Hale Products, Inc. Service Bulletins

Bulletin#: SB 105 **Revision#:** 0 **Date:** 3/6/2009

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

Keywords: ESP Primer Update – New Solenoid

Product Covered: ESP-12 Priming Pump

Summary Statement: **New ESP primer has new heavier duty solenoid that can be repositioned and reduced current draw while maintaining high performance.**

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Customer Service Designee: Paul Williams

Body of the Bulletin

The Hale ESP pump primer is the most popular priming system for fire pumps in North America, being used on Hale and other brands of pumps. The highly reliable and popular accessory is now being upgraded with a new solenoid that has heavier contacts and springs for even better operation.

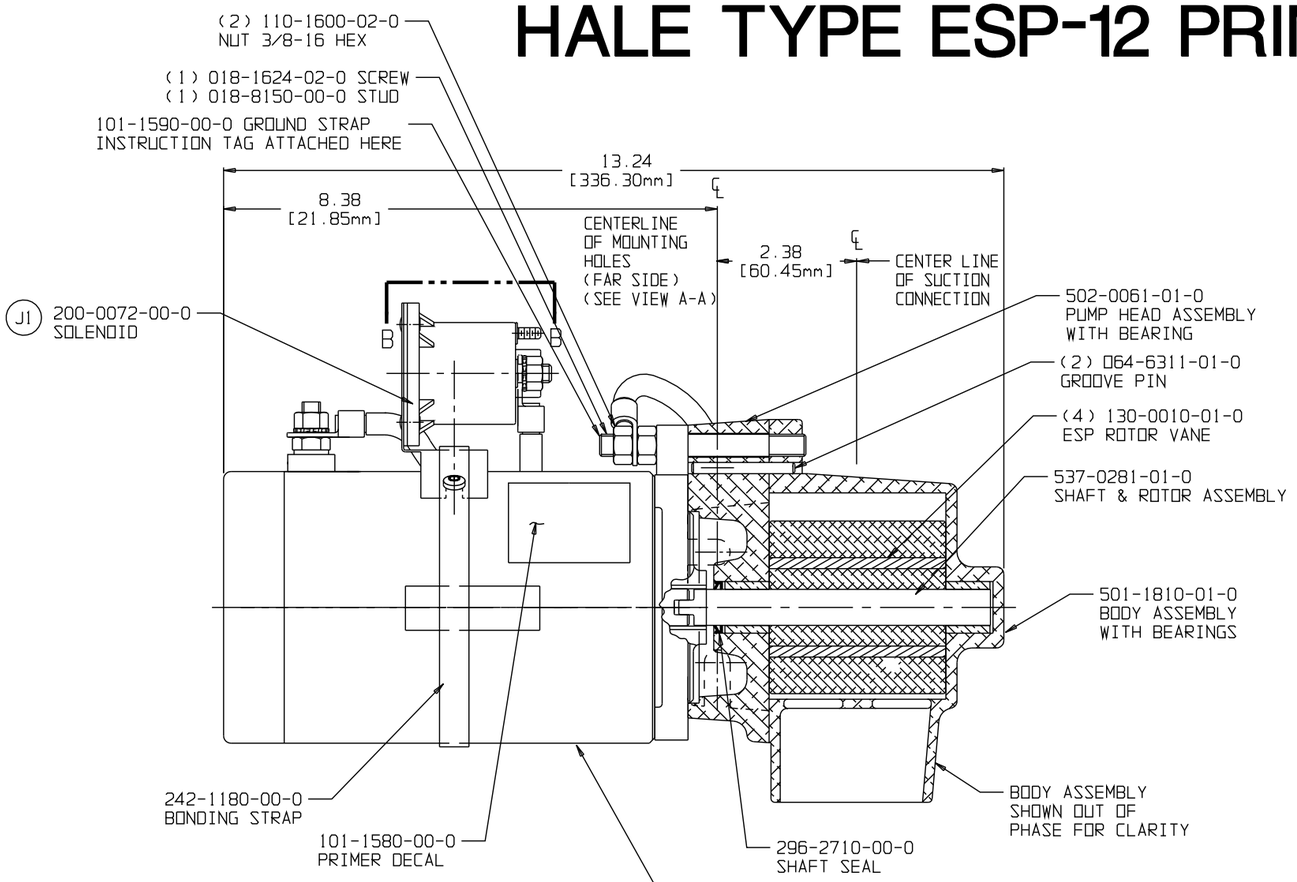
The solenoid is shipped in the standard location, however it is now mounted with an innovative clamp that allows the solenoid to be re-positioned on the primer pump so that potential interference or damage can be avoided.

