



5 1 9

TELEHANDLER

SERVICE MANUAL

PART # 9 1 3 3 0 2

Revision A - 04/08



Mustang Manufacturing Company, Inc.

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**SAFETY**

The above Safety Alert Symbol means **ATTENTION!** **ALWAYS BE ALERT! YOUR SAFETY IS INVOLVED!** It stresses an attitude of safety awareness.

Before attempting to operate this equipment, read and study the following safety information. In addition, be sure that everyone who operates or works with this equipment, whether family member or employee, is familiar with these safety precautions.

Mustang Manufacturing Company ALWAYS takes the operator's safety into consideration when designing its machinery, and guards exposed moving parts for his/her protection. However, some areas cannot be guarded in order to assure proper operation. Further, the Operator's Manual and decals on the machine warn of additional hazards and should be read and observed closely.

**DANGER**

"DANGER" indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

**WARNING**

'WARNING' indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

**CAUTION**

'CAUTION' indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also alert to unsafe practices.

REMEMBER! It is the owner's responsibility for communicating information on the safe use and proper maintenance of this machine! This includes providing understandable interpretations of these instructions for operators who are not fluent in reading English.

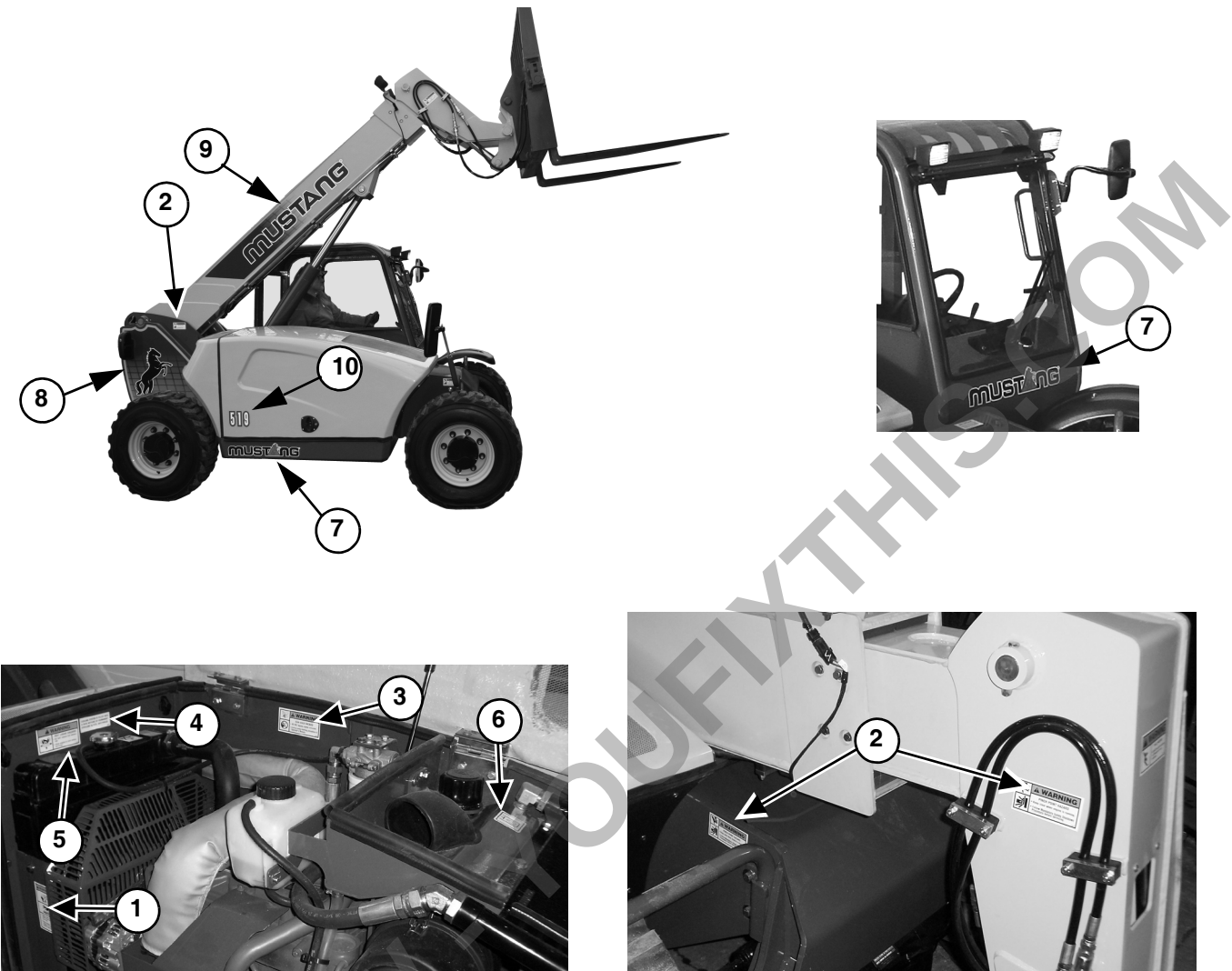
It is the responsibility of the operator to read and understand the Operator's Manual and use the correct operating procedures. Machine should be operated only by qualified operators.

