

Instruction Manual for Inverted Bucket Steam Trap

UIBT 28US

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1.Product Overview:-

Steam used for secondary heating like Coils, vessels, heat exchangers etc, generate a lot of condensate post heat transfer. This large quantity condensate can handle by the Inverted Bucket Trap. This condensate has a substantial heat component with cost tagged to it. Also this is treated and pure water and can be used as Feed water for the Boiler, saving the cost of heating, Water Bill and Treatment chemicals.

Therefore it makes sense to recycle / reuse this condensate. This function is also done by the Inverted Bucket Trap.

2. Working Principal :-

Inverted Bucket Trap works on the principle of Buoyancy, [densities difference of Water and Steam].The rising in condensate level fills and envelopes the Bucket causing it to sink which open the mechanically linked valve and discharges the condensate, and reverse, when the level of condensate drops Steam enters the bucket, causes the flotation of the Bucket which close the valve and stops condensate discharge & traps the steam.

MATERIAL OF CONSTRUCTION:

ASTM A 351 Gr. CF8
ASTM A240 TP304L

SIZES AVAILABLE:-

1/2", 3/4" and 1"



DESIGN CONDITIONS :

Maximum Design Pressure : 739.7 psi
Maximum Design Temperature : 797 °

OPERATING CONDITIONS :

Maximum Operating Pressure : 398.3 psi
Maximum Operating Temperature : 797 °F

END CONNECTIONS:

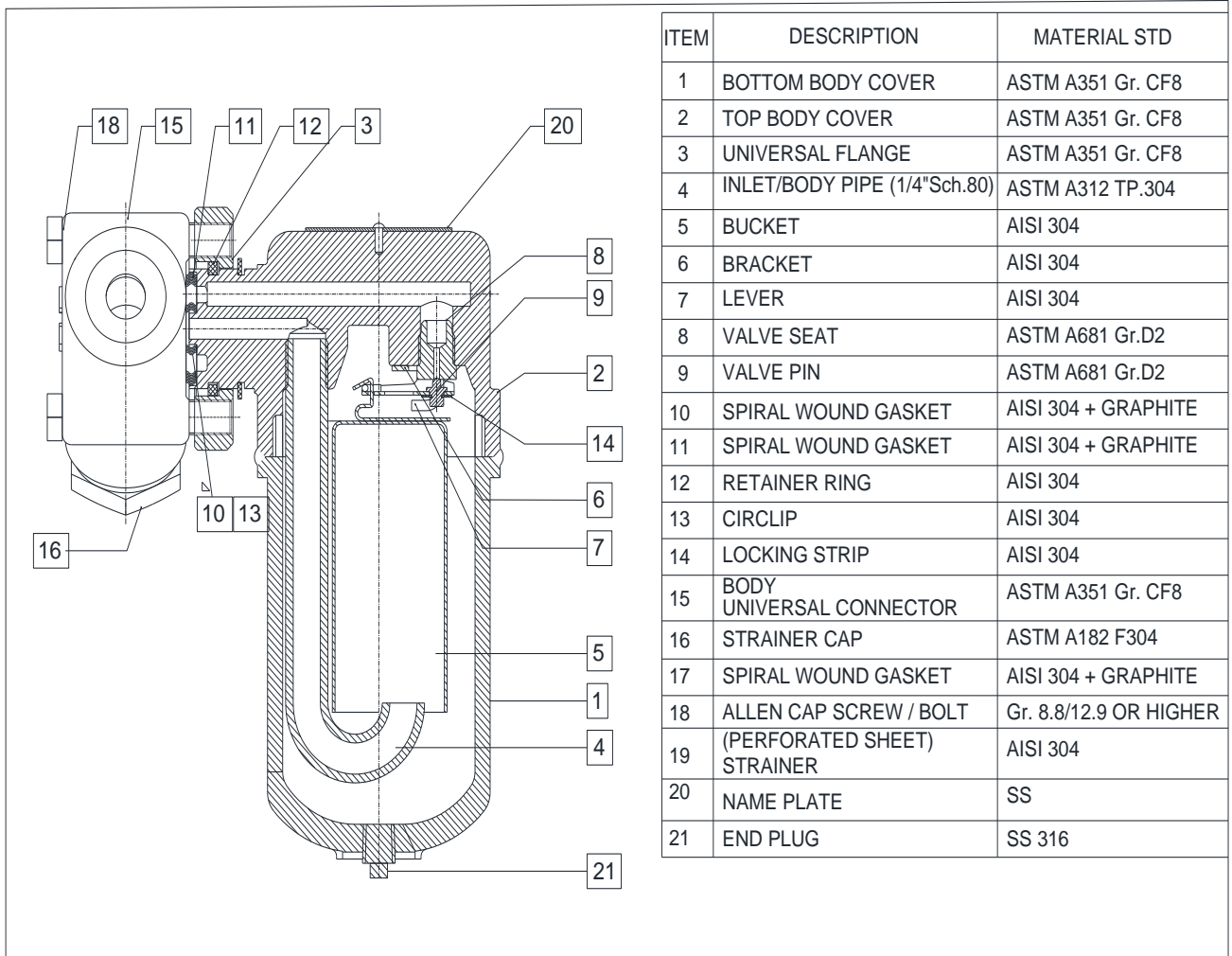
Screwed NPT and BSPT
Socket Weld
Suitable with UITVS (Universal Flange)

