

Instruction Manual for Ball Float Type Steam Traps

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1.Product Overview:-

UKL Ball Float Steam Trap is of mechanical, density operated type trap design.

It is commonly used for most process heating applications. Wherever steam is used for indirect heating application, the trap to be used must be of mechanical design. It is a continuous discharge type steam trap.

This trap can handle very high condensate loads and the discharge will be proportional to the differential pressure across the trap.

There may be other similar process applications where the heat load is small and a mechanical trap can handle small as well as fluctuating loads.

This trap is provided with two optional features called Steam Lock release (SLR) and Thermostatic Vent (TV). The SLR is a manual operation to release steam that may hamper free movement of the float on water level. The TV will ensure that air and such undissolved gases will be automatically vented out when present in condensate.



2. Working Principal :-

UKL Ball Float Trap discharge condensate near to steam saturation temperature, which works on the principle of Buoyancy, [densities difference of Water and Steam].The rising condensate level elevates the Float open the valve and discharges the condensate, and reverse, when the level of condensate drops, valve close the trap.

The working principle of this trap can also be used as Auto Air Moisture Drain, as Air Eliminator in liquid line, as well as for lifting condensate, as a pump

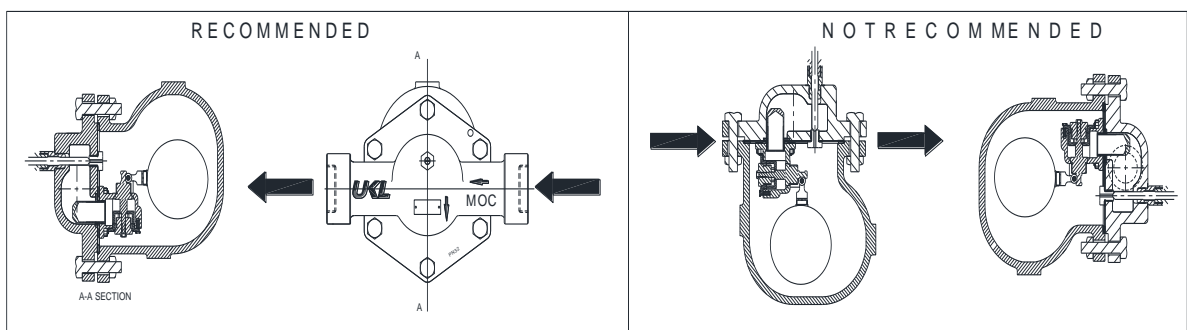
3. Installation and Commissioning Instructions:

Your UKL make Ball float 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.

- Ball float trap must always be installed in horizontal position, the float assembly movement must be vertical. Hence the arrow on name plate must point downwards.
- Before installing trap, the inlet piping should be carefully blown down to remove any existing pipe debris.
- A strainer must be installed on inlet line of Ball float Trap to ensure clean condensate flows through trap.
- An arrow mark is punched on every trap body showing the flow direction. Install the trap by fixing the inlet & outlet ports accordingly. The traps are supplied with flow from left inlet to right outlet (L-R) or R-L. The ½", ¾", and 1". Float traps are supplied with vertical connections i.e. top inlet and bottom outlet.
- The connection orientation can be changed from L-R to R-L in horizontal connection on site itself by rotating cover to required direction.
- The SLR has to be opened at time of start up to avoid steam locking of the trap.
- 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.
- 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.

