-rings and backup rings before removing for correct reassembly.*

Remove and discard the O-rings (1) and backup ring (2) from the base end gland. Repeat this procedure for the cross tube gland removed earlier.

STEP 9

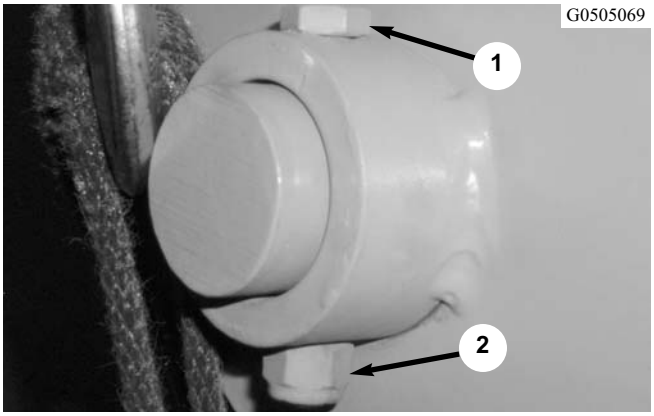


Remove the lower pivot pin.

STEP 10

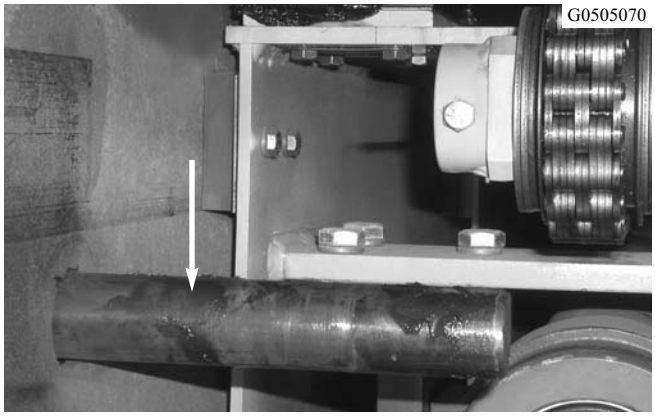
Using a chain hoist and lifting strap, position the lifting strap around the slave cylinder and apply upward pressure.

STEP 11



Remove the retainer bolt (1) and nut (2) from the upper pivot pin.

STEP 12



Remove the upper pivot pin.

STEP 13

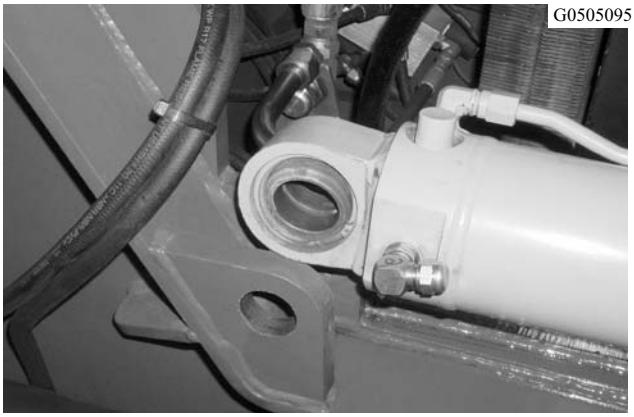
Remove the slave cylinder from the machine.

LIFT CYLINDER INSTALLATION

STEP 17

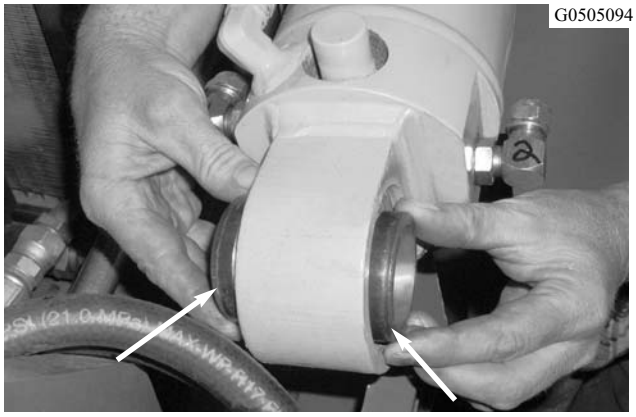
Position a chain hoist and lifting strap to equally support the lift cylinder.

STEP 18



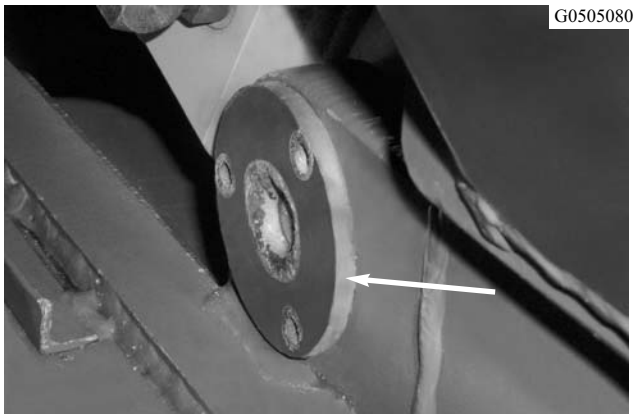
Lower the bottom end of the lift cylinder into position above the lower mounting bracket.

STEP 19



Install one spacer on each side of the cylinder base and lower cylinder and spacers into the mounting bracket.

STEP 20



Install the eccentric pin in the lower pivot point.

NOTE: *If installing the cylinder that was removed, use the alignment marks made during removal, otherwise install the pin so the adjustment mark points towards the rear of the handler.*

MANDATORY SAFETY SHUTDOWN PROCEDURE

BEFORE cleaning, adjusting, lubricating or servicing the 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 bodily injury.

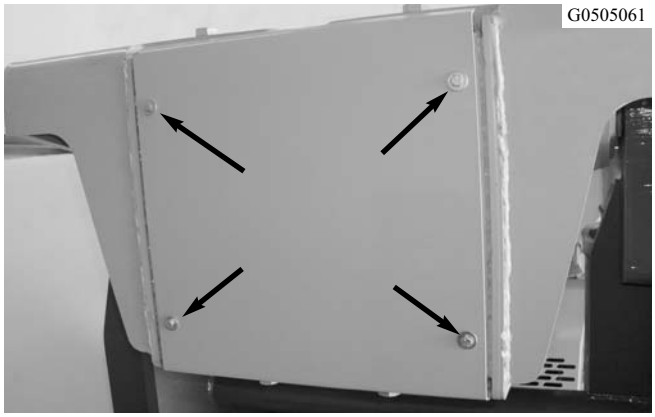
RELIEVING HYDRAULIC PRESSURE

1. Fully retract and lower the telescoping boom to the ground.
2. Turn the key switch to the OFF position to shut down the engine. (See Mandatory Safety Shutdown Procedure, above.)
3. Move the boom travel joystick in all directions several times to relieve hydraulic pressure from the hydraulic system.

NOTE: *See Section 605 of this Service Manual for the repair of this cylinder.*

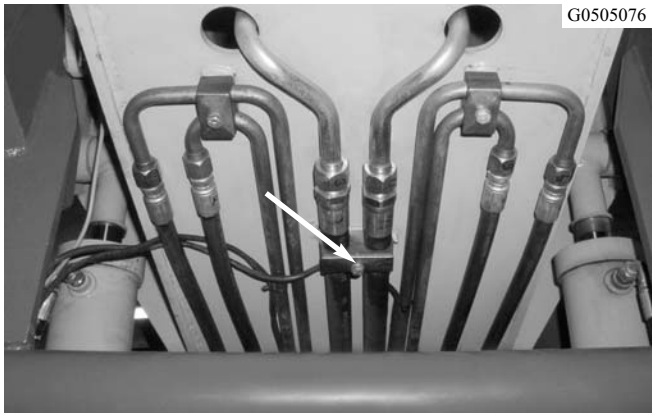
EXTEND CYLINDER REMOVAL

STEP 1



Loosen and remove the four bolts from the rear cover and remove the cover from the boom.

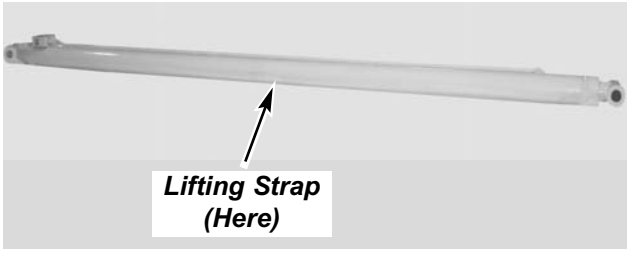
STEP 2



Remove the bolt and support block on the extend cylinder hydraulic hoses.

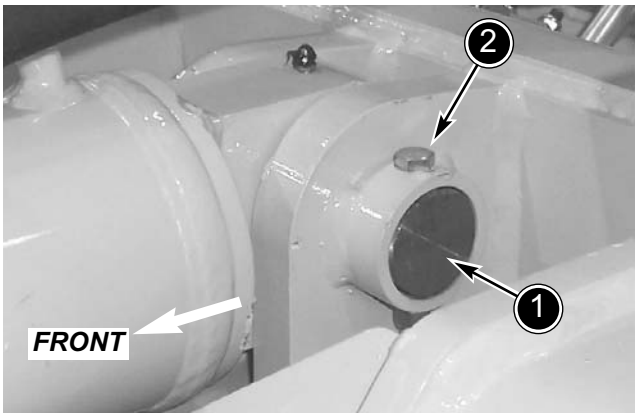
BOOM EXTEND CYLINDER INSTALLATION

STEP 8



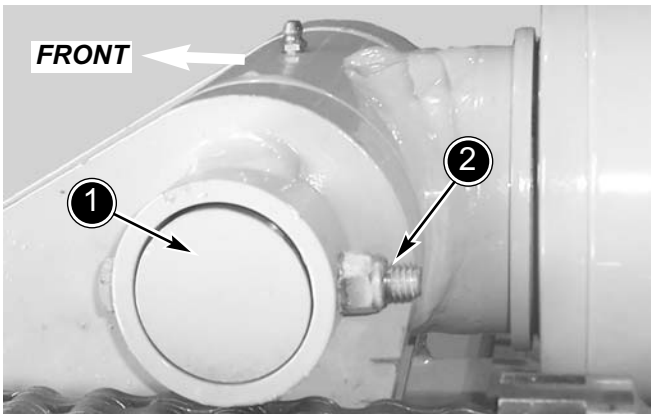
Wrap a lifting strap around the middle of the boom extend cylinder. Using a hoist attached to the lifting strap, lift the boom extend cylinder.

