An Oshkosh Corporation Company

Service and Maintenance Manual

Models
450A/AJ
Series II

Prior To
S/N 0300160835

P/N - 3121180

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ANSI

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11. Remove cylinder rod from holding fixture.
12. Place new guide locks and seals in applicable outside diameter grooves of cylinder piston. (See Figure 2-28. Piston Seal Kit Installation.)
13. Position cylinder barrel in a suitable holding fixture.

NOTICE

EXTREME CARE SHOULD BE TAKEN WHEN INSTALLING CYLINDER ROD, HEAD, AND PISTON. AVOID PULLING THE ROD OFF-CENTER, WHICH CAN DAMAGE PISTON AND CYLINDER BARREL SURFACES.

14. With barrel clamped securely, and while adequately supporting rod, insert piston end into barrel cylinder. Ensure piston loading O-ring and seal ring are not damaged or dislodged.
15. Continue pushing rod into barrel until cylinder head gland can be inserted into barrel cylinder.
16. Secure cylinder head gland using washer ring and socket head bolts. (See Table 2-1 and 2-3. Torque Specifications.)

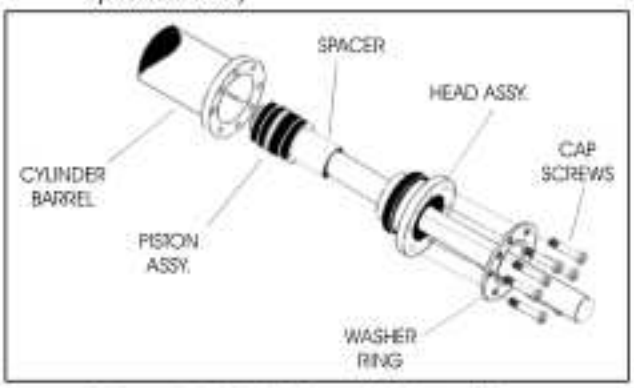


Figure 5-32. Rod Assembly Installation

17. After cylinder has been reassembled, rod should be pushed all the way in (fully retracted) before reinstallation of any holding valve or valves.
18. If applicable, install cartridge-type holding valve and fittings in rod port block. Use new O-rings as applicable. (See Table 2-2. Holding Valve Torque Specifications).

Table 5-1. Cylinder Head and Tapered Bushing Torque Specifications

Description	Head Torque Value (Wet)	Tapered Bushing Torque Value (Wet)
Lift Cylinder	120 ft. lbs. (163 Nm)	9 ft. lbs. (12 Nm)

Table 5-1. Cylinder Head and Tapered Bushing Torque Specifications

Description	Head Torque Value (Wet)	Tapered Bushing Torque Value (Wet)
Slave Cylinder	30 ft. lbs. (41 Nm)	5 ft. lbs. (9 Nm)
Master Cylinder	30 ft. lbs. (41 Nm)	5 ft. lbs. (9 Nm)
Jib Cylinder	30 ft. lbs. (41 Nm)	5 ft. lbs. (9 Nm)
Lockout Cylinder	80 ft. lbs. (109 Nm)	N/A
Steer Cylinder Piston Nut Torque Specifications		
Steer Cylinder	LBS.	NM
	150 ft. lbs	204 Nm

Table 5-2. Holding Valve Torque Specifications

Description	Torque Value
SUN - 7/8 HEX M20 X 1.5 THDS.	30-35 ft. lbs. (41-48 Nm)
SUN - 1 1/8 HEX 1 -14 UNS THDS.	45-50 ft. lbs. (61-68 Nm)
SUN - 1 1/4 HEX M36 X 2 THDS.	150-160 ft. lbs. (204-217 Nm)
RACINE - 1 1/8 HEX 1 1/16 - 12 THDS.	50-55 ft. lbs. (68-75 Nm)
RACINE - 1 3/8 HEX 1 3/16 - 12 THDS.	75-80 ft. lbs. (102-109 Nm)
RACINE - 1 7/8 HEX 1 5/8 - 12 THDS.	100-110 ft. lbs. (136-149 Nm)

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Table 6-7. Help Fault Codes, Displayed Faults, and Descriptions - Prior to S/N 0300066949

