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PRODUCT INFORMATION

September 16, 1991

TO: All Parts Service Centers
FROM: J. L. Costello
SUBJECT: MIDSHIP PUMP SHIFT PROCEDURES & RECOMMENDATIONS

Throughout the years we have attempted to share new industry technology and product information with all of our customers. Occasionally, we have been required to make our customers aware of potential field problems in order to maintain in-service apparatus to acceptable standards. Due to the exceptionally long life cycle of apparatus and its components, it is reasonable that routine product improvements or technological advances may not be incorporated into older apparatus.

As a Hale Parts Service Center we believe you have the ultimate obligation to the fire service not only to maintain the apparatus but to upgrade the apparatus to current standards wherever practical. One such area that we strongly recommend evaluating on every apparatus is the "Pump Shift System," particularly when powered through an automatic transmission.

In 1977 Hale provided a Pump Shift Light Package for both new and retro-fit purposes to indicate when the shift into Pump Position was recently completed. Apparatus manufactured prior to this date, with many still in service, may not have a Pump Shift Indicator Light System in place, and they should. We urge you to make a recommendation to every fire department that is not equipped with a Pump Shift Indicator Light System to install one as soon as possible.

MIDSHIP PUMP SHIFT PROCEDURES & RECOMMENDATIONS

Further, over the years we have attempted to provide the best information available regarding the interface of our midship pumps with engines and automatic transmissions to ensure optimum performance. As previously mentioned, in 1977, in conjunction with NFPA Standards, we provided a Pump Shift Indicator Light Package for all new products and retro-fit capabilities. We also provided Service Bulletins periodically regarding the interface of the split shaft pump, proper pump shift sequencing, and the automatic transmission/high range lock-up. Recently we issued our Service Bulletin #53, in conjunction with Allison, addressing some evolutionary changes that have taken place in the automatic transmissions and the effects on our split shaft midship pumps.

The instructions in Service Bulletin #53 offer specific recommendations to improve the interaction of the midship pump and Allison Automatic Transmission in order to provide a smooth, uninhibited shift from Road to Pump and vice versa.

To reacquaint you with the history of pump shift light systems, shift sequencing and proper interface with automatic transmissions, we have enclosed copies of our VPS shift recommendations and past Service Bulletins on this subject. We strongly recommend that you inspect this area of each apparatus you service and make the necessary recommendations to the fire department to update the equipment, if necessary, to current standards.

Regardless of the age or manufacturer of the apparatus we believe it's in the best interest of the fire department to consider these recommendations and believe it's your obligation to suggest them.

As you review the attached information be aware of the evolutionary process and changes over the years and attempt to deal only with the latest information, as it applies.

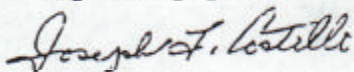
As you are probably aware, the newest NFPA 1901 Standards require additional shift warning lights on apparatus sold after February 8, 1991. We have enclosed Hale Drawing Plate #746, Instructions for indicator lights on PTO and Midship Pumps required by the new standard. We suggest if updating the light system is practical that you consider updating to latest requirements.

MIDSHIP PUMP SHIFT PROCEDURES & RECOMMENDATIONS

Further, we have enclosed Hale Drawing Plate #745 which indicates our recommendation for the proper installation and interface of the major shift components.

As always, should you need further assistance, do not hesitate to call 1-800-220-HALE, our Customer Service Department.