STEP 9



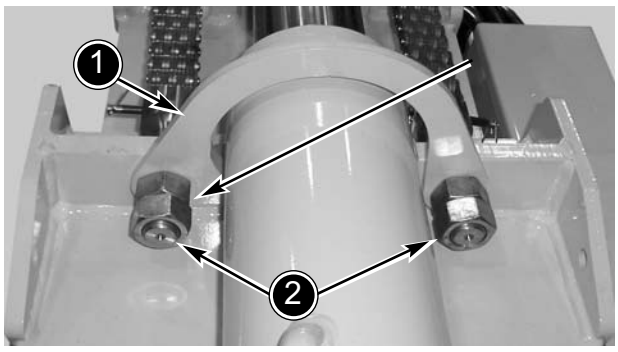
Move the boom extend cylinder to the machine and lower it into the rear extend cylinder mount on the outer boom. Install the extend cylinder pin (1) into the mount bracket and the boom extend cylinder; secure the pin with the retaining bolt (2) and lock nut.

STEP 10



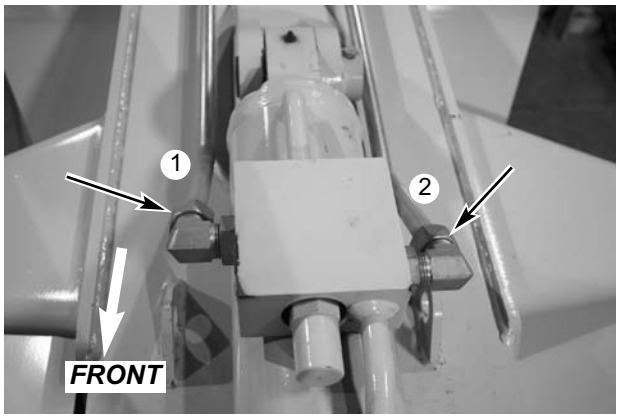
Lower the front of the boom extend cylinder into the mount bracket on the 1st intermediate boom. Install the front cylinder pin (1) and secure with the retaining bolt (2) and lock nut.

STEP 11



Reinstall the extend cylinder support bracket (1) to the front of the outer boom. Place the two boom chain adjusters (2) through the outer boom and support bracket (1). Reinstall the inner nuts (3) to the chain adjusters so that 6-7 threads of the chain adjuster extend past the inner nut, and then install the outer nuts (3) against the inner nuts. Be sure that the chain does not become twisted when tightening the chain adjuster nuts.

STEP 12



Reconnect the hydraulic tubes to the boom extend cylinder; be sure that the tubes are connected to the correct adapters on the extend cylinder.

STEP 13

Start the engine. Operate the boom to verify proper boom operation.

STEP 14

Shut off the engine. Check for hydraulic fluid leaks and correct as needed.

STEP 15

Adjust the boom chains, see Section 721 of this manual for the correct procedure.

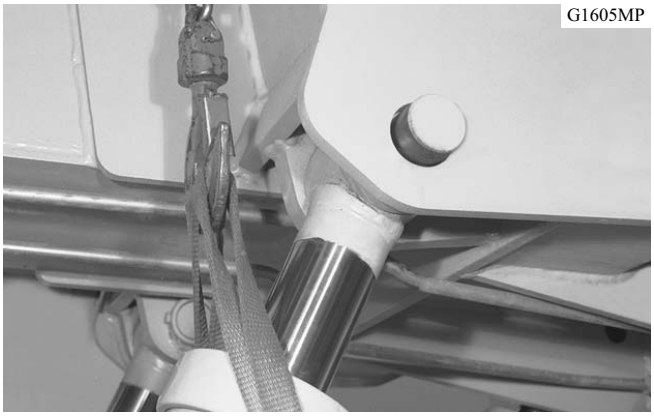
STEP 26

Use a feeler gauge, adjust the clearance between the proximity switch and the upright standard to the clearance recorded during removal.

STEP 27

Install both slave cylinder top pivot pins. Complete Steps 14, 15 and 16 of Section 608 of this manual for correct installation.

STEP 28

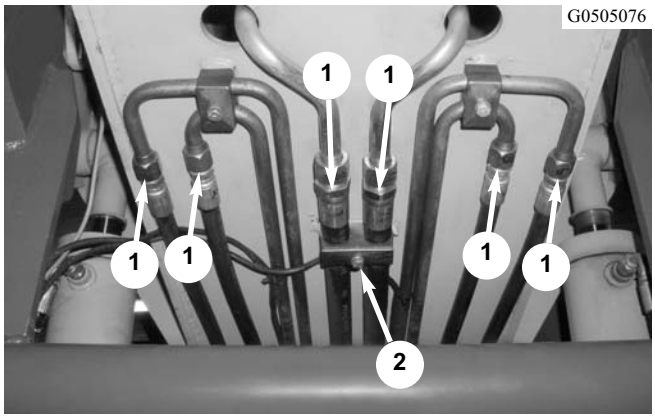


Install the top pivot pins in both lift cylinders. Complete Steps 22, 23, 24, 25 and 26 of Section 609 of this manual for correct installation.

STEP 29

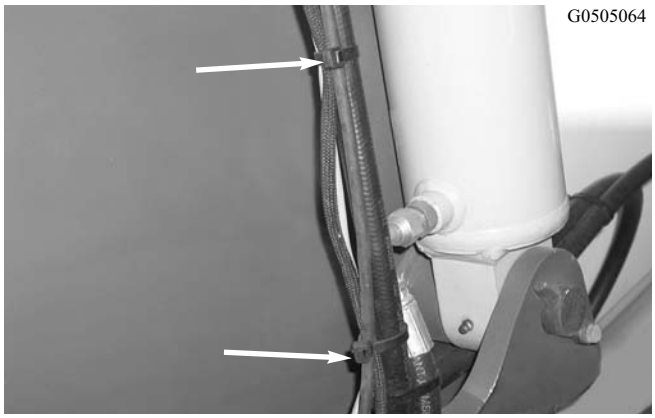
Remove caps and plugs from all hydraulic hoses and fittings.

STEP 30



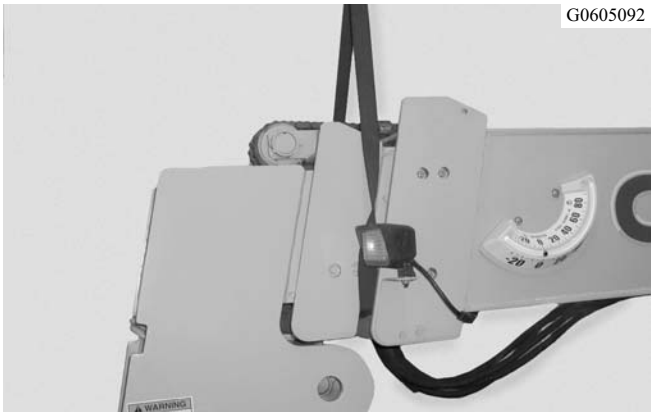
Connect the six hydraulic hoses (1) and center support block (2) to the bottom of the outer boom section.

STEP 31



Fasten the electrical harness to the hydraulic hose using tie straps.

STEP 11

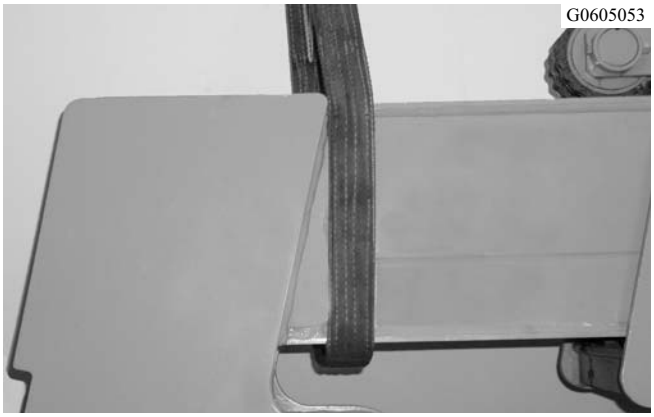


Use a hoist and lifting strap around the intermediate/inner booms and pull both sections out from the outer boom approximately 12 inches (300 mm).

STEP 12

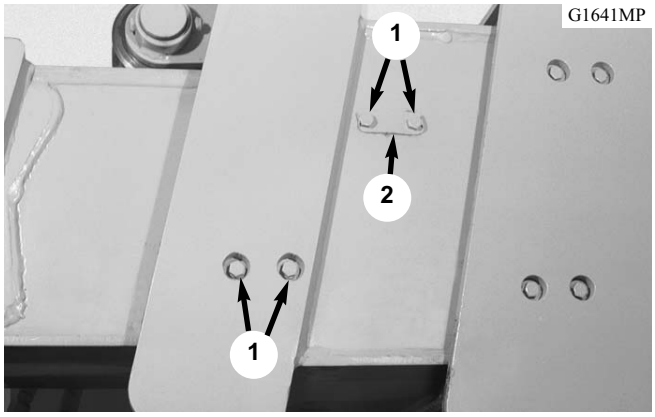
Remove the hoist and lifting strap from the intermediate/inner booms.

STEP 13



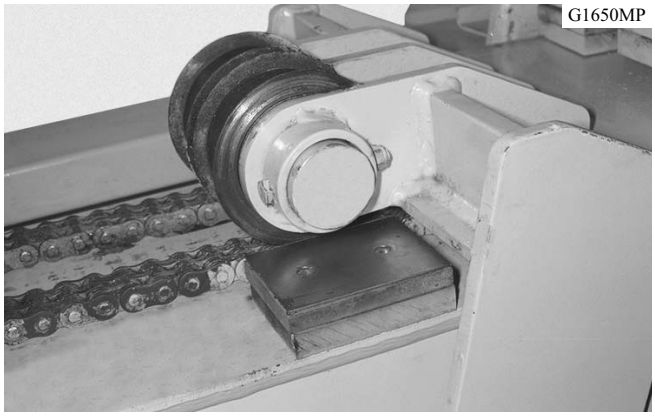
Use a hoist and lifting strap around the inner boom section. Pull the inner boom section from the intermediate section approximately 12 inches (300mm).

