

**UKL HIGH PRESSURE INTEGRAL TRAP VALVE  
STATION WITH THERMODYNAMIC STEAM TRAP  
(REPLACEABLE SEAT):**

This unit offers a compact one piece solution, with inbuilt Piston Valves and Replaceable Thermodynamic Steam Traps, replacing the conventional complex & elaborate Trap Modules.

UITVS-6DR is compact design which includes Upstream Isolation valve & Down stream Isolation valve to isolate steam while doing any maintenance work, Other valves like By pass valve to draining or divert steam, De-pressurisation (Trap vent) valve for de-pressurisation of trap and Trap test valve to monitor the trap are separately attached as per requirement.

The thermodynamic traps separate condensate and steam based on velocity which in case of steam is higher than that of condensate. These are used mainly on drip lines of the main steam distribution line, platen presses and super heated steam lines to remove condensate.

Condensate pressure is used to open the trap by lifting the disc, discharging condensate in low pressure. Due to low pressure flashing of condensate takes place. High flash steam velocity (approximately 5 times of condensate) creates a low pressure zone below the disc. Accumulated flash steam force over the disc becomes greater than the incoming condensate pressure this leads to closure of the disc. Subsequently the flash steam condenses and the incoming higher pressure condensate pushes the disc opening the trap and thus the cycle continues.

The UITVS-6DR is a steam trap module with replaceable seat & integral strainer gives eases inline maintenance & specifically designed to meet above application. An insulating cover can be fitted as a option on superheated steam mains.

**MATERIAL OF CONSTRUCTION:**

ASTM A105 / ASTM A182 Gr. F11

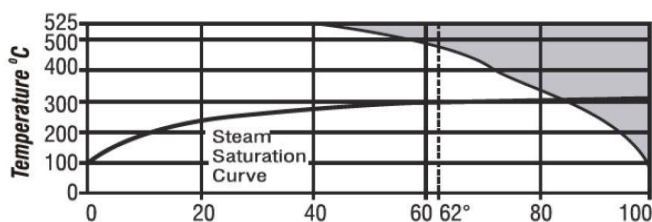
**SIZES AVAILABLE:-**

| Socket Weld End |       |
|-----------------|-------|
| 15 NB           | #6000 |
| 20 NB           | #6000 |

Socket Weld to ASME B 16.11

Other Sizes on request

**Operating range for Socket weld End IBR :-**



The product must not be used in this region  
Max. operating back pressure 80% of upstream pressure

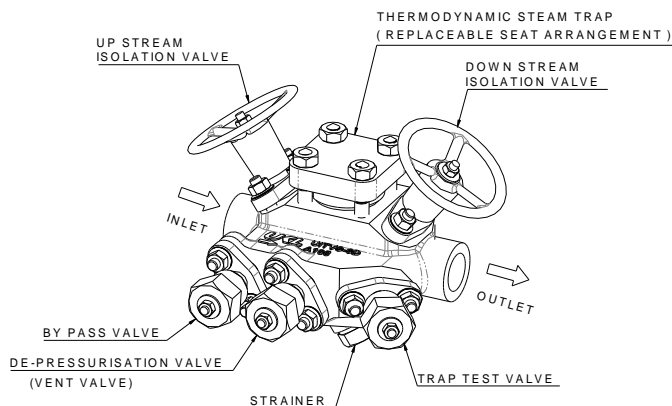


**OPERATING CONDITIONS**

| MOC- ASTM A105                    |   |
|-----------------------------------|---|
| End Conn.                         | Socket weld End                               |
| <b>Max. Allowable Pressure.</b>   | 63 bar [ 64.3 Kg/cm <sup>2</sup> ] @ 100 °C   |
| <b>Max Allowable Temperature</b>  | 425 °C @ 42 bar [ 42.8 Kg/cm <sup>2</sup> ]   |
| <b>Max. Operating Pressure</b>    | 42.0 bar [ 42.8 Kg/cm <sup>2</sup> ] @ 425 °C |
| <b>Max. Operating Temperature</b> | 425 °C @ 42 bar [ 42.8 Kg/cm <sup>2</sup> ]   |
| <b>Hydro Test Pressure</b>        | 84 bar [ 86 Kg/cm <sup>2</sup> ]              |