In addition, the priming pump amp draw has been reduced from a maximum of 300 amps to 280 amps without any loss of the priming performance that has made the ESP primer a popular fire pump accessory.

Please review the attached installation documentation for the details on the new ESP priming pump installation. The improved ESP priming pump will begin shipments in place of the current design in early April 2009.

As always Hale working to improve even our best products. Please contact Hale customer service at 1-800-220-3473 if you need additional information.

HALE TYPE ESP-12 PRIMING PUMP



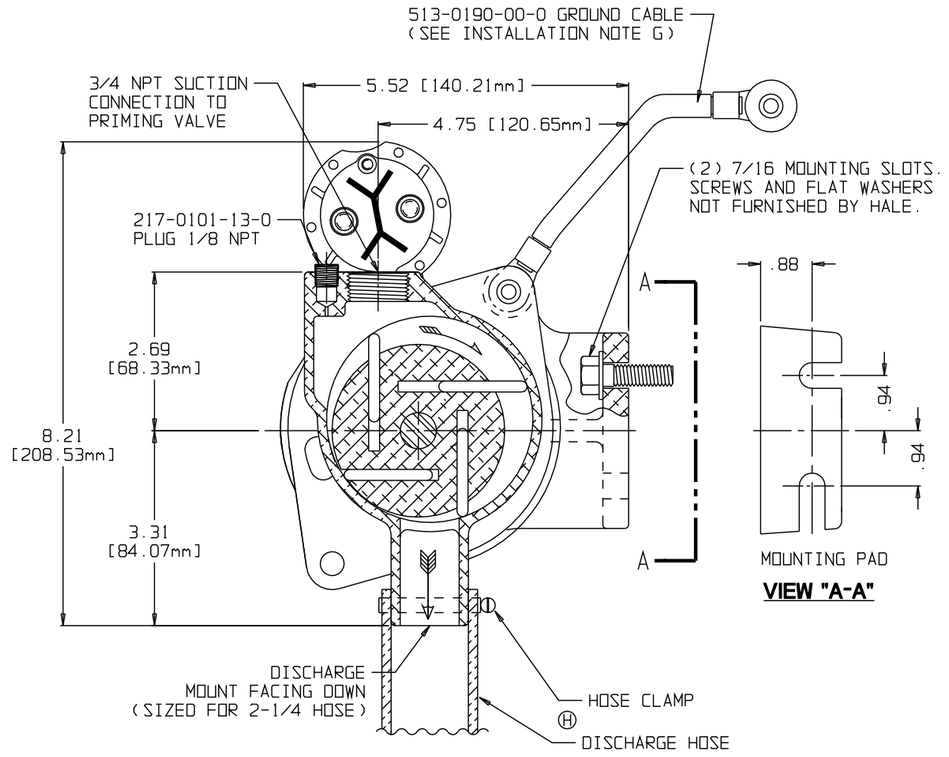
	PART NO.	VOLTAGE DC	AMPERES MAX.
J1	200-0043-00-0	12	280

INSTALLATION NOTES:

A) USE A MINIMUM OF 1/2 TUBING FORBOOSTER PUMPS.
B) USE A MINIMUM OF 3/4 PIPE FOR MIDSHIP PUMPS.
C) CONNECT TO HIGHEST POINT ON DISCHARGE OF MAIN PUMP IF PRIMING WHILE THE PUMP IS STATIONARY.
D) CONNECT TO HIGHEST POINT ON THE SUCTION NEAR THE IMPELLER EYE IF PRIMING WHEN THE MAIN PUMP IS RUNNING.
E) A SHUT-OFF VALVE, SUCH AS A HALE PVG OR SPV PRIMING VALVE, MUST BE LOCATED IN THE PRIMING LINE BETWEEN THE PRIMING PUMP AND THE MAIN PUMP.
F) THE PRIMING PUMP MUST BE MOUNTED SO THAT THE MOTOR SHAFT IS IN A HORIZONTAL PLANE WITH THE PRIMING PUMP DISCHARGE FACING DOWN.
G) GROUND THE PRIMING PUMP TO THE TRUCK CHASSIS, USING THE GROUND STRAP FURNISHED. THE GROUND STRAP IS REQUIRED FROM THE TRUCK CHASSIS TO THE TERMINAL STUD ON THE PRIMING PUMP.THIS IS TO INSURE A GROUND FOR THE MOTOR.
THE CABLE IS SIZED FOR A 12 VOLT DC 300 AMP LOAD.
H) DURING THE PRIMING OPERATION (EVACUATING AIR), DO NOT RUN MOTOR FOR MORE THAN 60 SECONDS.

NOTES:

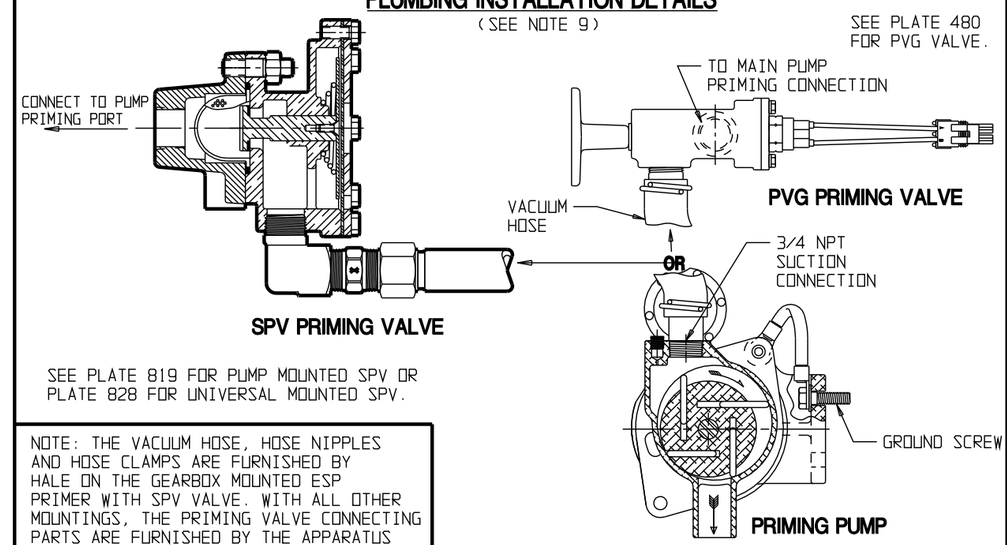
1) WEIGHT OF PRIMING PUMP AND MOTOR IS 27 LBS. (12.2 Kg).
2) THEORETICAL DISPLACEMENT IS .066 GAL. (.25 LITERS) PER REVOLUTION OR 47,000 CU. IN. (770,000 CU. CM) AIR PER MINUTE.
3) VACUUM CAPABILITY: 24 IN. Hg (610 MM Hg).
4) TO AID IN LONG PRIMER LIFE AND PROPER PERFORMANCE, IT IS RECOMMENDED THAT THE 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 CONTAMINATES WITH SAFETY KLEEN OR STODDARD SOLVENT. USE CARE TO REINSTALL THE VANES IN THE SAME ORIENTATION AND TO GREASE THE SHAFT SEAL.
5) SEE PLATE NO. 938 FOR 24V PRIMING PUMP DETAILS.
6) TO PREVENT DAMAGE TO PLASTIC HOUSING WHEN INSTALLING OR REMOVING LEADS, DO NOT APPLY SIDE LOADS TO NUTS.
7) WHEN USING A TERMINAL LUG ON THE BATTERY CONNECTION WITH A 5/16 DIA. HOLE, LOWER WASHER IS NOT NEEDED. IF HOLE DIA. IS LARGER THAN 5/16, WASHERS ARE REQUIRED BOTH ABOVE AND BELOW THE TERMINAL.
8) FOR ELECTRICAL DETAILS REFER TO SHEET 2