Very truly yours,



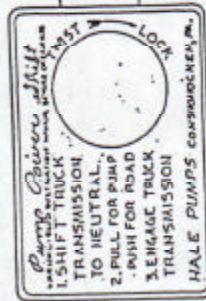
Joseph L. Costello
Service Manager

cc: All Midship OEM Service Managers

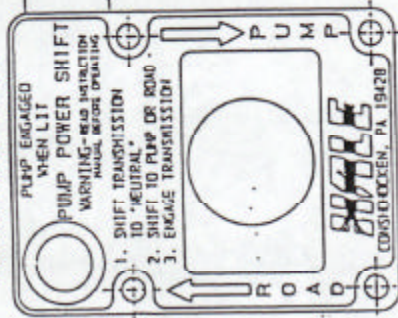
Enclosures

VPS CONTROL VALVE

PUSH/PULL TYPE VALVE USED
PRIOR TO APPROX. 1988

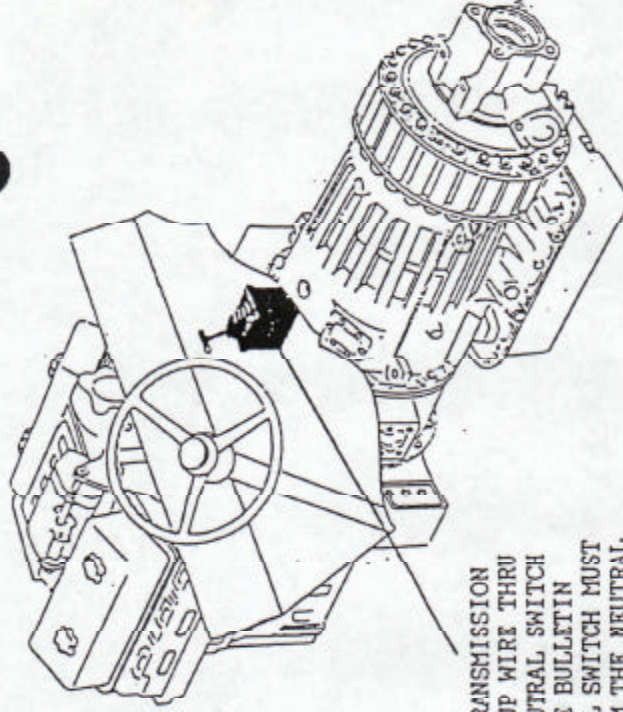


LEVER TYPE VALVE



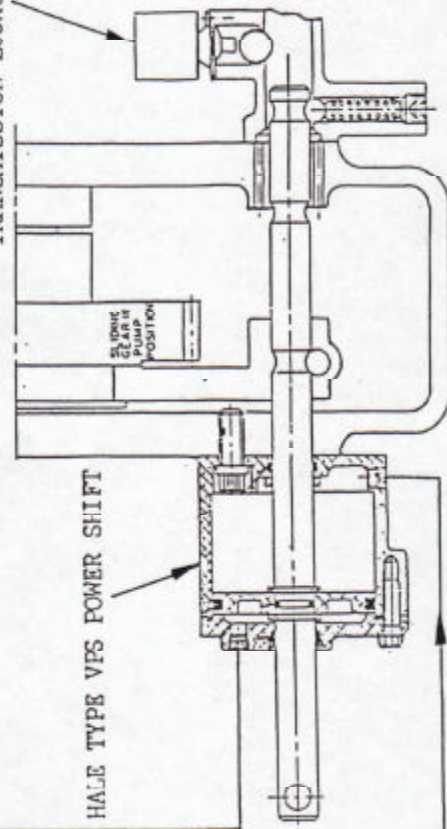
AIR FLOW

MECHANICAL OR AIR SWITCH
TO BE UTILIZED FOR HIGH RANGE
LOCKUP OF THE AUTOMATIC
CHASSIS TRANSMISSION.
SWITCH NOT FURNISHED
BY HALE



FOR AUTOMATIC TRANSMISSION
HIGH RANGE LOCKUP WIRE THRU
TRANSMISSION NEUTRAL SWITCH
PER HALE SERVICE BULLETIN
#53. THE NEUTRAL SWITCH MUST
BE SEPARATE FROM THE NEUTRAL
SWITCH IN THE VEHICLE STARTING
CIRCUIT.

THIS HALE SWITCH IS TO ACTIVATE
THE "PUMP ENGAGED" LIGHT ONLY.
DO NOT USE TO ACHIEVE AUTOMATIC
TRANSMISSION LOCKUP.