STEP 14



Loosen and remove the bolts (1), lockplate (2) and remove the two side slide pads and shims from the intermediate boom (both sides).

STEP 15



Loosen and remove the bolts, lockplates and remove the two top slide pads and shims from the intermediate boom.

STEP 16

Using the hoist and lifting strap apply upward pressure on the inner boom.

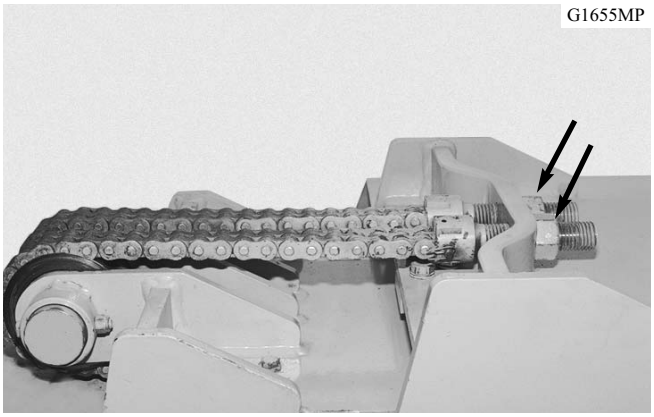
STEP 14

Reinstall the inner boom section into the intermediate boom section. See Section 703 in this manual for correct procedure.

STEP 15

Reinstall the extend cylinder into the inner boom section. See Section 610 in this manual for correct procedure.

STEP 16



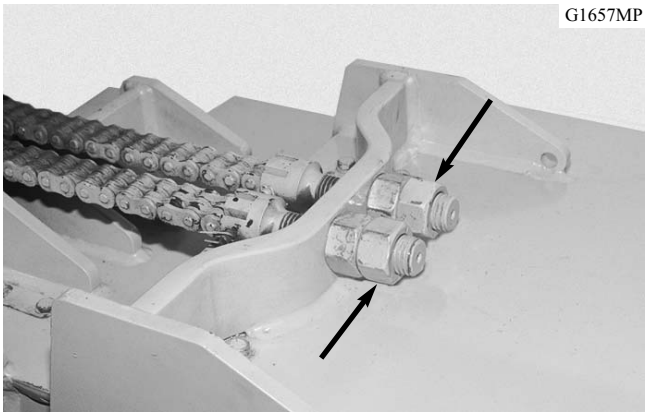
The Inner boom section must be fully installed. Pull the double chain assemblies up and over the sheaves and place each clevis through the mounting holes in the outer boom section securing it with one nut.

NOTE: *Check the condition of the sheave and roller bearing at this time. Proceed to Step 22 if repair is required.*

STEP 17

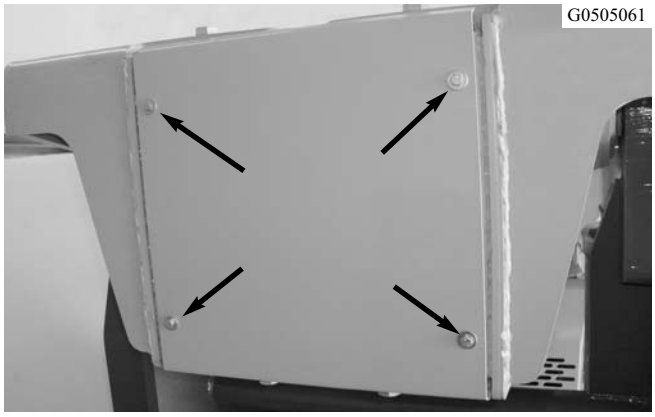
Torque the double chains. See Section 702 in this manual for correct procedure.

STEP 18



Install the lock nut on each clevis.

STEP 19



Reinstall the cover on the rear of the boom with the four bolts.

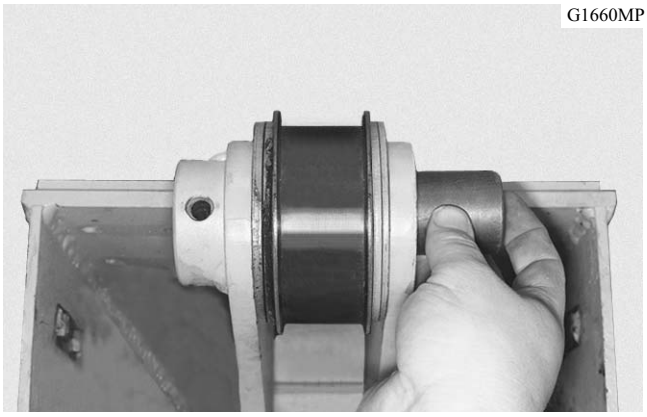
STEP 20

Start the engine and check boom operation in a clear area.

STEP 21

Shut down the engine and check for hydraulic fluid leaks. Correct any leakage problems found.

STEP 28



Remove the grease fitting from the sheave pin. Remove the sheave pin from the roller bearing.

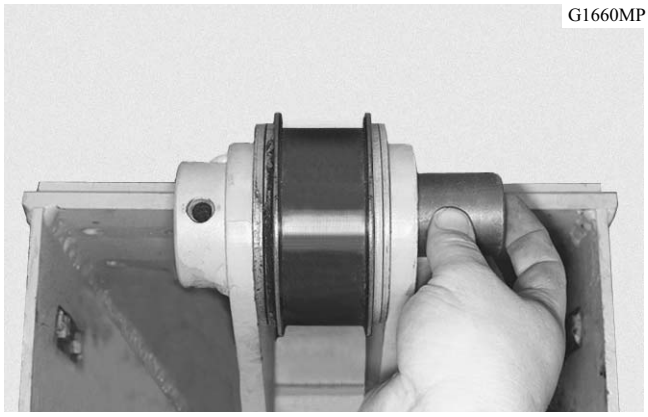
STEP 29

Remove the roller bearing.

STEP 30

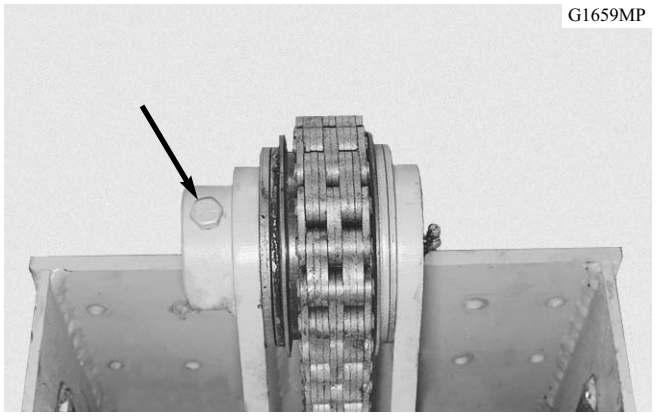
The roller bearing and sheave should be assembled before installing. Press the roller bearing into the sheave, apply grease to the inside of the roller bearing, then insert the inner ring into the roller bearing.

STEP 31



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

STEP 32



Install the retainer bolt and nut through the pin and tighten. Reposition the single chain over the sheave pulley.

STEP 33

Reinstall the inner boom section, see Section 703 of this manual for the correct procedure.

Section
707

BOOM PAD PLACEMENT
(3-Section Boom)

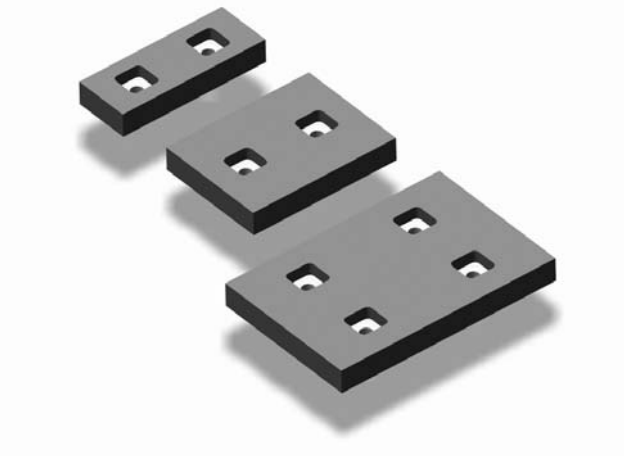
MT Series Telescopic Handlers

PRINTED IN U.S.A.

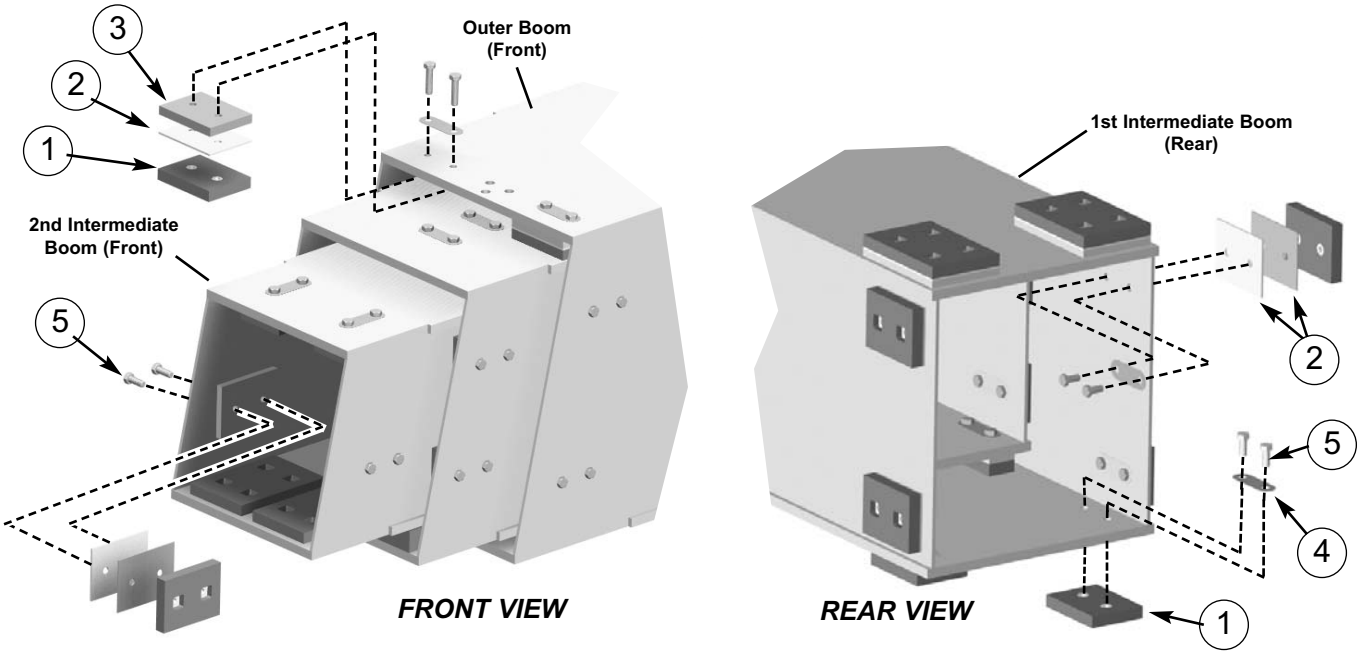
50960082AP0114

BOOM SLIDE PADS

The boom sections are equipped with special nylon low-friction slide pads between each section. Refer to Section 717 of this manual for more information.