MANDATORY SAFETY SHUTDOWN PROCEDURE

Before cleaning, adjusting, lubricating or servicing the unit:

1. Stop the 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 the engine for gradual cooling.
3. Place controls in **NEUTRAL** and apply the parking brake.
4. Shut off the engine and remove the key.

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



DECAL LOCATIONS

REF. NO.	DESCRIPTION	PART NO.
01	DANGER - HANDS OUT	L70305
02	WARNING - PINCH POINT	L65927
03	WARNING - JUMP START	L65933
04	ANTI-FREEZE	056859
05	COOLANT UNDER PRESSURE	072798
06	HYDRAULIC OIL	137632
07	MUSTANG, 4" X 21.19"	104893
08	HORSE, RH	104888
09	MUSTANG, RH BOOM SIDE	104890
10	519	104891

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	<p>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.</p> <p>*M14 is not a preferred size</p>			
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

Hydrostatic Transmission

Type Rexroth A4VG560A/32, 2 Speeds Forward, 2 Speeds Reverse
Travel Speeds
Low speed: Fwd/Rev 4 mph (6.4 km/h)
High speed: Fwd/Rev 15 mph (24 km/h)

Axles (Front and Rear)

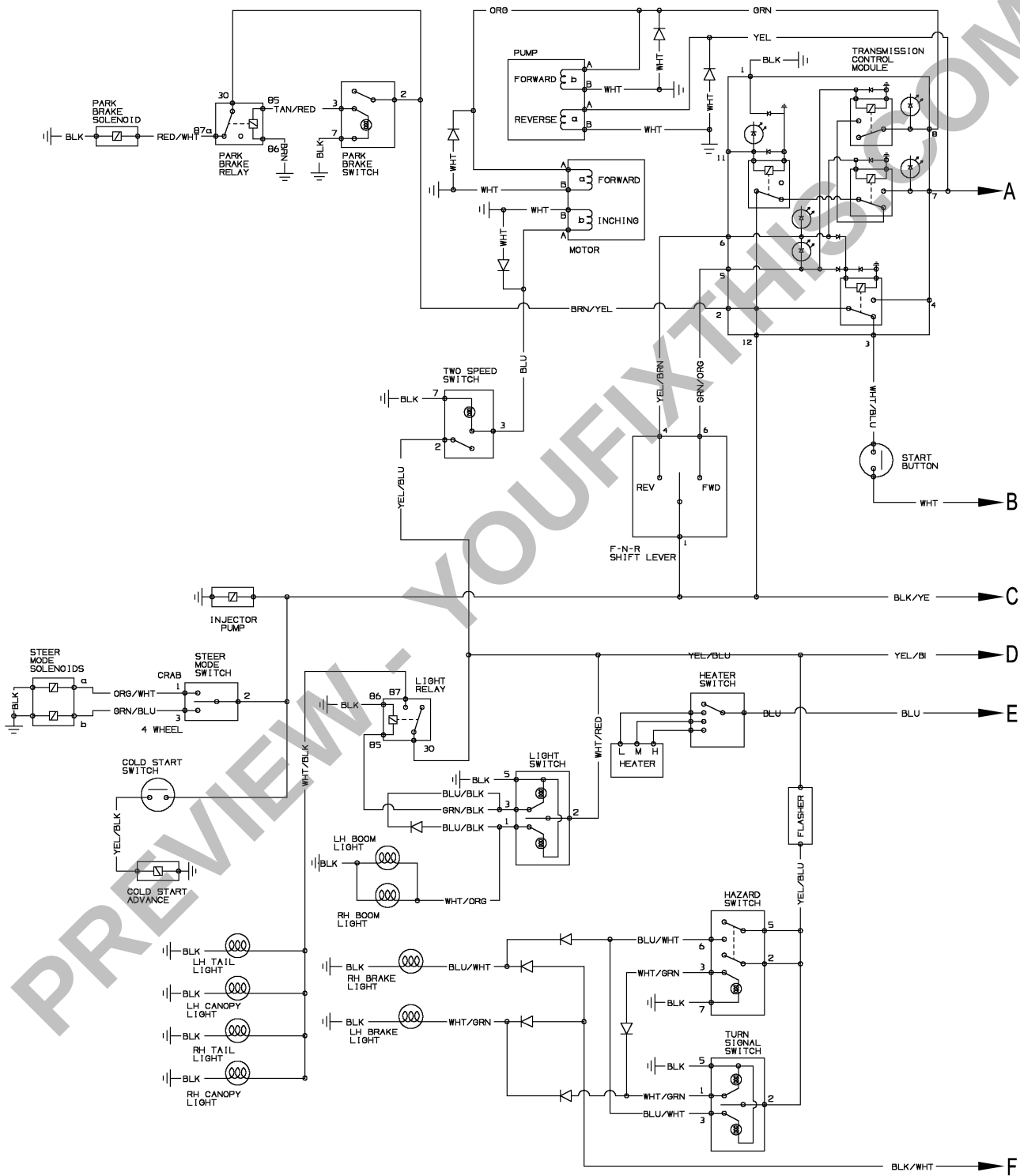
Make Dana
Type Full-time four-wheel drive, Steerable, Front: Limited Slip Differential,
Rear: Open Differential, Double-Reduction Planetaries
Ratio (overall) 29.21:1

