



Pressure Powered Pump Unit

Description:

Pumping of hot condensate using centrifugal pump is always a problem. Hot flashing condensate will cause cavitation and vapor locking meaning frequent replacements of costly pump internals. This also leads to additional capital expenses in terms of additional standby provisions and high down-time. UKL PPU provides the right answers to all your condensate pumping needs.

Main Features

Exceptionally low running cost is an add-on bonus. UKL PPU is fully mechanical pumping package unit that is stand-alone type and will work trouble-free for hours together and end-on year after year. What is more is the feature that makes it fully automatic without any complicated controls.

The UKL PPU is designed to remove condensate from severe and diverse operating conditions. It uses steam or any other gas or air in small quantities to pump out large condensate loads. Tailor made systems can be offered for higher capacities.

Pump Operation

The UKL PPU uses a spring assisted float mechanism to deliver condensate. A combination of inlet and exhaust valves will ensure that the pump starts and stops automatically depending on the availability of condensate that flows freely by gravity from the system's small receiver.

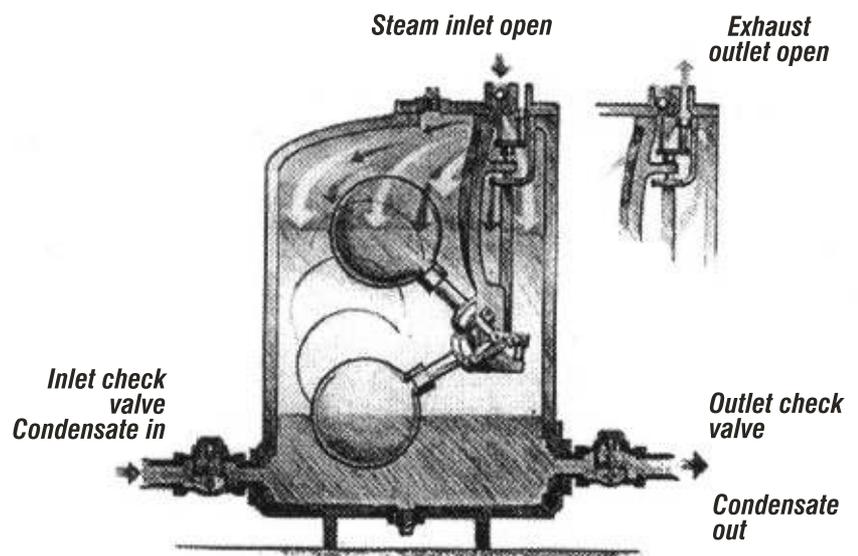
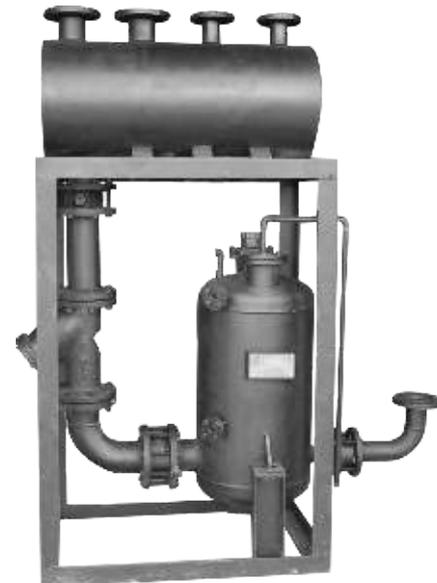
The buoyancy of the float assembly will operate the valves alternately to draw the condensate in and deliver it out of the pump body.

The pump discharge is cyclic with a fixed volume delivered with every stroke. Measurement of condensate delivered by the pump is then a simple mechanical counting of the pump strokes.