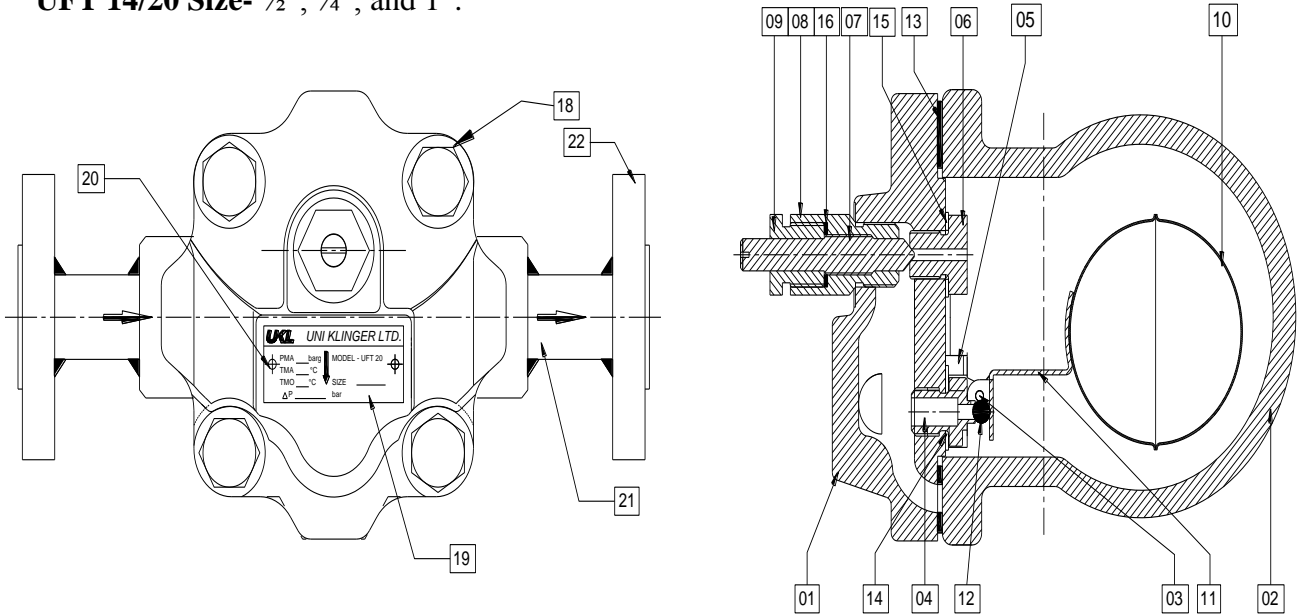
•BALL FLOAT MOUNTING



- 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.

BILL OF MATERIAL:

UFT 14/20 Size- 1/2", 3/4", and 1".



