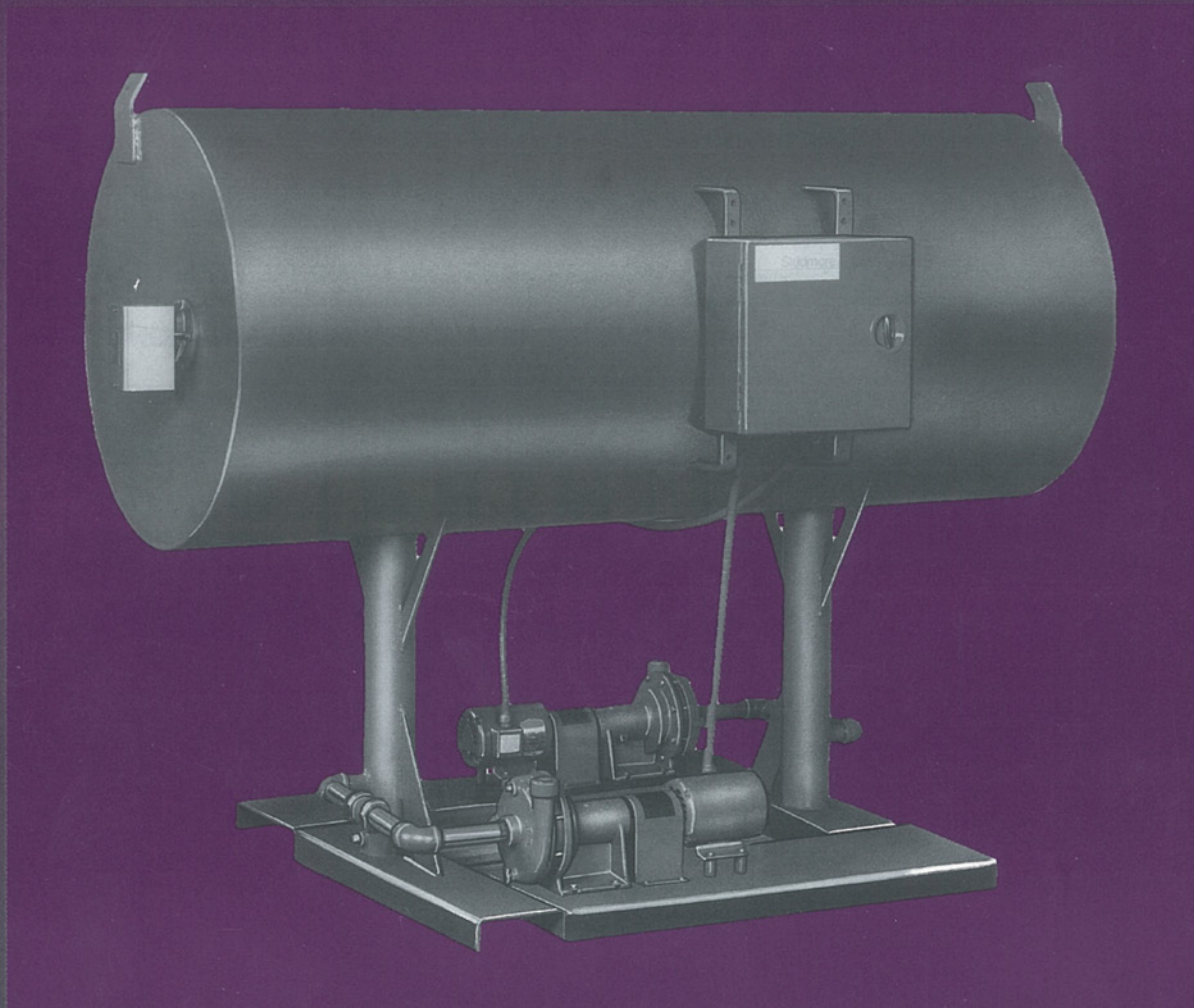


Skidmore®

Bulletin 16A
May, 2006

H SERIES CONDENSATE, BOILER FEED AND MAKEUP PUMPS



Corrosion resistant steel receivers

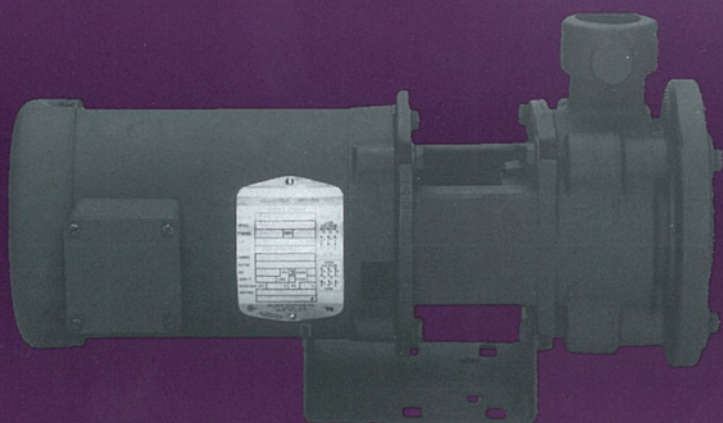
Capacities from 1,000 to 125,000 sq. ft. EDR

Boiler HP from 7½ to 1,000

2 Ft. N.P.S.H.R. pump selections

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HNS Pump Series

GENERAL INFORMATION

The Skidmore™ pumping systems described in this brochure are completely assembled, wired and tested at the manufacturing plant. They are designed to provide maximum efficiency, reliability and easy maintenance in compact, space saving configurations.

Manufacturing is done in clean modern facilities by people who take pride in producing dependable products. Each unit is individually factory tested before shipment to assure that the product is ready for service when it is received. Testing includes verification of flow rate, pressure, amperage draw and cut-in/cut-out points of all components. You can specify Skidmore products with confidence, knowing that you will receive the benefits that made the Skidmore name synonymous with quality and pride since 1921.

We invite you to compare the features and specifications of our condensate, boiler-feed and makeup pumps with other units. We're sure Skidmore will be your choice.

DO YOU NEED TECHNICAL ASSISTANCE?

Skidmore representatives have the expertise to assist you in selecting the pumping system most suitable for your application. They are backed by a team of engineers and application specialists who can develop the most efficient, energy saving pumping system for your specific requirements.