HALE FIRE PUMP COMPANY

700 Spring Mill Avenue, Conshohocken, PA 19428 USA

INSTRUCTIONS TO MOUNT SHIFT AND THROTTLE CONTROL INDICATOR LIGHTS

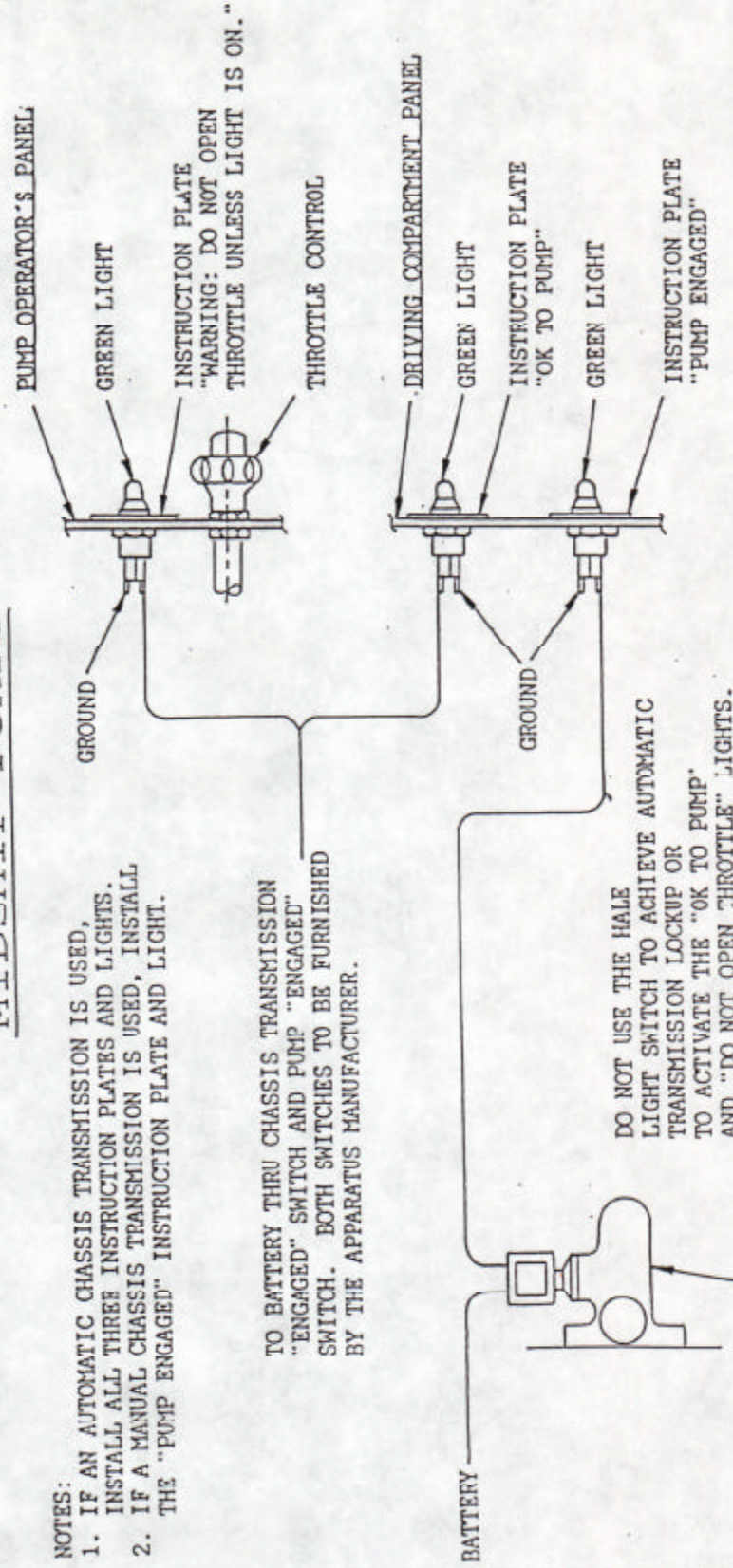
Hale Midship pumps are furnished with three green indicator lights. Power take-off driven pumps have three green lights and one red light. Refer to appropriate sketch for installation of lights and name plates. After system is installed check the shifting operation to see that the lights are hooked up according to the proper diagram.

MIDSHIP PUMPS

NOTES:

1. IF AN AUTOMATIC CHASSIS TRANSMISSION IS USED, INSTALL ALL THREE INSTRUCTION PLATES AND LIGHTS.
2. IF A MANUAL CHASSIS TRANSMISSION IS USED, INSTALL THE "PUMP ENGAGED" INSTRUCTION PLATE AND LIGHT.

TO BATTERY THRU CHASSIS TRANSMISSION "ENGAGED" SWITCH AND PUMP "ENGAGED" SWITCH. BOTH SWITCHES TO BE FURNISHED BY THE APPARATUS MANUFACTURER.



DO NOT USE THE HALE LIGHT SWITCH TO ACHIEVE AUTOMATIC TRANSMISSION LOCKUP OR TO ACTIVATE THE "OK TO PUMP" AND "DO NOT OPEN THROTTLE" LIGHTS.

