



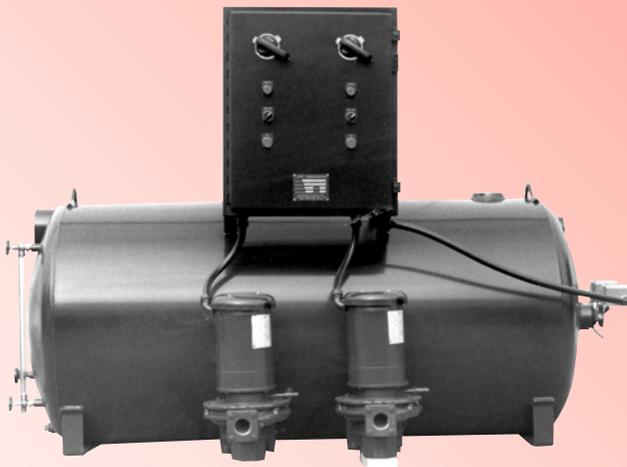
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Pride

Quality

Craftsmanship

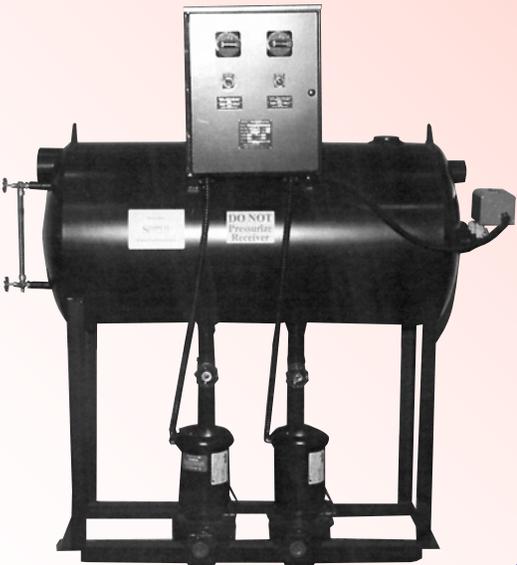
BULLETIN 116
Revised 2/16



Custom Design
TYPE SHC
STEEL HORIZONTAL
CONDENSATE PUMPS

and

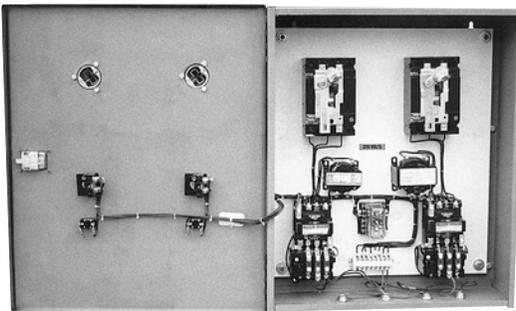
Custom Design
TYPE SHEC
STEEL HORIZONTAL ELEVATED
CONDENSATE PUMPS



SHIPCO[®]
PUMPS are equipped with Mechanical Seals rated up to a standard 250°F.
Higher temperature seals and special faces available upon request.

Type SHC Condensate Return Units are available for larger volumes of condensate. These units may be customized to meet specific design requirements of a particular installation. The quantity of pumps and controls may be custom engineered as required. The SHC (heightless saddles) design will handle condensate to 200°F with Model D pumps. By using the SHIPCO® pumps Model P, the SHC design will handle condensate to 210°F. The SHEC (elevated 30") design will handle condensate to 212°F with Model P pumps.

SHC Receivers are fabricated from 3/16" tk to 3/8" tk black steel, with flanged and dished heads. Standard features include: inlet, drain, vent, overflow and pump suction connections. Optional accessories include dial thermometer, gauge glass, magnesium anode and discharge pressure gauges. Optional receiver materials are available in heavier thicknesses of black steel. 300 Series Stainless Steel receivers are available for corrosion resistance.



Electrical Control Panels: An optional integral part of the SHC Unit is the electrical control panel. The panel can be factory mounted and wired to NEMA and J.I.C. specifications for various duties. Our standard wiring allows for independent pump operation. Internal wiring is numbered to match the corresponding wiring diagram for identification and service.

Magnetic Starters are required for all three phase motors. Our standard starter includes 3 leg overload protection. Single phase motors up to and including 1 HP have built-in thermal overload protection and do not require magnetic starters. Single phase motors larger than 1 HP usually do not have built-in thermal overload protection and require magnetic starters. Combination magnetic starter and disconnect options are available to meet code and servicing requirements.