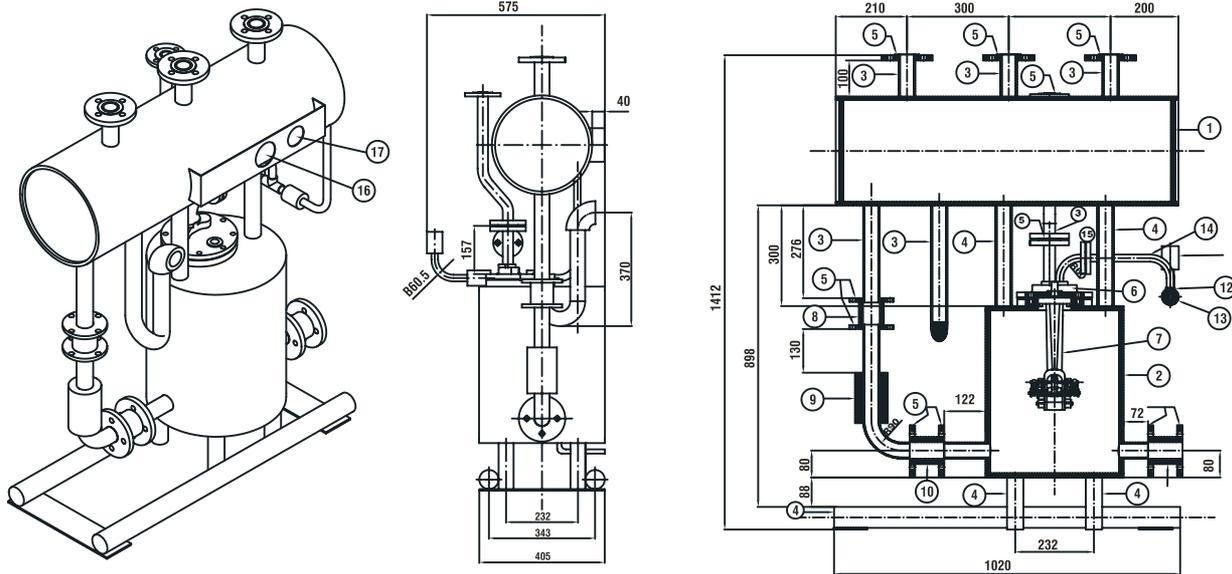
Package Concept

The UKL PPU is packaged to ensure that all design features and requirements are met by, not leaving anything to chance.

We value the utility of condensate pumping operation and the need to provide a safe and reliable solution.



UKL[®]



Sr.	Description	Qty	MOC	Specification
1	Condensate Receiver Tank	1	Carbon Steel	Pipe 12" as per IS 3589
2	Pump Housing	1	Carbon Steel	Pipe 16" as per IS 3589
3	Pipes	All	Carbon Steel	Pipes 1 1/2" as per IS 1239
4	Support Pipes.	2	Carbon Steel	Pipes 1 1/2" as per IS 1239
5	Flanger	12	IS 2062 B	40 NB as per Class 150
6	Pump Housing Cover	1	ASTM A 216GR.WCB	-
7	Pump Internal Assembly	1	-	-
8	Sandwich type Butter fly Valve	1	Carbon Steel	40 NB
9	'Y' Type Strainer	1	Carbon Steel	40 NB
10	Non Return Valve (NRV)	2	Carbon Steel	40 NB
11	Piston Valve	1	Carbon Steel	15 NB
12	T Connection	1	A 234 WPB / A 105	1/2" as per ASME 16.11
13	Steam Trap	1	AISI 420	15 NB
14	Pipes	All	Carbon Steel	Pipes 1/2" as per IS 1239
15	Flanges	12	IS 2062 B	15 NB as per class 150
16	Pressure Gauge	1	-	-
17	Temperature Gauge	1	-	-



