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The above Safety Alert Symbol means **ATTENTION! ALWAYS BE ALERT! YOUR SAFETY IS INVOLVED!** When you see this symbol, carefully read the message that follows and be alert to the possibility of injury or death.

Mustang Manufacturing Company always takes safety into consideration when designing its products, and designs guards for exposed moving parts whenever it is possible and practical to do so. However, even with today's state-of-the-art technology, it must be recognized that in order to assure machine functionality for specific purposes not all machine hazards can be guarded or shielded.

Decals are placed on the machine to warn of additional hazards and must be read and strictly followed.

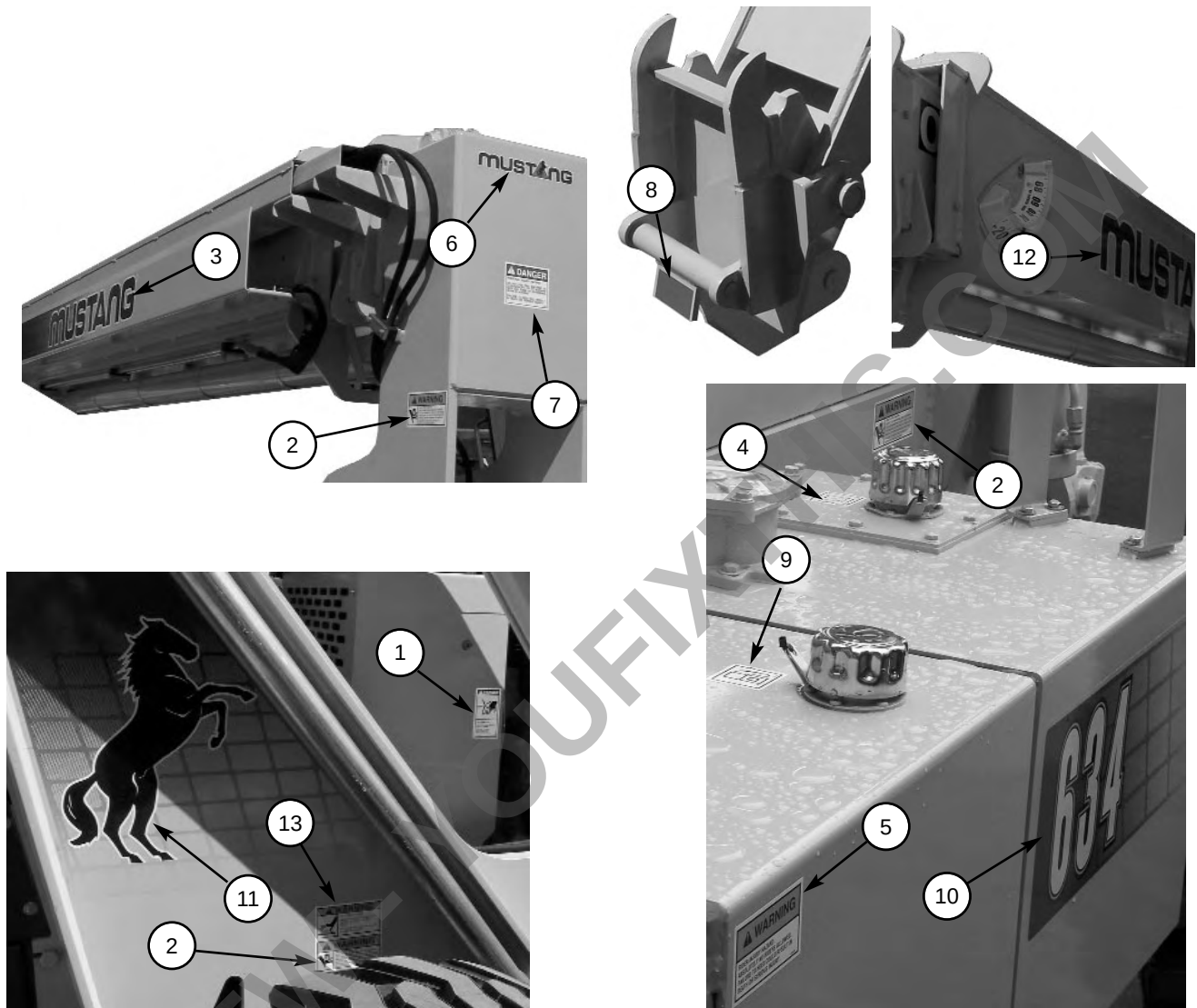
Mustang Manufacturing Company cannot anticipate every situation that may constitute a hazard. Therefore, the following safety rules and reminders are not all-inclusive and do not replace federal, state or local regulations, insurance needs or other safety code requirements.

MANDATORY SAFETY SHUTDOWN PROCEDURE

Before cleaning, lubricating or servicing 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 the park brake.
4. Idle the engine for gradual cooling.
5. Turn the key switch to OFF position and remove key (take key with you for security reasons).

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



DECAL LOCATIONS - FRAME AND BOOM

Ref. No.	Part No.	Description	Qty. Req.	Ref. No.	Part No.	Description	Qty. Req.
01	L70305	DANGER-HANDS OUT	AR	08	L66613	QUICK-ATTACH UNLOCKED . . .	AR
02	L65927	WARNING-PINCH POINT	AR	09	137634	DIESEL FUEL	AR
03	100623	MUSTANG, RH BOOM	AR	10	100626	634, RIGHT HAND	AR
04	137632	HYDRAULIC OIL FILL	AR	11	100625	HORSE	AR
05	L65932	WARNING-NO RIDERS	AR	12	100622	MUSTANG, LEFT HAND BOOM .	AR
06	100156	MUSTANG FRONT	AR	13	L65942	HOT SURFACE	AR
07	L65928	DANGER-PERSONNEL INJURY .	AR				

(units without WPS)

SAE FASTENER TORQUE CHART

NOTE: Use these torques, unless special torques are specified. Values are for UNC and UNF thread fasteners, plated or unplated, as received from supplier. Fasteners can be dry or lubricated with normal engine oil. Values do not apply if graphite, moly-disulphide or other extreme pressure lubricant is used.

SAE Grade No.	2				5				8*			
Bolt head identification (See Note 1)												
Bolt Size	LB FT		Nm		LB FT		Nm		LB FT		Nm	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1/4	5	6	7	8	9	11	12	15	12	15	16	20
5/16	10	12	14	16	17	20.5	23	28	24	29	33	39
3/8	20	23	27	31	35	42	48	57	45	54	61	73
7/16	30	35	41	47	54	64	73	87	70	84	95	114
1/2	45	52	61	70	80	96	109	130	110	132	149	179
9/16	65	75	88	102	110	132	149	179	160	192	217	260
5/8	95	105	129	142	150	180	203	244	220	264	298	358
3/4	150	185	203	251	270	324	366	439	380	456	515	618
7/8	160	200	217	271	400	480	542	651	600	720	814	975
1	250	300	339	406	580	696	787	944	900	1080	1220	1464
1-1/8					800	880	1085	1193	1280	1440	1736	1953
1-1/4					1120	1240	1519	1681	1820	2000	2468	2712
1-3/8					1460	1680	1980	2278	2380	2720	3227	3688
1-1/2					1940	2200	2631	2983	3160	3560	4285	4827

NOTE 1: Bolt head identification marks as per grade. Manufacturing marks will vary. *Thick nuts must be used with Grade 8 bolts.

