

Steam - Power condensate pump

Design

Vessel of steel plate in welded construction. In side outside provided with an antirust paint. The equipment is supplied with all necessary connections.

Supply

Vessel with equipment completely mounted and interconnected, inclusive of counterflanges, bolts and gaskets.

Capacity Range

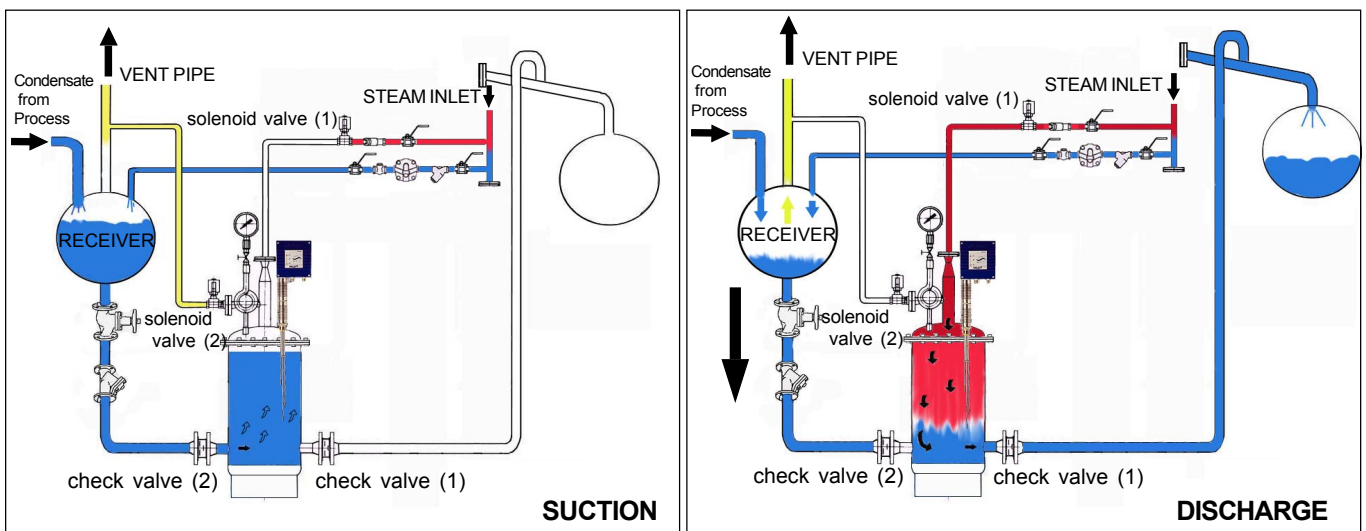
Standard design for hot condensate flowrates up to 10,000 kg/hr.

Materials

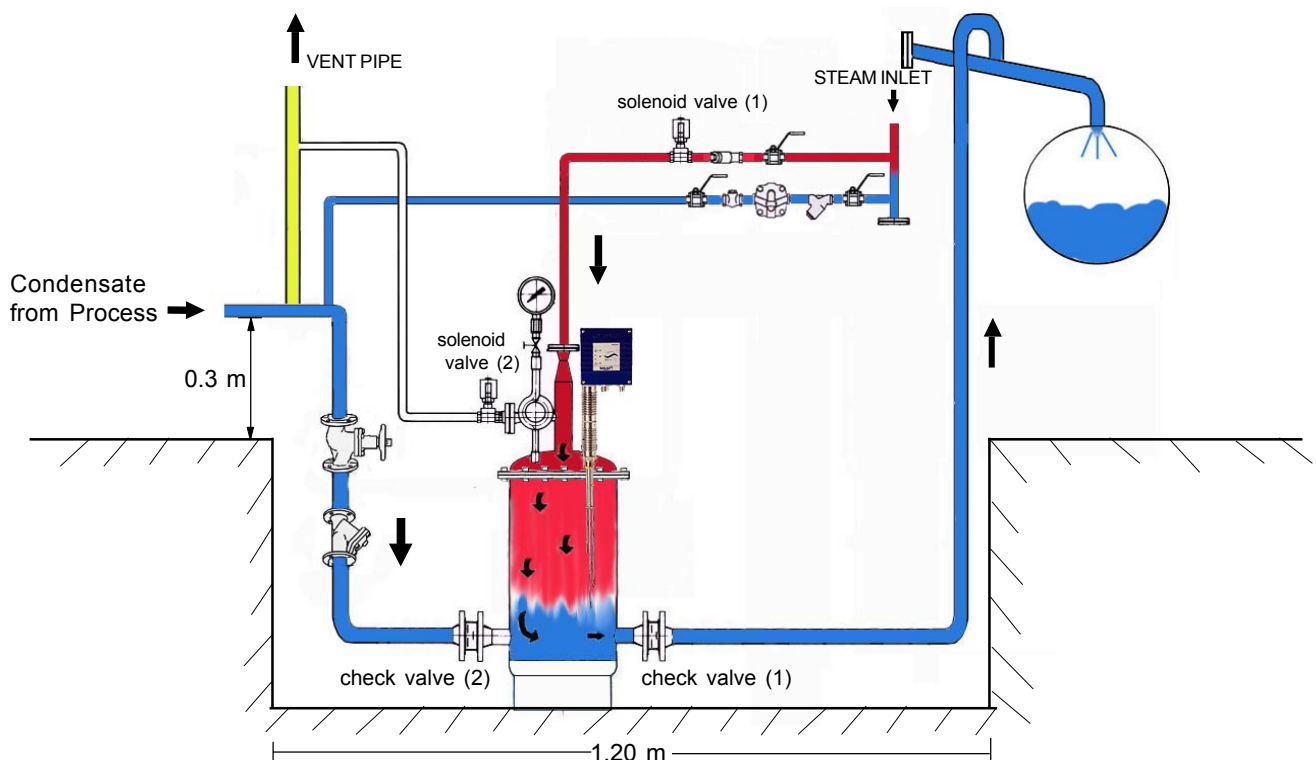
Steel DIN reference : St 37-2
(ASTM equivalent : A283 Grade C),