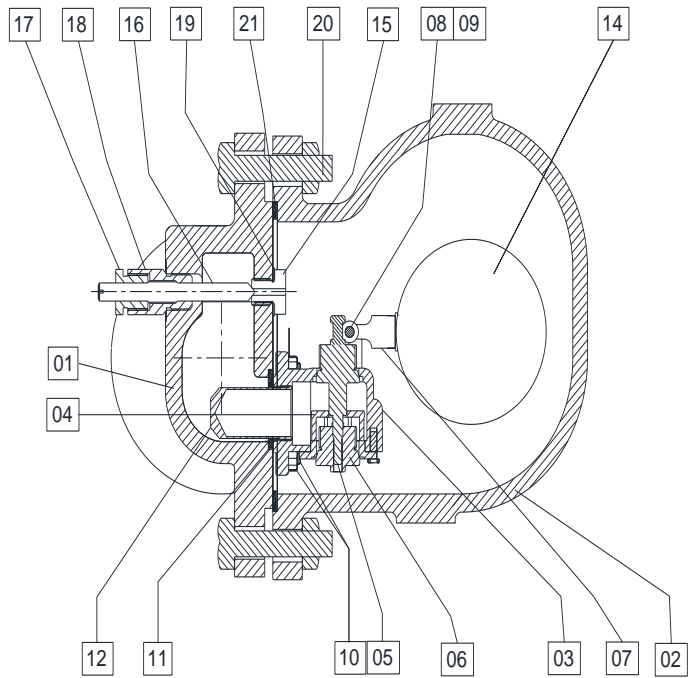
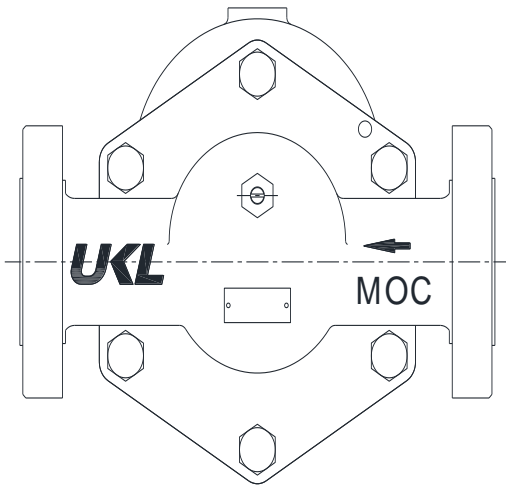
No.	PART NAME	UFT 20 Cast Steel Model		UFT 14 Cast Iron Model	
		MATERIAL	MATERIAL CODE	MATERIAL	MATERIAL CODE
1	Body	Cast Steel	ASTM A 216 Gr WCB	Cast Iron	IS 210 FG 260
2	Cover	Cast Steel	ASTM A 216 Gr WCB	Cast Iron	IS 210 FG 260
3	Pivot Pin	Stainless Steel	AISI 304	Stainless Steel	AISI 304
4	Valve Seat	Stainless Steel	AISI 304	Stainless Steel	AISI 304
5	Pivot Bracket	Stainless Steel	AISI 304	Stainless Steel	AISI 304
06	SLR Valve Seat	Stainless Steel	AISI 304	Stainless Steel	AISI 304
07	Stem	Stainless Steel	AISI 304	Stainless Steel	AISI 304
08	Stem Guide	Stainless Steel	AISI 304	Stainless Steel	AISI 304
09	Stem Guide Lock Nut	Stainless Steel	AISI 304	Stainless Steel	AISI 304
10	Float	Stainless Steel	AISI 304	Stainless Steel	AISI 304
11	Lever	Stainless Steel	AISI 304	Stainless Steel	AISI 304
12	Steel Ball	Stainless Steel	SS 440C	Stainless Steel	SS 440C
13	Cover Gasket	CAF	CAF	CAF	CAF
14	Valve Seat Gasket	Stainless Steel	AISI 304	Stainless Steel	AISI 304
15	SLR Valve Seat Gasket	Stainless Steel	AISI 304	Stainless Steel	AISI 304
16	SLR Stem Gasket	Graphite	Graphite	Graphite	Graphite
17	Screws	Stainless Steel	AISI 304	Stainless Steel	AISI 304
18	Cover Bolt (M10)	Carbon Steel	Gr. 8.8	Carbon Steel	Gr. 8.8
19	Name Plate	Stainless Steel	AISI 304	Stainless Steel	AISI 304
20	Rivets	Alluminium	---	Alluminium	---
21	Pipe	Carbon Steel	ASTM A 106 Gr B	Carbon Steel	ASTM A 106 Gr B
22	Flanges- SWRF	Carbon Steel	ASTM A 105	Carbon Steel	ASTM A 105

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BILL OF MATERIAL:

UFT 14/20 Size- 1½” and 2”.



No.	PART NAME	UFT 14 Cast Iron Model		UFT 20 Cast Steel Model	
		MATERIAL	MATERIAL CODE	MATERIAL	MATERIAL CODE
1	Body	Cast Iron	IS 210 FG 260	Cast Steel	ASTM A 216 Gr WCB
2	Cover	Cast Iron	IS 210 FG 260	Cast Steel	ASTM A 216 Gr WCB
3	Controller Housing	Stainless Steel	ASTM A 743 Gr CA 40	Stainless Steel	ASTM A 743 Gr CA 40
4	Valve Seat	Stainless Steel	ASTM A 743 Gr CA 40	Stainless Steel	ASTM A 743 Gr CA 40
5	Stem	Stainless Steel	ASTM A 743 Gr CA 40	Stainless Steel	ASTM A 743 Gr CA 40
6	Lower Valve	Stainless Steel	ASTM A 743 Gr CA 40	Stainless Steel	ASTM A 743 Gr CA 40
7	Lever	Stainless Steel	ASTM A 743 Gr CA 40	Stainless Steel	ASTM A 743 Gr CA 40
8	Pivot Pin	Stainless Steel	AISI 304	Stainless Steel	AISI 304
9	Split Pin	Stainless Steel	AISI 304	Stainless Steel	AISI 304
10	Stud & Nut	Carbon Steel	Gr 8.8 / 8	Carbon Steel	Gr 8.8 / 8
11	C. H. Gasket	Graphite	Graphite	Graphite	Graphite
12	Errosion Deflector	Stainless Steel	AISI 304	Stainless Steel	AISI 304
13	Baffle Plate	Stainless Steel	AISI 304	Stainless Steel	AISI 304
14	Float	Stainless Steel	AISI 304	Stainless Steel	AISI 304
15	SLR Valve Seat	Stainless Steel	AISI 304	Stainless Steel	AISI 304
16	SLR Stem	Stainless Steel	AISI 304	Stainless Steel	AISI 304
17	Stem Guide	Stainless Steel	AISI 304	Stainless Steel	AISI 304
18	Stem Guide Lock Nut	Stainless Steel	AISI 304	Stainless Steel	AISI 304
19	SLR Valve Seat Gasket	Stainless Steel	AISI 304	Stainless Steel	AISI 304
20	Bolts & Nut	Carbon Steel	Gr 8.8 / 8	Carbon Steel	Gr 8.8 / 8
21	Cover Gasket	CAF	CAF	CAF	CAF