3. Installation and Commissioning Instructions:

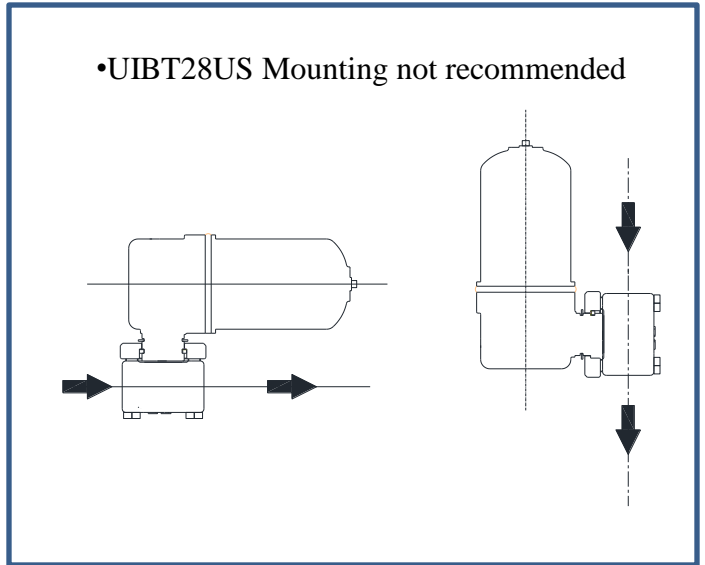
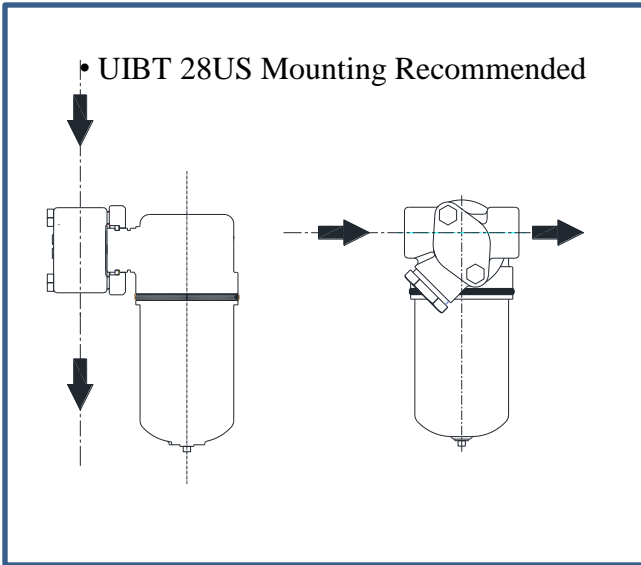
Your UKL make UIBT Inverted bucket steam traps will provide you with long, trouble-free service if they are correctly installed and maintained.

