Hale Products, Inc. Service Bulletins

Bulletin#: SB63 **Revision#:** 0 **Date:** 1/11/01

Product Type Covered: **Hale Pump** X **Hurst Tool** **Lukas Tool**

Product Covered:

FoamMaster and CAFSMaster Power Supply

Problem Statement:

Based on recent field service calls indications are that some FoamMaster™ and CAFSMaster™ power connections to the apparatus power system are inadequate and not in accordance with the installation guidelines provided in the current revision of the FoamMaster™ Installation and Operation Manual.

Written by: Paul Wentz **Date:** 1/10/01

Approved by:
Project Manager:
Customer Service Designee:

Body of the Bulletin

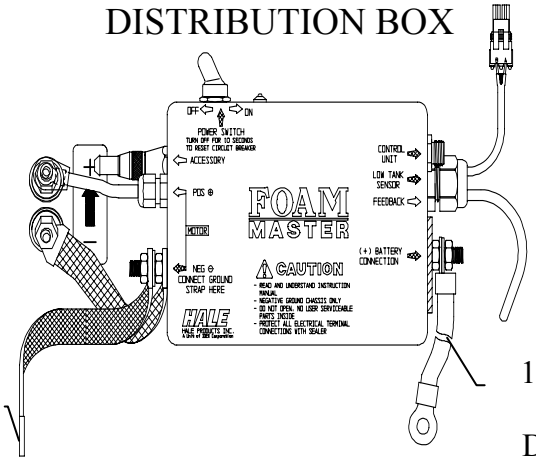
Power for the FoamMaster™ system is supplied from the apparatus battery and must be such that the FoamMaster™ completes its "power-on sequence" before any voltage drops occur in the chassis power system. During the first 10 to 15 seconds of FoamMaster™ power-up sequence the system is conducting self-diagnostics to determine the type of system and which additional accessories (i.e. CAFSMaster™ and/or Foam Discharge Multiplexing units) are installed with the system. During this time period, any significant voltage drops can cause an erroneous reading and cause the FoamMaster™ system to not operate correctly. This has been more evident on apparatus where CAFSMaster™ or Foam Discharge Multiplexing systems are installed with the greatest effect being on the CAFSMaster™ system.

One of the simplest ways to prevent voltage drop is use of the proper size primary power cable. Section II of the Hale FoamMaster™ Description, Installation and Operation manual (Hale P/N 029-0020-35-0) has the recommended primary power cable size chart. The following are the recommended primary power cable sizes based on length of cable run as they appear in the manual.

Length of Cable	Minimum Cable Size
1 to 6 ft (0.3 to 1.8 m)	4AWG (21.1 mm^2)
6 to 15 ft (1.8 to 4.6 m)	0AWG (53.5 mm^2)
15 ft or Greater (4.6 m)	00AWG (67.4 mm^2)

