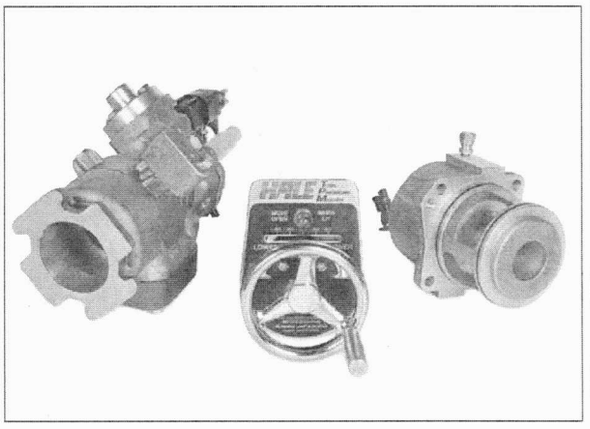
Model TPM

Total Pressure Master Relief Valve System

Features and Benefits

- Will not interfere with priming — The dump valve is mounted on the discharge — not the suction.
- Pump is protected from overpressure — regardless of inlet conditions.
- Total protection throughout the pump — Automatic sensing device works with Pressure Control Valve.
- Single panel-mounted pressure control valve with easy-to-read Pressure Reference Scale — Sets both the external (dump) and internal relief valves. Total Pressure Master monitors and responds to pressure variations on both the suction (inlet) and discharge sides of the pump.
- Provides protection from excess inlet pressure during relay and hydrant operation — Excess pressure dumped to the atmosphere from the discharge side.
- Meets or exceeds latest NFPA 1901 specifications for Pressure Control Systems — Totally mechanical system, relief valves operate on water pressure.



Relieve The Pressure

Now there is an automatic pressure monitoring and control system which coordinates your discharge and suction relief valves. By monitoring and controlling pressure changes on both sides of the pump, the Hale TPM can be responsive to small and large changes in pressure automatically.

With the Hale TPM system integrated into your pump, you will have a totally dependable, mechanical, high pressure safety release. Acting as a supplemental relief valve, the system starts with a unique sensing device installed on the inlet side of the pump. This, in turn, constantly monitors and controls your pump from a pressure control valve on the pump panel. As a result, the TPM gives you high speed, automatic pressure control. The TPM handles small changes in pump pressure by activating the internal recirculating valve. Larger changes in pressure are controlled by dumping the excess to the atmosphere from the discharge side of the pump. This relief takes place regardless of whether changes occur on the inlet or discharge side. As a result, the debris clogging or "sticking open" which disrupts suction side dump valves and interferes with priming can be virtually eliminated.

Recirculating relief valves, engine governors, or suction dump valves alone do not give you the level of coordinated control and safety that the Hale TPM system provides.

Recirculating relief valves relieve excess pressure build up on the discharge side by dumping water back on the inlet side. However, a sudden surge in pressure from a hydrant or relay hookup could mean undesirable complications. These units alone are satisfactory for small changes in pressure, but they do not provide the coordinated response you need to circumvent a high incoming pressure situation.

