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Conshohocken, Pa  
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Subject: Qtwo-K Midship Pump

The Hale Qtwo-K pump combines the best technologies with the most durable designs. Over the past several years Hale has been building and testing extremely quiet and durable gearboxes for heavy duty Fire Service use as well as other applications. These applications include the Silencer series of booster pumps. These units are so quiet that there does not appear to be any gearbox noise at all. In reality there is some gearbox noise but even in test conditions running from a 300 horsepower electric motor the gearbox noise is less apparent than the sound of rushing water exiting the flow meters. This is an example of the design philosophy behind the Hale Muscle Pumps. The operator should not have to think about the equipment. Hale Pumps provide simple and forgiving operation. The operator should not have to compensate for the pump design. The pump design should provide easy and reliable operations for the entire service life of the apparatus.

1. High Flow from any discharge. The Qtwo pump has up to 14 different 3 inch discharge outlets and up to 5 different 4 inch discharge ports on every pump. What is unique in the fire service is that full flows are obtainable from any discharge port on a Hale Qtwo. The discharge manifold design allows 1500 gpm from any 3 inch port and 2400 gpm from any 4 inch discharge port. The valve mounted on each discharge is the controlling factor. This way the operator doesn't have to know which discharges are weak and which are strong. They are all full capacity discharges. The Qtwo and the single stage Qmax make up the "Muscle Pump" family. These pumps have been improved and refined over the years to provide the best flow capacities. This allows the operator to choose the appropriate discharge to meet his needs and allows the truck builder to make sure the apparatus can be built for the best life cycle service.
2. TPM Relief Valve. The TPM relief valve can be run up to 600 psi. Many other relief valves are limited to lower pressures but the TPM operates with the same reliability in volume or pressure mode across a full range of pressures and flows. There is no need to turn the relief valve off at higher pressures. The TPM operates up to 600 psi. In addition, as the only full spectrum relief valve system, the patented TPM's one simple control takes care of pressure control from tank, draft, hydrant, or relay operation. There is no on-off valve to break and the operator doesn't have to remember to turn it on or to turn it off at high pressures. Simplified operation reduces the chance for errors and problems.

3. Thermal Relief Valve. The patented TRV prevents pre-mature pump problems or wear from overheating. A mechanical device, the TRV reliably helps to protect the pump from overheating by discharging a small amount of water, keeping the pump in service instead of in the repair shop. See the October Fire Chief for an article about pump overheating and how a couple simple tips can make it easy to prevent the premature wear and tear from an operator error.
4. High Pressure performance. The Qtwo equipped with an adequate engine can flow over 350 gpm at 600 psi from a 50 psi residual hydrant for excellent hi-rise performance. Hale hydro tests the Qtwo pump body to 600 psi instead of the NFPA minimum 500 psi so that higher pressure performance is not a concern. Again the operator can simply do his job and not think about pump limitations.
5. Stainless Steel Valves. Torrent Stainless Steel valve pass 600 psi flow tests many times w/o failure or repair. The valves pass a tough 6 hour 600 psi / 250 gpm gated flow test without failure. The 800 series valves offer many installation advantages and options including the ability to lubricate remote valves without taking them apart. This service advantage can save a great deal of time over the life of the apparatus.
6. Heavy Duty K Gearbox. The highest torque capability combined with high contact helical gears for minimum noise transmission and reliable power transfer. The reliable gearbox air shift system has a crash proof feature that prevents accidental gear clashes and provides reliable consistent pump shifts. The gearbox is designed to be interlocked so it can not be accidentally shifted while the truck is in drive. This eliminates another possible operator error and keeps the pumper in service instead of in the shop. So reliable is the Hale pump shift technology that many departments no longer specify a manual shift over-ride as it is no longer required. This same shifting mechanism has passed exhaustive chassis tests at Aberdeen proving grounds, shifting under extreme temperatures. Over 250 of these drive and shifting mechanisms are in service in USAF fuel trucks used to re-fuel military aircraft around the world.  
The K gearcase utilizes heavy duty tapered roller bearings for maximum driveline strength and high contact helical gears that transmit more power with less noise. The drive line carries a true 18,000 foot pound rating using 2-3/4 inch spline drive shafts. The standard Hale G gearbox has always been extremely reliable and durable, but it has been a source of noise and carried a lower 16,000 foot pound drive thru torque rating. The K gearbox takes the Hale muscle pumps to a new level with low noise and high power capabilities. (Actual installed noise levels are determined by the truck design and construction)  
The gearbox has dual coolers for cooler, more reliable operation across a range of applications.
7. The Class1 line of gages, fittings, governors and engine data displays can help complete the pump compartment. In fact we build complete pump modules in our Ocala facility and this allows the same pump module to be used on different truck designs for ease of fleet management.

8. Warranty issues can be confusing. To make it clear, Hale offers the best standard warranty in the Industry. We stand behind our products with a full parts and labor warranty for two years on the Qtwo midship pump or you can have a 5 year warranty on parts only. Pro-Tech Gold warranties offer additional protection for 5 years as an option. There simply is not a better set of warranty choices in the Fire Industry.

To summarize, the Hale Product line is designed to provide high performance and high reliability in a user-friendly package. The Fire Department has other items to worry about, let Hale take care of the pump.

We look forward to the opportunity to prove the superior features of a Hale Products pump system. Since we make the entire system, the Fire Department, not only gets sole source service, the entire system is well matched for better performance and reliability.

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