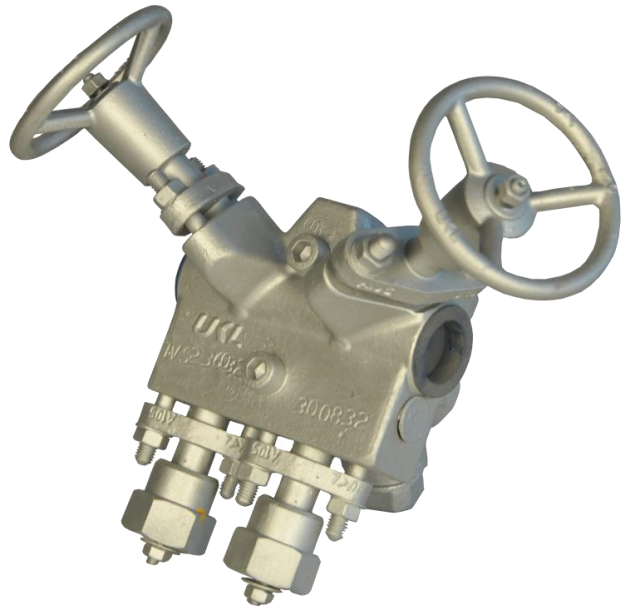


# Instruction Manual for Uni Klinger Integral Trap Valve Station UITVS

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## 1.Product Overview:-

The Trap Valve Station consists of

1. Main TVS Body
2. Inlet Isolation Piston Valve
3. Outlet Isolation Piston Valve
4. Bypass Piston Valve
5. Trap Test cum Vent Piston Valve
6. Universal Flange.

The function of any Steam Trap is to discharge Condensate and Trap Steam. Therefore in any Process plant, a Trap is always accompanied by a isolation valve for isolation to maintain/repair the trap and a Bypass valve to let out the condensate uninterrupted while the trap is being maintained. This was available in the form of a Trap Module, involving Pipes, valves Traps and Flanges etc. This entailed Adequate Inventory carrying, Fabrication facilities, testing facilities to check the integrity of the assembly. Not to speak of the time factor. All this was eliminated by incorporating all these features in a single compact Forged Unit, as a Uni Klinger Integral Trap Valve Station[UITVS] **Trap Valve Station Assembly.**

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

In End Connection sizes of 15 and 20mm and Pressure Rating upto #300.

## **2. Installation and Commissioning Instructions:**

UKL make Integral Trap Valve Station[UITVS] will provide you with long, trouble-free service if they are correctly installed and maintained.

A few minutes of your time spend reading these instructions now may save hours of trouble and downtime later.

- Before installing UITVS, the inlet piping should be carefully blown down to remove any existing pipe debris.
- An arrow mark is punched on every trap body showing the flow direction. Install the UITVS by fixing the inlet & outlet ports accordingly.
- Isolation/Bypass/Test piston valves are to be hot tightened when put in operation.
- The trap connected must be properly installed with respect to direction provided on trap.
- The Universal Connector Gasket must be properly placed.

## **3. Operating Instructions:**

### **Opening and Closing the UITVS isolation Valve**

The isolation valve begins to stop flow when the piston enters the lower ring.

When the isolation valve is completely closed, the valve plug is in full contact with the valve rings, ensuring the best possible seal. Since there is no metal to metal seating, applying torque to the hand wheel of Piston Valve is not required.

### • **Testing Trap for Operation**

Open test valve – Condensate will discharge from the test port on the side of the connector.

Close UITVS outlet isolation valve.

Observe trap operation at test port.

To place trap back in operation open UITVS outlet isolation valve and close test valve.

**Caution:** Hot condensate and flash steam will be discharged from the test port. Keep away as steam/condensate could cause damage to personnel.

### • **Replacing and depressurization of Trap.**

Close inlet and outlet isolation valves of UITVS.

Open strainer blow down cap to relieve pressure inside trap.