Fault Flash Code	Communicated (Displayed on Analyzer) Fault	Description	Priority
None	No flash code is indicated for the following help messages. They are intended to hint at a possible problem if the vehicle is not behaving as expected.		1
	EVERYTHING OK	The "normal" help message in platform mode	
	GROUND MODE OK	The "normal" help message in ground mode	
	DRIVING AT CREEP - TILTED	Drive speed is limited to creep because the vehicle is tilted.	
	FSW OPEN	A drive or boom function has been selected but footswitch is open.	
	RUNNING AT CREEP - CREEP SWITCH OPEN	All function speeds are limited to creep because the creep switch is open.	
	RUNNING AT CREEP - TILTED AND ABOVE ELEVATION	All function speeds are limited to creep because the vehicle is tilted and above elevation.	
	RUNNING AT CUTBACK - ABOVE ELEVATION	Drive speed is limited to "ELEVATED MAX" because the vehicle is above elevation.	
	TESTS ACTIVE – RECYCLE EMS TO END	The system tests have been activated; normal vehicle operation is not allowed.	
1/1	Flash code 1/1 indicates a "sleep" mode. NOT REQUIRED		
2/1	Flash code 2/1 indicates problems with footswitch.		2
	FSW FAULTY	The two foot switch signals do not agree. EMS recycle required.	
	KEYSWITCH FAULTY	Both platform and ground modes are selected simultaneously	
2/2	Flash code 2/2 indicates problems with drive & steer selection.		3
	DRIVE JOYSTICK FAULTY	Drive joystick center tap is out of valid range or wiper is wire-off.	
	DRIVE LOCKED – JOYSTICK MOVED BEFORE EMS/FSW	Drive was selected before and during footswitch closure.	
	FSW INTERLOCK TRIPPED	Footswitch was closed for seven seconds with no function selected.	
	STEER LOCKED – SELECTED BEFORE EMS/FSW	Steer was selected before and during footswitch closure.	
	STEER SWITCHES FAULTY	Both steer switches are active together.	
	WAITING FOR FSW TO BE OPEN	Footswitch was closed when platform mode was selected.	
	JOYSTICK FAULTS – CHECK PLATFORM BOX WIRING	More than one of the drive, lift, and swing joystick center tap or wiper voltages is out of range. This is probably due to a short-circuit across a joystick pot.	

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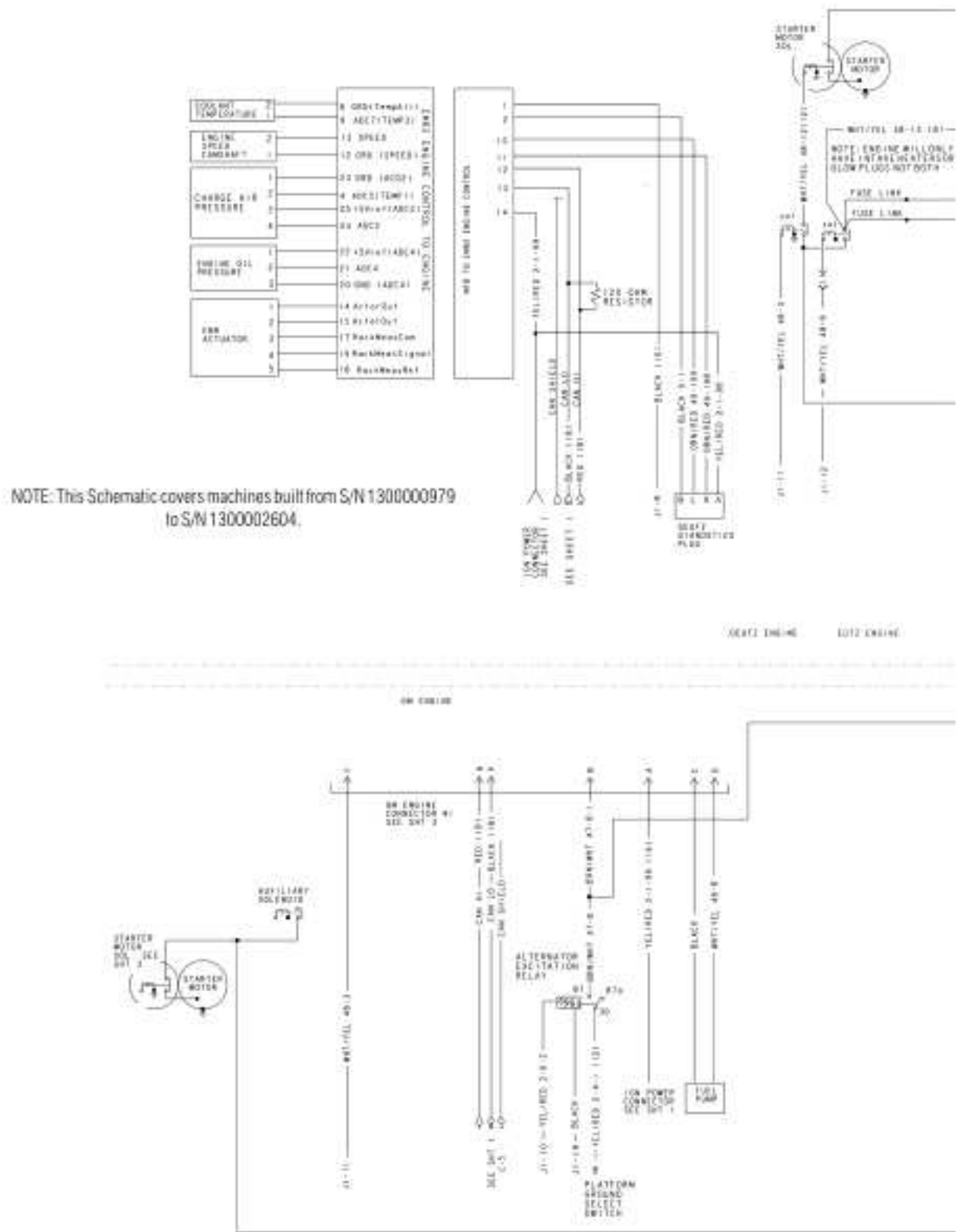
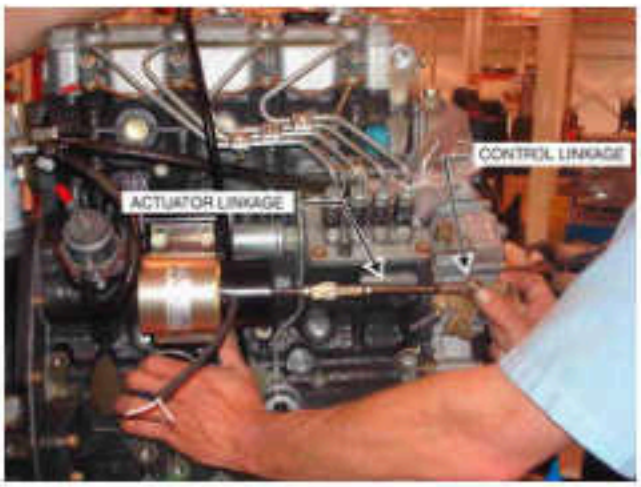