The Pump Unit size to be selected from the table given below -

Motive Pr. Kg./cm ² g	Delivery Head in mtrs.	Discharge Capacity			
		in LPH			
		40NB	50NB	80X50NB	DUPLEX
3	10	1600	2600	4450	7175
	20	1400	2100	3650	6300
4	10	1750	2800	4900	7875
	20	1600	2400	4000	6650
	30	1500	2100	3800	6300
5	10	1800	2830	4920	8400
	20	1700	2500	4350	7175
	30	1650	2380	4150	6825
	40	1500	2200	3800	6300
6	10	1800	2800	4900	8225
	20	1700	2640	4500	7525
	30	1600	2550	4400	7350
	40	1530	2380	4000	6475
	50	1500	2210	3810	6388
7	10	2030	2960	5100	8750
	20	1900	2700	4610	7683
	30	1760	2650	4530	7350
	40	1680	2560	4300	7000
	50	1560	2200	3800	6125
8	10	2050	3000	5130	8838
	20	1950	2800	5000	8225
	30	1900	2740	4720	8050
	40	1700	2550	4650	7927.5
	50	1550	2430	4350	7350
	60	1450	2300	4200	7035

Above capacities are based on fill head of 300 mm.

For fill head other than 300 mm, use correction factor given below

Fill Head in mtrs.	40NB	50NB	80X50NB	Duplex
0.15	0.7	0.7	0.7	0.7
0.3	1	1	1	1
0.6	1.2	1.2	1.2	1.2
0.9	1.33	1.33	1.33	1.33

Example for sizing and selection of UKL Pressure Pump Unit.

if you are required to select a suitable UKL Pressure Pump Unit, UKL-PPU, Proceed as follows.

Condensate to be handled 2000LPH

Motive steam pressure available 5
kg/cm²g

Delivery Head, Elevation in mtrs. 6 mtrs.

Frictional Losses in horizontal distance 4 mtrs.

Pressure in the line where condensate is being returned kg/cm²g

Above pressure in liquid column 10 mtrs.

Total Head against which pump has to operate 20 mtrs.

Now look at the table given on the left hand side

Select 5 kg/cm²g motive pressure line
Pick up 20 mtr. delivery head line
Select PumpUnit size that gives flow rate in excess of required.

if the unit in example given above has only 150 mm as the Filling Head.

The capacity from above table will have to be corrected from the data on the left side here

Capacity derating factor for 0.15m fill head 0.7
Pump Unit capacity of selected model 2600 LPH
Capacity after derating for FillHead 1820 LPH

You may have to choose a unit of higher size in this case.



Typical Installation

A simplified installation with no electric motors or Skid mounted installation without any additional level switches make it ideal for hazardous area tanks or level controls required to operate it application

User Benefits

Removes condensate under all load conditions ensuring maximum process efficiency. Reduced maintenance costs:

- No mechanical seals or packing glands that leak
- No cavitation problems

Requires no electric power and has minimum steam consumption
Suitable for hazardous environments

No motive steam loss when installed in a closed system

Additional Benefits

A Condensate flow Meter (CFM) is available as option to be installed with the pump which provides readings of the total amount of condensate pumped.

A Pressure Power Pump unit with the CFM can be used for monitoring plant efficiency :

CFMs can be linked together to display on your computer- the quantity of condensate returned from each section of the plant

CFMs may also linked with steam flow meters to indicate the overall plant utility system efficiency with losses.

Pressure Powered Pump vs Electrically Operated Pumps

- 100 % Steam turndown
- Safety-No electricity
- Minimum energy losses - closed loop
- Reduced Noise - No cavitation
- Pumps at 100 deg C
- Metering facility (open systems only)
- Increased plant life - better drained
- Improved heat exchanger temperature control
- Negligible operating costs - 3 Kg steam / 1000 kg of condensate pumped
- Easy installation

Other Products



Cast / Forged Steel Valves, Piston Valves, Strainers - 'Y' Type



Steam Traps - Thermodynamic, Thermostatic, Ball Float Traps, IBT, / Pressure Reducing Station

Manual & Actuated Ball & Butterfly Valves / Bellow Sealed Valve / Level Gauges - Reflex, Transparent. Bicolor, Condensate Recovery Products

FSD Products : Full range of Comp. Asbestos/Non Asbestos fibre Sheeting / Cut gaskets, Spiral Wound Gaskets



- AN ISO 9001 : 2008
COMPANY.

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