METRIC FASTENER (ISO) TORQUE CHART

NOTE: Use these torques, unless special torques are specified. Values are for UNC and UNF thread fasteners, plated or unplated, as received from supplier. Fasteners can be dry or lubricated with normal engine oil. Values do not apply if graphite, moly-disulphide or other extreme pressure lubricant is used.

ISO Grade No.	8.8				10.9				12.9			
Bolt head identification (See Note 1)												
Bolt Size	LB FT		Nm		LB FT		Nm		LB FT		Nm	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
M4	3	4	2	3	4	5	3	4	Because of the low ductility of these fasteners, the torque range is to be determined individually for each application. As a general rule, the torque ranges specified for grade 10.9 fasteners can be used satisfactorily. *M14 is not a preferred size			
M5	6.5	8	5	6	9.5	11	7	8				
M6	10.5	12	8	9	15	17.5	11	13				
M8	26	31	19	23	37	43	27	32				
M10	52	61	38	45	73	87	54	64				
M12	90	107	66	79	125	150	93	112				
*M14	144	172	106	127	200	245	149	179				
M16	217	271	160	200	310	380	230	280				
M20	434	515	320	380	610	730	450	540				
M24	675	815	500	600	1050	1275	780	940				
M30	1250	1500	920	1100	2000	2400	1470	1770				
M36	2175	2600	1600	1950	3500	4200	2580	3090				

NOTE 1: Bolt head identification marks as per grade. Manufacturing marks will vary.

GENERAL SPECIFICATIONS

POWER TRAIN

Transmission

Make..... Clark
Type..... 3 Speeds Forward, 3 Speeds Reverse
Model T12000
Torque Converter..... Single-Stage, Dual-Phase
Travel Speeds
1st gear 3.6 MPH (5.8 km/h)
2nd gear 7.9 MPH (12.7 km/h)
3rd gear 20.2 MPH (32.5 km/h)

Axles (Front and Rear)

Make..... Hurth
Type..... Full-Time 4WD, Steerable, Open Differential, Dual-Reduction
Outboard Planetaries
Ratio (overall) 15.4:1

Engine (Standard)

Make..... John Deere
Model 4045T
Type..... Diesel, In-line 4 Cyl.
Displacement 276 cu. in. (4.5 L)
Aspiration Turbo-Charged
High Idle Speed (no load) 2600 RPM
Rated Speed (Governed) 2500 RPM
Low Idle Speed (approx.) 950-1000 RPM
Power Rating (at 2500 RPM)..... 99 HP (74 kW)

NOTE: Also refer to engine manual.

Engine (Optional)

Make..... John Deere
Model 4045T
Type..... Diesel, In-line 4 Cyl.
Displacement 276 cu. in. (4.5 L)
Aspiration Turbo-Charged
High Idle Speed (no load) 2600 RPM
Rated Speed (Governed) 2500 RPM
Low Idle Speed (approx.) 950-1000 RPM
Power Rating (at 2500 RPM)..... 115 HP (86 kW)

NOTE: Also refer to engine manual.

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.

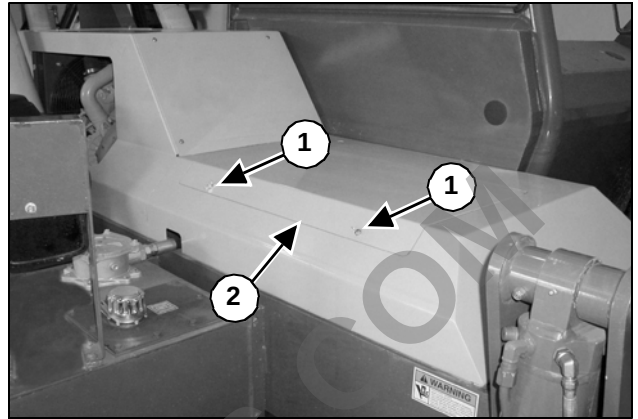
RELIEVE HYDRAULIC OIL PRESSURE:

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**

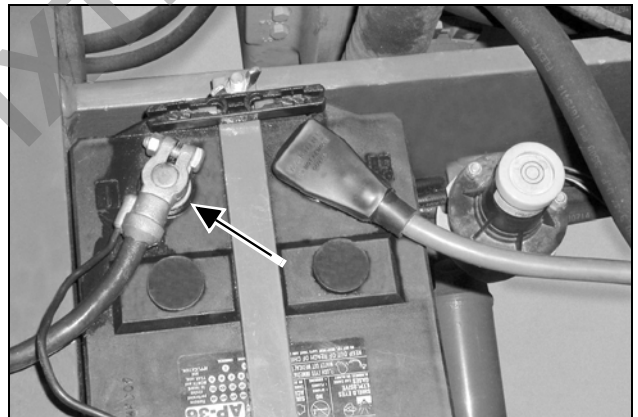
G0805189

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

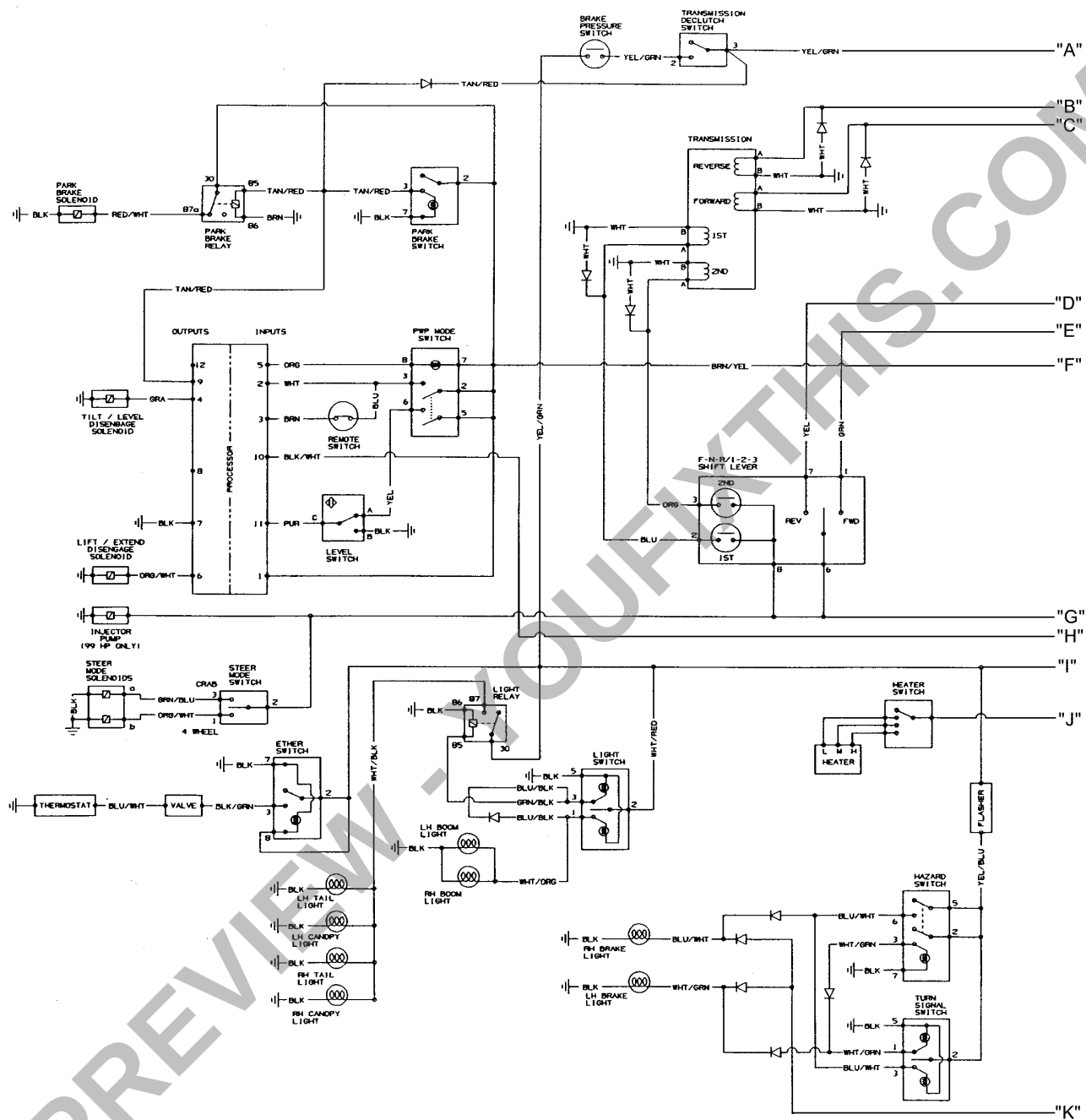
Loosen the two thumbscrews and remove the battery access cover (2).

