

UKL PRESSURE POWERED PUMP:-

UKL Condensate Pumping Package is designed for transfer of condensate from the area of steam utilization to the boiler feed circuit.

This condensate can then be used as an ideal source for boiler feed water. The UPPPU is an essentially mechanical pump, which derives motive force from the pressure of a motive gas usually steam or compressed air. The main advantages of using mechanical pumps are lower operating cost, less maintenance, higher reliability and no pump cavitations due to high temperature etc. The other advantage being the possible use in hazardous area where use of electrical power is prohibited.

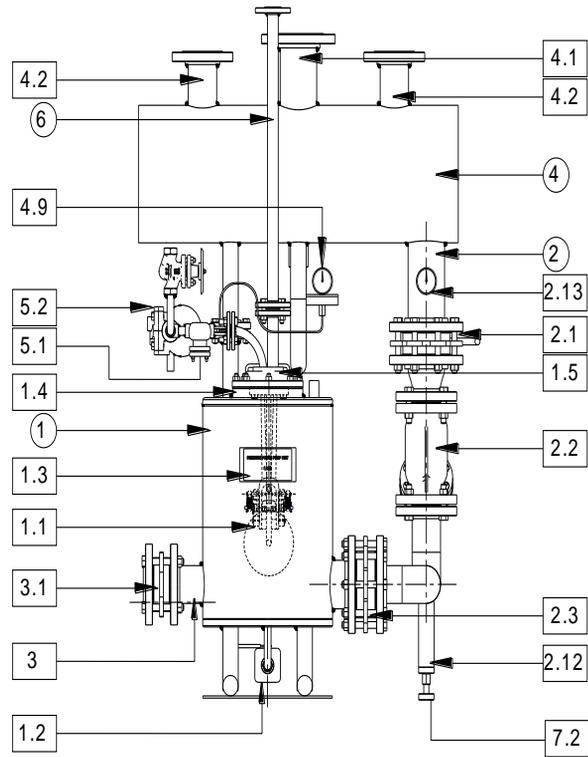
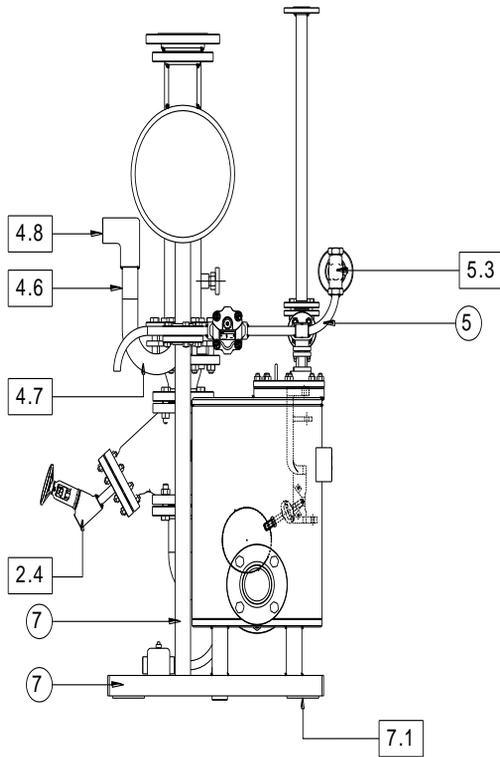
UPPPU is supplied as a complete skid mounted unit, inclusive of the condensate receiver, inlet piping with required head, the main pumping unit, accessories for controlling the operation of the pump and a simple mechanical flow totalizer as an option for measuring the quantity of condensate.

The UKL Pressure Pump Unit operates on a positive displacement principle.

The condensate from a receiver tank, flows by gravity into main pump body. As the condensate level in the pump body rises the float attached to central fork also rises up. At a predetermined float position, a spring aided mechanism snaps open the motive pressure inlet valve so that motive fluid flows in the pump. This motive fluid drive the condensate towards outlet. When the condensate is pumped the level inside the pump body falls causing float to descend towards lower position. At this point the spring mechanism again snaps back to open exhaust valve and close the motive fluid inlet valve. The exhaust valve open to drive the expanded motive fluid by incoming condensate, to be driven out of pump.

It is important to note that the steam is not used to pump water. The pressure exerted by steam is used as a motive force. Hence steam consumption is very little.





SIZE AVAILABLE:-

1½”, 2”, 3”x 2”, DUPLEX

OPTIONAL:-

A Condensate Flow meter (CFM) can be installed with the pump which provides the reading for total amount of condensate pumped.