- Pump control and alternation: SHC units are designed to control the pumps by the level of the condensate in the receiver.
- Standard units utilize 2 float switches to start and stop the pumps.

Option 1: Substitute 1 automatic mechanical alternator in place of the 2 float switches. The mechanical alternator will start and stop both pumps on a duplex unit. It will alternate the pumps on each duty cycle. In

the event of extreme load conditions the alternator will also operate both pumps simultaneously for high level conditions.

Option 2: Utilizing the 2 standard float switches. Install 2 lead-off lag selector switches in the electrical control panel. These switches allow you to manually select the lead and lag pumps. The duty cycle can manually be reversed on a predetermined schedule for even wear.

Option 3: Utilizing the 2 standard float switches. Install an electrical alternator in the electrical control panel. The electric alternator will alternate the pumps on each duty cycle. In the event of extreme load conditions the second float switch will start the second pump. Both pumps will then operate simultaneously until the level recedes.

Recommended Receiver Sizes and Pump Capacities: The normal condensing rate of a steam heating system is .5 GPM per 1000 sq. ft. EDR. This rate may be slightly higher at start-up; however, by experience, sizing the flow rate of the condensate pump at twice the normal condensing rate delivers adequate capacity at start-up and efficient operation under normal loads. By using the Table of Heat and Power you can easily convert from one unit of measure to GPM.

Table — Values of Heat and Power

	GPM	BTU	Lbs/Hr	Sq. Ft. EDR
1 Boiler HP	.069	33,475	34.5	139.4
1,000 sq. ft. EDR	.50	240,000	247.3	1,000

Unit designation as follows:

RECEIVER/GALS.	UNIT TYPE	GPM	PSIG	MODEL PUMP

Example:

196	SHEC	150	30	P
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196 GALLON RECEIVER,
WITH MODEL P PUMPS RATED 150 GPM @ 30 PSIG.

By knowing the flow rate of the condensate being produced from the system load, you calculate the pumping rate by multiplying it by 2.

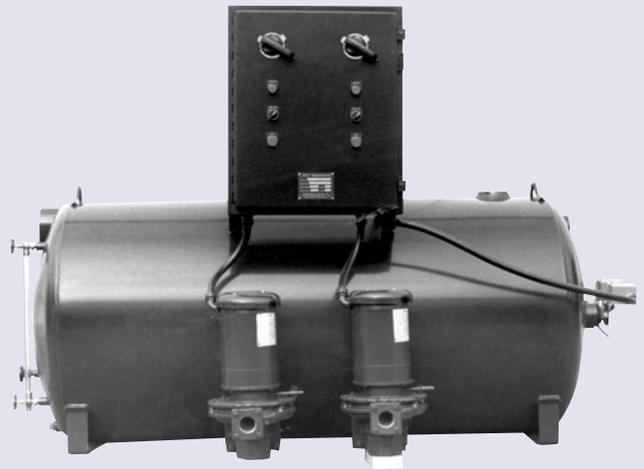
ex: 30,000 lbs. per hr. x .002 GPM/lb. per hr.
= 60 GPM.

thus the pumping rate should be 60 GPM x 2
or 120 GPM.

Sizing the receiver: Condensate receivers are sized to collect and hold the return condensate for approximately 1 to 2 minutes. The pumps should run approximately 1 minute on each duty cycle. In our example the pump is sized for 120 GPM. Checking the receiver table for net storage capacity we would select a 24 x 60 receiver with 124 gallons of storage.