SKIDMORE CUSTOM ENGINEERING

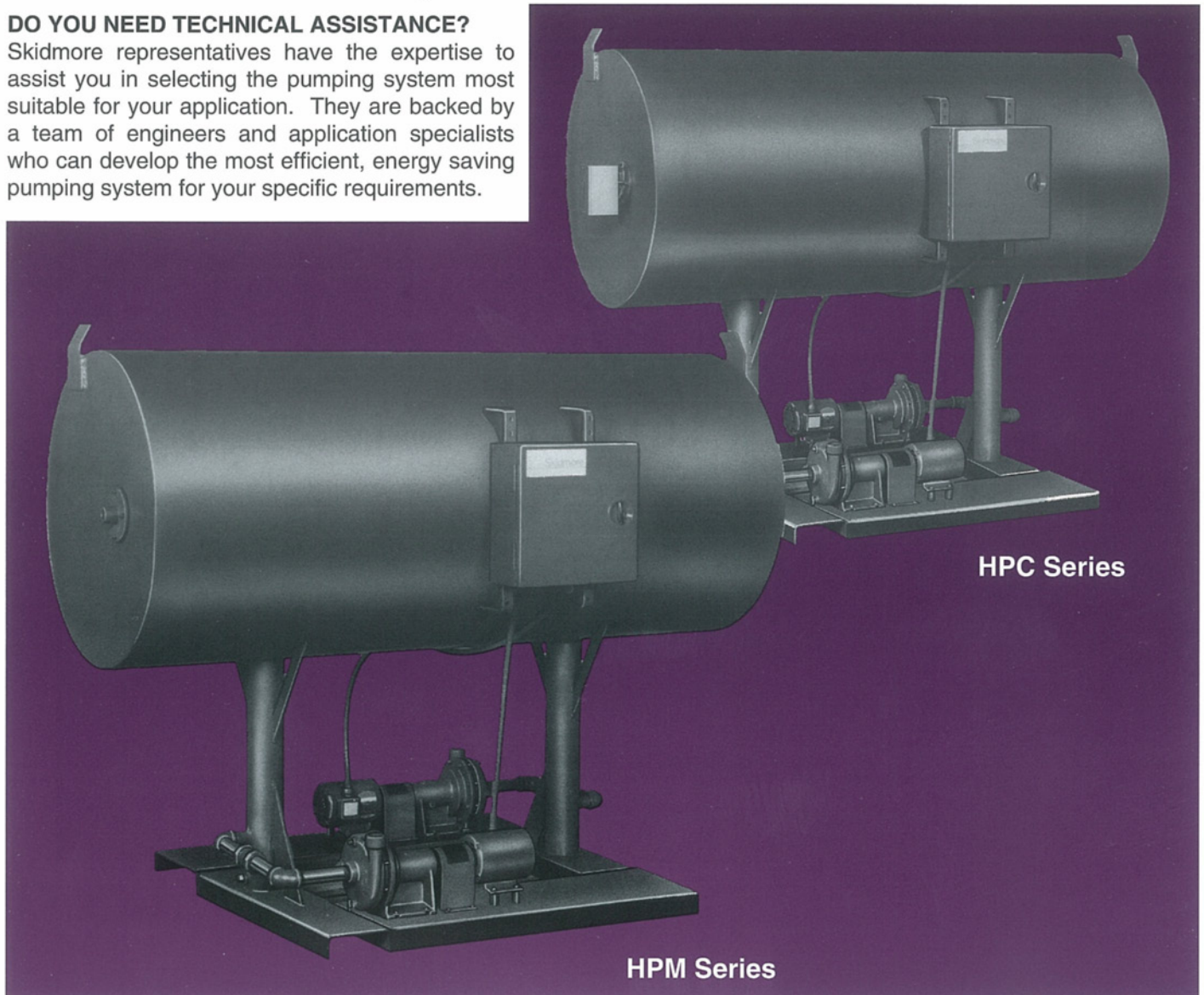
If your installation poses special problems, Skidmore's custom engineering and building capabilities are available without charge as part of our total service.

TECHNICAL MANUALS

Several technical manuals are available free-of-charge from your Skidmore representative, or they may be obtained by writing directly to the Skidmore sales headquarters in Benton Harbor, Michigan.

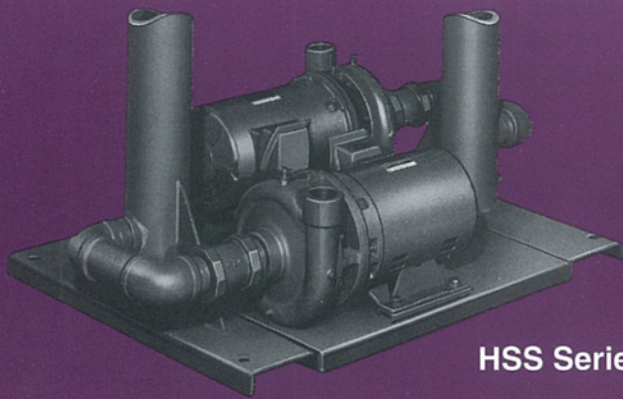
Bulletin 23T-1 contains piping and wiring diagrams, tables, formulas, and terminology.

Bulletin 23T-3 is a selection guide for boiler feed and condensate pumps. It contains the basic information required to understand, select and specify pump systems. Numerous diagrams show a variety of typical installations and piping arrangements.

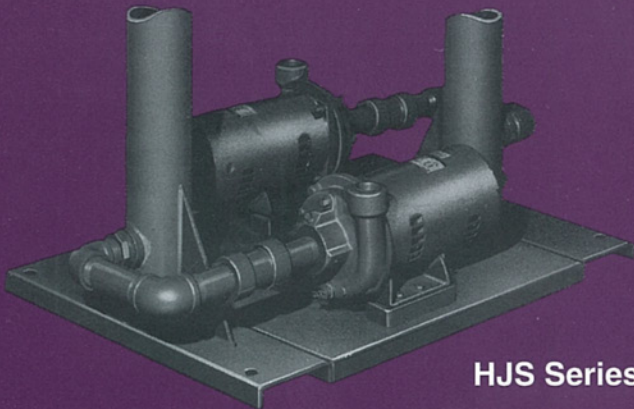


CONDENSATE PUMPS

Condensate pumps are used in low pressure heating systems to collect and quickly return condensate to the boiler feed unit. Their pumping action is controlled by the water level in the receiver. Units consist of an electric motor and centrifugal pump mounted on a welded steel storage receiver with a float operated pump control (simplex units — float switch, duplex units — mechanical alternator). Multiple pump units are used when greater pumping capacity or back-up pump protection is required. Note: Condensate pumps do not supply boiler system makeup water.