Part No.	Description	Size	Material Grade	MOC
	Pump Tank Assembly			
1	Pipe	16" NB	Carbon Steel	ASTM A106 Gr. B
1.1	Internal Assembly	---	---	---
1.2	Ball Valve (Local)	1/2"	Carbon Steel	ASTM A216 Gr. WCB
1.3	Name Plate	---	Stainless Steel	AISI 304
1.4	Cover Ring	---	Carbon Steel	IS 2062 B
1.5	Cover	---	Carbon Steel	ASTM A216 Gr. WCB
	Inlet Pipe Assembly			
2	Pipe	4" NB	Carbon Steel	ASTM A106 Gr. B
2.1	Sandwich Type Butter fly Valve	4"	Carbon Steel	ASTM A216 Gr. WCB
2.2	Strainer 'Y' - 40 Mesh	3"	Carbon Steel	ASTM A216 Gr. WCB
2.3	Disc Check Valve	4"	Carbon Steel	ASTM A351 Gr. CF8M
2.4	USN - 15 SW (2 Bolt)	1/2"	Carbon Steel	ASTM A105
2.12	Adjustable Support	---	Carbon Steel	---
2.13	Temperature Gauge	---	Stainless Steel	AISI 304
	Outlet Pipe Assembly			
3	Pipe	3" NB	Carbon Steel	ASTM A106 Gr. B
3.1	Disc Check Valve	3"	Stainless Steel	ASTM A351 Gr. CF8M
	Receiver Tank			
4	Pipe	12" NB	Carbon Steel	ASTM A106 Gr. B
4.1	Vent Nozzle - Pipe	4" NB	Carbon Steel	ASTM A106 Gr. B
4.2	Inlet Nozzle - Pipe	3" NB	Carbon Steel	ASTM A106 Gr. B
4.6	Over Flow Pipe	1-1/2"	Carbon Steel	ASTM A106 Gr. B
4.7	Bend -180°	1-1/2"	Carbon Steel	ASTM A105
4.8	Threaded Elbow	1-1/2"	Carbon Steel	ASTM A105
4.9	Pressure Gauge(0-21)	---	Stainless Steel	AISI 304
	Motive Pressure Line			
5	Pipe	1/2"	Carbon Steel	ASTM A106 Gr. B
5.1	USRM - 40 Mesh	1/2"	Carbon Steel	ASTM A105
5.2	UFTN - 4.5 D.P.	1/2"	Carbon Steel	ASTM A216 Gr. WCB
5.3	USN - 15 SW (2 Bolt)	1/2"	Carbon Steel	ASTM A105
	Exhaust Line			
6	Pipe	1"	Carbon Steel	ASTM A106 Gr. B
	Support Fabrication			
7	Pipe	1-1/2"	Carbon Steel	ASTM A106 Gr. B
7.1	Foundation Plates	---	Carbon Steel	---
7.2	Adjustable Screw	---	Carbon Steel	---



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

Motive Pr.	Delivery Head	Discharge Capacity (in lb/hr)				
		1½"	2"	3"x2"	DUPLEX	
42.7	30	3520	5720	9790	15785	
	60	3080	4620	8030	13860	
	90	3300	4620	8360	13860	
56.9	30	3850	6160	10780	17325	
	60	3520	5280	8800	14630	
	90	3300	4620	8360	13860	
71.1	30	3960	6226	10824	18480	
	60	3740	5808	9900	16555	
	90	3630	5236	9130	15015	
	120	3300	4840	8360	13860	
	85.3	30	3960	6160	10780	18095
		60	3740	5808	9900	16555
90		3520	5610	9680	16170	
	120	3366	5236	8800	14245	
	150	3300	4862	8382	14036	
	99.6	30	4466	6512	11220	19250
60		4180	5940	10142	16902.6	
90		3872	5830	9966	16170	
	120	3696	5632	9460	15400	
	150	3432	4840	8360	13475	
	113.8	30	4510	6600	11286	19448
60		4290	6160	11000	18095	
90		4180	6028	10384	17710	
	120	3740	5610	10230	17440.5	
	150	3410	5346	9570	16170	
	180	3190	5060	9240	15477	

Above capacities based on fill head of 1 ft

For fill head other than 1 ft, use correction factor shown in table-

Sizing and Selection of UKL Pressure Power Pump

- If you are required to select a suitable UKL Pressure Power Pump Unit, proceed as follows-

Condensate to be handled 4400 lb/hr

Motive steam pressure

Available 71 psi

Delivery Head 18 ft

Frictional Losses in horizontal

Distance 12 ft

Pressure in line where the condensate is being returned must also be considered.

Above pressure in liquid column 30 ft

Total Head against which

Pump has to operated 60 ft

Now look at table given on Left Hand Side

Select 71.1 psi motive pressure line

Pick up 60 ft delivery head line

Select Pump Unit size that gives flow rate in excess of required.

In above example 2" size Pump is selected.

Fill Head (ft)	1½"	2"	3" x 2"	DUPLEX
0.45	0.7	0.7	0.7	0.7
0.9	1	1	1	1
1.8	1.2	1.2	1.2	1.2
2.7	1.33	1.33	1.33	1.33

Other Products: 

Cast / Forged Steel Piston Valves, Bellow seal valves, High Pressure valves (Gate/Globe), Strainers – "Y" Type, ITVS Steam Traps (Thermodynamic, Thermostatic, Ball Float Traps and IBT), Pressure Reducing Station, Condensate Recovery Products. Level Gauges (Reflex, Transparent, Bicolor), Sight Glass, Hot Water Generation System, Safety and Relief Valves. FSD Products : Compressed Asbestos / Non Asbestos Fiber Sheeting / Cut Gaskets, Spiral Wound Gaskets.

In view of technical progress design and dimensions are subjected to change without notice.

UKL®

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