GEARSHIFT SHAFT CAP
ON PUMP GEARBOX

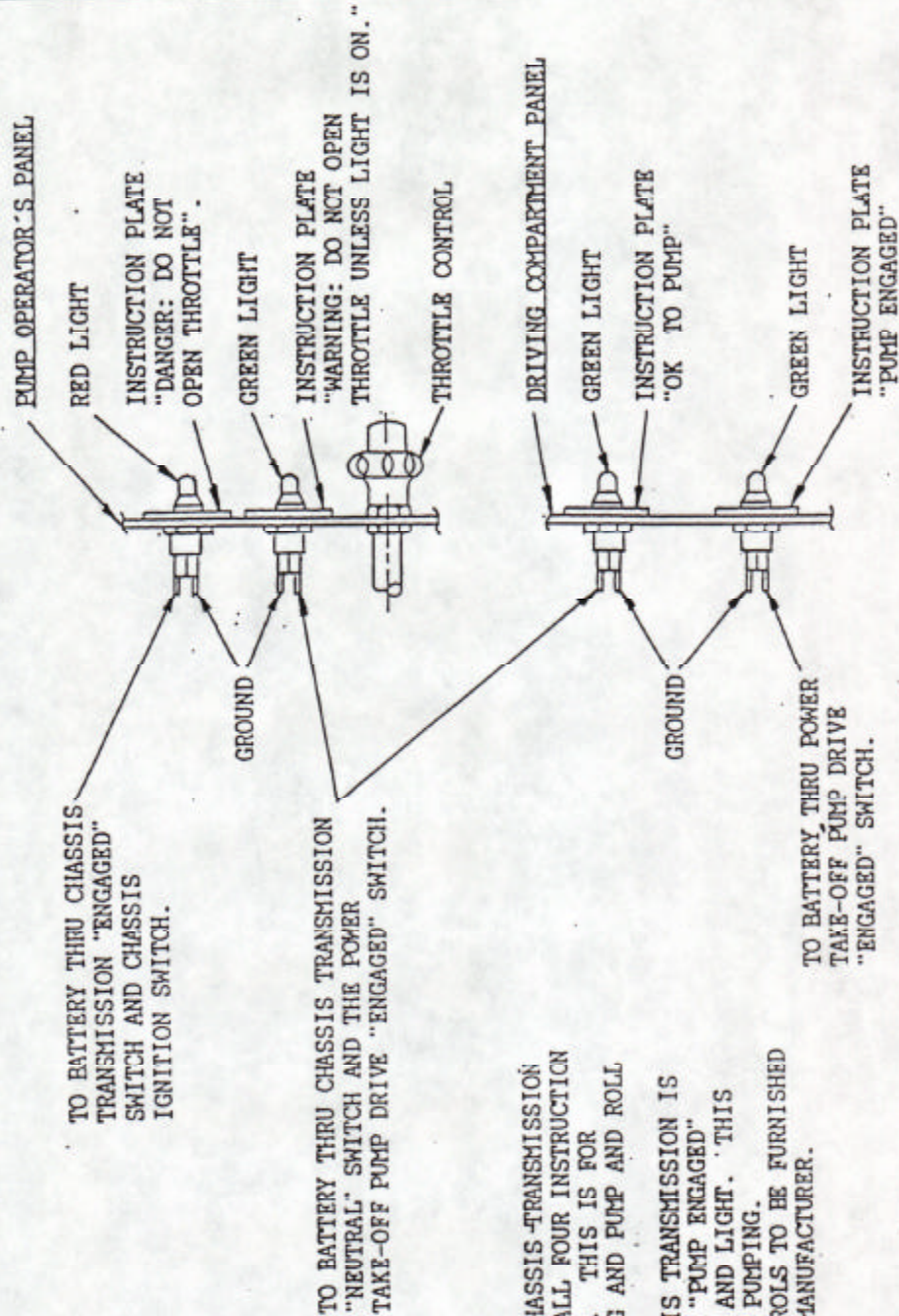
HALE FIRE PUMP COMPANY

700 Spring Mill Avenue, Corshocken, PA 19428 USA

8-15-91 SHEET 1 OF 2

PLATE NO. 746

POWER TAKE-OFF DRIVEN PUMPS



- NOTES:
1. IF AN AUTOMATIC CHASSIS TRANSMISSION IS USED, INSTALL ALL FOUR INSTRUCTION PLATES AND LIGHTS. THIS IS FOR STATIONARY PUMPING AND PUMP AND ROLL USE.
 2. IF A MANUAL CHASSIS TRANSMISSION IS USED, INSTALL THE "PUMP ENGAGED" INSTRUCTION PLATE AND LIGHT. THIS IS FOR STATIONARY PUMPING.
 3. ALL SWITCHES/CONTROLS TO BE FURNISHED BY THE APPARATUS MANUFACTURER.