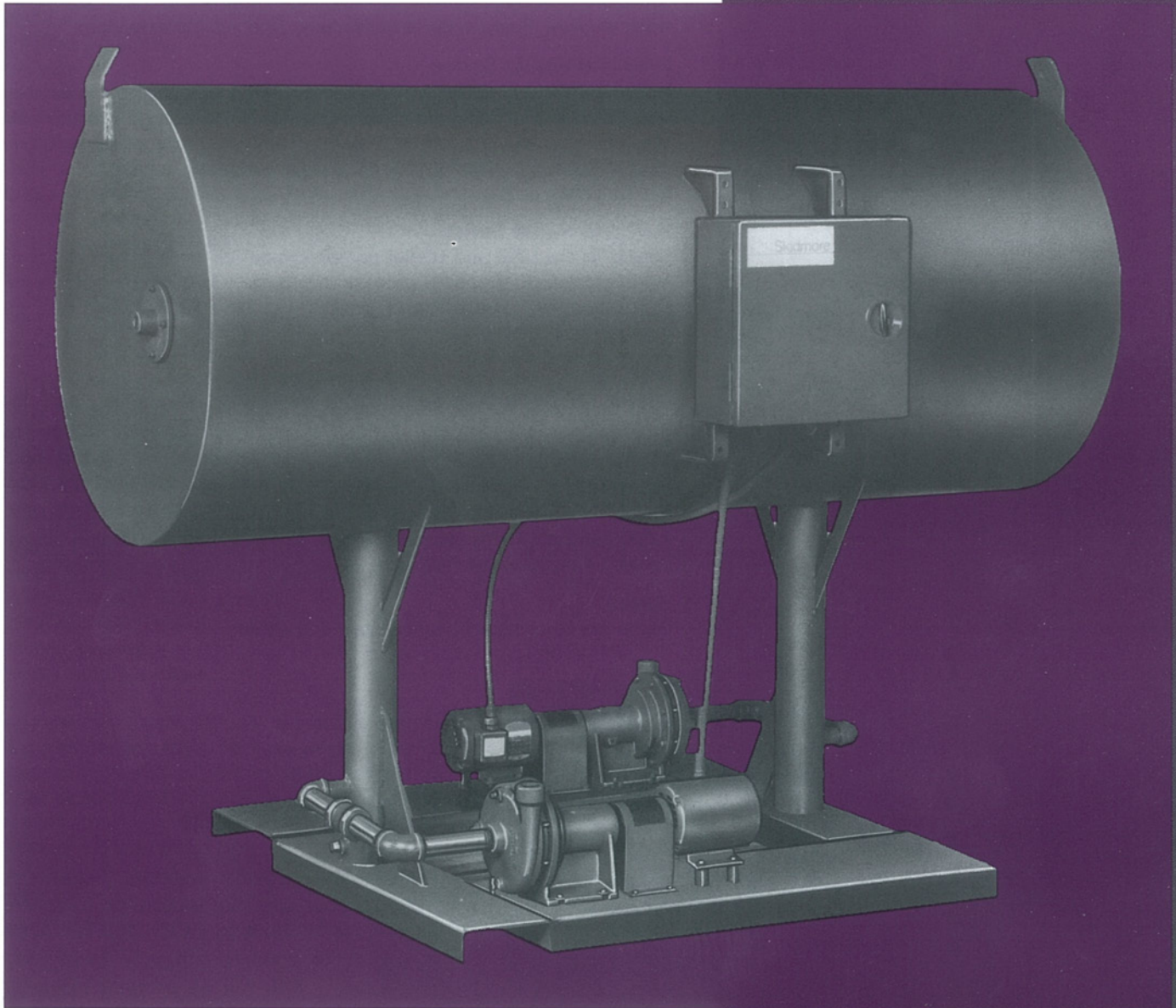
HSS Series



HJS Series

Boiler feed pumps are used to pump and precisely control the condensate and makeup water required by the boiler(s) in low pressure steam applications. Pumping action is controlled by the fluid level in the boiler. They consist of a welded steel storage receiver equipped with a makeup valve and one or more centrifugal pumps.

BOILER FEED OR MAKEUP PUMPS



H SERIES PUMPING SYSTEMS

Skidmore H Series pumping systems are available in simplex, duplex, triplex or quadruplex configurations from 1,000 to 125,000 sq. ft. EDR or 7½ to 1,000 boiler HP.

Skidmore Centrifugal Pumps

Skidmore centrifugal pumps feature rugged, heavy-duty design and simple construction assuring ease of accessibility for maintenance and repairs. Pumps may be removed for inspection or repair without disturbing pipe connections.

HPC and HPM Series

Horizontal, flexible coupled centrifugal type pump(s) with 250°F mechanical seal consisting of bronze rotating element with carbon ring, ceramic floating or stationary seat and stainless steel spring. Seal is especially designed for hot water service. The stainless steel pump shaft runs in heavy-duty ball bearings and is coupled to the motor with a heavy-duty flexible coupling. Coupling guard is included.

HSS and HSSM Series

Horizontal, close-coupled centrifugal type pump(s) with 250°F mechanical shaft seal consisting of bronze rotating element with carbon ring, ceramic floating or stationary seat and stainless steel spring. Seal is especially designed for hot water service. Pump motor is ball bearing type and the extended.

HNS and HNSM Series

Horizontal close-coupled centrifugal type with mechanical seal consisting of a special bronze rotating impeller designed to operate at a minimum of 2' N.P.S.H.R. The pump motor is ball bearing type with an extended stainless steel motor shaft. Mechanical seal design is especially suited for 2' N.P.S.H.R. applications.

HJS and HJSM Series

Similar to the HSS and HSSM pumps except for the bronze impeller which is manufactured by a special process to provide low friction water passages for high efficiency. The pump is available in 3450 RPM motors with standard voltages and enclosures.

