Skidmore Pump

Technical Data Summary

The following pages include information on key components of Skidmore's standard equipment. Not all items described will be applicable to each unit present in this submittal document. Please refer to your Technical Offer page(s) for details on provided equipment, components, and accessories.

Cast Iron Receivers

Constructed of close-grained cast iron, with flanges for mounting pumps and float switches or a mechanical alternator. Includes vent, drain, and return (inlet) connections in standard configuration, as well as connections for standard accessories.

Carbon Steel Receivers

Constructed of rust-resistant, heavy-duty steel, with flanges for mounting pumps and float switches or a mechanical alternator. Includes vent, drain, and return (inlet) connections in standard configuration, as well as connections for standard accessories.

V-series Pumps

Skidmore's V-series pumps are single-stage vertical centrifugal pumps, permanently aligned and driven by close-coupled motors. They are constructed with cast-iron volutes, bronze-fitted with bronze impellers, and use stainless steel motor shafts. Standard carbon-ceramic mechanical seals are suitable for temperatures up to 250° F. Viton seals, if selected, are suitable for temperatures up to 300° F.

The motor and all rotating components can be removed without disturbing electrical connections, suction piping, or discharge piping.

The VNS series, as well as select models of the VES and VCS series, require less than 2 ft. of NPSH at most operating points, and are therefore suitable for pumping condensate at 210° F, at sea level, from a non-elevated receiver, or condensate at the boiling point from a receiver elevated at least 2 ft. above the pumps. These pumps do not require an inducer or additional stages to achieve these excellent characteristics.

10MX Pumps

The 10MX series are single-stage vertical centrifugal pumps, driven by close-coupled motors. They are constructed with cast-iron volutes, bronze impellers, and use stainless steel motor shafts. Standard carbon-ceramic mechanical seals are suitable for temperatures up to 250° F. Viton seals, if selected, are suitable for temperatures up to 300° F. (cont.)

The motor and all rotating components can be serviced without disturbing electrical connections, suction piping, or discharge piping.

Suction isolation valves for 10MX pumps are integral to the volute.

Condensate Unit Controls

Condensate units without panels, or using 550-, 700-, or 750-series control panels, will typically be controlled by means of float switches or a mechanical alternator, both constructed with stainless steel floats and float arms.

Duplex units may be controlled by two float switches or a mechanical alternator, simplex units will be controlled by a float switch. The mechanical alternator will automatically cycle the lead pump on each activation to ensure equal run time, and will actuate both pumps should the first pump fail or be outpaced by returning condensate.

With a duplex system using two float switches, an electric alternator may be selected in the panel, which will perform the alternation function. The second, higher float switch will then actuate both pumps if the water level continues to rise.

Boiler Feed Controls

Boiler feed units are controlled by one or more signals from the boiler(s), which activate the pumps when the boiler requires water.

Make-up water for boiler feed units is supplied either by a mechanical float-operated make-up valve or a solenoid feed valve.

The mechanical float-operated make-up assembly uses a stainless steel float directly linked to the valve to control the make-up water supply.

Standard solenoid make-up assemblies are composed of a normally-closed 115V brass solenoid valve and a strainer, controlled by a reverse-acting float switch and powered by the panel.

Digital Controls

Units with the 800- or 850-series digital control panels do not use mechanical alternators or float switches for standard system control, nor do they typically use standard pressure gauges or thermometers. These panels make use of digital level, pressure, and temperature sensors.

Control Panels

All control panels are certified UL-508a and utilize only UL listed or recognized components. Control Panels come standard with non-fused disconnect switch/switches requiring the customer to supply feeder-circuit protection to the panel. For this reason, all control panels carry a minimum SCCR of 5kA (RMS) unless specified. Ratings as high as 100kA can be achieved with current limiting fused disconnects. Control Panels with multiple disconnect switches require a line side distribution block for single point customer feeder-circuit connection. It is standard for all control panels to be mounted and wired to the system unless specified as "Remote Mount".

NEMA/UL TYPE 1/2 control panels utilize flexible grounded metal-conduit and fittings for system wiring.

NEMA/UL TYPE 12/3/4/4X control panels utilize liquid-tight flexible grounded metal conduit and fittings for system wiring.

Digital Control Panels

Standard 800- and 850-series panels use touchscreen controls, digital sensors, and programmable controllers to permit advanced, field-configurable capabilities for condensate and boiler feed units alike.

The standard sensor package includes a guided-wave radar level sensor and a temperature sensor. Vacuum systems add a vacuum sensor to the receiver. Optional pressure sensors are available for pump discharges and standard sensors are suitable for pressures up to 145 PSI.

The touchscreen display comes in three sizes and can provide visual indication for water level, temperature, pressure including pump discharge or vacuum pressure, pump status, and run time. Key operating setpoints can be configured via the touchscreen.

Available alarm settings include thermal and magnetic pump faults, high or low water level, high temperature, high or low pressure, high or low vacuum on vacuum units, and system alarms such as a faulted sensor.

Monitored datapoints and faults can be transmitted via BACnet IP or other communications protocols.

Variable Frequency Drives

If VFDs are requested, a 750- or 850-series panel will be supplied with the required pressure sensors and control hardware.

Packaged Units

Complete units come as packaged systems, with all wiring and plumbing between the receiver, pumps, level controls or make-up system, and panel. These units are tested for full and proper functionality at the factory. Field wiring to the unit in these cases will be limited to feeder circuit connection and any boiler signals required to operate boiler feed units.

Units with remote panels or lacking the listed components will require additional wiring to be done in the field by others.