SLIDE PAD ASSEMBLIES



1 - SLIDE PAD 2 - SHIM 3 - SPACER 4 - LOCK PLATE 5 - BOLT

MANDATORY SAFETY SHUTDOWN PROCEDURE

BEFORE cleaning, lubricating, or performing service on this equipment:

1. Bring the machine to a full stop on 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 park brake.

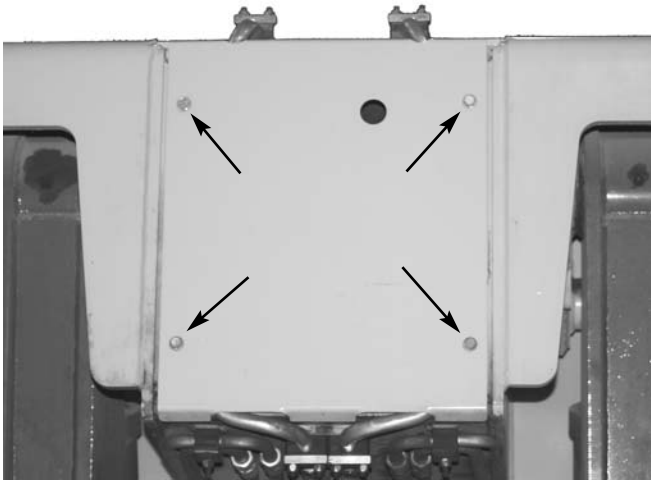
4. Idle engine for gradual cooling.

5. Turn the starter key switch to OFF position and remove the key (take 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 serious personal injury or death.

1ST INTERMEDIATE BOOM REMOVAL

STEP 1

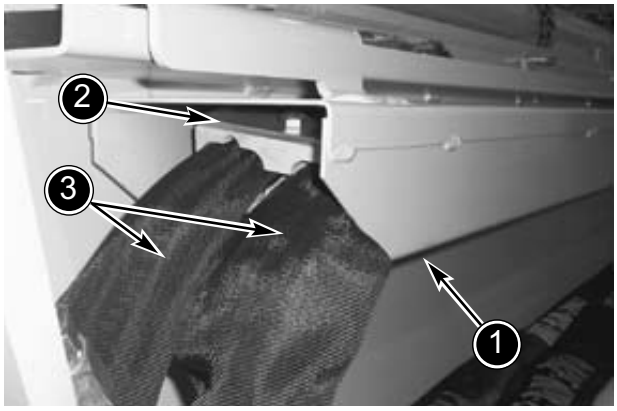


Loosen and remove the four bolts from the rear cover. Remove the cover from the boom.

STEP 2

Start the engine and level the boom untill the boom angle indicator is at 0 degrees. Shut off the engine following the Mandatory Safety Shutdown Procedure. Remove the boom side cover (1).

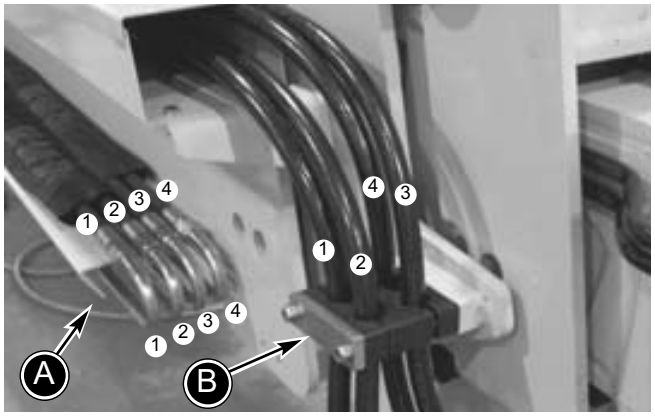
STEP 3



Remove the nut (1), located on the rear-bottom side of the hose tray, from the boom hose clamp assembly (2). Leave the hose clamp assembly (2) clamped to the boom hoses (3).

IMPORTANT: *When disconnecting hydraulic hoses, catch and dispose of any spilled fluid according to local waste disposal regulations. DO NOT discharge fluid onto the ground.*

STEP 4



Mark the hydraulic hoses and tubes as shown. Loosen the two hydraulic tube clamps (A) from the bottom of the hose tray (not shown). Disconnect the hydraulic hoses from the hydraulic tubes; cap all hoses and plug all tubes to prevent spillage and contamination. Remove the hose clamp (B) from the side of the boom.

MANDATORY SAFETY SHUTDOWN PROCEDURE

BEFORE cleaning, lubricating, or performing service on this equipment:

1. Bring the machine to a full stop on 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 park brake.

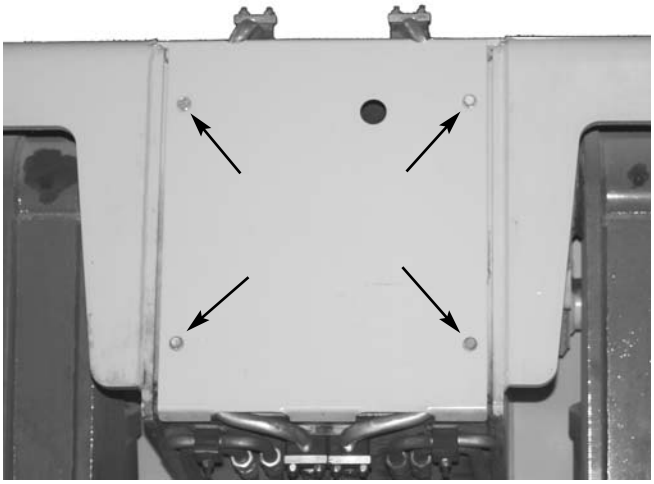
4. Idle engine for gradual cooling.

5. Turn the starter key switch to OFF position and remove the key (take 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 serious personal injury or death.

2ND INTERMEDIATE BOOM REMOVAL

STEP 1

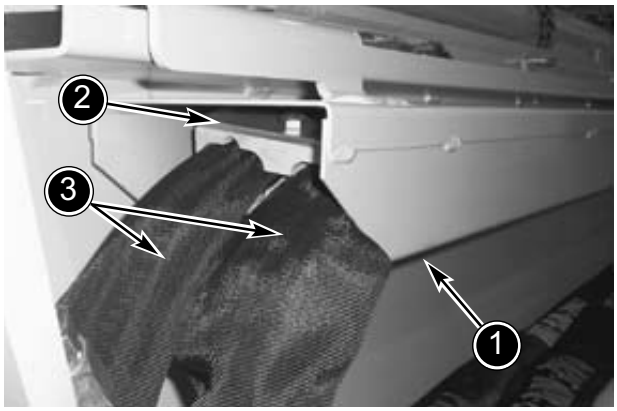


Loosen and remove the four bolts from the rear cover. Remove the cover from the boom.

STEP 2

Start the engine and level the boom untill the boom angle indicator is at 0 degrees. Shut off the engine following the Mandatory Safety Shutdown Procedure. Remove the boom side cover (1).

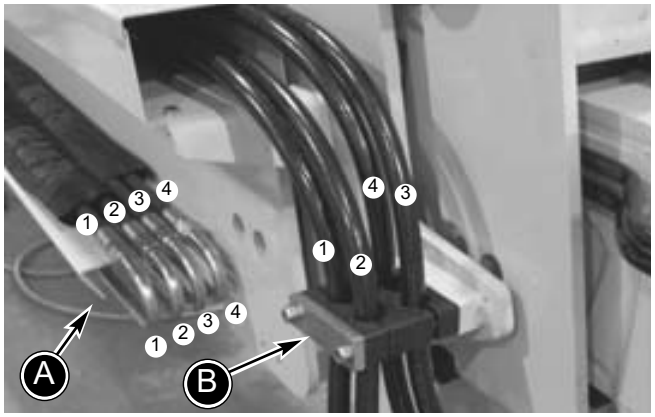
STEP 3



Remove the nut (1), located on the rear-bottom side of the hose tray, from the boom hose clamp assembly (2). Leave the hose clamp assembly (2) clamped to the boom hoses (3).

IMPORTANT: *When disconnecting hydraulic hoses, catch and dispose of any spilled fluid according to local waste disposal regulations. DO NOT discharge fluid onto the ground.*

STEP 4

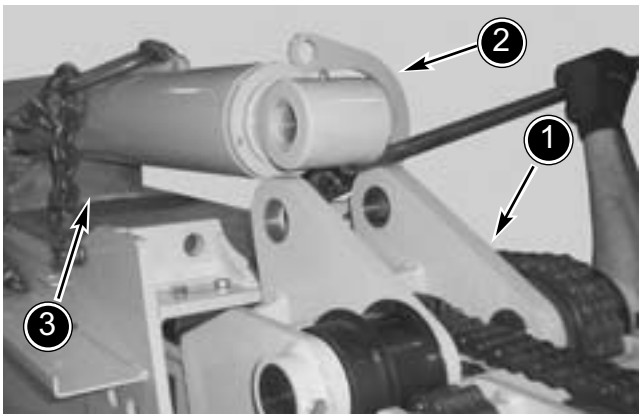


Mark the hydraulic hoses and tubes as shown. Loosen the two hydraulic tube clamps (A) from the bottom of the hose tray (not shown). Disconnect the hydraulic hoses from the hydraulic tubes; cap all hoses and plug all tubes to prevent spillage and contamination. Remove the hose clamp (B) from the side of the boom.