PLUMBING INSTALLATION DETAILS

(SEE NOTE 9)

SEE PLATE 480 FOR PVG VALVE.



SEE PLATE 819 FOR PUMP MOUNTED SPV OR PLATE 828 FOR UNIVERSAL MOUNTED SPV.

NOTE: THE VACUUM HOSE, HOSE NIPPLES AND HOSE CLAMPS ARE FURNISHED BY HALE ON THE GEARBOX MOUNTED ESP PRIMER WITH SPV VALVE. WITH ALL OTHER MOUNTINGS, THE PRIMING VALVE CONNECTING PARTS ARE FURNISHED BY THE APPARATUS BUILDER.

ECO NO	REV	CHANGED FROM	BY	DATE	APVD
02-251	G	ADDED TOP VIEW OF SOLENOID AND DIMENSIONS IN MILLIMETER. FIXED GROUND STRAP TO BE ATTACHED TO APPARATUS CHASSIS.	BVP	08-15-02	MAL
0411	H	ADDED DETAIL C AND HOSE	KSM	7-24-06	MAL
0526	I	REDRAWN AND ADDED SHEET 2	MLJ	2-22-07	MAL

ECO NO	REV	CHANGED FROM	BY	DATE	APVD
0815	J1	WAS 200-0042-00-0 & 200-0071-00-0	JRP	01-22-09	MAL
0815	J2	ADDED NOTE I	JRP	01-22-09	MAL

HALE PRODUCTS, INC.
A Unit of IDEX Corporation
Conshohocken, PA 19428 USA

DRAWN RDT | CHECKED RDT | DATE 2-19-95 | SIZE D | SCALE: FULL

PLATE NO. 821AJ (SHEET 1 OF 2)

