

SUBJECT: Improved Reliability of the Auxiliary Hydraulic Pump Circuit on Crosswind J Sweepers Equipped with Alternative Fuel Engines (FSO-1114835)

DATE: 5/7/2013

NUMBER: SB-0116

TO: All Dealer Principals, Service Managers, and Parts Managers

PURPOSE:

Some Crosswind J Alternative Fuel (CNG or LPG) sweepers may experience failure of the motor powering the optional hydraulic auxiliary pump. FSO Kit 1114835 provides instruction and parts for improving the reliability of the electrical circuit.

NOTE: Existing Aux Hydraulic Pump P/N 1089050 or replacement 1110168 may be used but must be upgraded with 1109302 FSO Solenoid Kit installed per/SB-0108.

UNITS TO SERVICE:

J3258D, J3260D, J3261D, J3300D, J3320D, J3367D, J3368D, J3370D, J3385D, J3424D, J3426D, J3441D, J3453D, J3472D, J3513D

WARRANTY COVERAGE: See Chart

SPECIAL TOOLS:

- Current-Clamp amperage measuring device at least 400A capacity (FLUKE i410 or i1010 w/ Meter or similar)
- Elgin Service Tool Version 2 with 2.22 (or higher) Model File and Laptop connection (see Elgin Dealernet for P/N and instruction)

PARTS REQUIRED:

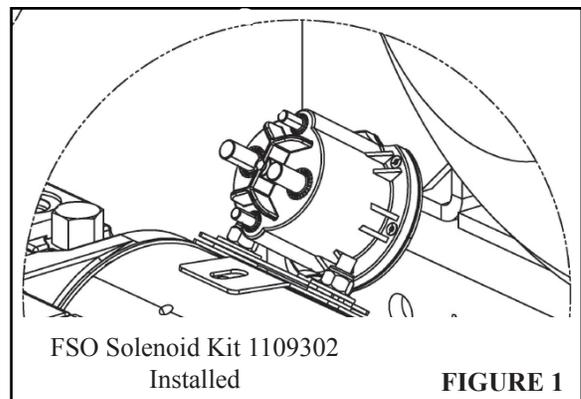
Part No.	Qty.	Description
1114835	1	FSO-J CNG/LPG Aux Pump
Reference		
1109302	1	FSO Solenoid Kit (J-NX)
1110168	1	Aux Pump Kit (one-post)
	OR	
1080950	1	Aux Pump (original component)

Special Requirement: Before and after installation photos must be supplied to Elgin Service, csr@fsdepot.com with claim numbers and documentation of the DC current draw test results (Page 6/6). Contact Elgin Sweeper Service at 877-DIAL ESG for any questions.

PROCEDURE:

This FSO kit improves the reliability of the auxiliary hydraulic pump system. This is accomplished by making several changes:

1. Install FSO Kit 1114835 as instructed in SB-0108.
2. A software update is installed that prevents the auxiliary hydraulic pump from running when a motor function is turned on.
3. An oil pressure switch is added to ensure that the auxiliary hydraulic pump does not turn on if the auxiliary engine is running.



4. The chassis battery ground circuit is validated.

These changes ensure that the auxiliary hydraulic pump only runs to operate cylinder functions when the auxiliary engine is not running.

Install the FSO Kit as instructed in the drawing supplied with the kit.

Installation Instructions:

IMPORTANT: The chassis battery is used to power the sweeper auxiliary hydraulic pump. It is important that the auxiliary pump ground cables are properly connected to the chassis frame.

1. General Instructions
 - 1.1 Verify that FSO Kit 1109302 FSO-Solenoid for Aux pump, J has been installed prior to installing this kit. **(FIGURE 1)** Confirm the auxiliary pump motor ground cable is 48" long, 0 gauge and connected to chassis frame. See schematic **(FIGURES 2-3-4)**
 - 1.2 Park the Unit, set the parking brakes and chock the wheels.
 - 1.3 Record the chassis hours, miles and auxiliary engine hours.
 - 1.4 Turn off both engines.
 - 1.5 Close the fuel master shutoff valve.
2. Software (Reference FSO 1114835 BOM)
 - 2.1 Install updated software Elgin P/N 1114918, Elgin Service tool XML Ver. 2.22 (or higher), item 5, per normal field software update instructions. Contact the Elgin Service Department (877 DIAL ESG) for assistance if needed.

