Instruction Manual for Double orifice Ball Float Type Steam Traps Module (DOFT)

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1.Product Overview:-

UKL Double orifice 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.

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. A double orifice steam trap is a mechanical type of continuous discharge steam trap. A double orifice pin is connected to a single float by unique interlink lever bracket arrangement. This trap efficiently handle different load condition like initial load, running load and peak load. DOFT also having features like integral strainer.

This trap is provided with SLR valve seat arrangement or Thermostatic vent. The TV will ensure that air and such un dissolved gases will be automatically vented out when present in condensate.

2. Working Principal :-

UKL Double orifice Ball Float steam 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 which is connected to the Double orifice by mechanical linkages, double orifice open and discharges the condensate, and reverse, when the level of condensate drops.

3. Installation and Commissioning Instructions:

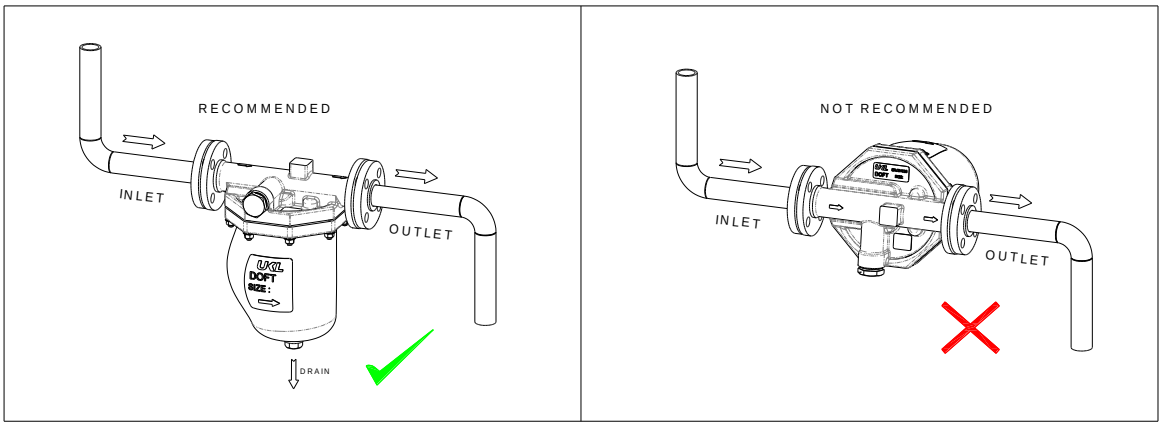
Your UKL make Double orifice Ball float steam traps will provide you with long, trouble-free service if they are correctly installed and maintained.

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

- Double orifice 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.
- This trap having integral strainer which will insure no debris will enter in closed chamber.

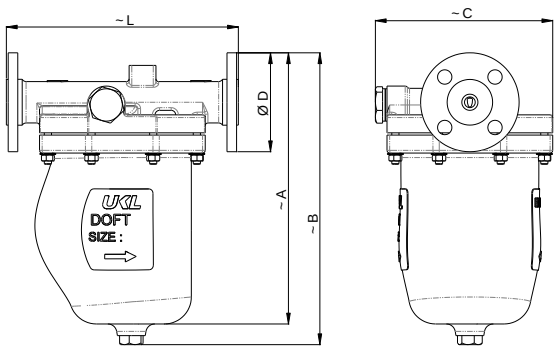
- An arrow mark is punched on every trap body showing the flow direction. Install the trap by fixing the inlet & outlet ports accordingly. The traps are supplied with flow from left inlet to right outlet (L-R). The ½", ¾", and 1". Float traps are supplied with Horizontal connections i.e. left inlet and right 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.
- 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 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



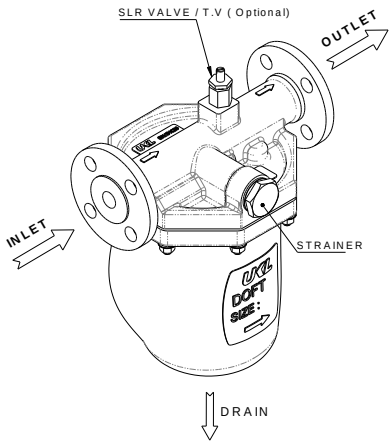
- Testing of trap: trap can be tested either by Test Valve, pyrometer, ultrasonic stethoscope or a rod with sufficient length can be touched to the trap body & vibrations can be sensed by hands if trap is operating.