HALE FIRE PUMP COMPANY

100 Spring Mill Avenue, Conshohocken, PA 19428 USA

PLATE NO. 746

8-15-91

SHEET 2 OF 2

HALE MODEL VPS AUTOMATIC PUMP SHIFT
(For use on Midship type pumps)

A. GENERAL

The Hale model VPS is a remote, pneumatically operated shifting device (an alternative to manual shift) to accomplish shifting of the pump transmission from "Road to Pump" position or "Pump to Road" position.

This arrangement utilizes available truck vacuum or air pressure to power the shift system and is activated by an in-cab pump shift control valve. Current models of this system are equipped with three green warning lights. Two are in the truck driving compartment. One adjacent to the pump shift control and the other near the chassis transmission shift control. The third light is located at the pump operator's position. The green lights will illuminate when a successful pump shift and chassis transmission shift has been completed.

CAUTION: Do not leave the truck driving compartment until the two green lights are lit. Do not open the hand throttle (or attempt to pump) until the green light on pump operators panel is lit.

B. SHIFT SEQUENCE

The procedures and sequence for completing the shift are as follows:

ROAD TO PUMP SHIFT

- 1) Bring vehicle to a complete stop before attempting to shift.
- 2) Apply vehicle parking brake.
- 3) Shift truck transmission into "Neutral" position.
- 4) Move in-cab control valve from the "Neutral" position to the "Pump" position.

NOTE: If the truck manufacturer has used another in-cab valve to achieve pump shift, follow instructions supplied with that valve.

- 5) The green shift warning light should come on in a second or two, indicating a completed shift.

NOTE: In addition, the speedometer should read 5 - 15 MPH after shift has been completed. If shift does not seem to be completed, repeat entire procedure.

- 6) Place truck transmission in the proper pump operating range or gear. For most pumps this will be direct drive (1:1 ratio).
- 7) With the above completed satisfactorily, exit the driving compartment.

CAUTION: Do not leave cab or attempt pumping until all the warning lights in cab and panel are on.

PUMP TO ROAD SHIFT

- 1) Make sure pump operator's hand throttle or governor control has been returned to idle speed.
- 2) Shift truck transmission into "Neutral" position.
- 3) Move the pump shift control valve lever to the "Road" position.
- 4) The in-cab and panel warning lights should go out when pump transmission starts to shift into "Road" position.

Pre 1977 fire trucks (especially with automatic transmissions) should be modified by the apparatus builder to include the aforementioned green warning lights.

C. EMERGENCY SHIFT PROCEDURES

Before implementing manual override shift procedures, repeat recommended procedures as outlined previously. If shift fails to take place, follow these procedures.

- 1) Vehicle should be completely stopped, wheels chocked and parking braking set.
- 2) Truck transmission should be in neutral position.
- 3) Put the pump shift control valve lever in the "neutral" or "center" position (half way between the "pump" and "road position).
- 4) Turn off engine.
- 5) Proceed to employ manual override procedures at the shift cylinder on the pump gear box.
- 6) A hole has been provided in the shifting shaft to accept a rod or screw driver. By inserting this tool into the hole provided, it will enable you to pull or push the shaft manually. Pull the shift shaft "out" for Pump Position or push shift shaft "in" for Road Position. If the shift stroke cannot be completed manually, rotate the drive shaft slightly by hand to realign the internal gears and repeat the manual shift effort.
- 7) After the shift stroke has been completed, move the in-cab pump shift control valve lever to the desired "Road" or "Pump" mode.

D. MAINTENANCE

Minimum maintenance is required on this shift system. Lubricate the shift cylinder once a year by squirting a few drops of light vacuum cylinder oil into the shift cylinder thru the compression fittings in the front or side of the cylinder.

Refer to the maintenance and repair instructions on Dwg. No. 101-0850-03-0 for care of the control valve.