



Hale Products, Inc. Service Bulletins

Bulletin#: SB64 Revision#: 0 Date: 10/22/2002

Product Type Covered: Hale Pump ☒ Hurst Tool ☐ Lukas Tool ☐
Product Covered:

ESP Primer Vane Maintenance

Problem Statement:

Primer vane life degrades if the recommended annual maintenance is not performed. To provide prolonged primer life Hale recommends the primer be disassembled and cleaned annually or after 500 operational cycles. At this time primer power and ground connections should be checked.

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Body of the Bulletin

Hale ESP rotary vane primers are reliable environmentally friendly devices that with normal use and if properly maintained will provide years of reliable operation. This reliable operation can only be maintained if proper service, as recommended by Hale products is performed.

Failure to perform this required maintenance could void the primer warranty.

Repeated in this document is the recommended annual maintenance for Hale ESP primers. These maintenance procedures are applicable to both 12 VDC and 24 VDC primer models.

The following text is from PL821, PL938 and Figure 3-2 of 029-0020-63-0:

"To aid in long primer life and proper performance, it is recommended that the priming pump be cleaned yearly or after 500 cycles of use. Separate the pump body and head from the motor and remove any black build-up or contaminants with Safety Kleen™ or Stoddard Solvent. Use care to reinstall the vanes in the same orientation and to grease the shaft seal."

Also included in this service bulletin is an updated Midship Pump Maintenance Checklist

The procedure for disassembly, cleaning, vane replacement and reassembly of the priming pump can be found in the Hale muscle pump manual (Hale P/N 029-0020-63-0) and is reprinted here for easy reference.

O. Primers

1. ESP Priming Pump

(Refer to figure 6-7)

The hale ESP primer is relatively maintenance free. If after testing of the priming system the primer fails to pull the required vacuum the primer vanes may be worn and require replacement.

The following procedures should be used to replace the primer vanes.

- a. Place apparatus out of service in accordance with departmental procedures.
- b. De-energize apparatus electrical system.

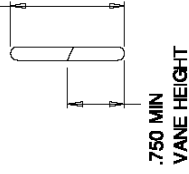
NOTE: Before beginning disassembly make note of the position and locations of components to ensure correct re-assembly.

- c. Tag and disconnect wires from battery connection, solenoid connection and ground connection point.
- d. Tag and disconnect hose from suction connection.
- e. Loosen nuts on studs or bolts that hold primer assembly to mounting pad. Remove primer to suitable work area.
- f. Remove the 3/8-16 UNC X2-1/2 inch long cap screw and remove the 3/8-16 UNC nut from stud. Carefully separate pump assembly from motor.
- g. Using a non-marring mallet carefully separate the pump head from the pump body.
- h. Mark the location of each primer vane. Remove the shaft and rotor assembly, and the vanes from the pump body.

- i. Remove the seal from the pump head assembly.
- j. Inspect all components for corrosion and abnormal wear. Clean all components using Safety Kleen™ or Stoddard Solvent. Obtain new components as necessary.
- k. Carefully press new seal into the pump head assembly.
- l. Insert rotor and shaft assembly into pump body assembly. Slide new vanes into the slots in the rotor. Rotate the rotor and shaft making sure the vanes move freely in the slots.
- m. If necessary install new pins into the pump head assembly. Align the pins with the holes in the pump body assembly and slide pump head over rotor shaft. Once head is seated against the pump body, make sure the rotor assembly turns freely in the pump assembly.
- n. Install motor on pump assembly and secure in place using 3/8-16 UNC X2-1/2 inch long cap screw and 3/8-16 UNC nut on the stud. Tighten the nut and cap screw.
- o. Place primer assembly on the mounting point and tighten cap screws or nuts.
- p. Reconnect suction hose making sure the connection is tight.
- q. Reconnect ground wire, battery connection and solenoid connection.
- r. Energize apparatus electrical system.
- s. Test operate the primer to ensure it is working correctly.
- t. Return apparatus to normal operation