Motors

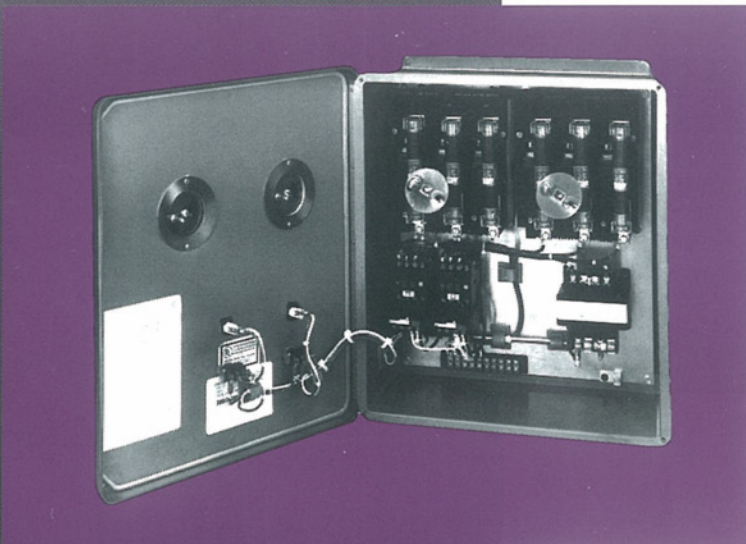
Motors are heavy-duty, ball bearing, open drip-proof type. Most fractional horsepower, single-phase motors have built-in thermal overload protection. Special motors available upon request.

Receivers

Receivers are constructed of welded rust resisting steel. Standard sizes to 1,000 gallons. Larger sizes available on special order. Smaller pump sizes (catalog # on selection chart) can be ordered with larger size receivers.

Bases

Bases are fabricated of channel steel and welded.



Control Panels

Skidmore will provide optional control panels tailored to your specific application requirements. Please refer to Bulletin ACC -700 for additional information, or consult with your local Skidmore representative who will be pleased to assist with your control panel selection. UL approved and labeled panels are available by request on 700 Series control panels.

ACCESSORIES AND OPTIONAL EQUIPMENT

Condensate Pumps — Standard Equipment

Single condensate return units are equipped with a 2-pole, heavy-duty float switch activated by a float. The entire switch mechanism including flange, float and rod is mounted on end of receiver, and it can be removed as a complete unit. The mechanism is readily adjustable for various water levels without removal from the receiver.

Duplex return units are equipped with a mechanical alternating float switch which alternates the operation of two pumping units in successive cycles. It consists of two 2-pole switch units in one enclosure, and is operated by one float within the receiver. This device not only alternates the pumping units, but also automatically starts the second pump in case the first pump fails to start or to carry the load.

Tappings for gauge glass and thermometer are standard on all H Series receiver tanks.

Condensate Pumps – Optional Equipment

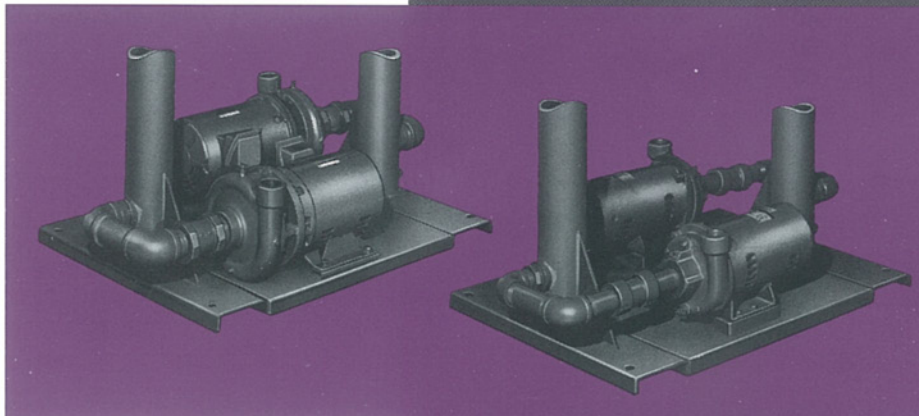
- Controls
 - Two float switches on duplex units
 - Electric alternator on duplex units
- Gauge glass assembly
- Gate valve(s)
- Thermometer
- Control cabinet – duplex includes magnetic starters with reset buttons and third leg overload protection for three-phase. Two hand-off automatic selector switches are optional. Other electrical options available, for further information reference bulletin ACC-700.
- Inlet strainer – basket or "y" type
- Magnesium corrosion inhibitor
- Tank linings
- High water alarm
- Manhole
- Split leg flanges

Boiler Feed Pumps – Standard Equipment

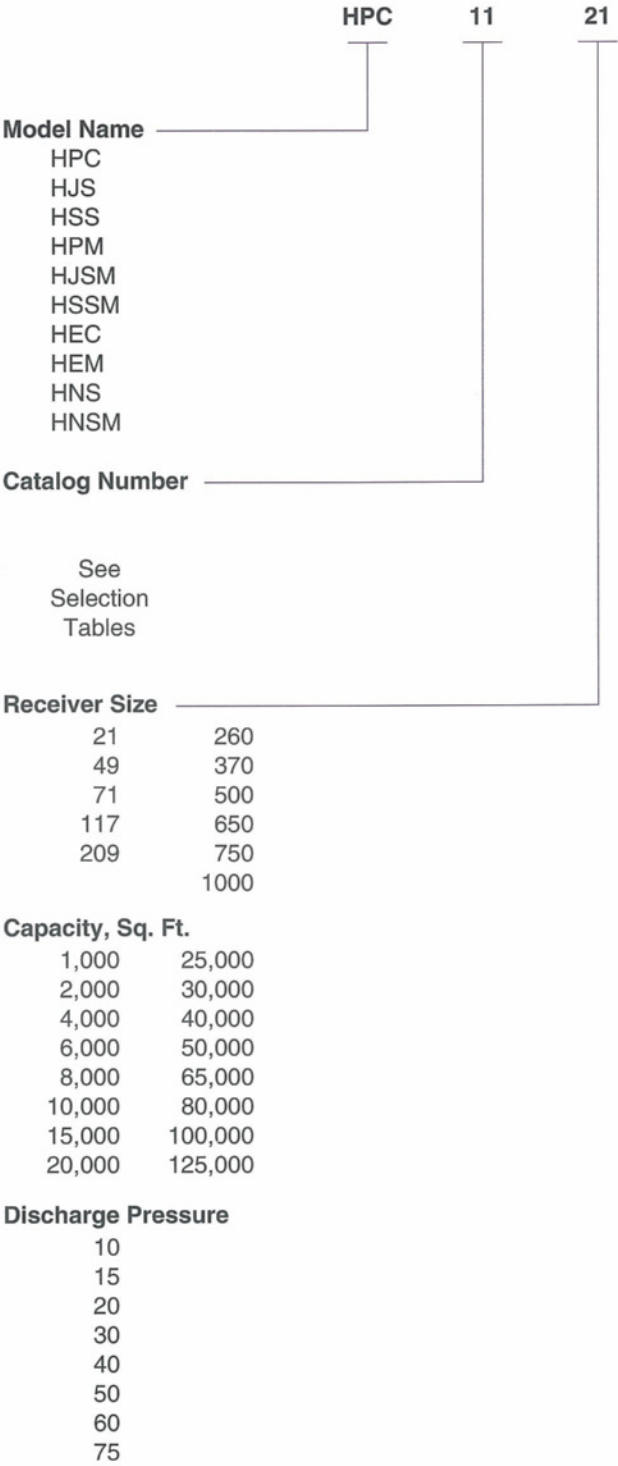
Single and duplex boiler feed units are equipped with a heavy duty float operated makeup valve actuated by a float. The entire mechanism including flange, float and rod is mounted on the end of receiver. It can be removed as a complete unit and is readily adjustable for various water levels. Tappings for gauge glass and thermometer are standard on all H series receiver tanks.