| MOC- ASTM A182 Gr. F11            |   |
|-----------------------------------|---|
| End Conn.                         | Socket weld End                               |
| <b>Max. Allowable Pressure.</b>   | 103 bar [ 105 Kg/cm <sup>2</sup> ] @ 93 °C    |
| <b>Max Allowable Temperature</b>  | 525 °C @ 42.5 bar [ 43.3 Kg/cm <sup>2</sup> ] |
| <b>Max. Operating Pressure</b>    | 62.5 bar [ 63.7 Kg/cm <sup>2</sup> ] @ 482 °C |
| <b>Max. Operating Temperature</b> | 525 °C @ 42.7 bar [ 43.5 Kg/cm <sup>2</sup> ] |
| <b>Hydro Test Pressure</b>        | 155 bar [ 158 Kg/cm <sup>2</sup> ]            |

**GENERAL ARRANGMENT OF UITVS-6DR**



**INSTALLATION:-**

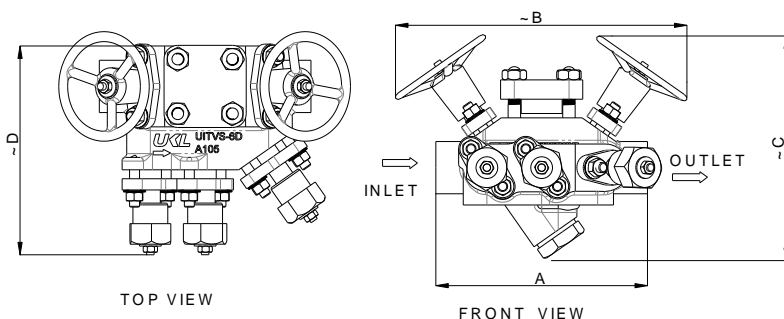
Preferably in horizontal position.

**ON REQUEST:-**

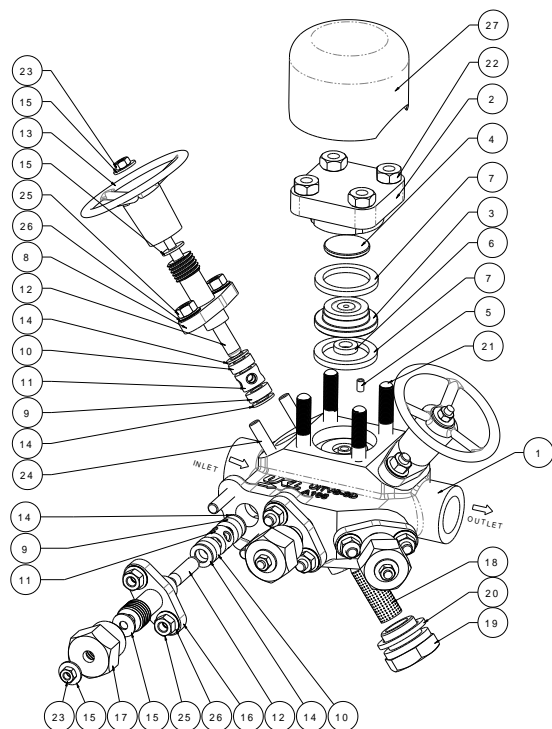
IBR/Non-IBR  
Isotub  
Flanges weld on type

## GENERAL DIMENSIONS OF UITVS-6DR:-

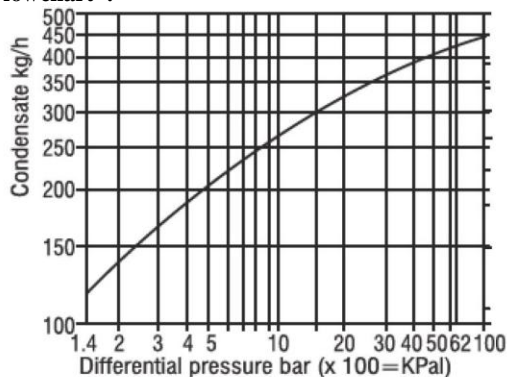
| Notations                | Dimensions (mm) |        |
|--------------------------|-----------------|--------|
|                          | 15 NB           | 20 NB  |
| <b>A</b>                 | 170             | 170    |
| <b>B (Open)</b>          | 265             | 265    |
| <b>C (Open)</b>          | 200             | 200    |
| <b>D (Open)</b>          | 190             | 190    |
| <b>Approx Weight(kg)</b> | 7.5 Kg          | 7.5 Kg |