Pressure/Temperature Rating

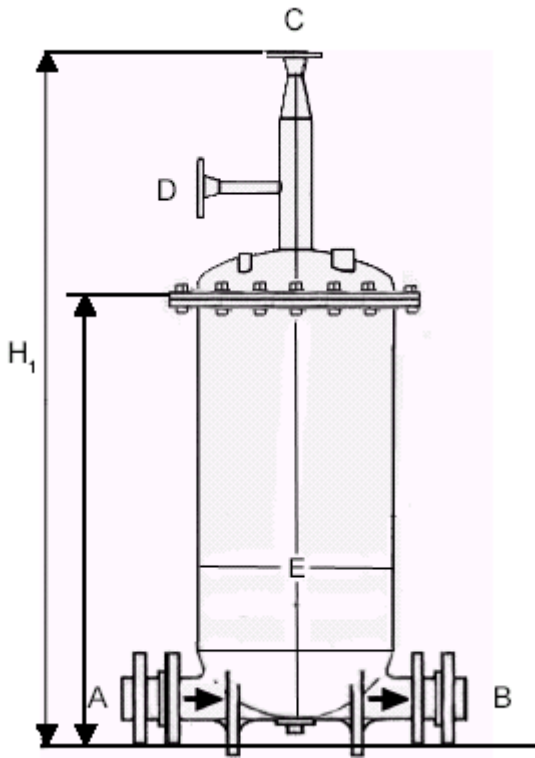
Max. service pressure	13 barg(185 psig)
Max. temperature	200 °C
Discharge head	Booster-steam pressure inbar x 0.7
Mains supply	230 V, 50 Hz
Protection	IP 65



POWER CONDENSATE PUMP FOR HEAT RECOVERY FROM PROCESS



Recommend for installation inlet pipe or condensate header could be 300 mm above the top of condensate pump.



Description

The condensate flows into the upright cylindrical tank displacing the air through a solenoid valve.

As soon as the water level reaches the upper electrode tip the solenoid valve in the vent line is closed and simultaneously the solenoid valve in the booster steam line (introduced from above into the tank) is opened. The inflowing steam pushes the condensate through the condensate main into feed tank. The condensate level sinks and when the lower electrode tip emerges, the solenoid valve in the booster-steam line is closed and the solenoid valve in the vent line opened. The cycle repeats itself.

Before entering the condensate-return unit the condensate is collected in a condensate header to be provided on site. This condensate header should be equipped with a vent.

Condensate inlet and outlet are provided non-return valves

The condensate-return unit is equipped with a pressure gauge and the booster-steam line with a stop valve with characterized valve cone which permits the adjustment of the booster-steam pressure in accordance with the length of the condensate discharge line and the prevailing back pressure.

As the condensate-return unit operates without a float it is unaffected by waterhammer. Continuous drainage of the booster-steam line upstream of the solenoid valve is ensured by Ball float steam trap.

Type		IF 4-1	IF 4-2	IF 4-3	IF 4-5
Capacity	x 10 ³ kg/hr	2	2	3	5
Volume	litres	20	30	40	50
Dimensions mm	E	300	300	300	300
	H	300	500	700	700
	H ₁ **	1000	1300	1300	1300
Connections					
A Condensate inlet DN(mm)		25	40	50	80
B Condensate outlet DN(mm)		25	40	50	50
C Booster-steam inlet DN(mm)		15	15	20	20
D Vent DN(mm)		15	15	20	25
Material		St 37-2	St 37-2	St 37-2	St 37-2

**) H₁ Total height inclusive of valves

Steam - Air Pressure Power Pump / PN 16

The discharge capacity of the pump is a function of :

1. Condensate load in kg/h
2. The pressure of operating medium (steam, compressed air or gas)
3. The total lift or back pressure the pump will have to exhaust against. This includes the change in fluid level elevation after the pump, plus pressure in the return piping, plus the pressure drop caused by friction, plus any other system component pressure drop the pump exhaust will have to overcome.

Operating Pressure bar	Total lift or back pressure bar	Dimension DN/Capacity Kg/h			
		1"	1 1/2"	2"	3" x 2"
0.34	0.14	725	1225	1725	2810
0.69	0.34	815	1315	1860	3170
0.69	0.14	905	1495	2315	3945
1.70	1.00	905	1495	2315	3945
1.70	0.69	950	1770	2540	4550
1.70	0.34	1040	1905	2765	4715
3.40	2.80	905	1450	2175	3720
3.40	1.70	1040	1680	1630	4440
3.40	0.69	1090	1815	2905	4900
5.20	4.10	905	1540	2270	3855
5.20	2.80	1090	1725	2630	4440
5.20	1.00	1135	1905	2995	5080
6.90	4.10	1000	1630	2630	4490
6.90	2.80	1090	1905	2765	4715
6.90	1.00	1180	2085	2995	5080
8.60	4.10	1040	1765	2720	4625
8.60	2.80	1090	2040	2860	4805
8.60	1.00	1180	2130	3040	5130

Capacity multiplying factors for other filling head				
m	1"	1 1/2"	2"	3" x 2"
0.15	0.7	0.7	0.7	0.9
0.3	1	1	1	1
0.6	1.2	1.2	1.2	1.08
0.9	1.35	1.35	1.35	1.2