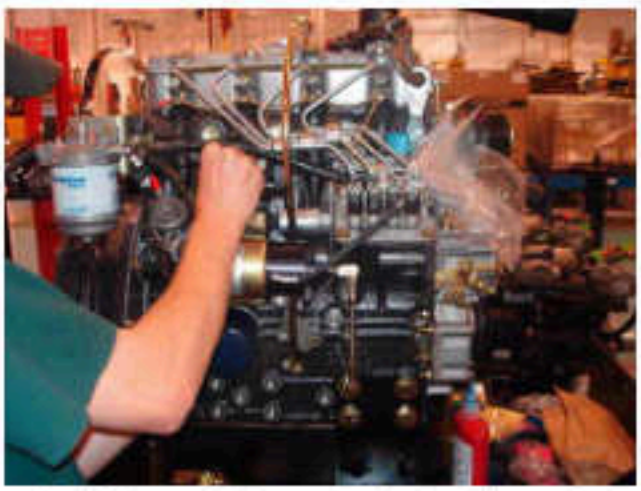
Figure 7-26. Electrical Schematic - Deutz EMR2 & GM Engine - Sheet 3 of 6

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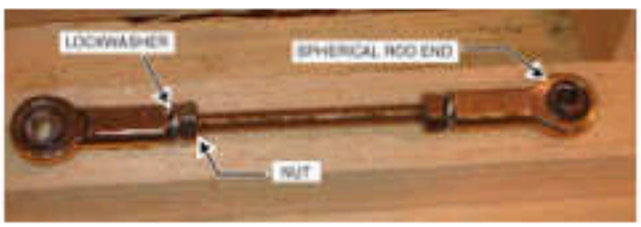
Setting Actuator