Engine

Make Deutz
Model Turbocharged TD2009L04
Type Diesel, In-line 4 Cyl.
Displacement 140 cu. in. (2290 cc)
Aspiration Turbo-Charged
High Idle Speed (no load) 2750 RPM
Rated Speed (governed) 2600 RPM
Low Idle Speed (approx.) 1100 RPM
Power Rating (at 2600 RPM) 64 HP (48 kW)

NOTE: Also refer to engine manual.

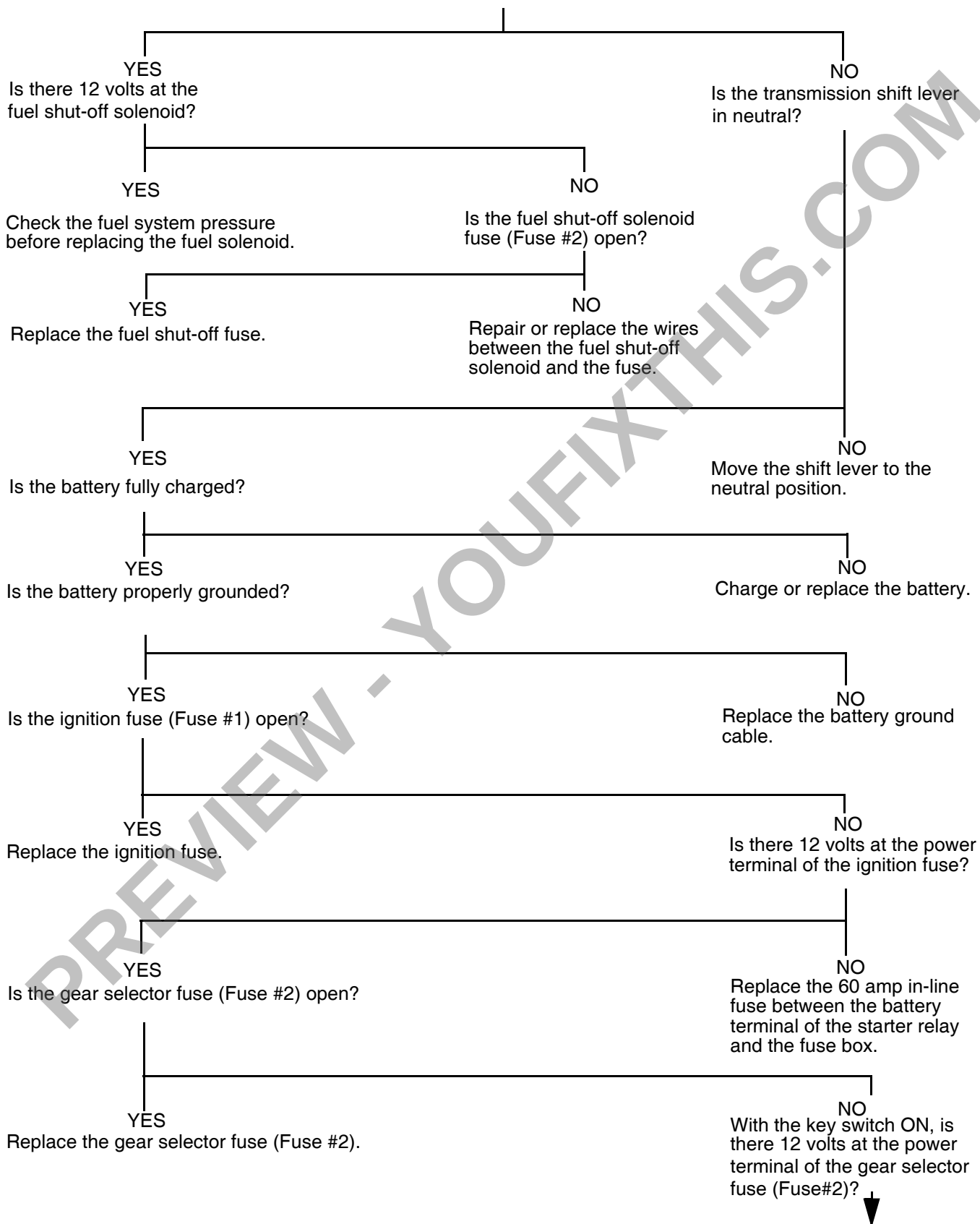
ELECTRICAL SCHEMATICS



MA08B041

STARTER CIRCUIT TROUBLESHOOTING

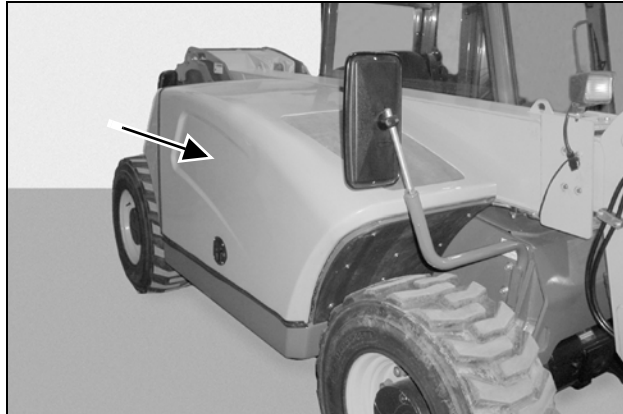
The engine does not start. Does the starter engage and turn over the engine?



ENGINE REMOVAL

BEFORE cleaning, lubricating or servicing this equipment, refer to the **MANDATORY SAFETY SHUTDOWN PROCEDURE** in Section 100 (Personal Safety Information and Decal Locations).

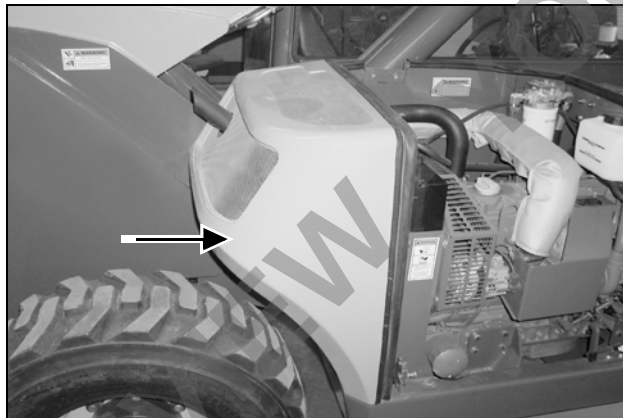
STEP 1



G0607021

Remove the engine cover. Complete Steps 1 through 3 of Section 800 for the correct procedure.