STEP 3

G0905001

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

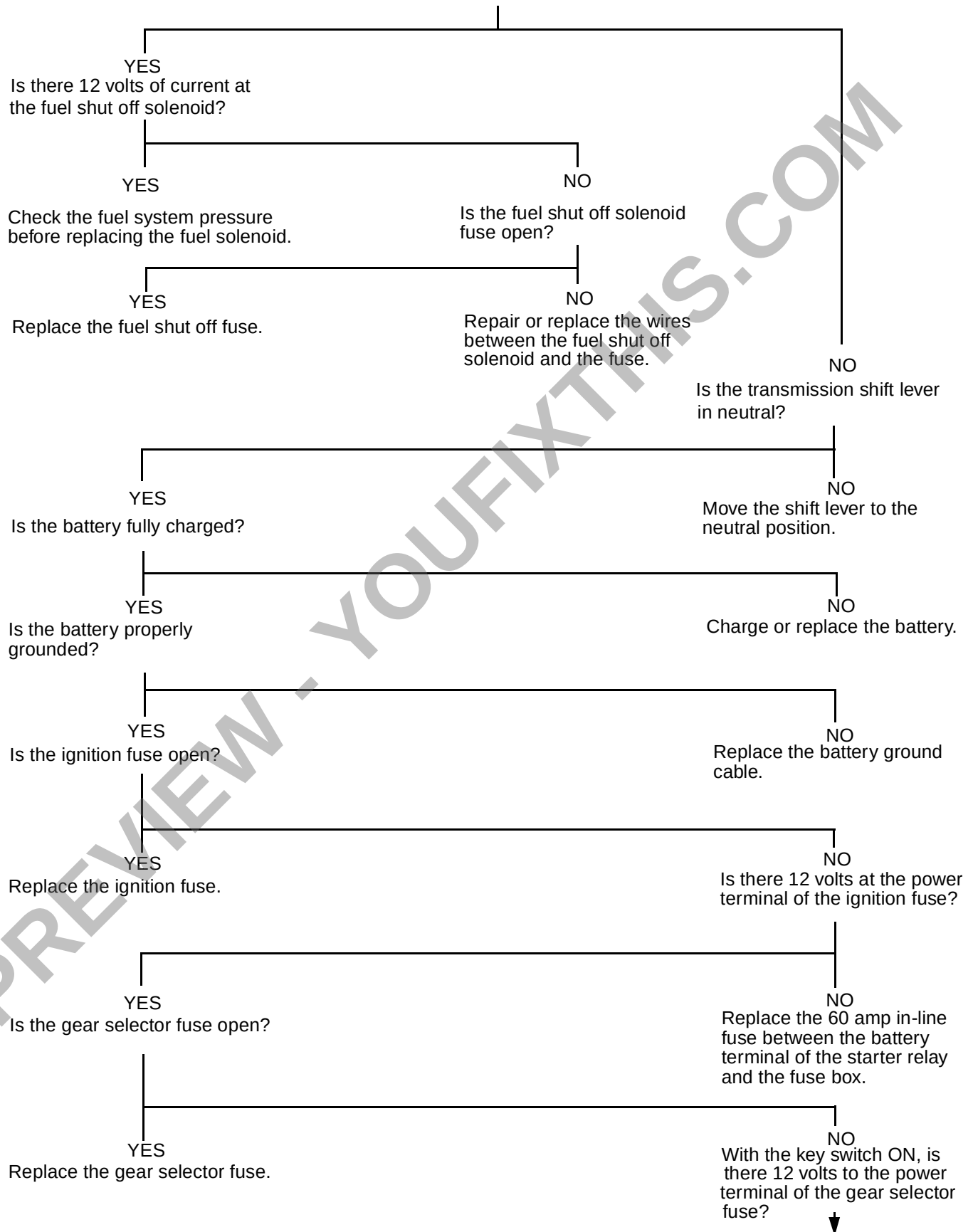
ELECTRICAL SCHEMATICS



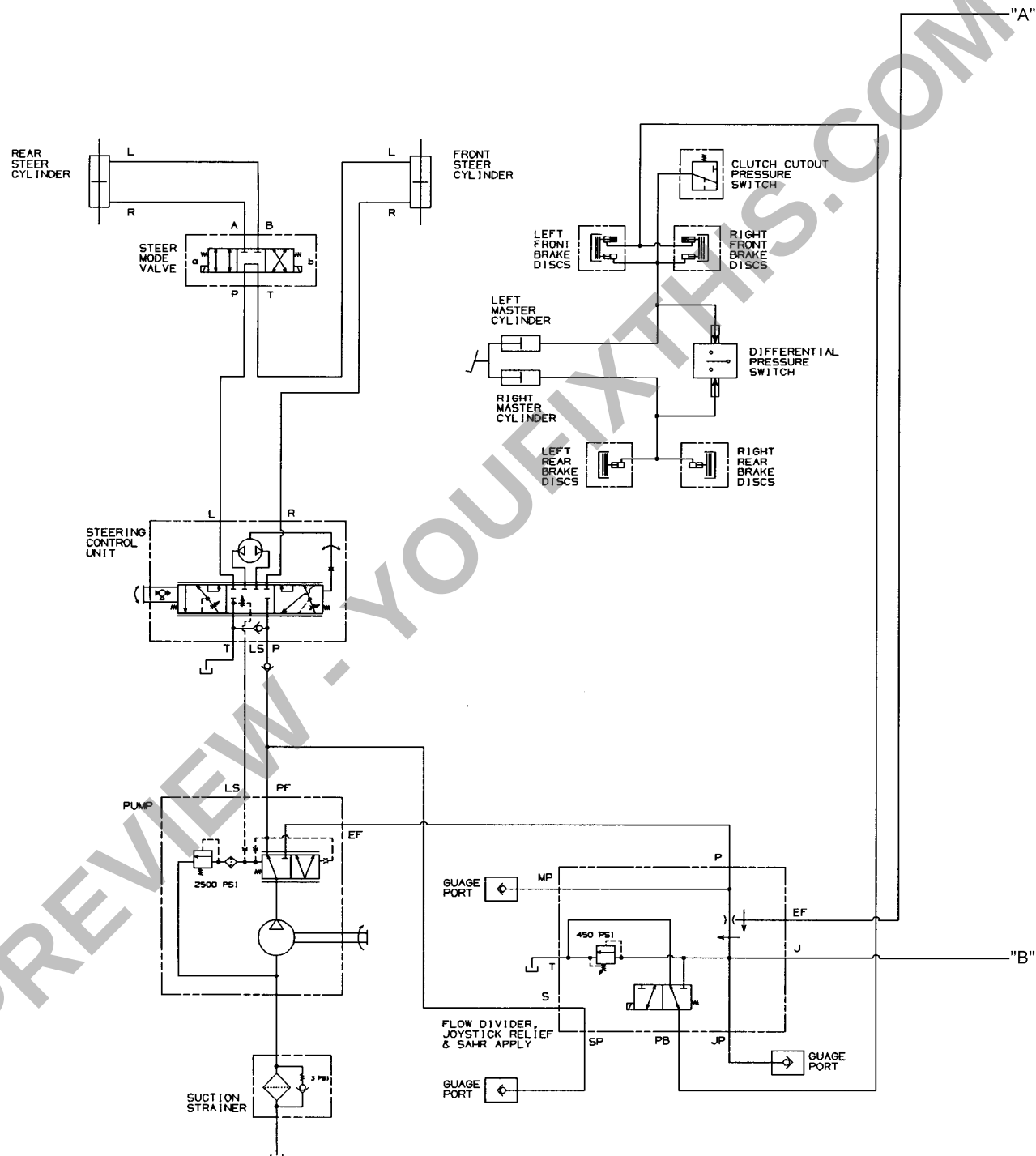
G0805233

STARTER CIRCUIT TROUBLESHOOTING

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



HYDRAULIC SCHEMATICS



G0805235

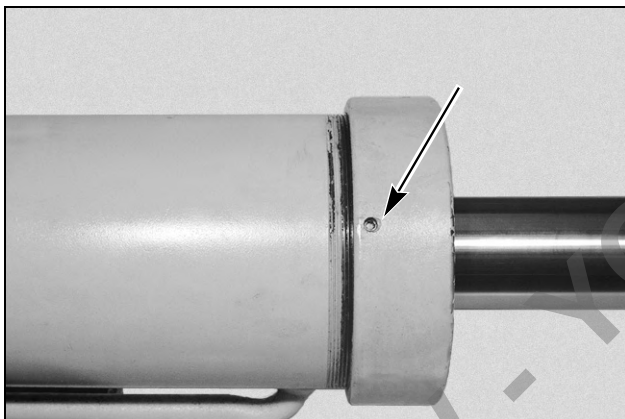
STEP 2



G1532MP

Put the base end of the cylinder in a vise. With a drain pan positioned under the cylinder, move the rod in and out slowly to remove the fluid.

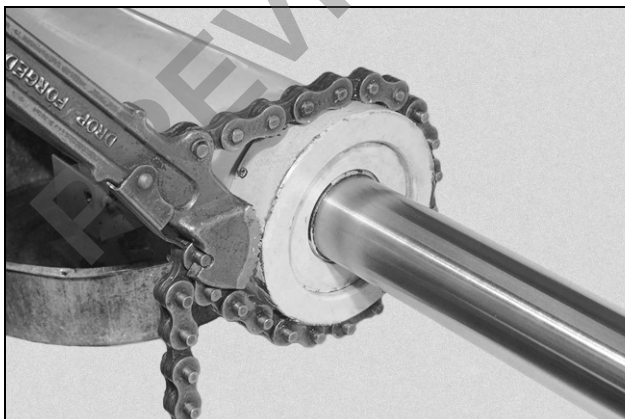
STEP 3



G1533MP