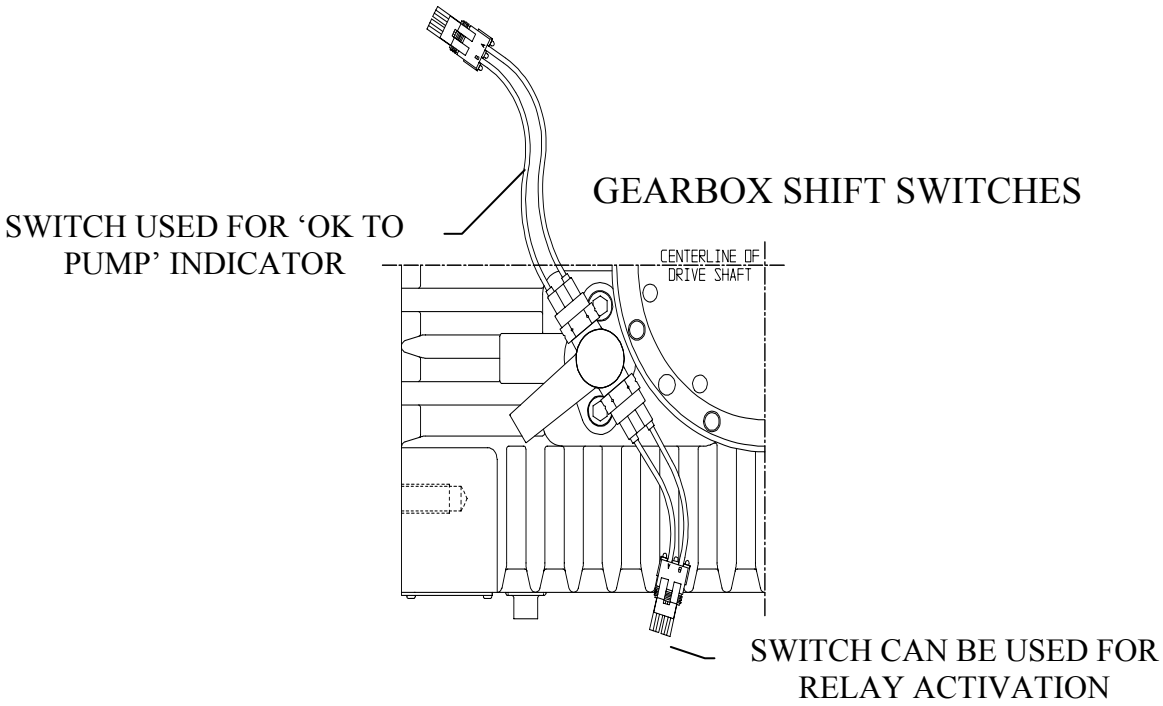
In addition to proper primary power cable size, proper grounding is also important. Hale recommends the use of a flat braided ground strap at least 1-1/4 inches (31.75 mm) wide attached to a dedicated chassis ground point. This ground strap should be no longer than 18 inches (457 mm) with soldered flat lug ends. The attachment holes should use minimum

5/16-inch (8 mm) diameter bolts. The ground strap must not have any other components attached to the same point. If the ground strap must be longer than 18 inches (457 mm) then a wider strap or a double thickness of the 1-1/4 inches (31.75 mm) wide strap must be used. The ground connection must be clean and free from paint or rust prior to assembly and must be sealed after assembly.



The primary power supply wire must be run from the apparatus battery positive terminal through a solenoid with a minimum 100 AMP continuous (200 AMP intermittent) duty rating to the FoamMaster™ distribution box + terminal. THERE SHOULD BE NO OTHER COMPONENTS BEING SUPPLIED WITH POWER FROM THIS CABLE WITH THE EXCEPTION OF POWER FOR PTO INTERLOCK OPTION IF SO EQUIPPED. The solenoid can be controlled with power supplied to the actuation coil when the apparatus master battery switch is turned on, or a better installation is to connect the primary side of the solenoid to the pump shift switch. When the pump is engaged the FoamMaster™ will power on and problems with interference due to engine starting or other chassis power drops can be avoided.

The best protection against voltage drop is afforded when power is supplied to the FoamMaster™ only after the apparatus is shifted from Road to pump position. Hale currently provides two separate shift indicator switches on our split shaft gearboxes. (Refer to the current revision of Hale Plate PL746 for wiring details. Although the upper switch must be used for the PUMP ENGAGED indicator light the second or lower switch can be used to control other relays and interlocks as required. The maximum continuous permissible load on this switch is 20 AMPS. See diagram on page 3.



This second switch can be used to provide power to a relay that will in turn energize the solenoid coil for the power supply to the FoamMaster™ in addition to lock-up and other functions. The pump mode selected air switch used on many apparatus is another place to get the pump engaged signal to power up the Foam System. This is a better solution since the apparatus is already running. The FoamMaster system should complete its power-on sequence before the apparatus operator exits the cab and reaches the pump operator panel.

Additionally, make sure the FoamMaster™ Power Filter Kit (P/N 546-1870-00-0 (12VDC) or P/N546-1870-01-0 (24VDC)) is properly installed per Hale Plate Number 891A.

Following these recommendations and other requirements set forth in the FoamMaster™ manual (P/N: 029-0020-35-0) has allowed many customers to enjoy years of trouble-free service. Three copies of the manual are shipped with each unit. To obtain an additional copy contact Hale Customer Service Department.