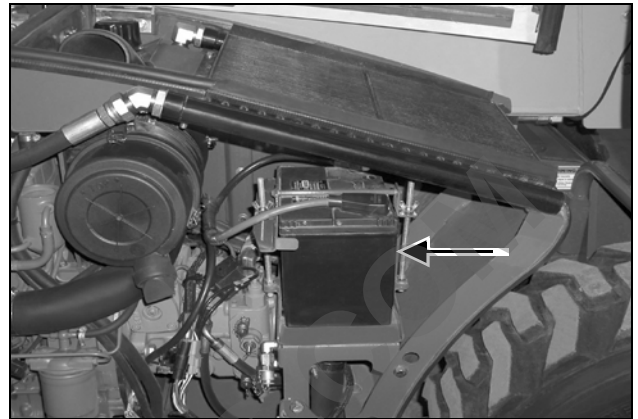
STEP 2



G0707005

Remove the radiator cover. Complete Steps 8 through 10 of Section 800 for the correct procedures.

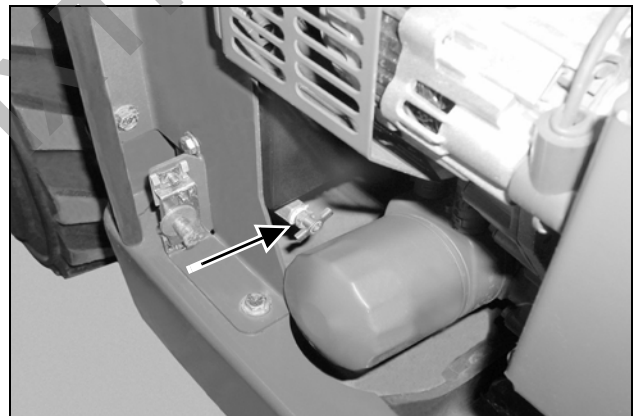
STEP 3



G0607001

Remove the battery. Complete Steps 1 through 5 of Section 302 for the correct procedure.