Loosen and remove the set screw from the cylinder gland ring nut.

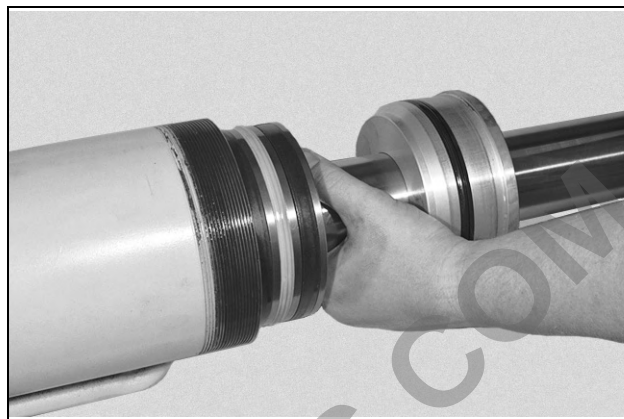
STEP 4



G1534MP

Loosen and remove the gland nut from the cylinder.

STEP 5



G1535MP

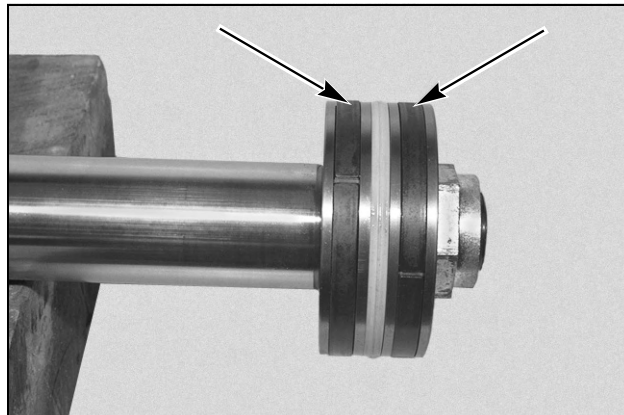
Remove the rod assembly from the cylinder.

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

STEP 6

Remove the cylinder barrel from the vise. Put the rod end in the vise. Support the rod on a wood block.

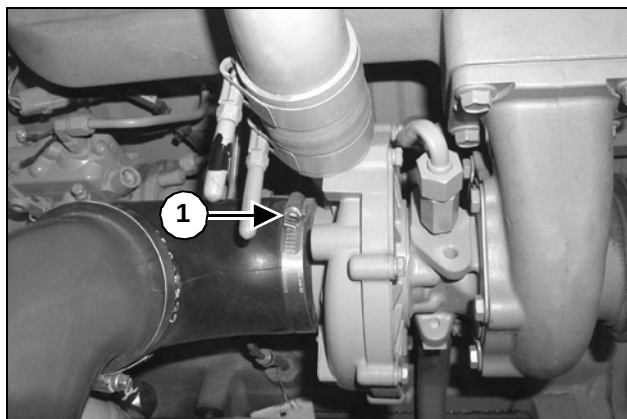
STEP 7



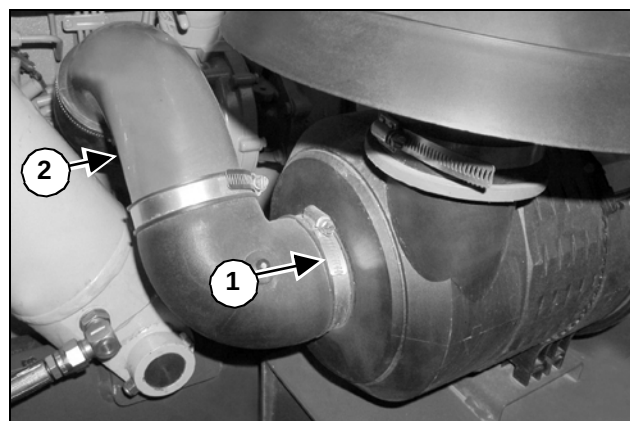
G1538MP

Remove and discard the two wear rings from the piston.