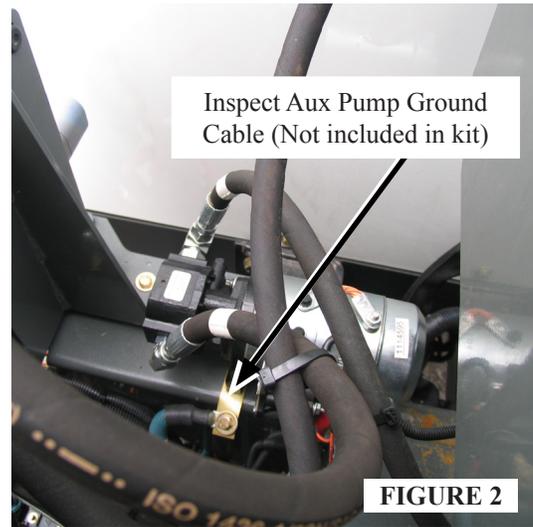


FIGURE 2

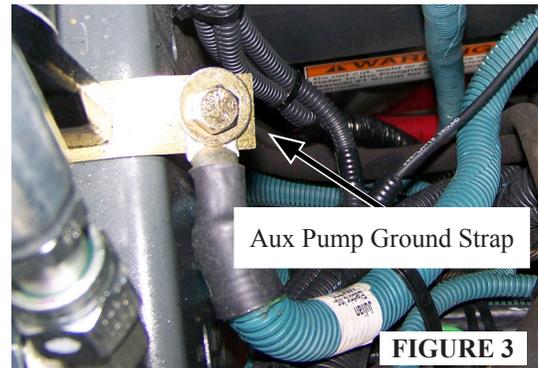


FIGURE 3

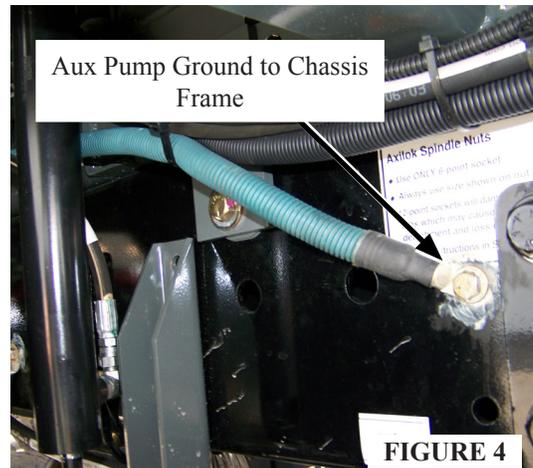


FIGURE 4

3. Oil Pressure Switch (Reference FSO 1114835 BOM)

3.1 Apply Teflon tape or thread sealer to the threads of item 2 and install into item 3. (Detail A) **FIGURE 5.**

3.2 Remove the plug from the rear outboard port on the auxiliary engine oil filter head. **FIGURE 6.**

3.3 Install items 2 and 3 into the port **FIGURE 3.**

3.4 Disconnect the orange wire from the auxiliary hydraulic pump motor solenoid. (wire marked "116-LM-61") **FIGURE 7**

3.5 Cut off the ring terminal and strip the wire back .25".

3.6 Slide the heat-shrink item 6 over the wire with the butt splice on item 1 (Aux Pump Cutout Harness).

3.7 Splice the wire to the item 1 harness using the butt splice on item 1. Solder the butt splice after crimping.

3.8 Connect the ring terminal on item 1 to the auxiliary hydraulic pump motor solenoid terminal. **FIGURE 7 and 8.**

3.9 Route harness item 1 to the auxiliary engine oil filter. Use item 4 to secure the harness.

3.10 Connect the ring terminals on harness item 1 to pressure switch item 2 terminal **FIGURE 6.**

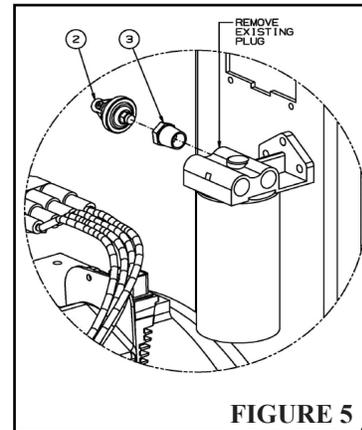
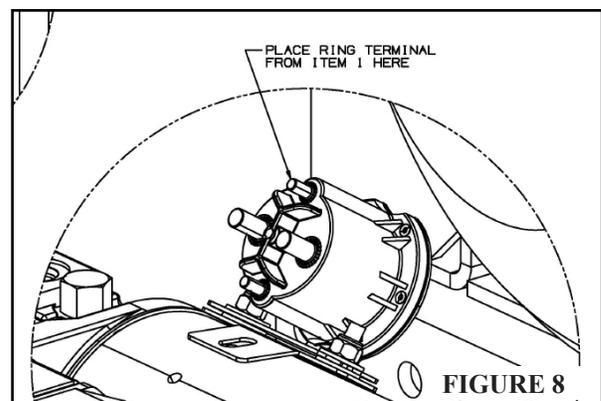
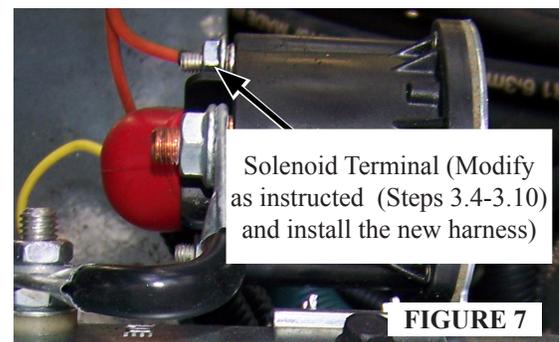
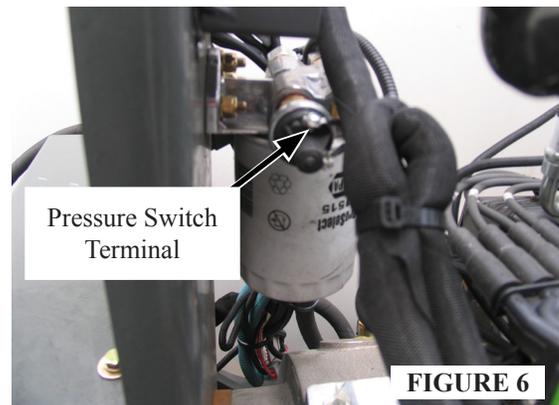


