 607 NW 27th Ave Ocala, FL 34475 Phone : (352) 629-5020 Fax : (352)-629-2902	FIELD REPAIR INSTRUCTIONS				P/N	FSG-WI-00245
	TYPE	HARNES REPAIR			PAGE	1 OF 5
	DEPARTMENT	PORTABLES	BY	ROBERT HE	REV	D

OVERVIEW

Portable Pumps with Kubota 24 HP or 39 HP diesel engines, may have non-functional LED warning lamps for oil pressure and coolant temperature due to improper wire connections.

The purpose of this document is to provide step by step instructions to test that the LED warning lamps function properly, and if a problem is detected, how to repair the connections. The estimated total time for the tests and repair is less than (1) hour. This applies to harness 200799_REV_C and its prior revisions, which are used on the control panel.

Safety

Read and understand the applicable engine operation and service manuals before performing these instructions.

FSG-MNL-00138: Kubota KBD24 (DH902) Operation

FSG-MNL-00139: Kubota KBD24 (DH902) Service

FSG-MNL-00140: Kubota KBD39 (V1505) Operation

FSG-MNL-00141: Kubota KBD39 (V1505) Service

ATTENTION ⚠ DANGER

INDICATES A HAZARDOUS SITUATION, WHICH IF NOT AVOIDED WILL RESULT IN SERIOUS INJURY OR DEATH.

ATTENTION ⚠ CAUTION

INDICATES A POTENTIALLY HAZARDOUS SITUATION, WHICH IF NOT AVOIDED MAY RESULT IN MINOR OR MODERATE INJURY.

IMPORTANT ⚠ NOTICE

ADDRESSES PRACTICES NOT RELATED TO PERSONAL INJURY.

ATTENTION ⚠ DANGER

ALL ELECTRICAL SYSTEMS HAVE THE POTENTIAL TO CAUSE SPARKS DURING SERVICE. ELIMINATE EXPLOSIVE OR HAZARDOUS ENVIRONMENTS DURING SERVICE AND/OR REPAIR.


ATTENTION ⚠ CAUTION

NEVER ATTEMPT TO SERVICE AN APPARATUS WHEN IT IS RUNNING OR STILL HOT FROM BEING RUN. HOT SURFACES CAN CAUSE BURNS.

ATTENTION ⚠ CAUTION

HEAT GUN SURFACES AND HEATED OBJECTS CAN CAUSE BURNS.

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The instructions apply to the Hale wire harness part number 200799, Rev C as well as its earlier revisions. The harness usually comes with the control panel (Part number 168-0072-98-0) shown on Figure 1, for Kubota diesel engines.


There are two LED lamps on the panels, the lamp in red color is for engine oil level warning and the lamp in amber color is for engine coolant temperature warning.


Pre-repair Inspection/Test

- A. Turn control panel power on.
- B. Turn engine RUN/START switch to RUN position.

Figure 1.



- C. Check that engine oil level warning illuminates. ()

1. If it turns on as shown on  Figure 2, lamp functions properly and no repair is needed.
2. If not, that indicates lamp wire requires repair. (See **Repair Instructions** on page 4.)



- D. Perform following to check that engine coolant temperature warning illuminates. ()
 1. Turn off control panel power.
 2. Locate engine coolant temperature sensor. (See  Figure 3. The sensor is located on the coolant outlet manifold which connects a coolant hose to the radiator.)



Figure 2.

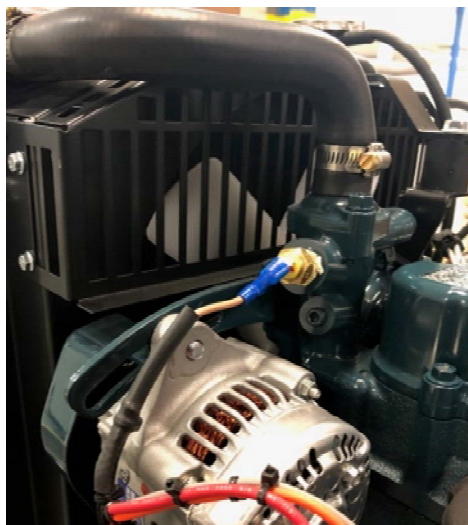



Figure 3.

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3. Using care, unplug sensor connector as shown on Figure 4.



Figure 4.

4. Turn on control engine **RUN/START** switch to **RUN** position.
5. Using a jumper wire connect the metal terminal inside blue connector to a bare metal surface on engine such as the hex on the sensor.


If amber lamp turns on as shown on

6. Figure 5, the lamp functions properly and no repair is needed. (If not, the lamp wire needs repair. See the repair instructions below.)



Figure 5.

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Repair Instructions

TOOLS RECOMMENDED/REQUIRED

- A Phillips screw driver for the control panel removal and installation
 - A wire with an alligator clip on each end for testing
 - Tools (Repair Option 1)
 - A wire cutter (for 18 GA wire)
 - A wire stripper (for 18 GA wire)
 - A wire crimper
 - A thermal (heat) gun
- A. Turn off power supply to control panel and disconnect negative battery terminal.
 - B. Remove four (4) control panel mounting screws. (Located at corners of panel.)
 - C. Carefully pull panel out to provide sufficient room to perform repair.
 - D. On back of panel, identify part number of main harness is 200799. See Figure 6 for reference. (If not, stop and call Hale Products at 1-800-533-3569.)



Figure 6.

Locate the two branches with a Sure Seal rubber connector that split out of the main harness (harness is marked 200799). One is tagged as ENG TMP WRN; and other is tagged as OIL PRS WRN. (See Figure 7.)

NOTE: If both lamps failed testing, do the repair one at a time.

Repair Option 1: Perform the following repair to the wires shown on Figure 7.

- A. Disconnect Sure Seal rubber connectors.

IMPORTANT ⚠ NOTICE

USE THE THERMAL GUN SPARINGLY, DO NOT OVER HEAT/DAMAGE THE WIRING.

- B. Cut both wires about 2-inches from end of connector.
- C. At both ends of both wires, strip insulation.


Note: After the repair, the wire colors will not match.

- D. Reverse wires by connecting stripped end of one wire to stripped end of opposite wire, using a sealed butt splice for 18 GA wire (shown on Figure 8).



Figure 7.

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E. Using wire crimper, crimp both ends of butt splice.



Figure 8.

F. Using heat gun, shrink butt splice tubing.

G. Reinstall both connectors.

Repair Option 2.

(Call Hale Products Customer Service 1-800-533-3569 to get repair kit.)

Locate the harness adapters (see Figure 9), from the repair kit, each pair of defective wires (failed the indicator tests) will need a wire adapter.



Figure 9.

A. Disconnect failed indicators Sure Seal rubber connectors.

B. Connect a wire adapter into harness side connector. (There is a stripe on the female connector and a dot on the male connector for connector alignment (see Figure 10).



Figure 10.

C. Connect other end of wire adapter into indicator side connector.

D. If required, repeat Step A thru Step C except for other failed indicator.

ASSOCIATED REPAIR KIT (PROVIDED) FOR REPAIR OPTION 2

Part Number	Description	Qty
200-00138-000	Harness Adapter	2

Post Repair Inspection

A. Connect battery negative terminal.

B. Turn on control panel power.

C. Perform **Pre-repair Inspection/Test**. (Verify both lamps turn on during the tests.)

D. Install panel.

If apparatus is functional, place it in service in accordance with departmental procedures.

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