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5. Maintenance and Troubleshooting:

MAINTENANCE:

- When the steam trap will malfunction, it can be checked by observing the discharge of the trap. Ball float traps discharge continuously. 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.

PROCEDURE TO REPLACE UFT FLOAT ASSEMBLY FOR ½”, ¾”, and 1”. –

- Dismantle the body & cover by unscrewing M 10 hexagonal bolts (4 nos.)
- Dismantle the float from pivot bracket by removing pivot pin.
- Remove pivot bracket & support bracket by unscrewing M5 screws (2 nos.)
- Unscrew the valve seat.
- Replace the valve seat of appropriate differential pressure.
- Fix pivot bracket & support bracket on valve seat by screwing M 5 screws (2 nos.)
- Replace the new float assembly to pivot bracket by pivot pin (assure proper sitting of steel ball on to the valve seat orifice).
- Check for no air leakage through valve seat if air applied from outlet connection with valve in closed condition & float assembly resting on valve seat orifice by self-weight.
- If the above condition is satisfied assemble body with cover by installing the gasket provided, Assemble M10 bolts after fitting Dowell pin (Replace cover gasket & apply 30 to 35 N m . Torque)
- Hydro test the ball float trap at 1.5 times the operating pressure to ensure that there is no leakage.

PROCEDURE TO REPLACE UFT FLOAT ASSEMBLY 1½” and 2”. -

- Dismantle the body & cover by unscrewing M16 hexagonal bolts (6 nos.)
- Dismantle the float & lever from controller housing by removing pivot pin.
- Remove float from lever by unscrewing M10 hexagonal bolts.
- Assemble the new float assembly to lever by screwing M10 bolt.
- Assemble the new float assembly to controller housing by pivot pin & engage the lever with stem.
- Check for no air leakage through controller housing if air applied from outlet connection with valve in closed condition & stem & lower valve resting against controller housing by self weight of float.
- If the above condition is satisfied assemble body with cover by installing the gasket in between body and cover, Assemble M16 bolts after fitting Dowell pin.(Replace cover gasket & apply torque 110 to 120N m)
- Hydro test the ball float trap at 1.5 times the operating pressure to ensure that there is no leakage

TROUBLESHOOTING

Trap is leaking live steam.

The most likely reason for this is possible deposition of dirt on the valve seating area.

It is necessary to fit a separate strainer before the trap for this reason.

Please ensure that the strainer screen is removed and cleaned properly. It is necessary to inspect the seat and spindle of any dirt deposition. If this is noticed, clean the surfaces and refit.

Trap is not discharging any condensate.

Please ensure that clean condensate is coming to the trap.

Make sure that the float has not been exposed to water hammer conditions. Float will get punctured and will soon get filled with water, losing its buoyancy and float does not rise on water level causing the trap to choke. Then replace the float with spare.

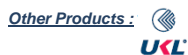
These traps are most sensitive to differential pressure across the trap. If this differential pressure reduces or is nullified by high back pressure on the trap, the trap will not be able to discharge any condensate.

Please ensure that the required differential pressure is available across the trap.

If the problem persists, contact UKL.

6. Storage:

- UNI KLINGER UFT and the respective spares should be stored only in enclosed dry rooms in a non-aggressive atmosphere. Fully assembled Ball Float 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.



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