FIGURE 5



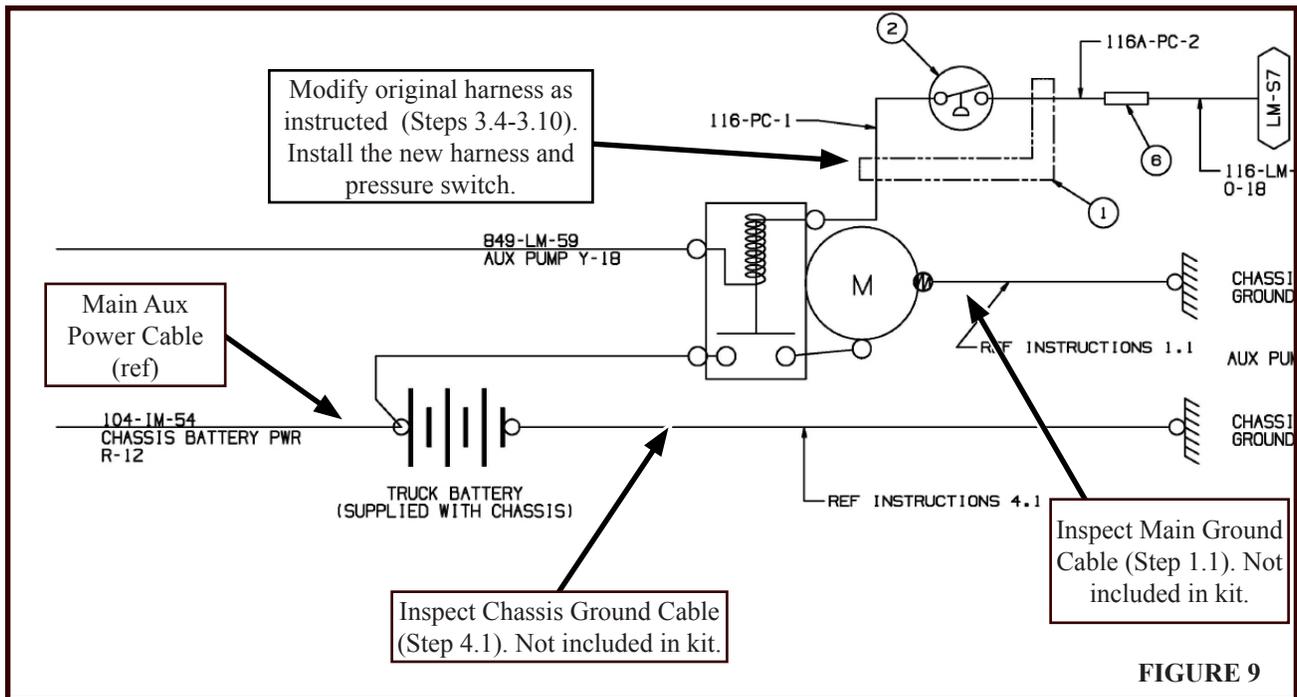


FIGURE 9

FSO 1114835 Electrical Schematic and Identification

Ref #	Part No.	Qty.	Description
1	1114739	1	Harn-Aux Pump Cutout
2	1048596	1	Pres Switch 3 PSI/NC
3	1076383	1	Brass Pipe Reducer 8-2
4	5009158	5	Cable Tie-Std Duty
5	1114918	1	Software Logic CNG/LPG
6	1082838	2	UM-.093 HT Shrink Black
7	5500120	1	ND-INCL Install Prints
Step 4.1	1055749	if-req	Battery Cable 0 GA x 22" (if chassis ground cable is missing in step 4.1)
Ref	1101770	1	Cable 0 GA x 48"

FSO 1114835 Identification Parts List

4. Battery Cable