STEP 50

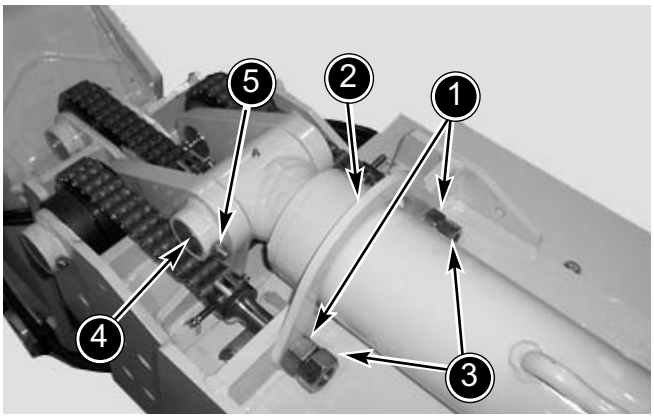
Using the hoist and lift strap, slide all the boom sections into the outer boom.

STEP 51



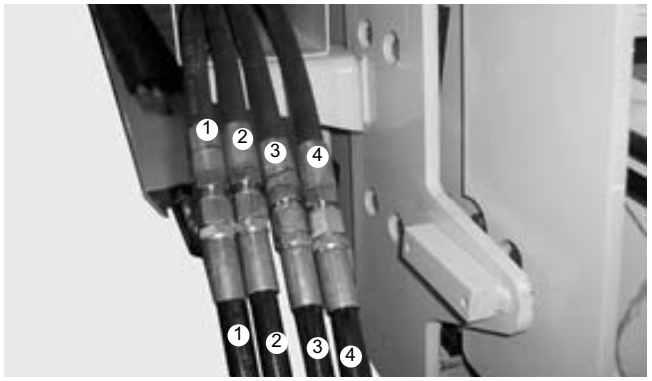
Reinstall the right side chain (1) through the extend cylinder bracket (2). Remove the block (3) and lower the extend cylinder into the extend cylinder mount.

STEP 52



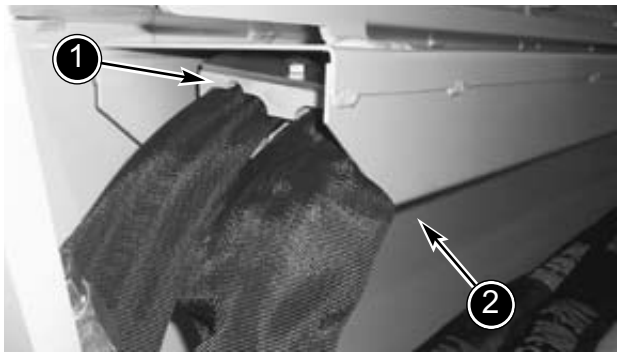
Reinstall the left chain adjuster and the two inner nuts (1) to the extend cylinder bracket (2), leave two to three threads extending past each of the chain adjusters. Loosely install the outer two nuts (3). Reinstall the extend cylinder pin (4) and secure with a retaining bolt and lock nut (5).

STEP 53



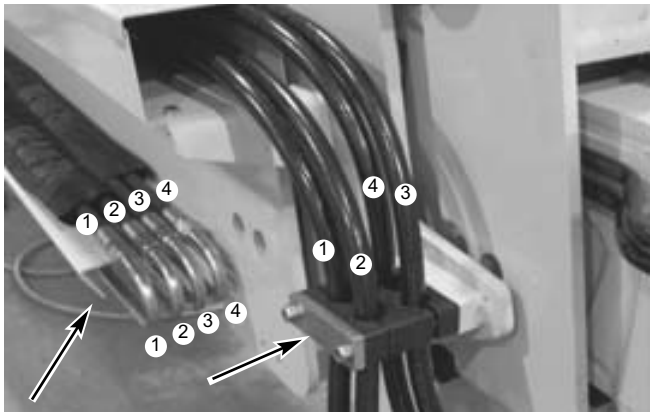
Reconnect the hydraulic hoses from the boom to the hoses in the hose tray; be sure to match the correct hoses to each other when connecting.

STEP 54



Reinstall the rear hose clamp assembly (1) to the hose tray by fastening the flange lock nut (2) from the bottom of the hose tray.

STEP 55



Reconnect the boom hoses to the hydraulic tubes. Reinstall the boom hose clamp to the side of the intermediate boom (as shown).

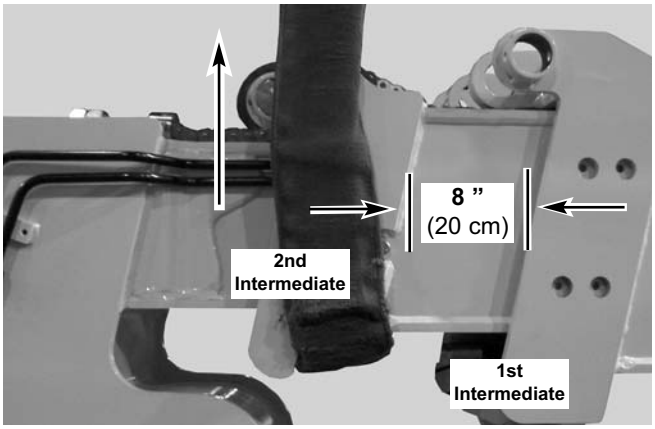
Section
713

BOOM HYDRAULIC HOSE AND TUBE REPLACEMENT (4-Section Boom)

MT 10055 Telescopic Handler

PRINTED IN U.S.A. 50960082AP0114

STEP 24

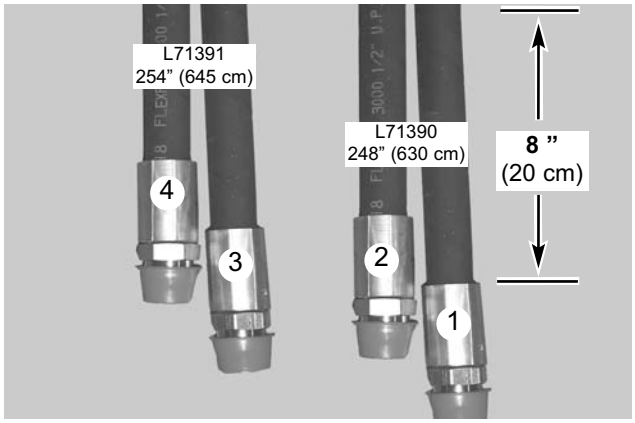


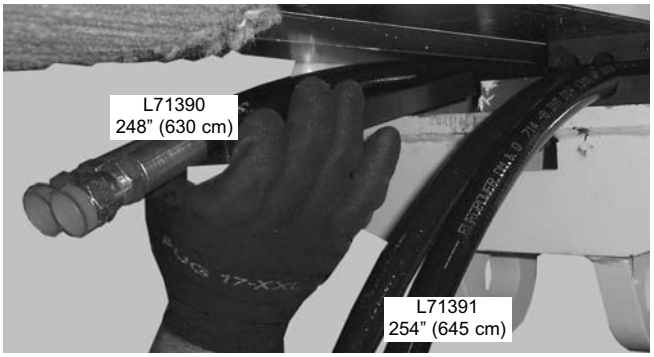
Using a hoist and lifting strap around the 2nd intermediate boom, slide the 2nd intermediate boom out of the 1st intermediate boom approximately 8 inches (20 cm). Apply upward pressure on the 2nd intermediate boom section.

STEP 25

Refer to the illustration in Step 11; remove the four remaining bottom slide pad bolts (item #2 - shown in Step 11). Remove the two bottom slide pads from the 1st intermediate boom (as shown above).

STEP 26



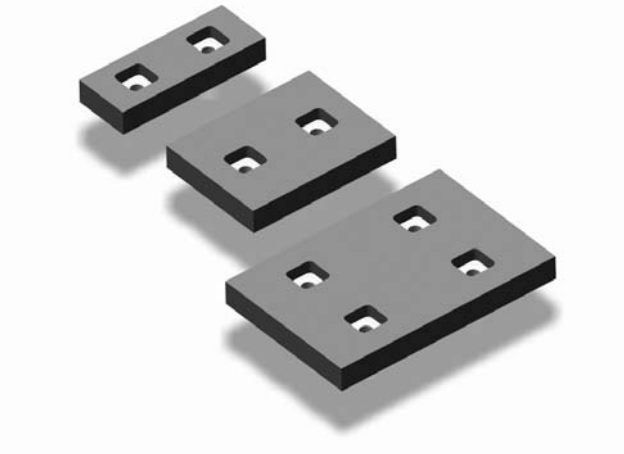


Uncoil the new interior boom hoses (P/N L71391 and L71390) and lay them flat on the ground. Mark one end of each hose, locate and mark the corresponding end of each hose. Use a hydraulic fitting (connector) to attach the shorter split end [8 inches (20 cm)] of each hose to the corresponding ends of the old hose.

STEP 27

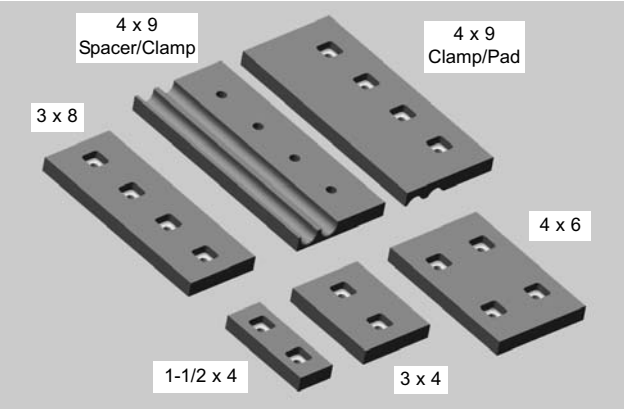
Pull the old hoses (with the new hoses attached) out of the rear of the outer boom. Leave approximately 30 inches (76 cm) of both hoses extending out of the front of the 1st intermediate boom section.