PREVIEW - YOUFIXTHIS.COM

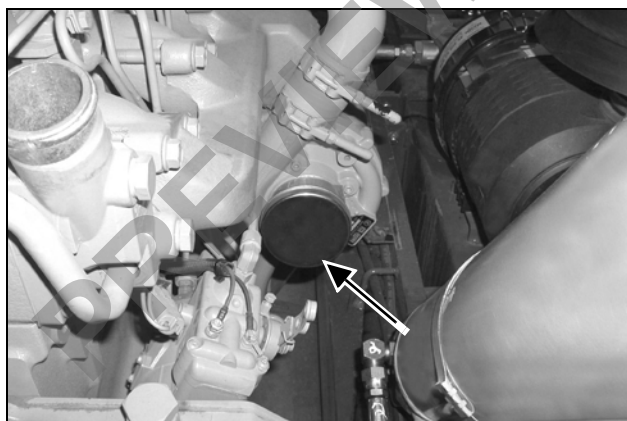
STEP 43

G0905172



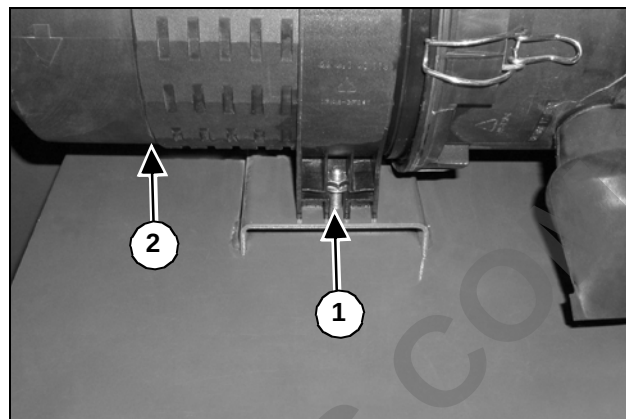
G0905173

Loosen the two hose clamps (1) and remove the air inlet duct (2) from the turbocharger and air cleaner assembly.

STEP 44

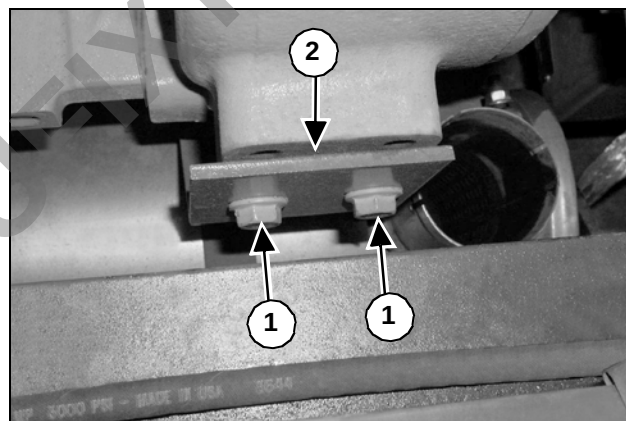
G0905175

Cap or plug the turbocharger inlet.

STEP 45

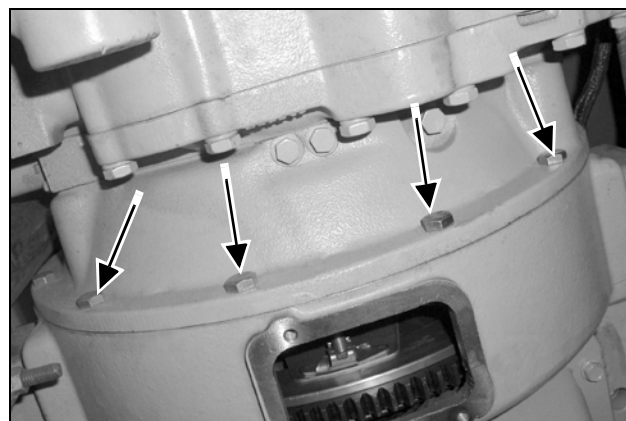
G1005011

Loosen the two bolts (1) and remove the air cleaner assembly (2).

STEP 46

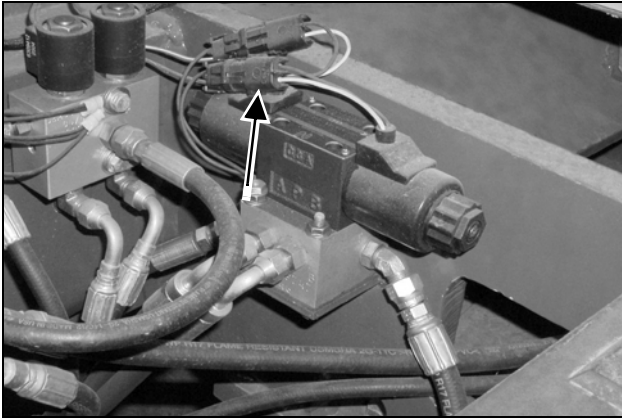
G0905178

Remove the two bolts (1) and the muffler bracket (2) from the right side of the engine.

STEP 47

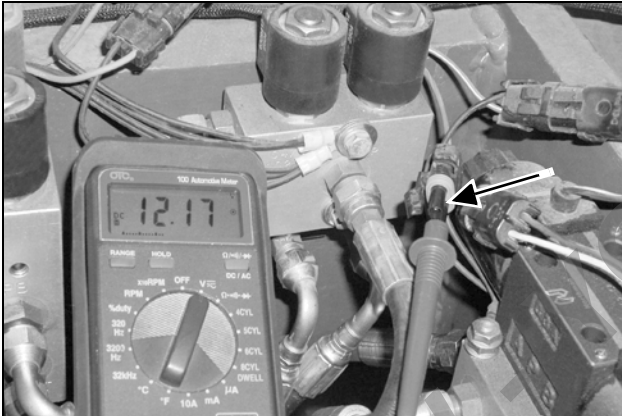
G0905126

Remove the lower housing bell bolts.

STEP 34

G0805079

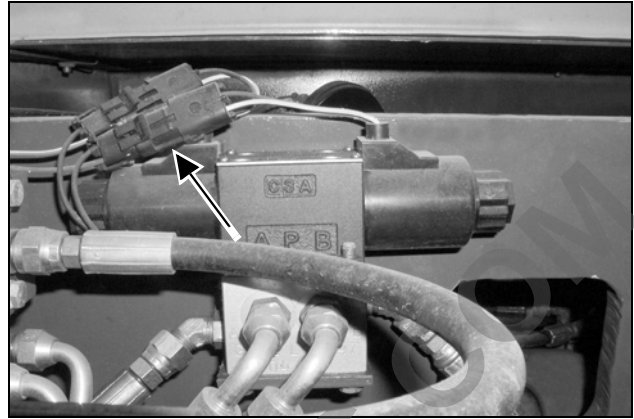
Set the multimeter to read DC volts. Disconnect 4-wheel-steer wire harness (green and black wires) from the steer-mode solenoid connector.

STEP 35

G0805176

Install the positive (+) test lead in the green wire prong of the wire harness. With the key switch in the ON position and the steer-mode switch in the 4-wheel-steer position. The multimeter should read 12 to 13 volts.