STEP 4



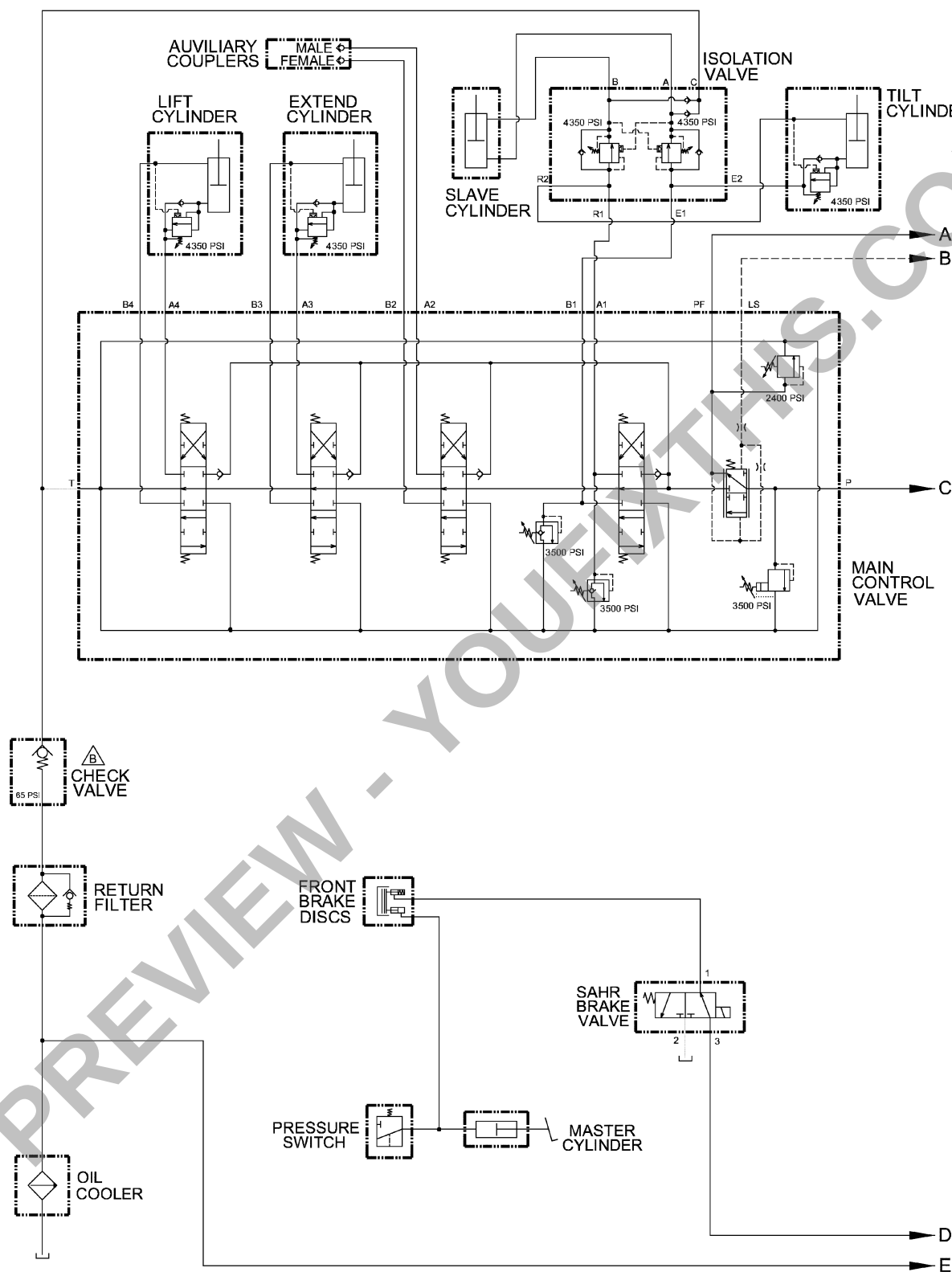
G0707007

Open the radiator drain valve and drain the coolant into an approved container.

NOTE: Attaching a hose to the drain valve will help direct the coolant flow to the container.

STEP 5

After all the coolant is drained, close the drain valve. Recycle or dispose of the coolant in an environmentally safe manner.



MA07N010

GENERAL INFORMATION

Except for some configuration differences, hydraulic cylinder disassembly, repair and assembly procedures will be basically the same for the tilt cylinder, boom lift cylinder, boom slave cylinder and boom extend cylinder. Except where noted differences or procedures are required for special application cylinders, use the following repair procedures for hydraulic cylinders.

When backup rings are used with O-ring seals, always note the position of the backup ring (above or below the O-ring) when removing the seals for reassembly reference.

One-piece Nylatron® type piston seals can be difficult to install on the piston. Soaking these seals in hot water for a short time prior to installation will make the seals more resilient and easier to install on the piston.