GENERAL INFORMATION



The boom sections are equipped with special nylon low-friction slide pads between each section. These pads are pre-greased and initially worn in at the factory. Normal greasing is not required, except for maintaining a light film of grease on the pad tracking areas of the boom sections. If a boom section is replaced, grease is applied to certain areas on the boom sections. Refer to the boom removal sections of this manual for the correct procedure.

SLIDE PAD SIZES:



There are five different sizes of slide pads used in the four-section telescoping boom assembly. All slide pads are the same thickness [5/8“ (16 mm)] when new. See pages 717-2 and 717-3 of this section for a listing of sizes and locations.

SHIMS:

Metal shims are installed between the slide pads, spacers and boom sections. Shims are installed to minimize the clearance between the slide pad and the boom section that it slides on, which helps keep the boom centered as it is extended or retracted.

Two different thicknesses of shims are available: 1/16 inch (1.6 mm) or 1/8 inch (3.2 mm). Different thickness shims can be combined on the same slide pad to provide a clearance of 1/16 inch (1.6 mm) or less. Shims are not used on the bottom slide pads of any boom section. Shims widths and lengths are: 3” x 8” (76 mm x 200 mm); 3” x 4” (76 mm x 100 mm); and 4” x 6” (100 mm x 150 mm).

In addition to the shims, spacers are available in two different thickness: 3/8 inch (10 mm) for the 4” x 6” pads and 1/2 inch (13 mm) for the 3” x 4” pads. These spacers are used in various locations in combination with the shims to minimize the clearance between the slide pad and the boom section.

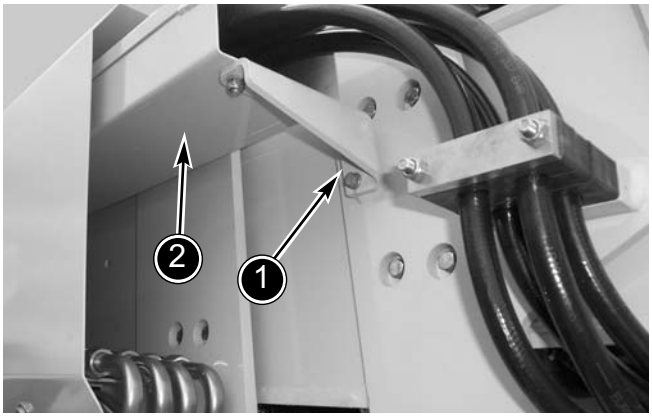
PAD LOCATION:

For pad location, size and quantity information, see pages 714-2 and 714-3 of this section.

BOOM PAD REPLACEMENT PROCEDURE

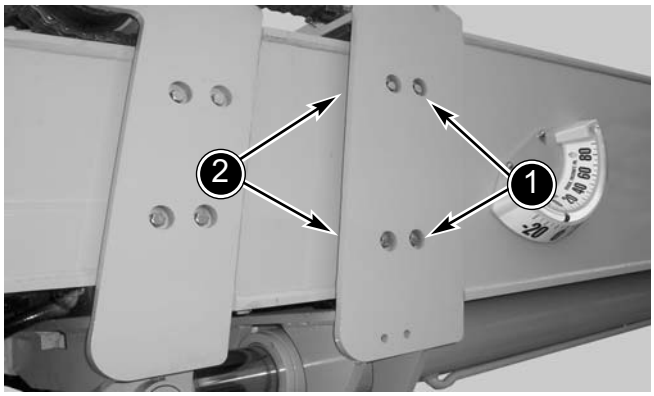
For boom pad replacement, see Section 715 of this manual for the correct procedure, or refer to the boom removal sections of this manual.

STEP 5



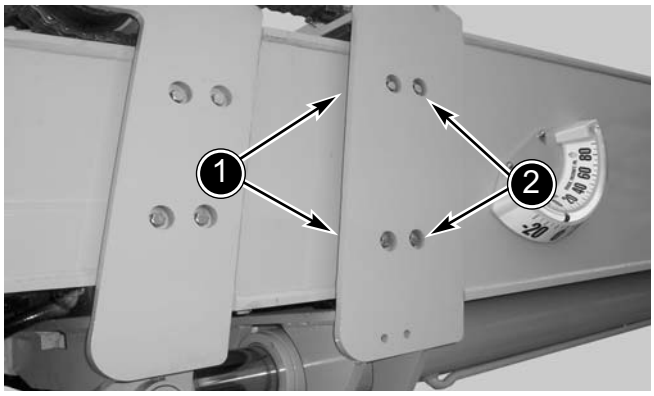
Remove the two bolts and lock washers from the side of the hose tray bracket (1). Move the front of the hose tray (2) down and away from the outer boom so as to be able to access the upper right-side side slide pad bolts (not shown). If needed, secure the hose tray with mechanic's wire.

STEP 6



Remove the bolts and lock washers (1) from the side slide pads and shims from one side of the outer boom. Remove the side slide pads and shims from the outer boom, one side only.

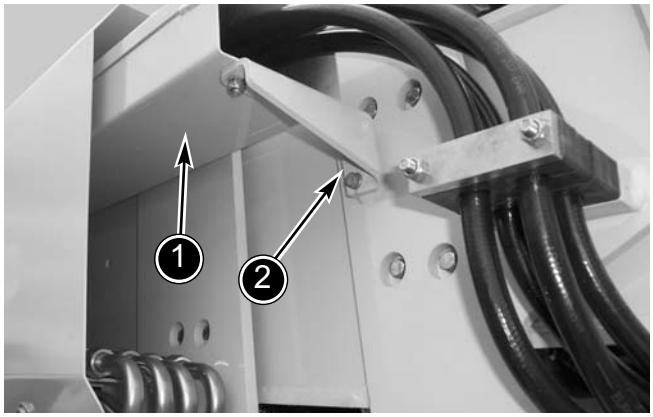
STEP 7



NOTE: *It is helpful to install the upper slide pad first; this will help prevent additional work should it drop behind a previously installed lower slide pad.*

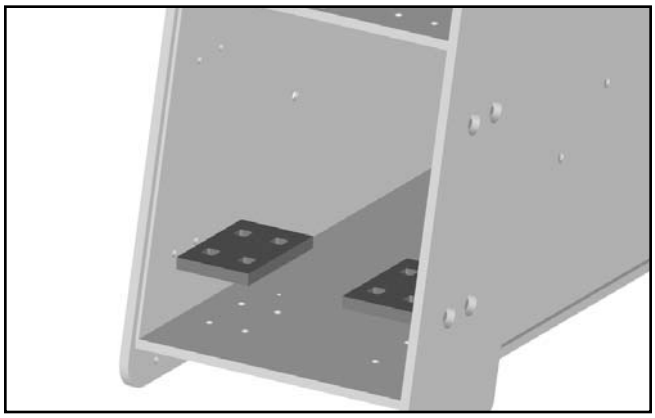
Install the side slide pads to the front of the outer boom (1) using bolts and lock washers (2). Use Loctite® 271 (red) Thread Lock (or equivalent) on the threads of the bolts and tighten to 30 ft.-lbs. (40 Nm) torque. Repeat Steps 6 and 7 to replace the side slide pads for the other side of the outer boom.

STEP 8

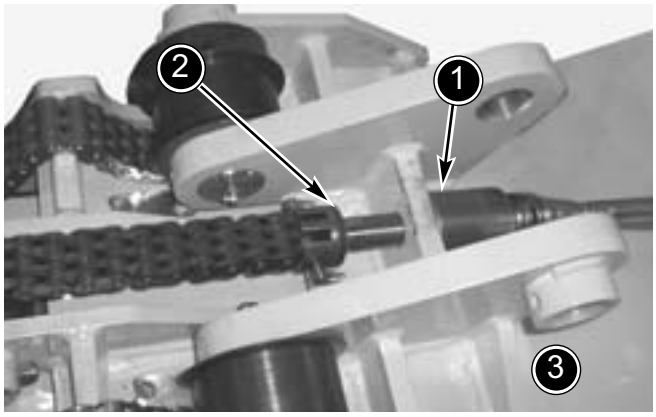


Reinstall the hose tray and bracket (1) to the side of the boom using two bolts and lock washers (2). Use Loctite® 271 (red) Thread Lock (or equivalent) on the threads of the bolts and tighten, be careful not to over tighten the bolts.

OUTER BOOM FRONT - BOTTOM PADS

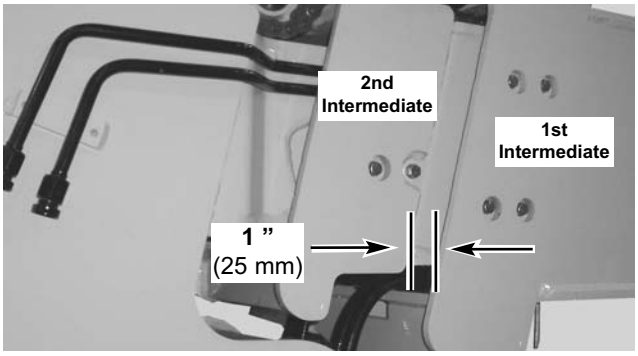


STEP 59



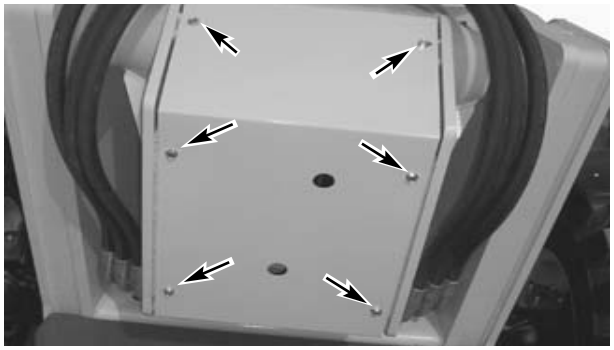
Remove nuts from the center chain adjuster (1). Remove center chain adjuster (2) from 1st intermediate boom (3). Lay the center chain over the nose of the inner boom.