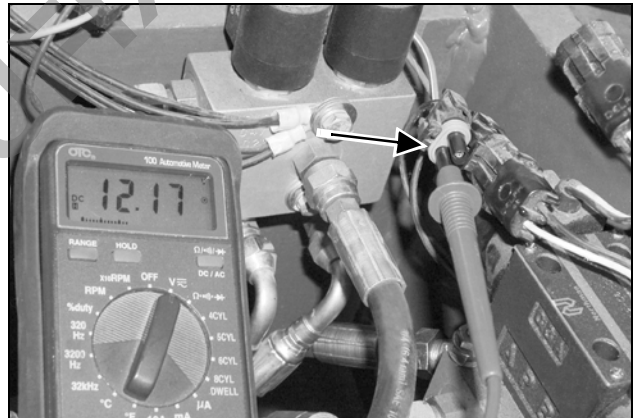
If there is no voltage proceed to Step 42.

STEP 36

G0805083

If there is 12 to 13 volts but the 4-wheel-steer mode does not function, replace the solenoid valve.

Connect the wire harness to the 4-wheel-steer mode solenoid connector.

STEP 37

G0805177

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.

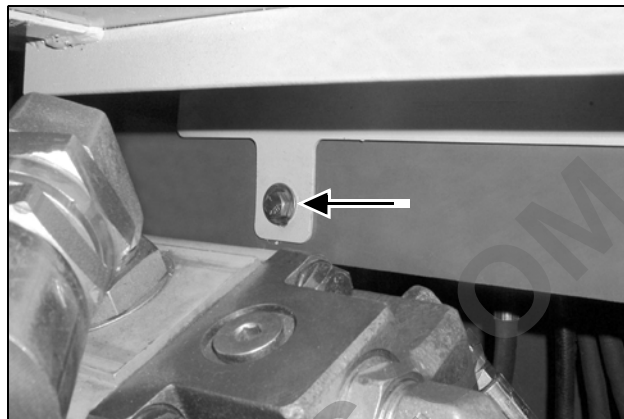
If there is no voltage, proceed to the next step.

STEP 87

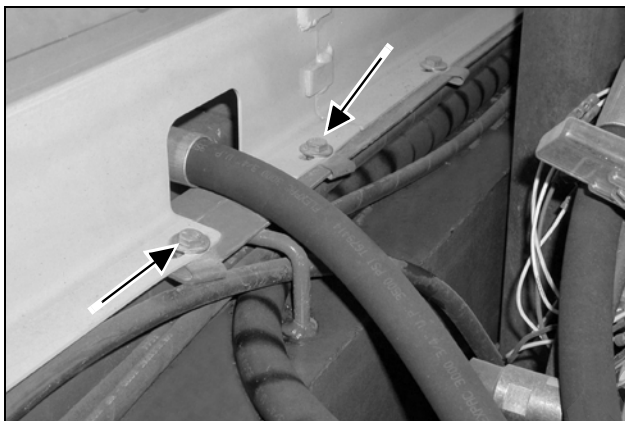


G1005015

STEP 88

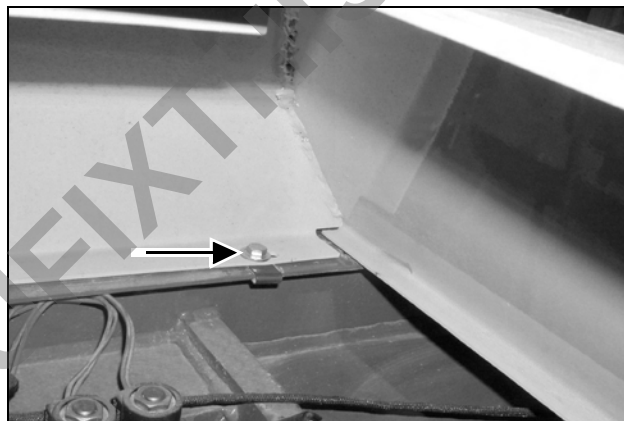


G1005014



G0905079

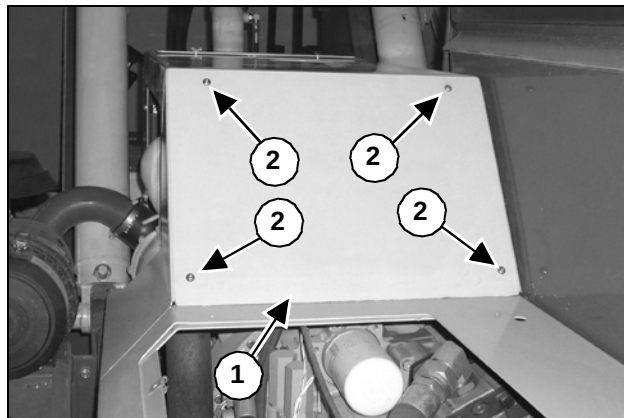
Install the right side mounting bolts.



G1005013

Install the left side mounting bolts.