Before installing the piston and rod assembly into the barrel, lubricate the piston seals and wear rings liberally with clean operating fluid. Using an engine piston ring compressor to compress the piston seals tightly for a short period of time will often aid in the assembly procedure.

CYLINDER DISASSEMBLY

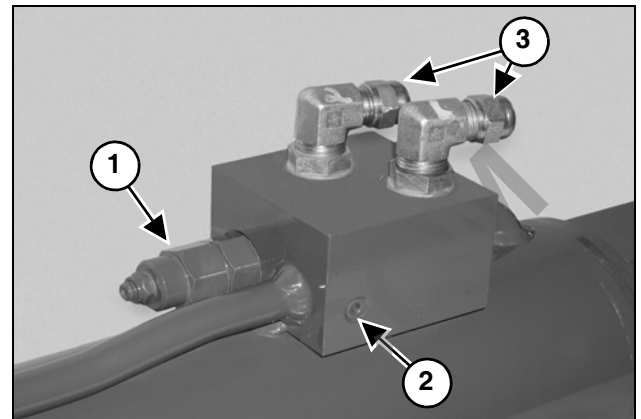
BEFORE cleaning, lubricating or servicing this equipment, refer to the **MANDATORY SAFETY SHUTDOWN PROCEDURE** in Section 100 (Personal Safety Information And Decal Locations).



WARNING

When disassembling hydraulic cylinders, **NEVER** use pneumatic or hydraulic pressure to aid in removing the piston and rod assembly from the cylinder barrel. To ignore this warning may result in severe injury or death.

STEP 1



G0907024

Select a clean environment. Remove the load check valve (1) slowly to relieve any residual pressure. Remove the plug (2) from the valve block and caps (3) from the fittings.

STEP 2



G0907025

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.

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