

**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.*

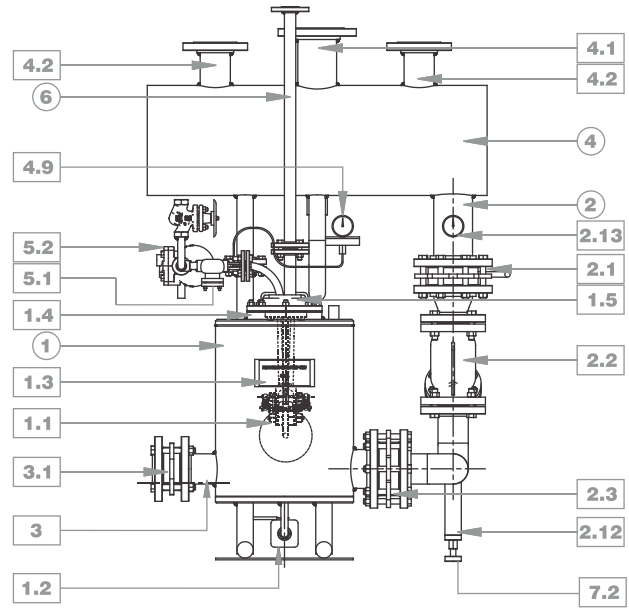
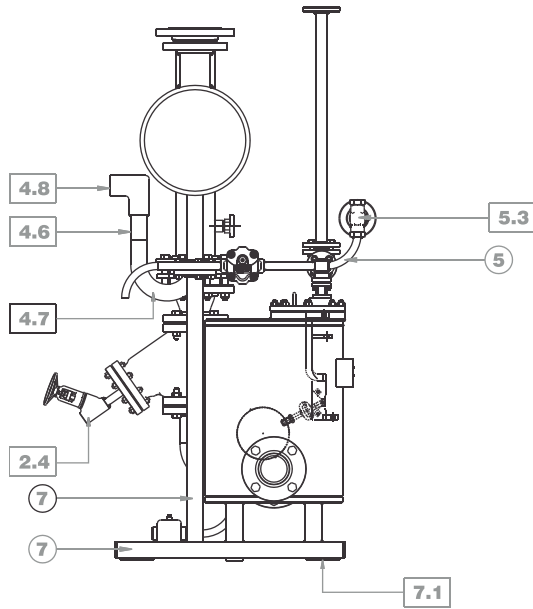
*The UKL Pressure Pump Unit operates on a positive displacement principle.*

*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.*



# Pressure Powered Pump Unit UPPPU



## SIZE AVAILABLE:-

40 NB/ 50 NB/80x 50 NB/ DUPLEX

## OPTIONAL:-

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

## BILL OF MATERIAL

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	---

# Pressure Powered Pump Unit UPPPU

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

Motive Pr.	Delivery Head	Discharge Capacity (in LPH)			
		40 NB	50 NB	80x50NB	DUPLEX
kg/cm <sup>2</sup>	(m)				
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	2640	4500	7525
	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	6380
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	8840
	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

## 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** 2000 LPH  
**Motive steam pressure Available** 5 kg/cm<sup>2</sup>

**Delivery Head** 6 m  
**Frictional Losses in horizontal Distance** 4 m

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

**Above pressure in liquid column** 10 m

**Total Head against which Pump has to operated** 20 m

### Now look at table given on Left Hand Side

Select 5 kg/cm<sup>2</sup> motive pressure line

Pick up 20 m delivery head line

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

In above example 50 NB size Pump is selected

Above capacities based on fill head of 300 mm For fill head other than 300 mm, use correction factor shown in table-

Fill Head (m)	40 NB	50 NB	80x50 NB	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

## Product Range

### **UTD-55 | UTD-62 | UTD-120**

Thermodynamic steam trap

### **UTST | UCT-10**

Thermostatic steam trap & Sanitary steam trap

### **UFT-15 to 100 | UCA**

Ball Float Trap for Steam and air application

### **UG 25/45 | UP64Ti | UP215Ti**

Bi-metallic Steam Trap

### **UITVS**

Compact Trap Valve Station

### **UIBT-28US**

Inverted bucket Steam Trap in complete stainless steel construction

### **UIBT 1701 to 7004**

Inverted bucket steam trap in cast/forged steel construction

### **UDCV**

Wafer type disc check valve / NRV

### **UMS**

Moisture separator for Steam & Air

### **UAV**

Thermostatic air vent for steam with air bottle for proper venting

### **UAE**

Air eliminator for liquid application

### **UBSV**

Bellow seal gate/globe valve

### **UPHV**

High pressure (#1500/#2500) gate/globe valve

### **USTR**

Y & T type strainers in cast carbon steel and stainless steel

### **USG**

Double window sight glass

### **USI**

Steam injector for boiler feed water tank

### **UFV**

Condensate flash vessel

### **UPPPU**

Condensate pressure powered pump unit

### **UDH**

Atmospheric de-aerator head for boiler feedwater tank

### **UAPT**

Automatic pumping trap – Combination of a conventional trap & pump for proper condensate discharge for varied applications

### **UCCDS**

Online (24x7) condensate contamination detection system

### **UBBHRS**

Boiler blowdown heat recovery system

### **UHWGS**

Instant Hot water generator system

### **UPRS / UPRDS**

Pressure reducing system & de-superheating system

### **UCCM / USDM**

Steam / Condensate manifolds

### 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 Sheetting / Cut Gaskets, Spiral Wound Gaskets / Gland Packing

In view of technical progress designs and dimensions are subject to change without notice.



## UNI KLINGER LIMITED

A joint venture of the Neterwala group of companies and KLINGER AG, Switzerland.



## HARSH ENGINEERING SALES & SERVICE PVT. LTD

Only Authorized Dealers for UNI KLINGER products, Telangana

Add: 2-3-692/22/13 Lal Bagh, Zinda Tilismath Road, Ganga Nagar, Amberpet, Hyderabad - 500013  
Tel: +91-40-2740 3329 | Website: harsh-engineering.com | E-mail: sales@harsh-engineering.com