STEP 89

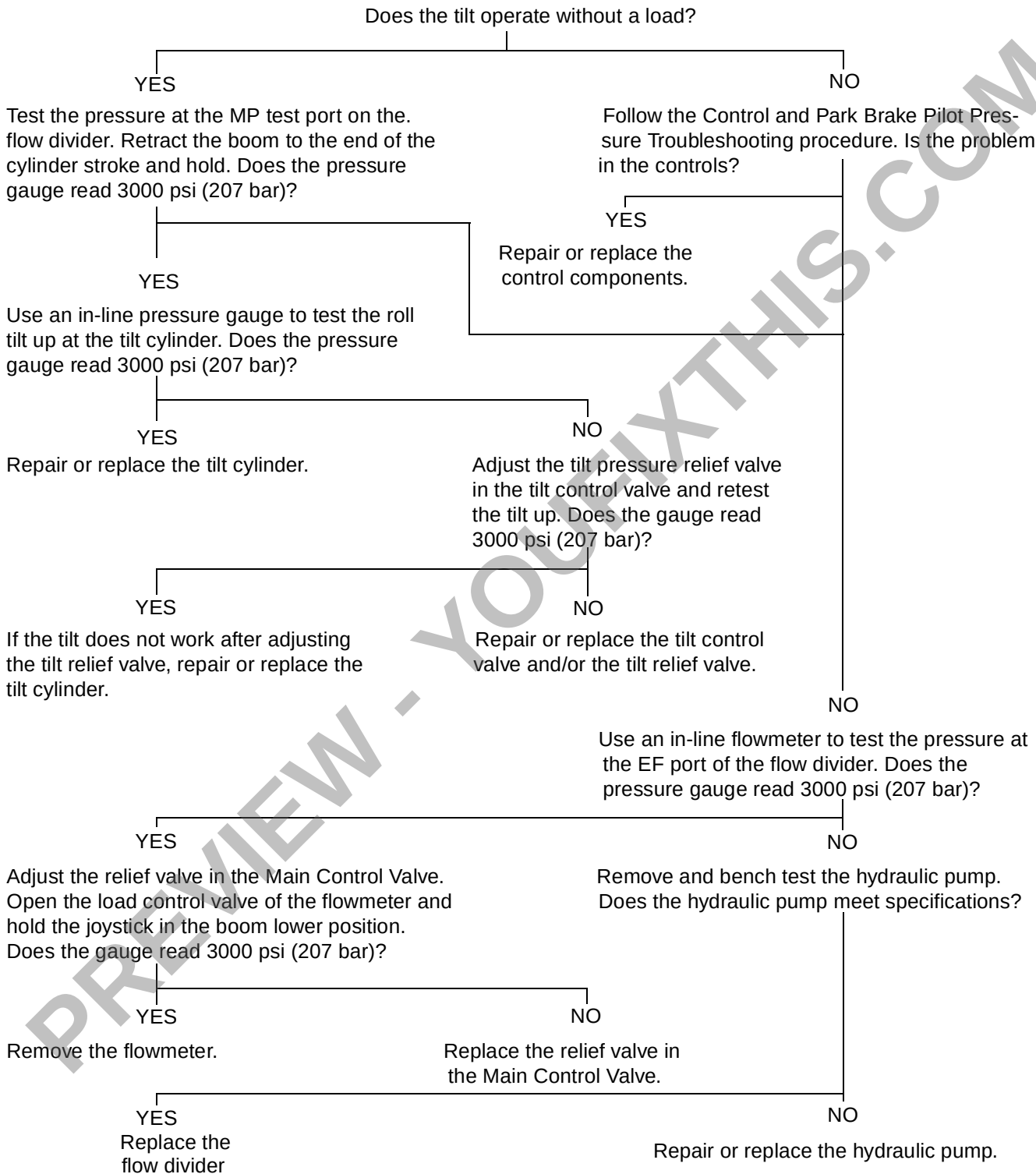


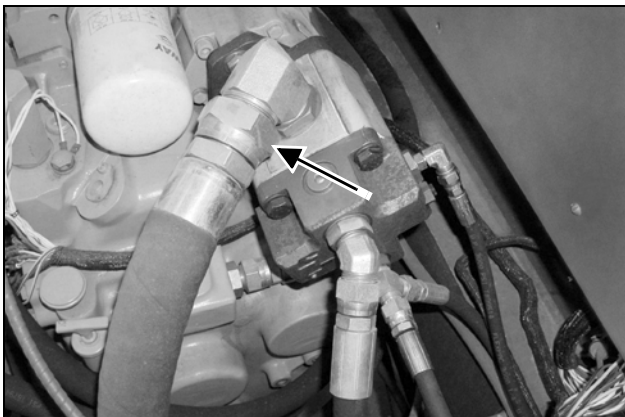
G0905077

Install the fuel filter access cover (1) using the four screws (2).

ATTACHMENT TILT CYLINDER TROUBLESHOOTING

NOTE: If the tilt cylinder will roll back but not lower or lowers slowly, repair or replace the counter balance valve on the cylinder.



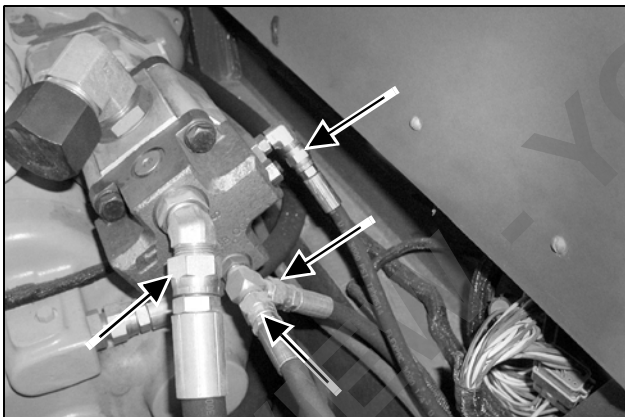
STEP 4

G0905104

Disconnect the hydraulic fluid supply line from the hydraulic pump. Install a cap on the fitting and a plug in the line.

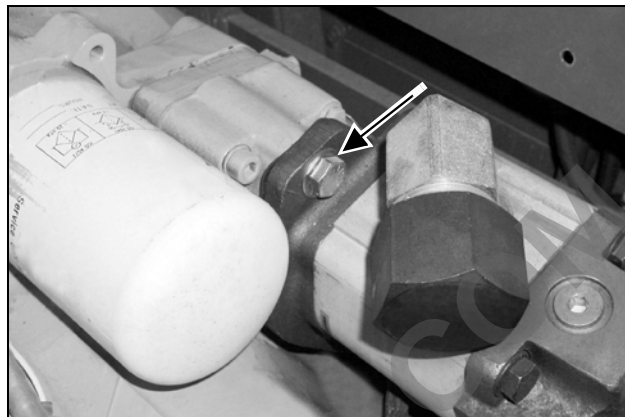
STEP 5

Mark the pump output hydraulic hoses for correct assembly.

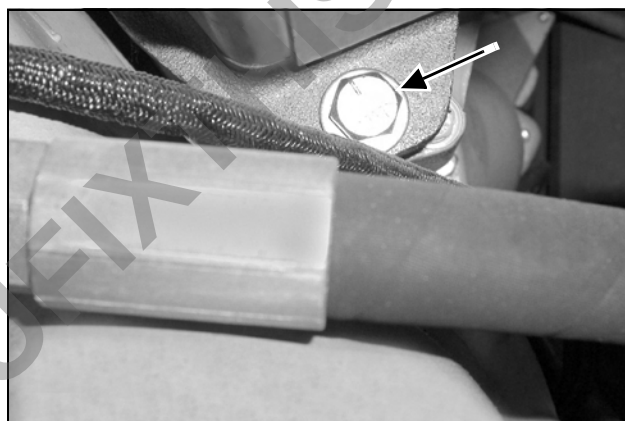
STEP 6

G0905106

Disconnect the remaining hydraulic hoses from the hydraulic pump. Install plugs in the hoses and caps on the fittings.

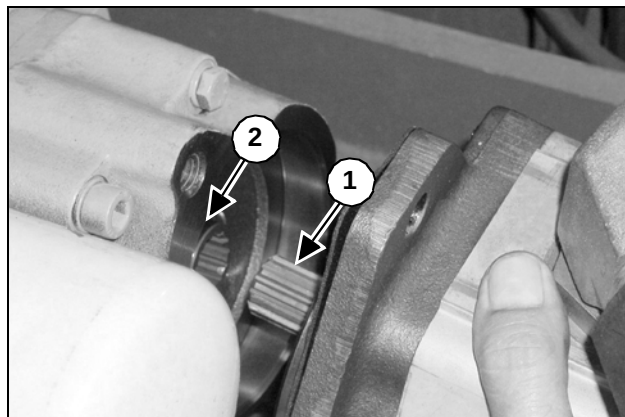
STEP 7

G0905110



G0905111

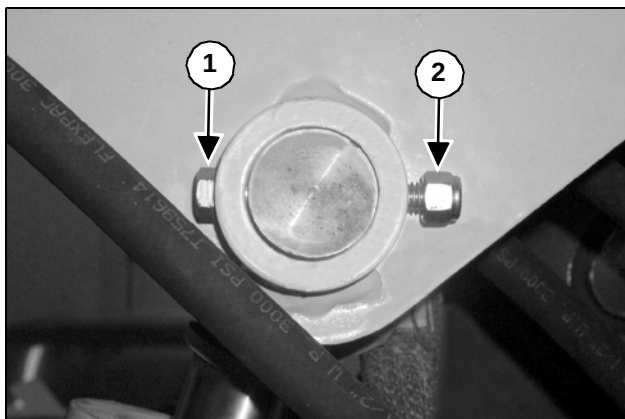
Remove the two hydraulic pump mounting bolts.

STEP 8

G0905114

Pull the pump forward until the pump input shaft (1) is clear of the transmission (2). Lift the pump out of the machine. Remove the gasket from the mounting flange or transmission.