It is recommended as an alternative to above that the inlet valve should be kept open first and the steam and condensate should be let out through the bypass valve before opening the blow down cap on steam trap.

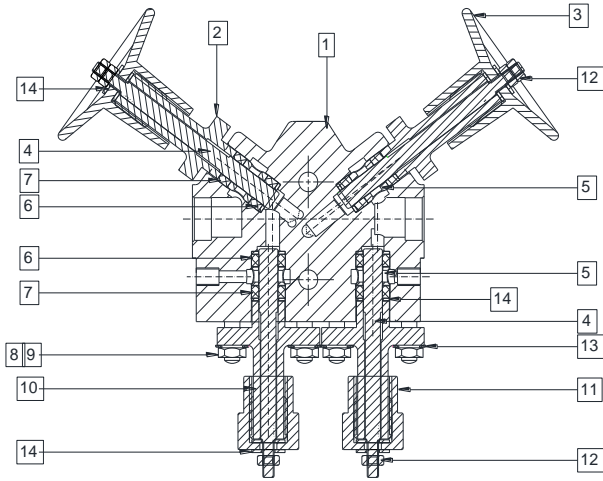
After pressure has been relieved, remove bolts and the trap.

Clean trap connector sealing surfaces.

Apply anti seize grease to the new trap bolts, insert bolts through connector block. Tighten bolts evenly.

Open UITVS inlet and outlet isolation valves.