## BILL OF MATERIAL OF UITVS-6DR:-



### Flowchart :-



Note: Minimum Differential pressure for satisfactory operation 1.4bar g with Positive Pressure and Discharge to atmosphere.

| BILL OF MATERIAL OF UITVS-6DR                                |                             |                                    |
|--|-----------------------------|------------------------------------|
| No.  | PART NAME                   | MATERIAL CODE                      |
| 1  | Body                        | ASTM A105 / ASTM A182 Gr.F11       |
| 2  | Top Cover                   | ASTM A105 / ASTM A182 Gr.F11 / WC6 |
| 3  | Replaceable Seat            | ASTM A681 Gr. D2                   |
| 4  | Disc                        | ASTM A681 Gr. D2                   |
| 5  | Locator                     | AISI 304                           |
| 6  | SPW Gasket for Seat         | AISI 304 / 316 with Graphite       |
| 7  | SPW Gasket for Top cover    | AISI 304 / 316 with Graphite       |
| 8  | Bonnet                      | ASTM A105 / ASTM A182 Gr.F11       |
| 9  | Lower Valve Ring            | Klinger Std                        |
| 10   | Upper Valve Ring            | Klinger Std                        |
| 11   | Lantern Bush                | ASTM A276 Gr. TP 410               |
| 12   | Spindle (Integral Piston)   | ASTM A276 Gr. TP 410               |
| 13   | Hand wheel                  | ASTM A216 Gr. WCB                  |
| 14   | Plain Washer                | AISI 304 / 316                     |
| 15   | Hand wheel Washer           | AISI 304 / 316                     |
| 16   | Bottom Bonnet               | ASTM A105 / ASTM A182 Gr.F11       |
| 17   | Bottom Hand wheel           | ASTM A105                          |
| 18   | Strainer                    | AISI 304 / 316                     |
| 19   | Strainer Cap                | ASTM A105 / ASTM A182 Gr.F11       |
| 20   | SPW Gasket for Strainer Cap | AISI 304 / 316 with Graphite       |
| 21   | Stud for Top Cover          | ASTM A 193 Gr B7 / B16             |
| 22   | Nut for Top Cover           | ASTM A194 Gr. 2H / 8M              |
| 23   | Hand wheel nut              | AISI 316                           |
| 24   | Stud for Bonnet             | ASTM A 193 Gr B7 / B16             |
| 25   | Nut for Bonnet              | ASTM A194 Gr. 2H / 8M              |
| 26   | Belleville Washer           | 50 Cr. V4                          |
| 27*  | Isotub (Optional)           | AISI 304 / 316                     |
| Item No- 3,4,5,6,7,9,10,11,12,18,20, 27 Available as Spares. |                             |                                    |

| Item | Recommended Tightening Torque |      |     |         |
|------|-------------------------------|------|-----|---------|
|      | Part                          | Size | A/F | Nm      |
| 9    | Filter Cap                    | --   | 36  | 145-158 |
| 22   | Nut                           | M10  | 17  | 55-60   |
| 25   | Nut                           | M8   | 13  | 10-15   |

### How to Replace Seat & disc :-

Unscrew the four nuts and remove the top cover. Lift off the disc. Lift off of Seat and remove gasket, insert new two gasket on groove below seat, Properly locate locator, fit new seat and disc. Ensure that the seating surface is not unduly worn. Lapping is necessary for worn out seats. Re- assemble cover using a new gasket making sure that gasket faces are perfectly clean.

To clean or replace strainer remove strainer cap. Remove strainer screen. Fit new or cleaned strainer screen into recess in cap. A new gasket should be fitted and the cap screwed into the body.

To replace cover studs after removing old cover studs fit new cover studs.

### 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 Sheet / Cut Gaskets, Spiral Wound Gaskets.



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

## UNI KLINGER LIMITED

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