Boiler Feed Pumps – Optional Equipment

- Solenoid operated makeup valve with float switch
- McDonnell-Miller #21 makeup valve
- McDonnell-Miller #25 makeup valve
- Gauge glass assembly
- Gate valve – pump suction
- Thermometer
- Control cabinet – duplex includes two starter switches, two reset buttons and third leg overload protection for three-phase. Two hand-off automatic selector switches are optional. Other electrical options are available, see bulletin ACC-700 for additional information
- Magnesium corrosion inhibitor
- Inlet strainer – basket or "y" type
- Preheater
- Manhole
- Split leg flanges



TYPICAL CATALOG CODE DESIGNATION



HOW TO ORDER

Condensate Pumps

Specify the following information:

Model name and number (catalog number)

Receiver size _____" dia. _____" long _____ gallons

Condensate pumps _____ gpm _____ psig _____ RPM

_____ HP _____ volt _____ Hz _____ HP

Boiler Feed or Makeup Pumps

Specify the following information:

Model name and number (catalog number)

Receiver size _____" dia. _____" long _____ gallons

Quantity _____ boiler feed pumps _____ gpm

_____ psig _____ RPM _____ HP _____ volt

_____ Hz _____ PH

Makeup water supply pressure _____ psig

TYPICAL ENGINEERING SPECIFICATIONS

HPM Boiler Feed Unit

Furnish and install according to plans and manufacturer's instructions the quantity of boiler feed units as shown on the drawings. Each unit shall consist of one (1) boiler feed receiver, quantity of boiler feed pumps as scheduled, one (1) inlet strainer, suction gate valves, one (1) water makeup assembly, electrical controls and accessories.

The boiler feed pumps shall be centrifugal design, coupled to the motor through a heavy duty flexible coupling with coupling guard. The motor and rotating parts shall be removable without disturbing suction or discharge piping. Pumps shall be bronze fitted with enclosed bronze centrifugal impeller, stainless steel shaft and dripless mechanical seals suitable for 250°F. Capacities and electrical characteristics shall be as scheduled on the drawings.

The receiver shall be horizontal welded, rust resisting steel construction elevated on fabricated steel frame and channel steel base. Receiver shall have a capacity of not less than that shown on drawings and shall be equipped with water level gauge glass, dial thermometer, Skidmore makeup water valve with capacity equal to one (1) boiler feed pump, inlet strainer with bronze or stainless steel screen easily removable for cleaning, suction gate valves. Contractor shall install check valve, gate valve and pressure gauge in each discharge line.

Add Control Specifications

Capacity Schedule

Skidmore Model No. _____

Receiver size _____" dia. _____" long _____ gallons

Quantity _____ boiler feed pumps _____ gpm _____ psig

_____ gpm _____ psig _____ gpm _____ psig

_____ RPM _____ HP _____ volt _____ Hz _____ PH

Makeup water supply pressure _____ psig

Duplex HNS Series Condensate Units 2' N.P.S.H.R.

Furnish and install according to plans and manufacturer's instructions the quantity of condensate units as shown on the drawings. Each unit shall consist of one (1) receiver, one (1) mechanical alternator, two (2) condensate pumps, one (1) inlet stainer, two (2) suction gate valves, electrical controls and accessories.

The condensate pumps shall be centrifugal design close coupled to the motor. Pump shall be bronze fitted with enclosed bronze centrifugal impeller, stainless steel shaft and dripless mechanical seals suitable for 250° F. Unit shall be 2" N.P.S.H.R. Capacities and electrical characteristics shall be as scheduled on the drawings.

The receiver shall be horizontal welded, rust resisting steel construction elevated on fabricated steel frame and channel steel base. Receiver shall have a capacity of not less than that shown on drawings and shall be equipped with water level gauge glass, dial thermometer, inlet strainer with bronze or stainless steel screen easily removable for cleaning suction gate valves. Contractor shall install check valve, gate valve and pressure gauge in each discharge line.

Add Control Specifications

Capacity Schedule

Skidmore Model No. _____

Receiver size _____" dia. _____" long _____ gallons

Quantity _____ condensate pumps _____ gpm _____ psig

_____ gpm _____ psig _____ gpm _____ psig _____ N.P.S.H.R.

_____ RPM _____ HP _____ volt _____ Hz _____ PH

Makeup water supply pressure _____ psig

SELECTION TABLE - HP, HSS, HJS and HE

HPC, HSS, HJS and HEC – Condensate Pump and Receiver HPM, HSSM, HJSM and HEM – Boiler Feed Pump and Receiver
 Note: The HP and HSS units 20 PSI and under operate at 1750 RPM, 30 PSI and over operate at 3500 RPM, HJS all operate at 3500 RPM.