4.1 Verify that there is a battery cable from the negative chassis battery terminal to the chassis frame rail. See schematic **FIGURE 9** and **FIGURES 10 - 11 - 12 - 13**.

4.2 Elgin P/N Cable 0 ga - 22" P/N 1055749 may be installed if the chassis cable is missing. **FIGURES 10 and 11**.

4.3 If the chassis cable is missing, install the cable to the chassis battery "-" terminal. **FIGURE 10**



FIGURE 10

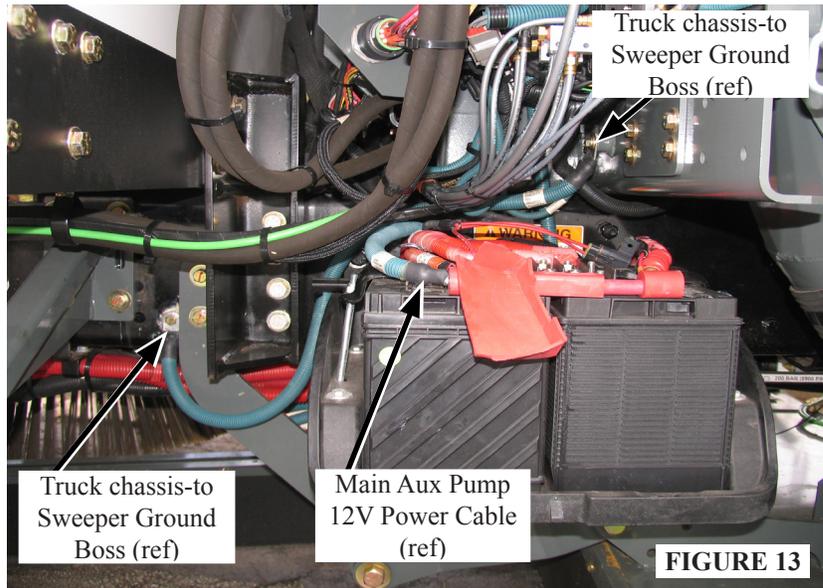
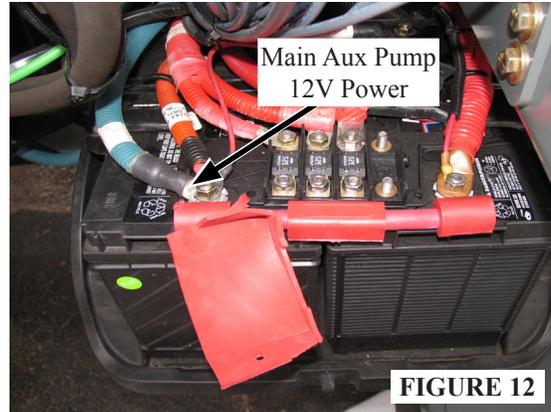
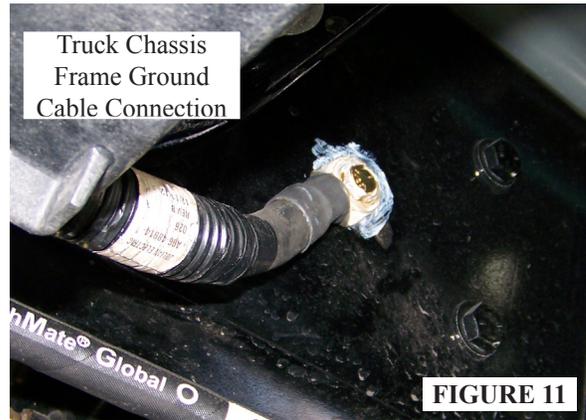
4.4 Thoroughly clean the paint from a near-by hole in the chassis fram rail and connect the cable end to the chassis using a suitable 3/8" bolt, nut and lockwasher. **FIGURE 11**