1. Remove bolt from control linkage

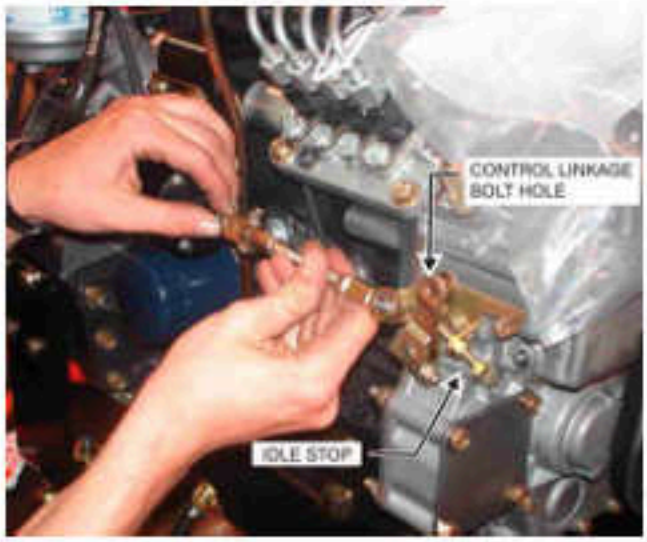




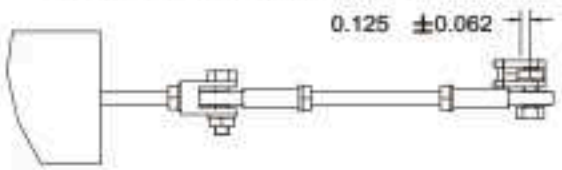
2. With control linkage pushed against idle stop, begin to make adjustments to actuator linkage in to align bearing of spherical rod end with control linkage bolt hole. When making linkage adjustments, thread spherical rod end and threaded rod evenly (Turn threaded rod for every turn of spherical rod end.)



NOTE: *During this procedure it's very important to keep control linkage pushed against stop.*



3. Once adjustments are made to align spherical rod end bearing with control linkage bolt hole, lengthen actuator linkage by continuing to turn spherical rod end and threaded rod 2-2½ turns (1-1¼ turns of spherical rod end and 1-1¼ turns of threaded rod.) This will provide 1/8" (3 mm) preload.



4. Use a measuring device to ensure preload is approximately 1/8" (3 mm), then secure actuator linkage to control linkage with original bolt and nut. Make sure spherical ball is seated in control linkage bolt hole.
5. Tighten two nuts on threaded rod of actuator linkage heads using two wrenches to prevent binding of clevis.



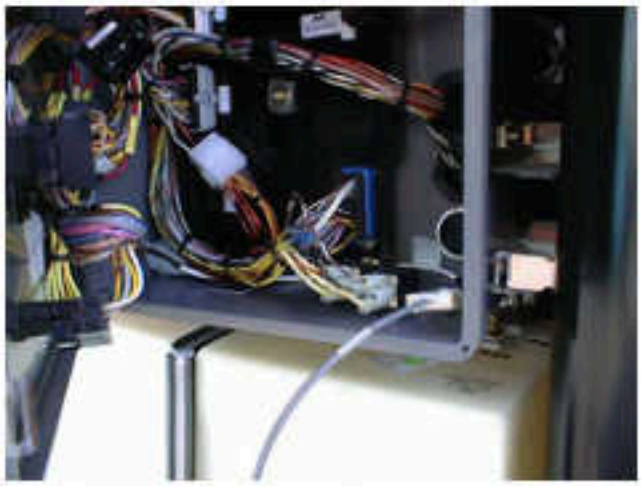
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Test from the Ground Station

1. Set Platform/Ground select switch to Ground.



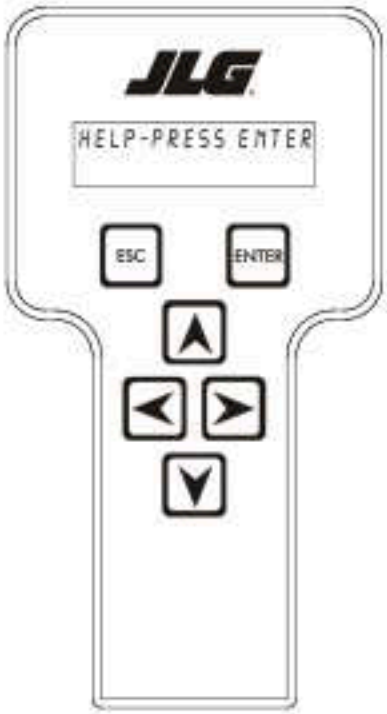
2. Plug analyzer into connector inside Ground control box.



3. Pull out the Emergency Stop switch. and Start the engine.



4. The analyzer screen should read:



5. Use arrow button to reach SYSTEM TEST. Press Enter. Analyzer will prompt you asking if you want to activate system test. Press Enter again to activate.

6. Follow flow path in Figure 6-15., System Test Flow Chart - Ground Station Tests and go through component tests. Press ESC key during any part of test to return to main menu without completing all tests or wait until all tests are complete. During TEST ALL INPUTS sequence, the analyzer allows control switches to be operated and shows if they are closed (CL) or open (OP).

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