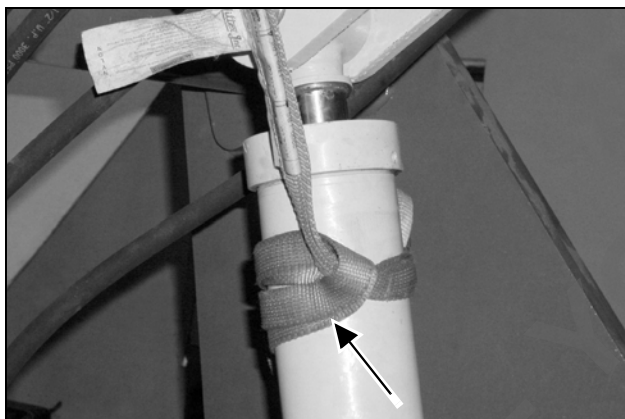
STEP 10



G0905012

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

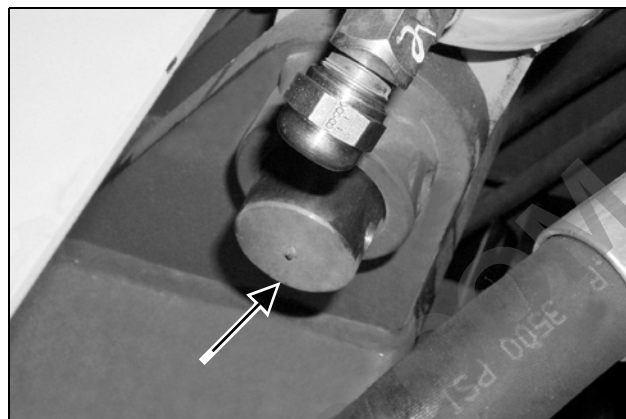
STEP 11



G0905013

Remove the lifting strap and hoist from the slave cylinder.

STEP 12



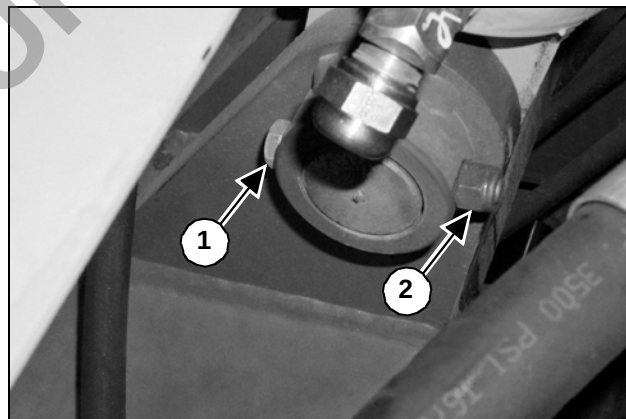
G0905007

Using a pry bar, extend the slave cylinder rod enough to install the lower pivot pin.

Install the lower pivot pin.

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

STEP 13

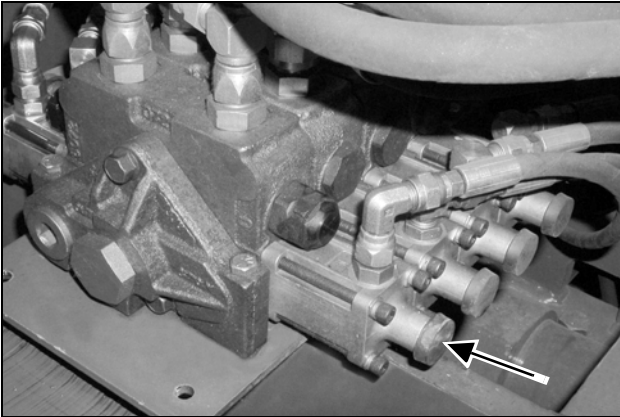


G0905006

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

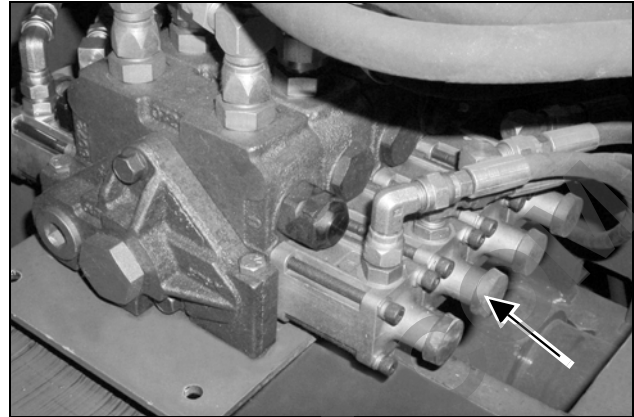
STEP 14

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



G0805102

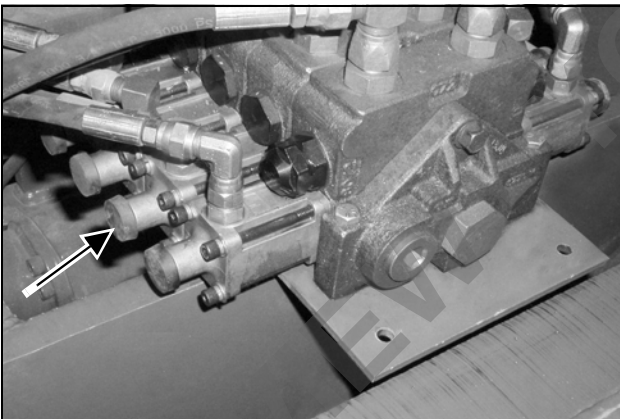
6. Locate the attachment Tilt-Down section (rear section) on the right side of the control valve and remove the rubber boot. Using a screwdriver, turn the screw IN (clockwise) until it bottoms, then turn it OUT (counterclockwise) until it bottoms. Reinstall the rubber boot.



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.

RELIEVING HYDRAULIC PRESSURE FROM THE BOOM EXTEND CYLINDER



g0805101

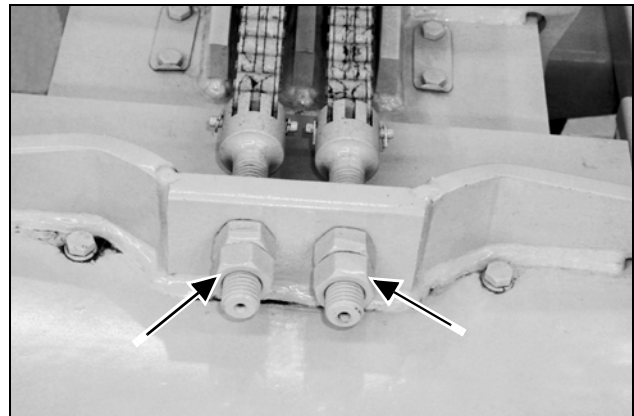
7. Locate the attachment Boom-Extend section (third section) on the left side of the control valve and remove the rubber boot. Using a screwdriver, turn the screw IN (clockwise) until it bottoms, then turn it OUT (counterclockwise) until it bottoms. Reinstall the rubber boot.

GENERAL INFORMATION

If slide pad replacement is required, see Section 707 of this manual for correct procedure.

INNER BOOM REMOVAL

STEP 1



G1005038

Loosen and remove the nuts from each clevis that secure the double chain to the outer boom.

STEP 2

Position both ends of the double chain over the front of the inner boom.

PREVIEW ONLY

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