STEP 60



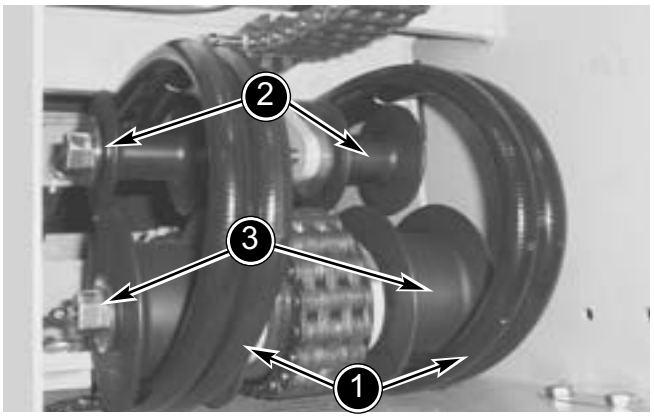
Use a prybar to slide the 2nd intermediate boom section 1 inch (25 mm) out of the 1st intermediate boom section.

STEP 61



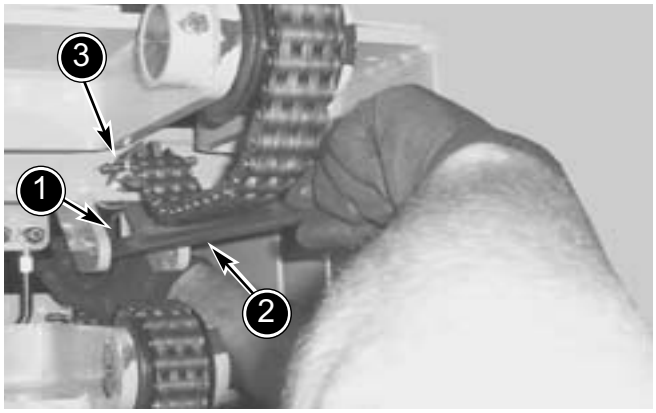
If the rear boom cover was not removed in previous Steps, remove the six bolts from the rear cover and remove the rear cover from the boom.

STEP 62



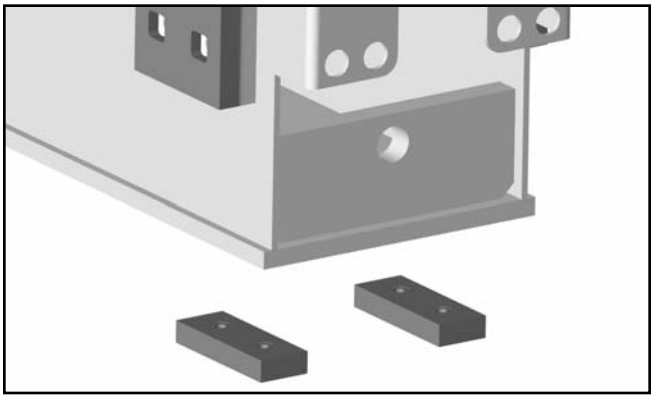
Reach inside the rear of the boom and pull back on the boom hoses (1) to create enough slack to assist in the removal of the hose guides. Remove the upper retaining bolts and hose guides (2) (both sides). Remove the lower retaining bolts and hose guides (3) (both sides).

STEP 63



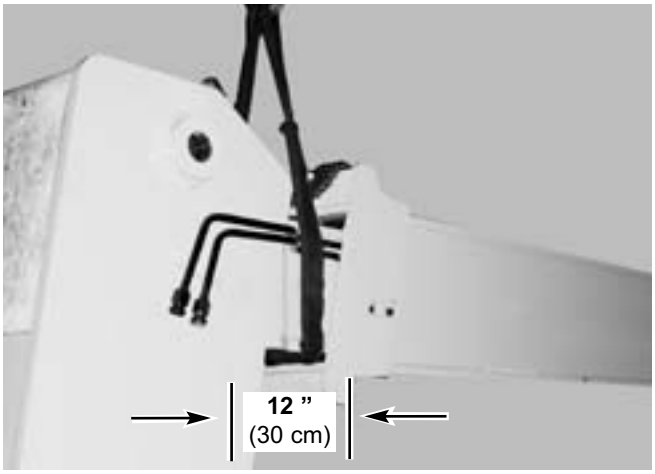
Using a short handle 1/2” drive ratchet, a 1-1/2” deep-well socket (1) and a prybar (2), loosen and remove the upper chain adjuster nuts and the chain adjuster (3) from the rear of the 2nd intermediate boom.

INNER BOOM REAR - BOTTOM PADS



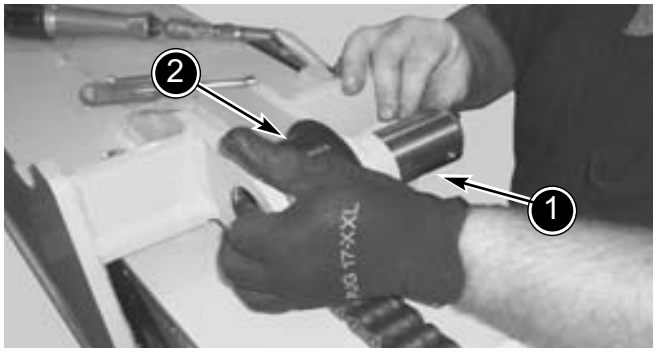
NOTE: *To replace the bottom slide pads for the inner boom, it is necessary to remove the inner boom from the 2nd intermediate boom; continue with the following Steps to remove the inner boom.*

STEP 107



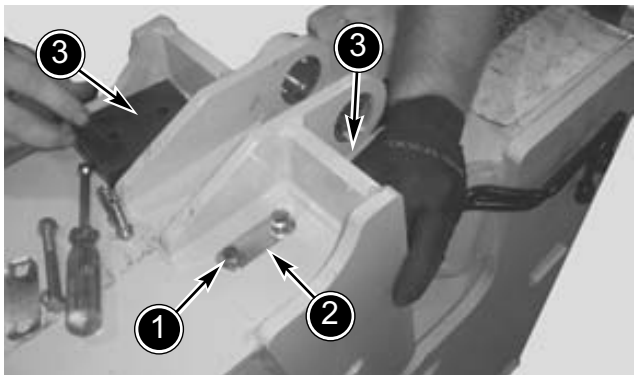
Using a hoist and lifting strap around the front of the inner boom, pull the inner boom out of the 2nd intermediate boom approximately 12 inches (30 cm) and lower the hoist to relieve upward pressure on the 2nd intermediate boom section.

STEP 108



Remove the bolt and lock nut from the 2nd intermediate boom section front chain roller mount. Remove the chain roller pin (1) and chain roller (2) from the front of the 2nd intermediate boom section.

STEP 109



Remove the four bolts (1) and two lock plates (2) from the top-front (both sides) of the 2nd intermediate boom slide pads. Remove the top slide pads and shims.

STEP 110

Loosen and remove the two bolts and lock washers from the side slide pads on the front of the 2nd intermediate boom (both sides). Remove the side slide pads and shims (both sides).

Section
717

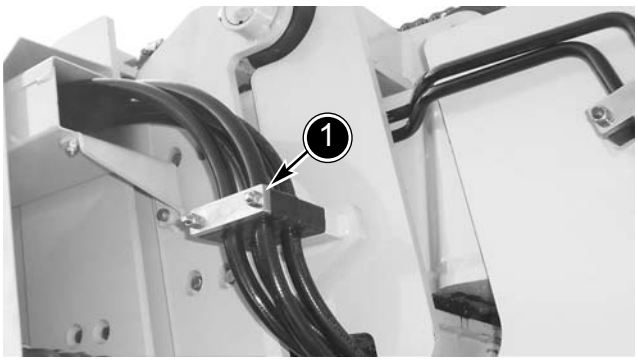
INNER BOOM TOP CHAIN AND ROLLER REPLACEMENT (4-Section Boom)

MT 10055 Telescopic Handler

PRINTED IN U.S.A.

50960082AP0114

STEP 41



Reinstall the boom hose clamp (1) on the side of the 1st intermediate boom. Be sure to allow some slack between the boom hose tray and the hose clamp.

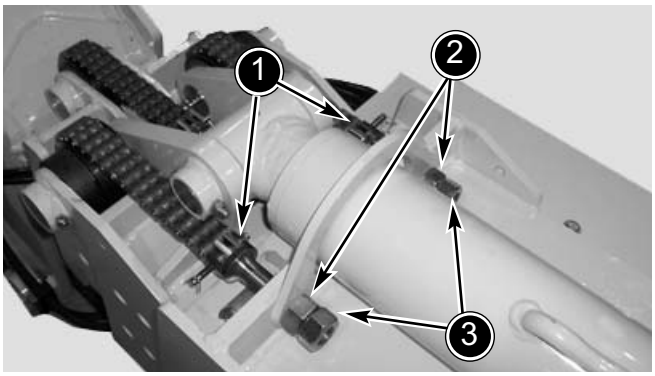
STEP 42

Reinstall the rear boom cover.

STEP 43

Adjust the boom chains, see Section 721 of this manual for the correct procedure.

STEP 31



Reinstall the boom chains (1) to the top-front of the outer boom (both sides). Tighten the chain adjuster so that approximately six threads of the chain adjuster extend past the inner nut (2). Loosely tighten the outer nut (3) onto the chain adjusters.

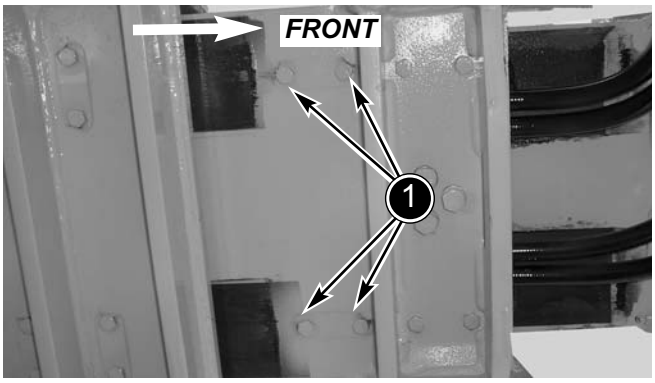
STEP 32

Start the engine and carefully extend the 1st intermediate boom section out about 6 inches (15 cm); refer to the illustration in Step 42.