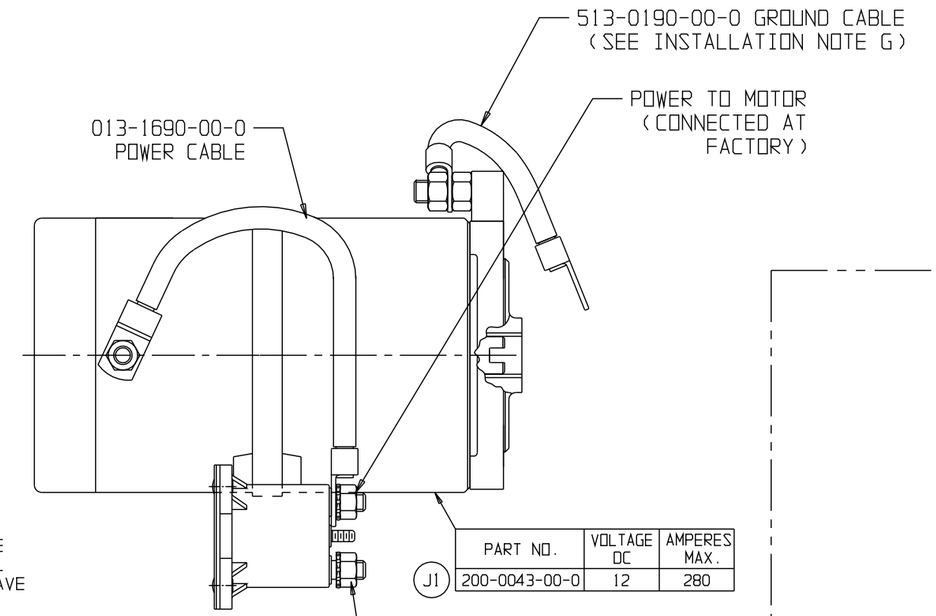
HALE TYPE ESP-12 PRIMING PUMP

ELECTRICAL INSTALLATION DETAILS

MATING CONNECTOR NOT PROVIDED BY HALE
CAN BE PURCHASED AS HALE KIT # 546-1780-00-0
PACKARD WEATHER PACK SEALED CONNECTOR:
(1) P/N: 12010973 (2 CONTACT) SHROUD HALF
(2) P/N: 12124582 (16-14 GAGE) MALE TERMINAL
(2) P/N: 12010293 (16-14 GAGE) LT GRAY CABLE SEAL
USE A MINIMUM OF 14 AWG SXL, GXL OR TXL
SAE J1128 WIRE TYPE

SOLENOID RELOCATION INSTRUCTIONS

1-REMOVE (2) SCREWS HOLDING THE SOLENOID TO THE MOTOR AND LOOSEN THE SOLENOID CLAMP SCREW.
2-LOOSELY INSTALL THE CLAMP USING THE EXISITING SOLENOID MOUNTING HOLES.THE SCREWS MUST GO THROUGH TWO OF THE HOLES IN THE CLAMP.
3-POSITION THE SOLENOID IN THE DESIRED LOCATION. PLACE THE CLAMP BETWEEN THE FOUR CLAMP GUIDES ON THE SOLENOID MOUNTING BRACKET. TIGHTEN THE THE SOLENOID CLAMP,THEN TIGHTEN THE SOLENOID SCREWS. MAKE SURE CLAMP AND SCREWS ARE TIGHTENED IN THIS ORDER.
4-TIGHTEN THE LOWER TERMINAL NUT TO 50 LBS-IN. INSTALL THE CABLE AND THE UPPER TERMINAL NUT. HOLD THE LOWER TERMINAL NUT WITH A WRENCH WHILE THIGHTENING THE UPPER TERMINAL NUT TO 50 LBS-IN.
5-INSTALL THE CABLE TO THE SOLENOID TERMINAL AND TIGHTEN THE TERMINAL NUT TO 35 LBS-IN..
6-INSTALL THE SOLENOID POWER CABLE AND TIGHTEN THE LARGE SOLENOID NUT TO 35 LBS-IN. INSTALL THE SOLENOID "ACTIVATION" WIRE AND TIGHTEN THE SMALL NUT TO 15 LBS-IN. POSITION THE CABLES SO THEY HAVE THE LEAST POSSIBILITY FOR DAMAGE.