PUMP OPTIONS

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HALE

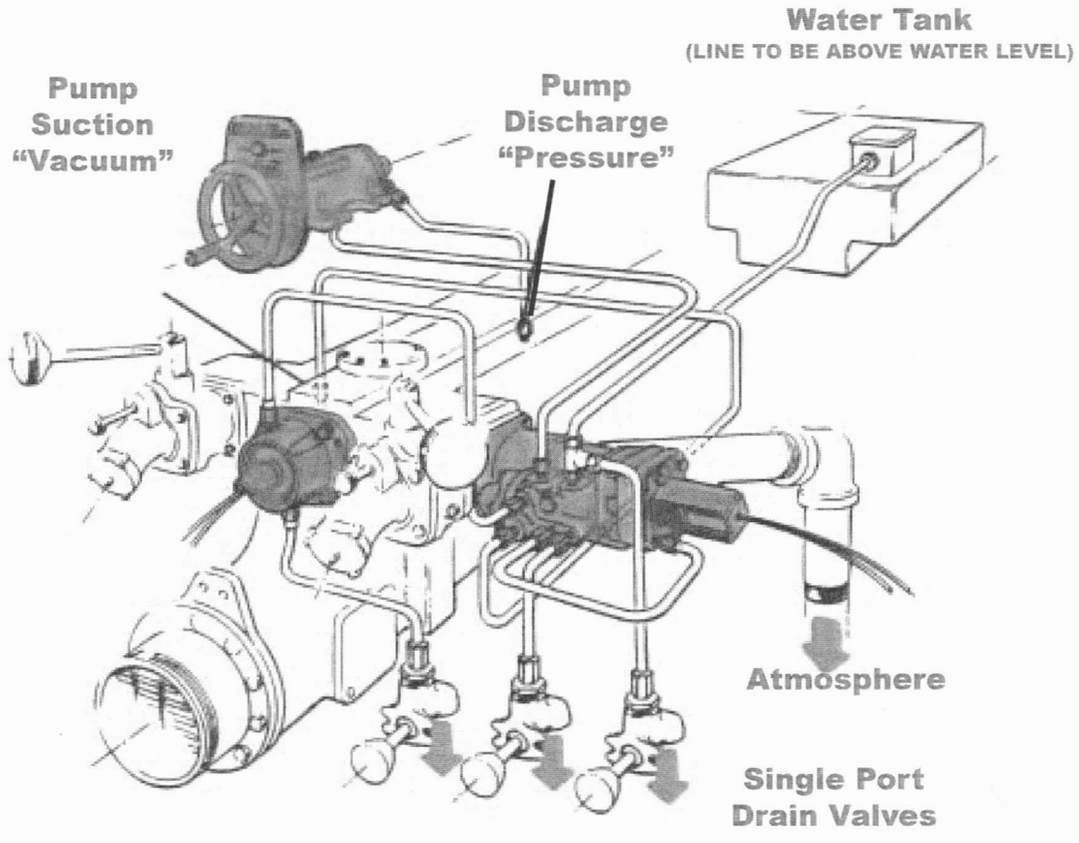
Model TPM

Total Pressure Master Relief Valve System

Likewise, a governor will throttle back the engine to reduce discharge pressure but does not compensate for suddenly high incoming pressures. Controlling the engine with a governor cannot reduce the engine below idle speed, so it limits protection beyond this point. Finally, you could have a suction dump valve, which helps in certain circumstances, but since they are generally preset and have low flow capacity — and are not accessible from the panel — they are incapable of compensating for rapidly changing pumping conditions.

The Hale Model TPM Relief Valve System can be specified when ordering a new pumper, or retrofit into your present unit. In either case, you will have a pressure sensing device which continuously monitors pressure on both the inlet and discharge sides of the pump. And with the unit's pressure control valve on the pump panel, you will have easy access to precision pressure control over pumping operations right from the control panel.

U.S. Patent #4,653,978



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PUMP SPECIFICATIONS

TPM Total Pressure Master

DETAILED SPECIFICATIONS

SPECIAL NOTE:
When preparing the specifications for your new pumper, assure the use of a Hale TPM Relief Valve System by incorporating these specifications as written. No competitive relief valve system can match Hale's construction or performance.

1. The apparatus pump shall be equipped with a variable relief valve system designed to automatically relieve excessive pump pressure when operating from draft or positive incoming flows. The system shall self-restore to the non-relieving position when excessive pressure is no longer present.

2. The relief valve system shall be totally mechanical and consist of an internal relief valve to bypass water to the suction side of the pump, an external relief (dump) valve to discharge water to atmosphere, and a single panel mounted control valve to provide complete control of pump pressure to the pump operator.

3. A single panel mounted control shall permit the pump operator to "set" a desired relief pressure for both internal and external relief valves. The panel control shall have an easy to read and easy to set adjustment with indication of pressure setting.

4. The total relief valve system shall function by monitoring and controlling pump pressure and relieve excessive pressure by first utilizing the internal relief valve (returning flow to the pump suction). If excessive pressure remains, a secondary external relief valve responds by discharging excessive pressure to atmosphere. The staging of the internal and external relief valves to operate in series ensure maximum protection against over pressure and eliminates the indiscriminate discharging of water to the ground.

5. The external relief (dump) valve shall be mounted on the discharge side of the pump where discharged water flowing through the valve provides a self-cleaning process and virtually eliminates the possibility of the valve remaining in an open position due to contamination.

6. One amber light shall illuminate when the internal relief valve is open. The same light shall flash intermittently when both the internal and external valves are open.

7. Both relief valves shall be designed to open into discharge flow which provides the advantage that in a normally closed position both relief valves are maintained in a closed position by virtue of pump discharge pressure.

8. All functional components of the relief valve system that are in contact with water shall be bronze material.

9. The total relief valve system must meet all existing NFPA Standards for Pressure Control Devices and Intake Pressure Relief Systems incorporated into one interconnected system.

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