| PUMP CAPACITY - GPM | | 1.5 | 3 | 6 | 9 | 12 | 15 | 22.5 | 30 | 37.5 | 45 | 60 | 75 | 97.5 | 150 | 187.5 |
|---------------------|-------------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| PSI | E.D.R. | 1,000 | 2,000 | 4,000 | 6,000 | 8,000 | 10,000 | 15,000 | 20,000 | 25,000 | 30,000 | 40,000 | 50,000 | 65,000 | 100,000 | 125,000 |
| 10 | CATALOG NO. | 11 | 21 | 41 | 61 | 81 | 101 | 151 | 201 | 251 | 301 | 401 | 501 | 651 | 1001 | 1251 |
| | Motor H.P. | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 | 1/2 | 1/2 | 3/4 | 1 | 1½ | 1½ | 2 |
| | Frame Size | 1B | 1B | 1B | 1B | 1B | 1B | 1B | 1B | 1¼B | 1½B | 1½B | 2B | 2B | 2B | 2B |
| | Suction | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 2 | 2 | 2½ | 2½ | 2½ | 2½ |
| | Discharge | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 1½ | 1½ | 2 | 2 | 2 | 2 |
| | Motor H.P. | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 | 1/2 | 1/2 | 1/2 | 1 | 1½ | 2 | **1½ | **2 |
| | Frame Size | 1H | 1H | 1H | 1H | 1H | 1H | 1H | 2M | 2M | 2H | 4M | 5M | 6M | 620A | 620A |
| | Suction | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 1½ | 1½ | 1½ | 2½ | 2½ |
| | Discharge | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1¼ | 1¼ | 1¼ | 2 | 2 |
| | CATALOG NO. | 11½ | 21½ | 41½ | 61½ | 81½ | 101½ | 151½ | 201½ | 251½ | 301½ | 401½ | 501½ | 651½ | 1001½ | 1251½ |
| | Motor H.P. | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 | 1/2 | 1/2 | 3/4 | 3/4 | 1 | 1½ | 1½ | 2 | 3 |
| | Frame Size | 1B | 1B | 1B | 1B | 1B | 1B | 1B | 1B | 1¼B | 1½B | 1½B | 2B | 2B | 2B | 2B |
| 15 | Suction | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 2 | 2 | 2½ | 2½ | 2½ | 2½ |
| | Discharge | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 1½ | 1½ | 2 | 2 | 2 | 2 |
| | Motor H.P. | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 | 1/2 | 1/2 | 1/2 | 1 | 1½ | 2 | **3 | **3 |
| | Frame Size | 1H | 1H | 1H | 1H | 1H | 1H | 1H | 2M | 2M | 3H | 4M | 5M | 6M | 820A | 820A |
| | Suction | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 1½ | 1½ | 1½ | 2½ | 2½ |
| | Discharge | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1¼ | 1¼ | 1¼ | 2 | 2 |
| | CATALOG NO. | 12 | 22 | 42 | 62 | 82 | 102 | 152 | 202 | 252 | 302 | 402 | 502 | 652 | 1002 | 1252 |
| | Motor H.P. | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 3/4 | 3/4 | 1 | 1 | 1½ | 2 | 2 | 3 | 5 |
| | Frame Size | 1B | 1B | 1B | 1B | 1B | 1B | 1B | 1B | 1¼B | 1½B | 1½B | 2B | 2B | 2B | 2B |
| | Suction | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 2 | 2 | 2½ | 2½ | 2½ | 2½ |
| | Discharge | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 1½ | 1½ | 2 | 2 | 2 | 2 |
| | Motor H.P. | 1/3 | 1/3 | 1/3 | 1/3 | 1/3 | 1/2 | 1/2 | 3/4 | 3/4 | 1 | 1½ | 1½ | 2 | **3 | **5 |
| 20 | Frame Size | 1H | 1H | 1H | 1H | 1H | 2H | 2H | 3M | 3H | 4H | 5M | 5M | 6M | 825A | 825A |
| | Suction | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 1½ | 1½ | 1½ | 3 | 3 |
| | Discharge | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1¼ | 1¼ | 1¼ | 2½ | 2½ |
| | CATALOG NO. | 13 | 23 | 43 | 63 | 83 | 103 | 153 | 203 | 253 | 303 | 403 | 503 | 653 | 1003 | 1253 |
| | Motor H.P. | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 1 | 1½ | 1½ | 1½ | 2 | 3 | 3 | 5 | 7½ |
| | Frame Size | 1B | 1B | 1B | 1B | 1B | 1B | 1B | 1B | 1¼B | 1½B | 1½B | 1½B | 2B | 2B | 2B |
| | Suction | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 2 | 2 | 2 | 2½ | 2½ | 2½ |
| | Discharge | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 1½ | 1½ | 1½ | 2 | 2 | 2 |
| | Motor H.P. | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 1 | 1 | 1½ | 2 | 2 | 5 | 5 | 7½ |
| | Frame Size | 3H | 3H | 3H | 3H | 3H | 3H | 3H | 4H | 4H | 5H | 6H | 6M | 615A | 615A | 615A |
| | Suction | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 1½ | 1½ | 1½ | 2 | 2 | 2 |
| | Discharge | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1¼ | 1¼ | 1¼ | 1½ | 1½ | 1½ |
| | CATALOG NO. | 14 | 24 | 44 | 64 | 84 | 104 | 154 | 204 | 254 | 304 | 404 | 504 | 654 | 1004 | 1254 |
| 40 | Motor H.P. | 1 | 1 | 1 | 1 | 1 | 1 | 1½ | 1½ | 2 | 2 | 3 | 3 | 5 | 7½ | 7½ |
| | Frame Size | 1B | 1B | 1B | 1B | 1B | 1B | 1B | 1B | 1¼B | 1½B | 1½B | 1½B | 2B | 2B | 2B |
| | Suction | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 2 | 2 | 2 | 2½ | 2½ | 2½ |
| | Discharge | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 1½ | 1½ | 1½ | 2 | 2 | 2 |
| | Motor H.P. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1½ | 1½ | 2 | 2 | 3 | 5 | 7½ | 7½ |
| | Frame Size | 4H | 4H | 4H | 4H | 4H | 4H | 4H | 5H | 5H | 6H | 7M | 610A | 610 | 615J | 615J |
| | Suction | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 1½ | 1½ | 2 | 2 | 2 | 2 | 2 |
| | Discharge | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1¼ | 1¼ | 1¼ | 1½ | 1 | 1 | 1 | 1 |
| | CATALOG NO. | 15 | 25 | 45 | 65 | 85 | 105 | 155 | 205 | 255 | 305 | 405 | 505 | 655 | 1005 | 1255 |
| | Motor H.P. | 1½ | 1½ | 1½ | 1½ | 1½ | 1½ | 2 | 2 | 3 | 3 | 5 | 5 | 5 | 7½ | 10 |
| | Frame Size | 1B | 1B | 1B | 1B | 1B | 1B | 1B | 1B | 1¼B | 1½B | 1½B | 1½B | 2B | 2B | 2B |
| | Suction | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 2 | 2 | 2 | 2½ | 2½ | 2½ |
| | Discharge | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 1½ | 1½ | 1½ | 2 | 2 | 2 |
| | Motor H.P. | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 5 | 5 | 5 | 7½ | 10 |
| 50 | Frame Size | 6H | 6H | 6H | 6H | 6H | 6H | 6H | 6H | 7H | 7H | 610A | 610A | 615J | 615J | 810A |
| | Suction | 1½ | 1½ | 1½ | 1½ | 1½ | 1½ | 1½ | 1½ | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | Discharge | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 1½ | 1 | 1 | 1 | 1 | 1 |
| | Discharge | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 1½ | 1 | 1 | 1 | 1 | 1 |