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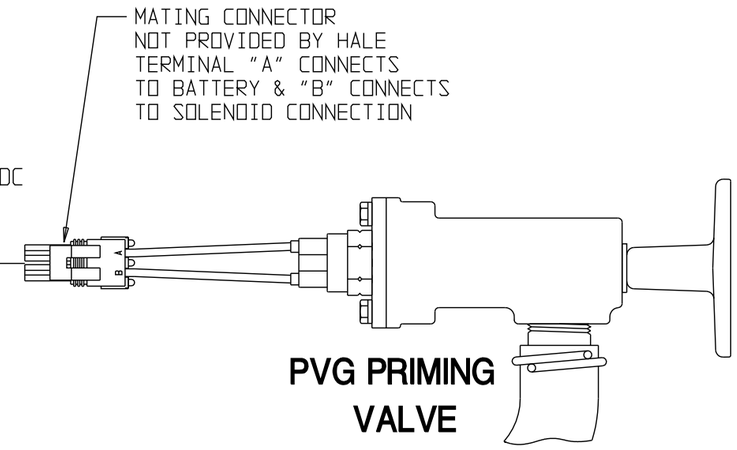
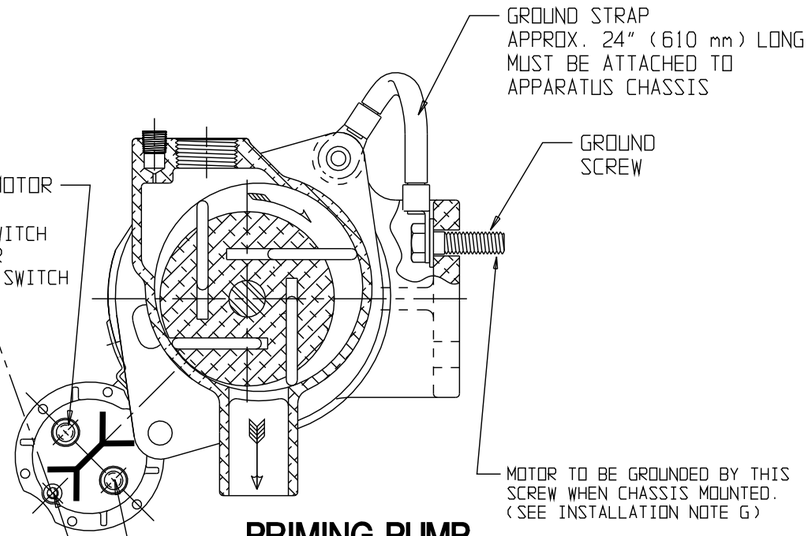
BATTERY POWER CONNECTION 12 VDC.
USE MINIMUM 4 AWG STRANDED COPPER BATTERY CABLE MEETING REQUIREMENTS OF SAE J1127.
(LONGER LENGTHS REQUIRE HEAVIER CABLE).

SPV PANEL MOUNTED SWITCH

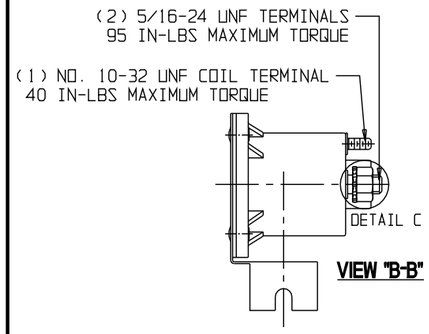


PVG PRIMING VALVE

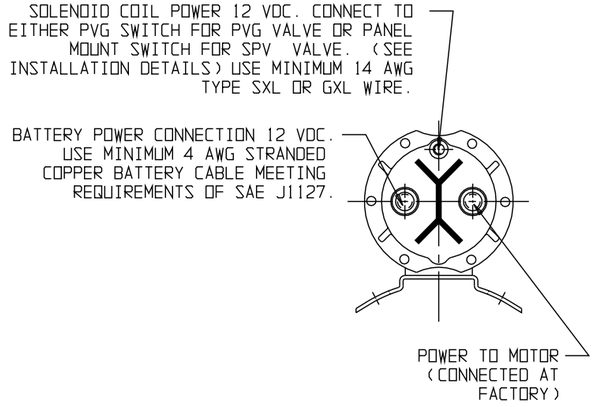


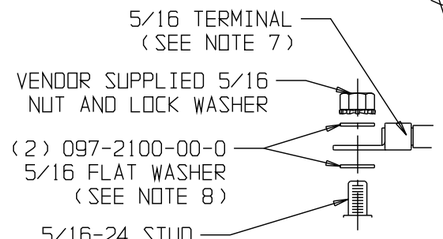
PRIMING PUMP

SOLENOID FASTENER TORQUE SPECIFICATION



VIEW "B-B"





DETAIL C

WHEN USING A TERMINAL LUG ON THE BATTERY CONNECTION WITH A 5/16 DIA. HOLE, LOWER WASHER IS NOT NEEDED. IF HOLE DIA. IS LARGER THAN 5/16, WASHERS ARE REQUIRED BOTH ABOVE AND BELOW THE TERMINAL.

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PLATE NO. 821AJ (SHEET 2 OF 2)