GENERAL ARRANGEMENT:



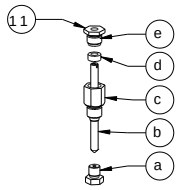
FLANGE END

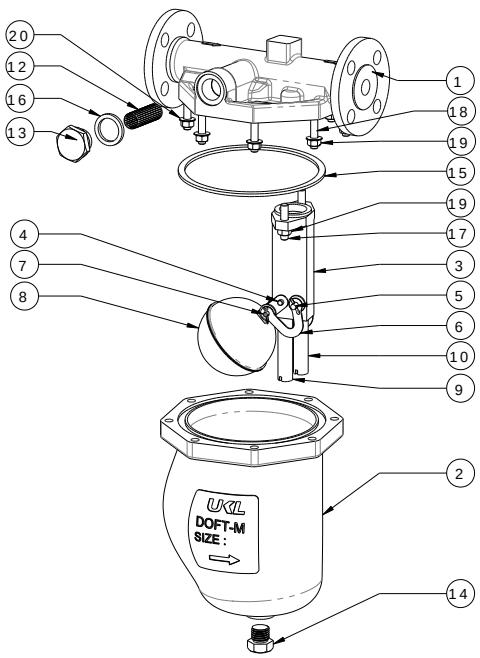
GENERAL DIMENSIONS						
SIZE	**END CONNECTION**	**~L**	**ØD**	**A**	**B**	**C**
15 NB	Flange End #150	255	90	300	325	200
20 NB	Flange End #150	255	100	300	325	200
25 NB	Flange End #150	259	110	300	325	200
15 NB	Flange End #300	259	95	300	325	200
20 NB	Flange End #300	259	115	300	325	200
15 NB	Flange End #PN10 / PN 16	259	95	300	325	200
20 NB	Flange End #PN10 / PN 16	263	105	300	325	200
25 NB	Flange End #PN10 / PN 16	263	115	300	325	200



RECOMMENDED TIGHTENING TORQUES		
Sr.	**PART NAME**	**TORQUE Nm**
13	Strainer Cap 3/4" NPT – A/F-36mm	110-120
14	Drain Plug 1/2"NPT – A/F-24mm	100-110
17	Stud M8x40L	47-50
18	Stud M8x50L	47-50
19	Nut M8	55-60

BILL OF MATERIAL:





BILL OF MATERIAL OF DOFT		
No.	**PART NAME**	**MATERIAL CODE**
01	Body	ENJS 1025
02	Cover	ENJS 1025
03	Controller Housing	ASTM A276 Gr. TP.316 / AISI 316
04	Main Valve Pin	ASTM A276 Gr. TP.316 / AISI 316
05	Secondary Valve Pin	ASTM A276 Gr. TP.316 / AISI 316
06	Lever Bracket assly	AISI 316
07	Floating Pin	AISI 304 / AISI 316
08	Float assly	AISI 304 / AISI 316
09	Main inlet pipe	AISI 304 / AISI 316
10	Secondary inlet pipe	AISI 304 / AISI 316
*11	SLR Assly / TV	AISI 304
12	Strainer	AISI 304
13	Strainer Cap	ASTM A105
14	Drain plug	ASTM A105
15	Cover Gasket	SPW SS316 / SS 304 WITH GRAPHITE FILLER
16	Gasket for Strainer Cap	SPW SS316 / SS 304 WITH GRAPHITE FILLER
17	Stud for Controller Housing	ASTM A193 Gr. B7
18	Stud for Cover	ASTM A193 Gr. B8 / B7
19	Nut for cover	ASTM A194 Gr. 8 / 2H
20	Belleville Washer for Cover	50 Cr V4
$20	NAME PLATES	AISI 304

BILL OF MATERIAL OF SLR – PART NO 18		
No.	**PART NAME**	**MATERIAL CODE**
a	SLR Valve Seat	AISI 304
b	SLR Stem	AISI 304
c	SLR Stem guide	AISI 304
d	SLR Graphite Packing	GRAPHITE
e	SLR Stem guide lock nut	AISI 304

***Note:** Optional
$ - Not shown in assembly view

SPARES AVAILABLE:
Controller Assembly –(3, 4, 5, 6, 7, 8, 9, 10)Full set
SLR / Thermostatic Air Vent- 11
Gasket- 15, 16
Strainer -12

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 FLOAT CONTROLLER ASSEMBLY. :–

- Isolate the system.
- Use Bypass valve arrangement to divert flow.
- Let the trap to be cooled or open Outlet isolation valve and release inside pressure or open SLR to release inside pressure.
- Dismantle the body & cover by unscrewing M8 hexagonal Nut (8 nos.)
- Dismantle the float controller by unscrewing M8 hexagonal Nut (2 nos.)
- It is advisable to purchase float controller full set assembly
- Replace new float controller assembly.
- Fix the float controller bracket by screwing M8 hexagonal Nut (2 nos.)
- Fix the body and cover by screwing M8 hexagonal Nut (8 nos.)
- Make sure SPW gasket is in proper location or in good condition, It is advisable to replace SPW gasket.
- Apply recommended torque to the cover Nut and check for any leakages.
- Hydro test the ball float trap at 1.5 times the operating pressure to ensure that there is no leakage.

PROCEDURE TO REPLACE STRAINER. :-

- Isolate the system.
- Use Bypass valve arrangement to divert flow.
- Let the trap to be cooled or open Outlet isolation valve and release inside pressure or open SLR to release inside pressure.
- Dismantle the strainer cap by unscrewing A/F-36mm, ¾" NPT strainer cap (Part No-13)
- Remove strainer (Part No-12), clean it properly or replace new strainer.
- Insert strainer at their location.
- Fix the strainer cap and apply recommended torque to insure there is no leakages from strainer cap.

TROUBLESHOOTING

Trap is leaking live steam.

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

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, loosing it's buoyancy and float does not rise on water level causing the trap to choke. Then replace the float with spare.

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 Double Orifice 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.

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