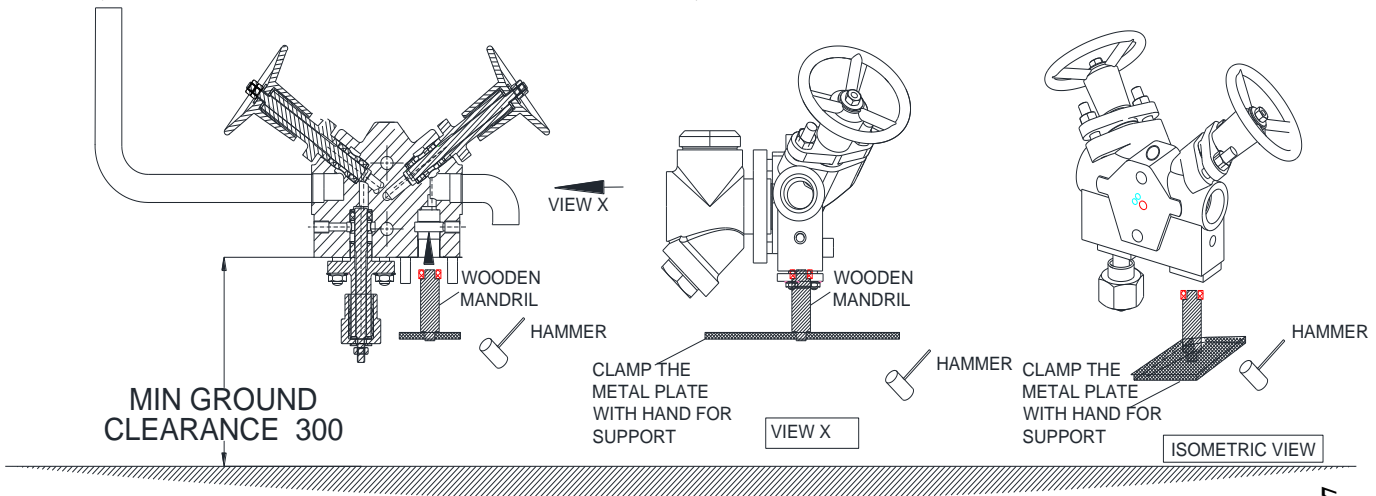
**BILL OF MATERIAL:-**



14	PLAIN WASHER	STAINLESS STEEL	AISI 304
13	BELLEVILLE WASHER	SPRING STEEL	50 Cr. V4
12	HANDWHEEL NUT	STAINLESS STEEL	AISI 316
11	BOTTOM HAND WHEEL	FORGED STEEL	ASTM A 105
10	BOTTOM BONNET	FORGED STEEL	ASTM A 105
9	STUD	CARBON STEEL	ASTM A 193 Gr. B7
8	BONNET NUT M8	ALLOY STEEL	ASTM A 194 Gr. 2H
7	UPPER VALVE RING	KLINGER STD.	KLINGER STD.
6	LOWER VALVE RING	KLINGER STD.	KLINGER STD.
5	LANTERN BUSH	STAINLESS STEEL	ASTM A 276 Gr. TP 410
4	SPINDLE (INTEGRAL PISTON)	STAINLESS STEEL	ASTM A 276 Gr. TP 410
3	HAND WHEEL	CAST STEEL	ASTM A 216 Gr. WCB
2	BONNET	FORGED STEEL	ASTM A 105
1	BODY	FORGED STEEL	ASTM A 105
ITEM	DESCRIPTION	MATERIAL	MATERIAL CODE
BILL OF MATERIAL			

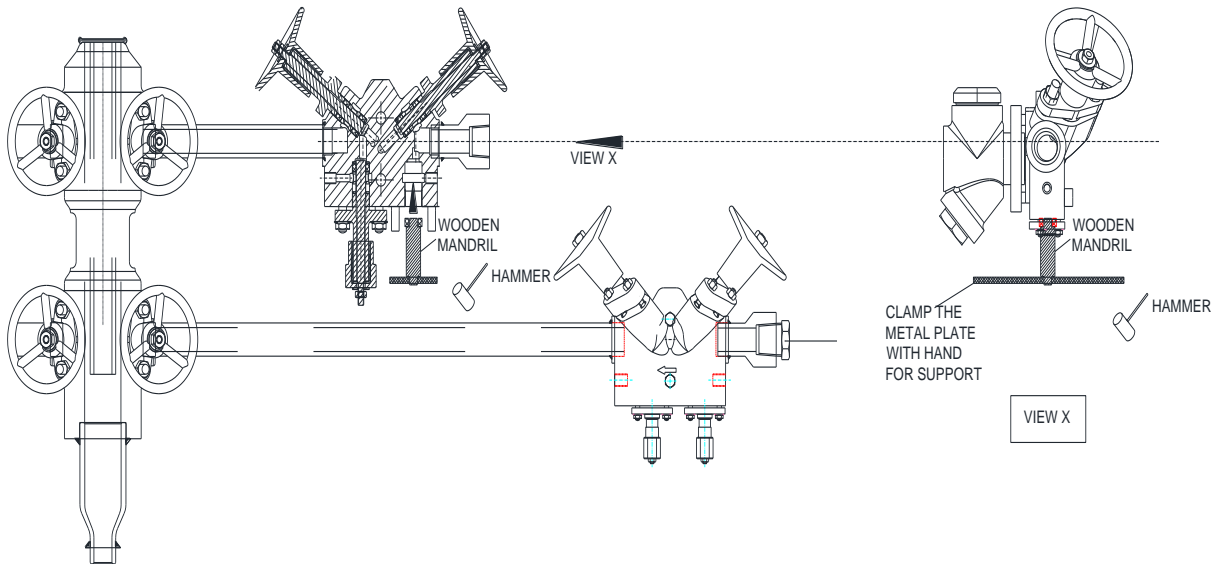
UITVS is available with Blow down valve instead of piston valve at Bypass/Test on customer request.

**A] Maintenance of UITVS when connected on Ground.  
(Recommended Ground Clearance=300 mm)**



NOTE- Insert sealing ring, lantern bush by using wooden mandrill. Hold the mandrill with metallic plate. Clamp the metallic plate with hand for support and slowly hammer the metallic plate from the other end as shown above. Then insert the piston, bonnet and tighten the bonnet nuts.

## B] Maintenance of UITVS when connected to Condensate Collection Manifold.



### 4. Maintenance and Troubleshooting:

- **Troubleshooting Uni Klinger Integral Trap Valve Station Isolation Valves (Piston Valves)**

The Piston Valve principle is KLINGER invention. The sealing system is astonishingly simple and extraordinarily effective. A piston valve will retain its leak tightness for several years without maintenance. In severe service, such as rapid heating and cooling some field maintenance may be required. Depending on the problem, these simple steps may help.