(Continued on page 11)

SELECTION TABLE - HP, HSS, HJS and HE (continued from page 10)

| PUMP CAPACITY - GPM | | 1.5 | 3 | 6 | 9 | 12 | 15 | 22.5 | 30 | 37.5 | 45 | 60 | 75 | 97.5 | 150 | 187.5 |
|---------------------|----------------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| PSI | E.D.R. | 1,000 | 2,000 | 4,000 | 6,000 | 8,000 | 10,000 | 15,000 | 20,000 | 25,000 | 30,000 | 40,000 | 50,000 | 65,000 | 100,000 | 125,000 |
| 60 | CATALOG NO. | 16 | 26 | 46 | 66 | 86 | 106 | 156 | 206 | 256 | 306 | 406 | 506 | 656 | 1006 | 1256 |
| | Motor H.P. | 2 | 2 | 2 | 2 | 2 | 2 | *3 | 3 | 3 | 3 | 5 | 5 | 7½ | 10 | 10 |
| | HPM Frame Size | 1B | 1B | 1B | 1B | 1B | 1B | 1B | 1B | 1¼B | 1½B | 1½B | 1½B | 2B | 2B | 2B |
| | HSS Suction | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 2 | 2 | 2 | 2½ | 2½ | 2½ |
| | HSSM Discharge | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 1½ | 1½ | 2 | 2 | 2 |
| | Motor H.P. | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 5 | 5 | 5 | 5 | 5 | 7½ | 10 | 15 |
| | HEC Frame Size | 610A | 610A | 610A | 610A | 610A | 610A | 610A | 610A | 610A | 610A | 610A | 610A | 615A | 810A | 810A |
| | HEM Suction | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | HEM Discharge | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1½ | 1 | 1 |
| | CATALOG NO. | 17½ | 27½ | 47½ | 67½ | 87½ | 107½ | 157½ | 207½ | 257½ | 307½ | 407½ | 507½ | 657½ | 1007½ | 1257½ |
| | Motor H.P. | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 5 | 5 | 7½ | 7½ | 7½ | 15 | 15 |
| | HPM Frame Size | 1B | 1B | 1B | 1B | 1B | 1B | 1B | 1B | 1¼B | 1½B | 1½B | 1½B | 2B | 2B | 2B |
| 75 | HSS Suction | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 2 | 2 | 2 | 2½ | 2½ | 2½ |
| | HSSM Discharge | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 1½ | 1½ | 2 | 2 | 2 |
| | Motor H.P. | 5 | 5 | 5 | 5 | 5 | 5 | 3 | 5 | 5 | 7½ | 7½ | 7½ | 10 | 15 | 15 |
| | HEC Frame Size | 810A | 810A | 810A | 810A | 810A | 810A | 810A | 810A | 810A | 810A | 810A | 810A | 810A | 810A | 810A |
| | HEM Suction | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | HEM Discharge | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

*HSS-156 & HSSM-156 ARE 3 HP; HPC-156 & HPM-156 ARE 2 HP

**1750 RPM PUMPS

NOTE: WHEN USING TEFC OR EXP. PROOF MOTORS AN INCREASE BY ONE SIZE MOTOR MAY BE NECESSARY.

SELECTION TABLE - HNS 2' N.P.S.H.R.

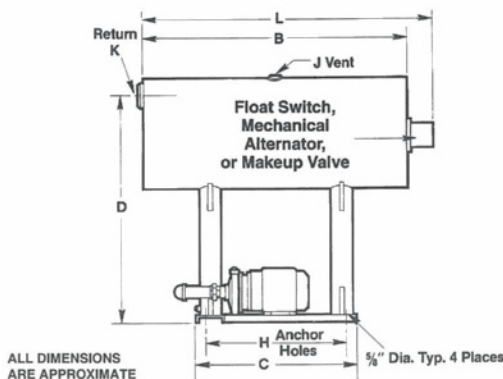
All HNS pumps operate at 3500 RPM and are 2' N.P.S.H.R. at conditions listed.

| PUMP CAPACITY GPM | | 9 | 15 | 22.5 | 30 | 45 | 60 | 75 | 90 | 120 |
|-------------------|-------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| PSI | E.D.R. | 6,000 | 10,000 | 15,000 | 20,000 | 30,000 | 40,000 | 50,000 | 60,000 | 80,000 |
| 20 | CATALOG NO. | 62 | 102 | 152 | 202 | 302 | 402 | 502 | 602 | |
| | MOTOR H.P. | 1/2 | 1/2 | 1/2 | 3/4 | 1 | 1 1/2 | 2 | 2 | |
| | FRAME SIZE | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | |
| | SUCTION | 1½ | 1½ | 1½ | 1½ | 1½ | 2½ | 2½ | 2½ | |
| | DISCHARGE | 1¼ | 1¼ | 1¼ | 1¼ | 1½ | 2 | 2 | 2 | |
| | HNS | | | | | | | | | |
| 30 | CATALOG NO. | 63 | 103 | 153 | 203 | 303 | 403 | 503 | 603 | |
| | MOTOR H.P. | 3/4 | 3/4 | 1 | 1 | 1½ | 3 | 3 | 3 | |
| | FRAME SIZE | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | |
| | SUCTION | 1½ | 1½ | 1½ | 1½ | 1½ | 2½ | 2½ | 2½ | |
| | DISCHARGE | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 2 | 2 | 2 | |
| | HNS | | | | | | | | | |
| 40 | CATALOG NO. | 64 | 104 | 154 | 204 | 304 | 404 | 504 | 604 | 804 |
| | MOTOR H.P. | 1½ | 1½ | 1½ | 1½ | 3 | 3 | 3 | 5 | 7½ |
| | FRAME SIZE | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 |
| | SUCTION | 1½ | 1½ | 1½ | 2½ | 2½ | 2½ | 2½ | 2½ | 2½ |
| | DISCHARGE | 1¼ | 1¼ | 1¼ | 1¼ | 2 | 2 | 2 | 2 | 2 |
| | HNS | | | | | | | | | |