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

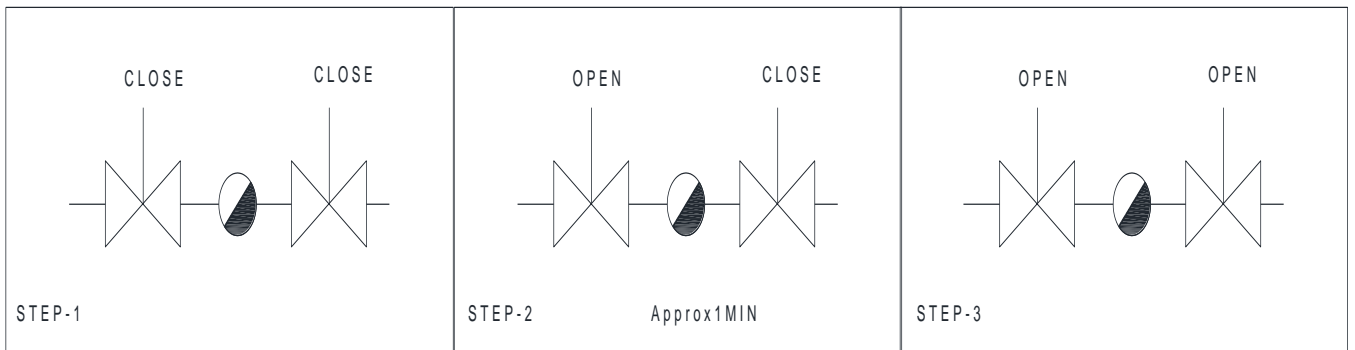
- Before installing trap, the inlet piping should be carefully blown down to remove any existing pipe debris
- An arrow mark is punched on every trap body showing the flow direction. Install the trap by fixing the inlet & outlet ports accordingly.
- It is advisable to install the Isolation Valves on either sides of trap to facilitate the servicing.
- If the trap discharges condensate into a closed condensate return system or where there is a lift at the trap, a check valve should be fitted at the outlet of the trap.
- Depending on the quality of steam, a strainer with adequate mesh size is recommended at the inlet of trap.
- It is preferable to install a 'Test Valve' at outlet & before isolation valve for testing the trap functioning.
- Install the trap & seal the leakages at inlet & outlet then crack open the inlet valve for some time to get the trap to be primed. Once the trap is get water sealed it will give some intermittent stroking action at outlet then fully open the inlet valve.
- Testing of trap: trap can be tested either by Test Valve, pyrometer, ultrasonic stethoscope or a rod with sufficient length can be touched to the trap body & vibrations can be sensed by hands if trap is operating.



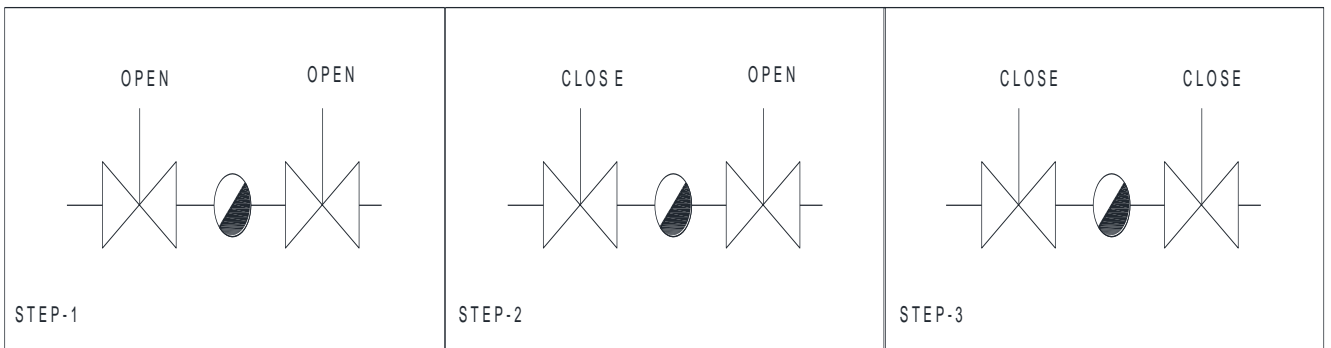
4. OPERATIONS



TRAP START UP OPERATION



TRAP SHUT DOWN OPERATION



5. Maintenance and Troubleshooting:

MAINTENANCE:

- When the steam trap will malfunction, it can be checked by observing the discharge of the trap. Inverted bucket traps discharge intermittently. If the trap is locked in close condition, check the maximum allowable differential pressure (stamped on the trap) is not exceeded.
- If the trap is blowing live steam, close the inlet valve for a few minutes, then gradually open so that the priming of the trap will take place.
- If the trap continues to blow live steam, remove the trap from the line, back flush it with compressed air or water, and check it again for normal operation.
- If trap do not operate normally, verify that the trap is correct for the application (capacity, differential pressure, etc.). If not correct, install a new steam trap in its place.

TROUBLESHOOTING:

- No discharge at Outlet: Trap may be hot & lost the water seal so prime it again.
- Live steam at outlet:

Don't confuse with Flash steam. If confirmed live steam is seen then reasons may be:

1. Dirt or scaling on orifice surface. : Clean it with soft cloth. Don't use hard material, as seat & pin are lapped surfaces.
2. Worn out valve seat or pin : if the nominal irregularities on surface is seen then try to lap the Valve Pin against the valve seat. Otherwise order a new pair of valve seat & valve pin from UKL.

Note: Don't use Valve pin of one trap with valve seat of other trap.

Valve Seat & Valve pin comes in pair & duly machined lap at UKL.

- Mysterious working:

Some time trap working at outlet open to atmosphere but not functioning satisfactorily when connected to closed lines.

The differential pressure of trap & actual D.P. at site conditions may not be matching.

Reasons may be:

1. The vacuum present in lines or nearby equipments putting trap out of its rated D.P. conditions.
2. May be controller assembly chosen is wrong one.

6. Storage:

- UIBT and the respective spares should be stored only in enclosed dry rooms in a non-aggressive atmosphere. Fully assembled UIB Traps 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 -4 Deg. F and +122 Deg. F.
- 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.



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.



UNI KLINGER LIMITED

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Central Sales Office & Pune Branch : SC1, 5th Fl., Kohinoor Est. Mumbai-Pune Highway, Kadaki, Pune-411 003. Tel.: +91-20-4102 3000 Fax.: (020) 4102 3001
e-mail : salesco@uniklinger.com, salespune@uniklinger.com, Website : www.uniklinger.com

Factory : C-37, M.I.D.C., Ahmednagar – 414 111, Maharashtra, Tel. : 0241 – 2777223 / 2777512 Fax : 0241 – 2777294, E-mail : fdworks@uniklinger.com

Branch Offices :

Baroda : 102, 1st Floor, Otel Towers-II R.C. Dutt Road, Baroda-390 005, Tel.: 91-0265-2312343 / 2340660, Fax.: 91-265-2341419, E-mail : salesbar@uniklinger.com
Chennai : East Coast Centre, 5th Floor, 553, Mount road, Teyanampet, Chennai - 600 018, Tel.: 91 - 44 - 24345707, Fax.: 91 - 44 - 24343960, E-mail : saleschen@uniklinger.com
Kolkata : 9, Chittrakoot, 8th Floor, 230 A, A.J.C Bose road, Kolkata-700 020, Tel.: 91-33-22872510, Fax.: 91-33-22876494, E-mail : salescal@uniklinger.com
Mumbai : 22, 2nd Flr, Shreeji Arcade CHS, Almeda road, Thane-400 602, Tel.: 91-22-25421140 / 91-22-25440461, Fax.: 91-22-25440463, E-mail : salesmum@uniklinger.com
Delhi : 321, Ansal Chamber-II, 6, Bhikaji Cama Place, New Delhi-110 066, Tel.: 91-11-41658767 / 91-11-26193847, Fax.: 91-11-41658768, E-mail : salesdel@uniklinger.com