- **Piston valve/isolation valve leaks when the valve is closed.**

Close the hand wheel fully and make sure that the valve is closed. Tighten the bonnet bolts evenly. This compresses the valve sealing rings against the body and the Piston. This process can be repeated whenever valve leaks till the bonnet touches and seats on the body. When bonnet is resting on body, this is the indication that valve sealing rings are worn out and needs to be replaced.

Attend to the isolation valves as soon as leakage starts for getting long life of resilient rings. Prolonged internal leakage can cause scratches/wear on the metallic Piston or resilient valve sealing rings. Damaged components will have to be replaced, if leakage continues.

**Important Note:** Before tightening the bonnet bolts, make sure the valve is fully closed position.

- **Test valve/ Bypass valve leaks.**

Close the trap test valve fully

Loosen the locknut

Tighten the bonnet by quarter turn or till free operation of valve

Operate the valve for few times

This procedure can be repeated every time leak takes place till bonnet rests on metal and can not be tightened further.

- **Removing the bonnet assembly, valve sealing rings, lantern bush and washers.**

1. Close the isolation valves of UITVS fully.
2. Using the hand wheel or wrench (depending on the model), open the drain valve all the way slowly to depressurize trap and then open the test valve all the way until it stops.
3. Loosen and remove the bonnet nuts/Lock Nut. Leave the studs in the body.
4. Pull complete bonnet assembly out of valve body.
5. Remove valve sealing rings, valve washers and lantern bush using a Packing Hook. Check to see if all components, including valve washer at bottom of valve body have been removed.
6. Inspect and clean any debris that might have remained in the valve body.
7. Replace new sealing rings, lantern bush and valve washers in the order they are removed by using Maintenance Kit.
8. Insert sealing ring using wooden mandrill. Fix the wooden mandrill on a metallic plate. Hold the metallic plate with hand for support from one side and hammer metallic plate from the other side.
9. Insert the piston, bonnet assembly. Fit back the bonnet assembly and tighten the bonnet nuts/lock nut.

### **Installing New Isolation Valve Assembly**

1. Follow steps 1- 6 as above.
2. Place UKL isolation valve assembly with hand wheel open in valve body.
3. Lightly tap the isolation valve assembly to the bottom of the valve body.
4. Coat the threads of the bonnet bolts with anti seize compound Grease. Insert bolts through bonnet and tighten evenly.
5. Check the isolation valve for proper operation by opening and closing the valve one or two times leaving them in the open position.
6. Open upstream and downstream isolation valves of the UITVS and check for leakages if any.

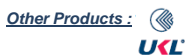
### **Hand wheel Replacement**

UKL recommends that the entire bonnet sub assembly be replaced with valve repair kit.

1. Remove the bonnet and valve piston without disturbing the valve sealing rings.
2. Follow steps 1-5 to remove bonnet assembly.
3. Rotate the hand wheel clock wise.
4. Hold the piston on a soft vice. Ensure that piston is not damaged.
5. Remove the hand wheel nut (Left handed).
6. Rotate the hand wheel till it comes out.
7. Remove the Nut on the piston shaft.
8. Push the piston shaft down after removing the assembly from wise.

## 5. Storage:

- UITVS and the respective spares should be stored only in enclosed dry rooms in a non-aggressive atmosphere. Fully assembled UITVS must be stored as supplied by UNI KLINGER. Spare parts must be handled with care and should be stored in their original packing.
- It is recommended to take protective measures if parts are stored in dusty conditions.
- The ambient temperature in store room must be between -20 Deg. C and +50 Deg. C.
- Sudden change in temperatures must be avoided.
- Any damage due to inappropriate storage shall release UNI KLINGER of any obligations derived from warranty, guarantee, and product liability.



**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.*



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