4.5 Contact the Elgin Service Department if problems are encountered.

5. General Instructions

5.1 Perform the test instructions.

5.2 Troubleshoot and repair if needed.



Warranty Coverage and Claim Submittal

The ESG dealer should submit a claim for warranty.

Use the following information when submitting a warranty claim:

CAUSAL PART: **1089050**

To enter the Service procedures, perform the following:

For INSTALLED PART # **1114835**, SRT of **2** hrs and **0** min is allowed.

Install Chassis Ground (if required)

For INSTALLED PART # **1155749**, SRT of **0** hrs and **30** min is allowed.

Test/Audit Instructions:

Verify the installation by performing the following tests:

1. Test the auxiliary hydraulic pump interlock system.

- 1.1 Turn on the master fuel shutoff valve.
- 1.2 Start the chassis engine.
- 1.3 Turn on the sweeper key without starting the engine.
- 1.4 Set the Mode switch to Sweep.
- 1.5 Turn on the Auxiliary Hydraulic Pump switch.
- 1.6 Press and hold the Hopper Door Open switch until the hopper door open light is on.
- 1.7 Press and hold the Hopper Raise switch. Note the sound of the auxiliary hydraulic pump.
- 1.8 Continue to hold the Hopper Raise switch and start the sweeper engine.
- 1.9 The auxiliary hydraulic pump must stop running when the auxiliary engine starts. The hopper will continue to rise after the engine starts.
- 1.10 Release the Hopper Raise switch
- 1.11 Press and hold the Hopper Lower switch until the hopper is fully lowered.
- 1.12 Press and hold the Hopper Door Closed switch until the hopper door is closed and latched.
- 1.13 Turn off the auxiliary engine.
- 1.14 Turn off the chassis engine.

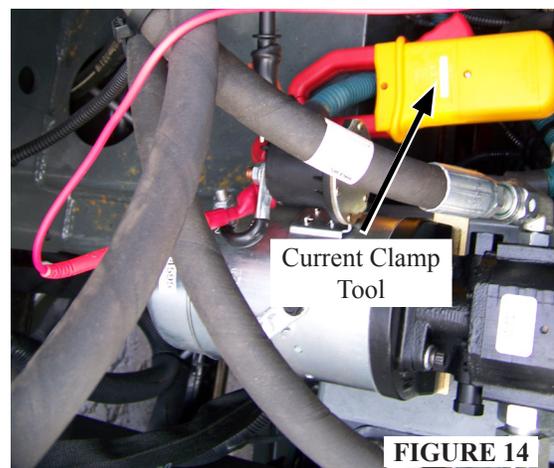
2. Measure the auxiliary hydraulic pump motor current.

2.1 This test will require a DC current clamp capable of measuring up to 400 amps. Reference fluke DC current clamp part numbers i410 (400 DC amps max.) or i1010 (1000 DC amps max.) These current clamps need to be read via a volt/ohm meter.

2.2 Install the current clamp on the positive battery cable going to the auxiliary hydraulic motor solenoid. The current direction arrow should point to the auxiliary hydraulic pump.

FIGURE 14

- 2.3 Adjust the output zero after the current clamp is installed.
- 2.4 The hydraulic oil temperature must be above 60 degrees F.
- 2.5 Start chassis engine, check battery voltage, it must be above 13.5 volts with the chassis engine running.
- 2.6 Turn on the sweeper key but do not start the sweeper engine.
- 2.7 The hopper must be fully down.
- 2.8 Press and hold the hopper door open switch.
- 2.9 Continue to hold the switch on once the door is fully open, note the motor amps reading, then release the switch.
- 2.10 Press and hold the Door Close switch until the hopper door closes and latches.
- 2.11 Turn off the sweeper key and the chassis engine.
- 2.12 The motor amps must remain below 335 amps during the operation of the auxiliary pump. If not, replace the auxiliary hydraulic pump and motor using FSO kit 1110168 (single -post) or 1114595 FSO-Aux pump (two-post) without solenoid.
- 2.13 Repeat the test after the new pump is installed.



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