STEP 33

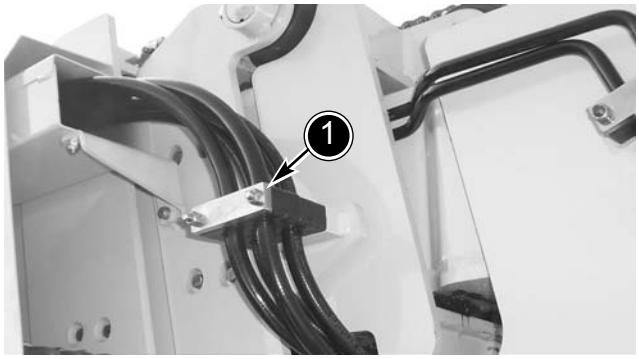
Shut off the engine following the Mandatory Safety Shutdown Procedure.

STEP 34



Reinstall the four rear bolts (1) and two lock plates (2) to the bottom slide pads and shims on the bottom of the 1st intermediate boom section. Use Loctite® 271 (red) Thread Lock (or equivalent) on the threads of the bolts and tighten to 30 ft.-lbs. torque. Bend each end of the lock plates up.

STEP 35



Reinstall the boom hose clamp (1) on the side of the 1st intermediate boom. Be sure to allow some slack between the boom hose tray and the hose clamp.

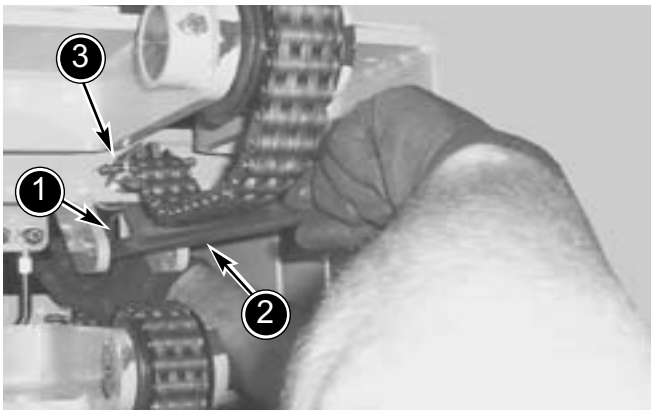
STEP 36

Reinstall the rear boom cover.

STEP 37

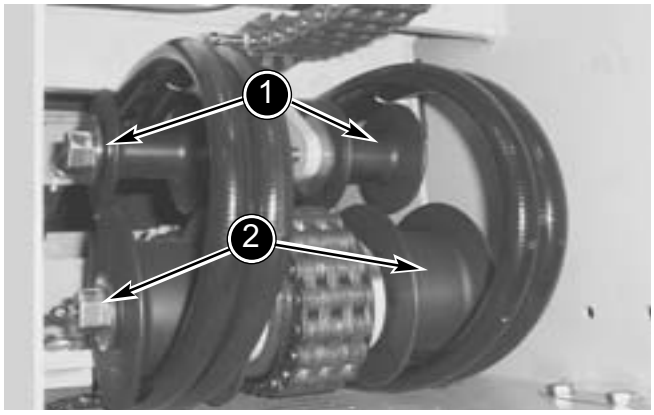
Adjust the boom chains, see Section 721 of this manual for the correct procedure.

STEP 32



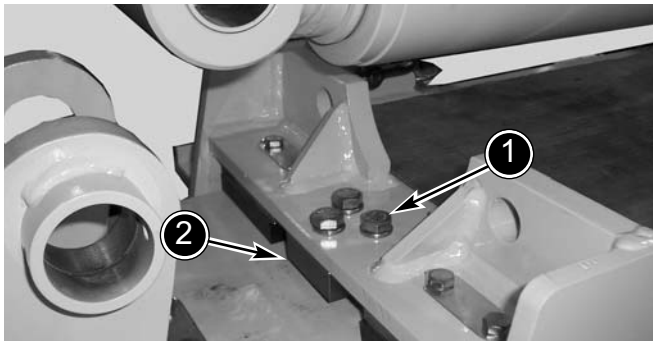
Using a short handle ratchet (1), 1-1/2" deep-well socket and a pry bar, tighten the outer nut.

STEP 33



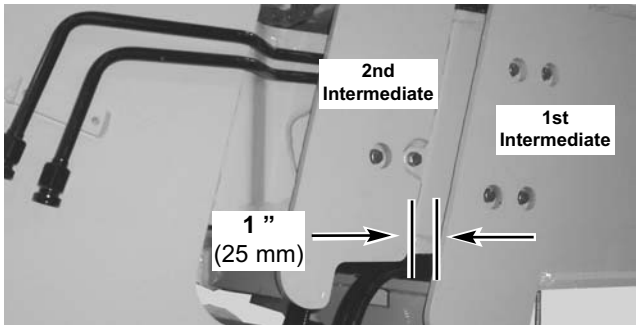
Reinstall the the upper hose guides and bolts (1) (both sides). Use Loctite® 271 (red) Thread Lock (or equivalent) on the threads; do not over tighten. Reinstall the the lower hose guides and bolts (2) (both sides). Use Loctite® 271 (red) Thread Lock (or equivalent) on the threads; do not over tighten.

STEP 34



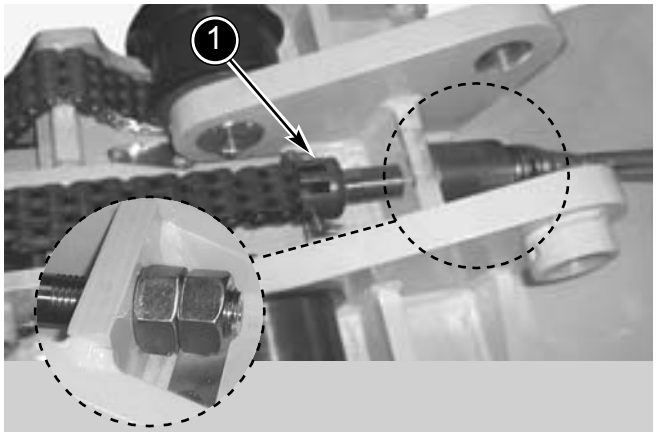
Reinstall the clevis block (1) to the outer boom using the three bolts and washers (2). Use Loctite® 271 (red) Thread Lock (or equivalent) on the threads of the bolts and tighten to 90 ft.-lbs. (122 Nm) torque.

STEP 35



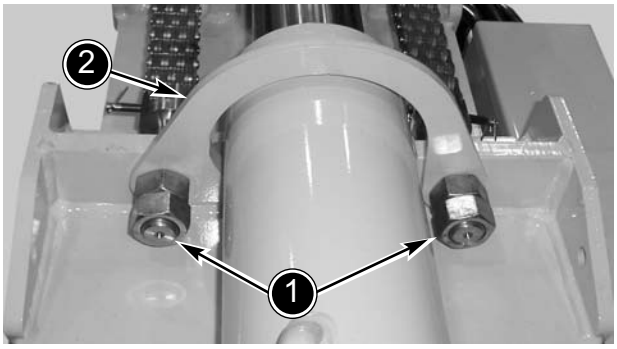
Using a hoist and lifting strap around the front of the inner boom, slide all boom sections fully into the outer boom. Use a prybar to slide the 2nd intermediate boom 1 inch (25 mm) out of the 1st Intermediate boom.

STEP 36



Reinstall the single chain adjuster clevis (1) into the center mount hole of the 1st intermediate boom. Tighten the two chain adjustment nuts so that two or three threads extend past the end of the outer nut.

STEP 9



Position the boom chain adjusters through the mount holes and secure with four nuts (1). Leave approximately two to three threads extending past the outer nut.

Be sure to reinstall the extend cylinder bracket (2) as shown.

STEP 10

Adjust the boom chains, see Section 721 of this manual for the correct procedure.

HOODS AND COVERS

MANDATORY SAFETY SHUTDOWN PROCEDURE

BEFORE cleaning, adjusting, lubricating or servicing the unit:

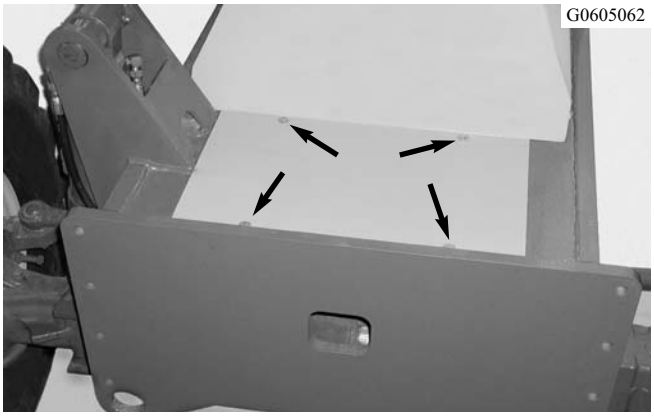
1. **Stop machine on a level surface. (AVOID parking on a slope, but if necessary, park across the slope and block the tires.)**
2. **Fully retract the boom and lower the attachment tool to the ground. Idle engine for gradual cooling.**
3. **Place controls in neutral and apply parking brake.**
4. **Shut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

FRONT HOOD REMOVAL

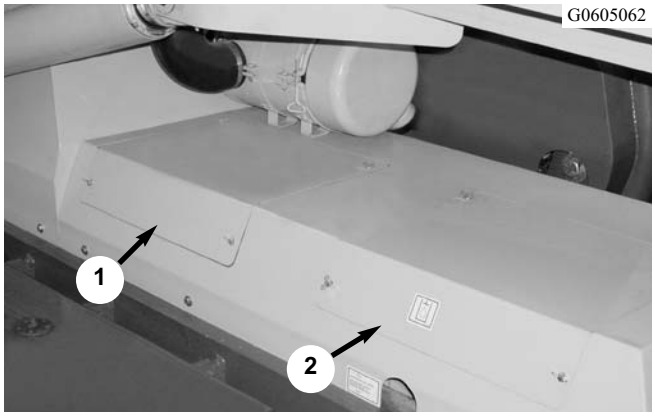
NOTE: *The front hood can be removed with the air cleaner assembly attached.*

STEP 1



Remove four bolts to release and remove the front cover.

STEP 2



Remove the hydraulic pump access cover (1) and hydraulic tank access cover (2).

STEP 3

Loosen the hose clamp securing the rubber intake connector to the air intake tube.