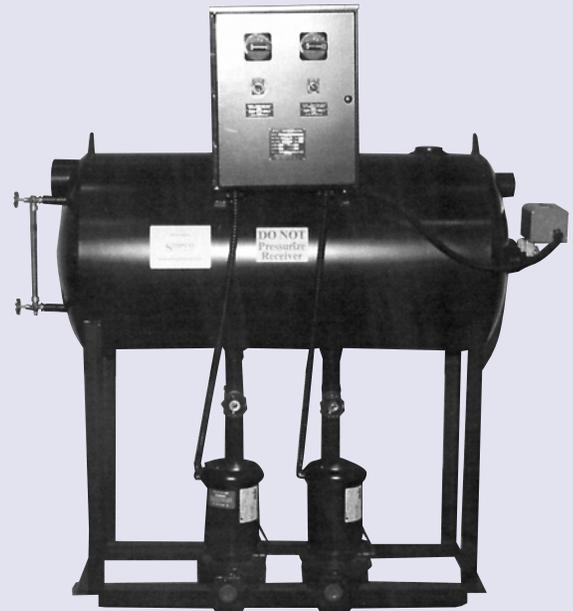
TYPE SHC CONDENSATE PUMP

A Steel Horizontal Condensate unit for holding a large volume of water and pumping water temperatures up to 200°F (with Model D pump) and temperatures up to 210°F (with Model P pump). A standard black steel receiver is ASME code constructed with dished heads; tank can be ASME code stamped if needed. Material thickness ranges from 3/16" to 3/8" for years of service; an option for heavier thickness is available. Receiver also can be 300 series stainless steel for maximum corrosion resistance; most receiver sizes can be epoxy-lined or plasite-lined. Units are floor-mounted for low-piped gravity returns and with tank sizes ranging from 77 gallons to 1578 gallons; custom-sized tanks can be made for unique applications. Unit can handle a wide range of flows and pressures.

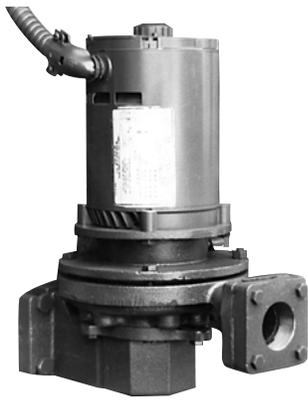


TYPE SHEC CONDENSATE PUMP

A Steel Horizontal Condensate unit for holding a large volume of water and pumping water temperatures up to 210°F (with Model D pump) and temperatures up to 212°F (with Model P pump). A standard black steel receiver is ASME code constructed with dished heads; tank can be ASME code stamped if needed. Material thickness ranges from 3/16" to 3/8" for years of service; an option for heavier thickness is available. Receiver also can be 300 series stainless steel for maximum corrosion resistance; most receiver sizes can be epoxy-lined or plasite-lined. Units are elevated on a fabricated steel base with tank sizes ranging from 77 gallons to 1560 gallons; custom-sized tanks can be made for unique applications. Unit can handle a wide range of flows and pressures.



Units are available in either simplex or duplex configurations with a variety of options including gauge glass, thermometer, control panel; motors can be either 1750 RPM or 3500 RPM, single or three phase. Unit equipped with bronze-fitted Model "D" or "P" pumps typically fitted with industry standard motors and with mechanical seals rated for temperatures up to 250°F. Higher temperature seals and special faces available upon request.



MODEL D & P - Vertical

MODEL D

The Model D pump is the center of all SHIPCO® units. These pumps are bronze fitted and are designed with NPSH requirements in mind. Vertical mounting saves floor space and avoids dirt and water. Industry standard motors available in single or three phase, 1750 RPM or 3500 RPM. Vertical or horizontal style available. All units are equipped with mechanical seals rated for 250°F as standard. (Higher temperature seals and special faces available upon request.)



MODEL D & P - Horizontal

MODEL P

The Model P pump pumps high temperature condensate. This 2 ft. NPSH pump has mechanical seals rated for 250°F as standard. (Higher temperature seals and special faces available upon request.) Industry standard motors available in single or three phase, 3500 RPM. Vertical or horizontal styles available. This bronze fitted pump has an axial flow propeller to provide the necessary NPSH that high temperature water can not, thus assuring cavitation free operation. The P pump also contains straightening vanes to ensure that the water enters the suction cavity as smooth and straight as possible.



TYPE AW / AWF — Multi-Stage

TYPE AW / AWF MULTI-STAGE

Base Mounted Close Coupled (AW) or Flexible Coupled (AWF) Multistage Bronze Fitted Pumps. Pumps have ASA flanged suction and discharge openings. Pumps are low NPSH design, 3500 RPM with three phase motors. AWF pumps have OSHA rated coupling guards. Flows up to 500 GPM and pressures up to 340 PSIG. All pumps are equipped with tungsten carbide mechanical seals rated up to 300°F as standard. All pumps come equipped with an automatic flow control valve for balancing or throttling pump to the designed condition point.