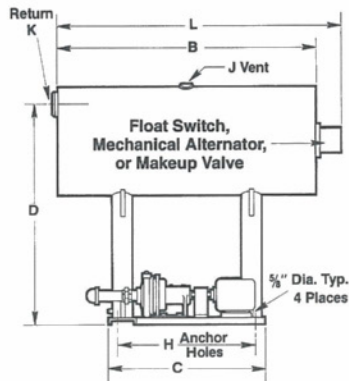
NOTE: WHEN USING TEFC OR EXP. PROOF MOTORS AN INCREASE BY ONE SIZE MOTOR MAY BE NECESSARY.

DIMENSION DATA

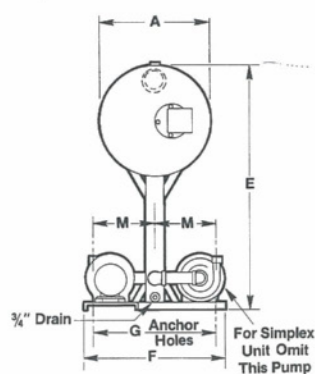
HSS, HSSM, HJS, HJSM, HNS, HNSM Series – Front View



HPC, HPM Series – Front View



HPC, HPM, HSS, HSSM, HJS, HJSM, HNS, HNSM Series – End View



DIMENSIONS

| RECEIVER SIZE | | APPROXIMATE DIMENSIONS IN INCHES | | | | | | | | | | | |
|---------------|--------|----------------------------------|--------|--------|--------|--------|--------|--------|--------|-------|-------|---------|--------|
| | | A | B | C | D | E | F | G | H | J | K | L | M |
| 21 | INCHES | 14 | 30 | 30 | 42 | 45 1/4 | 30 | 27 1/2 | 27 1/2 | 1 | 2 | 36 1/2 | 13 3/4 |
| | CM | 35.56 | 76.20 | 76.20 | 106.68 | 114.81 | 76.20 | 69.85 | 69.85 | NPT | NPT | 92.71 | 34.93 |
| 49 | INCHES | 22 | 30 | 30 | 49 7/8 | 53 1/4 | 30 | 27 1/2 | 27 1/2 | 1 1/4 | 2 1/2 | 36 1/2 | 13 3/4 |
| | CM | 55.88 | 76.20 | 76.20 | 126.24 | 135.13 | 76.20 | 69.85 | 69.85 | NPT | NPT | 92.71 | 34.93 |
| 71 | INCHES | 24 | 36 | 36 | 51 1/2 | 55 1/4 | 32 | 29 1/2 | 33 1/2 | 1 1/2 | 3 | 42 1/2 | 14 |
| | CM | 60.96 | 91.44 | 91.44 | 130.81 | 140.21 | 81.28 | 74.93 | 85.09 | NPT | NPT | 107.95 | 35.56 |
| 117 | INCHES | 24 | 60 | 36 | 51 | 55 1/2 | 32 | 29 1/2 | 33 1/2 | 2 | 4 | 66 1/2 | 14 |
| | CM | 60.96 | 152.40 | 91.44 | 129.54 | 140.97 | 81.28 | 74.93 | 85.09 | NPT | NPT | 168.91 | 35.56 |
| 209 | INCHES | 32 | 60 | 50 | 58 | 63 3/4 | 50 | 47 1/2 | 47 1/2 | 2 | 5 | 66 1/2 | 22 |
| | CM | 81.28 | 152.40 | 127.0 | 147.32 | 161.80 | 127.0 | 120.65 | 120.65 | NPT | NPT | 168.91 | 55.88 |
| 260 | INCHES | 36 | 60 | 50 | 62 | 67 7/8 | 50 | 47 1/2 | 47 1/2 | 2 | 5 | 66 1/2 | 22 |
| | CM | 91.44 | 152.40 | 127.0 | 157.48 | 172.40 | 127.0 | 120.65 | 120.65 | NPT | NPT | 168.91 | 55.88 |
| 370 | INCHES | 36 | 84 | 50 | 62 | 68 | 50 | 47 1/2 | 47 1/2 | 2 | 5 | 90 1/2 | 22 |
| | CM | 91.44 | 213.36 | 127.0 | 157.48 | 172.72 | 127.0 | 120.65 | 120.65 | NPT | NPT | 229.87 | 55.88 |
| 500 | INCHES | 42 | 84 | 50 | 68 | 74 | 50 | 47 1/2 | 47 1/2 | 2 | 5 | 90 1/2 | 22 |
| | CM | 106.68 | 213.36 | 127.0 | 172.72 | 187.96 | 127.0 | 120.65 | 120.65 | NPT | NPT | 229.87 | 55.88 |
| 650 | INCHES | 42 | 108 | 50 | 68 | 74 | 50 | 47 1/2 | 47 1/2 | 2 | 5 | 114 1/2 | 22 |
| | CM | 106.68 | 274.32 | 127.0 | 172.72 | 187.96 | 127.0 | 120.65 | 120.65 | NPT | NPT | 290.83 | 55.88 |
| 750 | INCHES | 48 | 96 | 76 | 74 | 80 | 56 | 53 1/2 | 73 1/2 | 2 | 5 | 102 1/2 | 25 |
| | CM | 121.92 | 243.84 | 193.04 | 187.96 | 203.20 | 142.24 | 135.89 | 186.69 | NPT | NPT | 260.35 | 63.50 |
| 1000 | INCHES | 48 | 132 | 76 | 74 | 80 | 56 | 53 1/2 | 73 1/2 | 2 | 5 | 138 1/2 | 25 |
| | CM | 121.92 | 335.28 | 193.04 | 187.96 | 203.20 | 142.24 | 135.89 | 186.69 | NPT | NPT | 351.79 | 63.50 |

"HN" Series Notes:

1. Discharge is located on vertical pump centerline.
2. For dimension "M" deduct 3" for 1 1/4" discharge pumps and deduct 1" for 2" discharge pumps.

Skidmore®

1875 DEWEY AVENUE

BENTON HARBOR, MICHIGAN 49022

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