MUST BE CONNECTED TO CHASSIS
FRAME FOR PROPER GROUNDING.
GROUND CONNECTION MUST BE FREE
OF CORROSION AND SEALED

150 REF.
NEW VANE



SOLENOID
CONNECTION

BATTERY (+)
CONNECTION

(2) 6

1

10

2

15

20

19

1. CHECK POWER AND GROUND CONNECTIONS
2. DISMANTLE PER PROCEDURE.
3. CHECK SEAL (ITEM 10) FOR NICKS AND CUTS.
IF DAMAGED REPLACE WITH HALF P/N 296-2710-00-0
4. CHECK HOUSING AND HEAD (ITEMS 15 & 12). IF WORN
REPLACE ENTIRE PUMP END. HALF P/N
5. CHECK VANES, REPLACE IF REMAINING BLADE IS LESS THAN
0.750 INCHES HIGH AS SHOWN
6. CLEAN ALL BLACK RESIDUE FROM PRIMER BODY AND ROTOR WITH
SAFETY KLEEN OR SOAP AND WATER PRIOR TO REASSEMBLY
7. REASSEMBLE PER PROCEDURE

ESP PRIMER MAINTENANCE

INLET FROM PUMP

12

2-1/2 INCH DISCHARGE

ESP Priming Pump



Midship Pump Maintenance Check List

Truck Manufacturer _____
Pump Model & Serial Number _____
Year _____ Unit# _____

Recommended Weekly Procedures:

- ☐ Test relief valve system or governor at 150, 200, 250. If pump is equipped with TPM, you will need to have positive pressure.
- ☐ Operate transver valve and check clapper valves for proper operation on 2-stage pumps
- ☐ Test the priming system and check lubrication level in priming tank (if applicable)
- ☐ Operate all valves, discharge, suction, hose, drain, and multi-drain.
- ☐ Check pump shift indicator lights.

RECOMMENDED MONTHLY PROCEDURES	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Complete weekly checks												
Lubricate threads on PM relief valve panel control and check light. DO NOT USE GREASE												
Lubricate remote valve controls and all valves												
Check controlled drip rate and adjust if necessary (8 - 10 drops per minute @ 100-150 PSI)												
Perform dry vacuum test*												
Check drive flange bolts to ensure tightness. Lubricate U Joint												
Lubricate suction tube threads. DO NOT USE EXCESSIVE GREASE												
Clean and inspect inlet strainers (Examine for loss of zinc)												
Inspect cap gaskets. Replace if cracked or damaged												
Check oil level in pump gear box; add oil as necessary or replace oil with SAE EP 90 oil if contamination is found												

*Per NFPA-1911, para. 3-32, 22 inches minimum vacuum; loss not to exceed 10 inches vacuum in 5 minutes

Recommended Annual Procedures

- ☐ Complete all previous checks
- ☐ Check gauge calibration
- ☐ Check oil level in AutoLube assembly (SEA-EP 90 oil). Pump must be drained of water prior to checking oil. See operation and maintenance manual for details.
- ☐ Lubricate power transfer cylinder, VPS shift cylinder, and shift control valve with air tool oil
- ☐ Drain pump gear box oil and refill (use SAE-EP 90 oil). Examine magnetic plug.
- ☐ Check individual drain lines from pump to multi-drain to ensure proper drainage and protection from freezing.
- ☐ Lubricate transfer valve mechanism on two stage pump. Dry moly spray is preferred.
- ☐ Perform yearly standard pump test (per NFPA-1911) to test pump performance levels.
- ☐ Repacking of pump is recommended every two or three years.
- ☐ Service ESP primer as per bulletin
- ☐ Remove and clean relief valve strainers

NOTE: The above general recommendations are provided for normal use and conditions. Extreme conditions or variables may indicate a need for increased maintenance. Good preventative maintenance lengthens pump life and ensures greater dependability. Consult service or diagnostic chart in operator's manual for detailed information