Double Orifice Ball Float Steam Trap Module DOFT

Patent Applied

UKL DOUBLE ORIFICE BALL FLOAT STEAM TRAP MODULE

Steam has two different kind of heat : The Latent heat and the Sensible heat. Whereas condensate has only sensible heat. This condensate must be removed as soon as it is formed, because it hampers the efficient heat transfer and leads to water hammer phenomenon due to hot water (having more Specific Gravity) that moves with high velocity of steam (8 to 10 times higher than water), carrying enough momentum to rupture pipes, damaging the plant pipelines and piping equipments. Hence, need to remove condensate from steam main and trap steam. This is done by steam trap.

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

It is commonly used in most of the process heating applications, where steam is used for indirect heating application. Normally these traps are of mechanical design. A double orifice float trap is a mechanical type having continuous discharge. A double orifice pin is connected to a single float by unique interlink lever bracket arrangement. This trap efficiently handles different load condition like initial load, running load and peak load. DOFT is having integral strainer.

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

DESIGN CONDITIONS FOR #150 / #300		
1	Max Allowable Pressure	17 bar (g) @ 220 °C
2	Max Allowable Temperature	220 °C
3	Max Working Pressure	15 bar (g)
4	Max Working Temperature	220 °C
5	Max Cold hydro pressure	30 bar (g)
DESIGN CONDITIONS FOR #PN 10		
1	Max Allowable Pressure	10 bar (g) @ 38 °C
2	Max Allowable Temperature	220 °C
3	Max Working Pressure	10 bar (g) @ 184 °C
4	Max Working Temperature	220 °C @ 5.6 bar (g)
5	Max Cold hydro pressure	15 bar (g)
DESIGN CONDITIONS FOR #PN 16		
1	Max Allowable Pressure	16 bar (g) @ 38 °C
2	Max Allowable Temperature	220 °C
3	Max Working Pressure	16 bar (g) @ 204 °C
4	Max Working Temperature	220 °C @ 9.1 bar (g)
5	Max Cold hydro pressure	24 bar (g)

MATERIAL OF CONSTRUCTION:

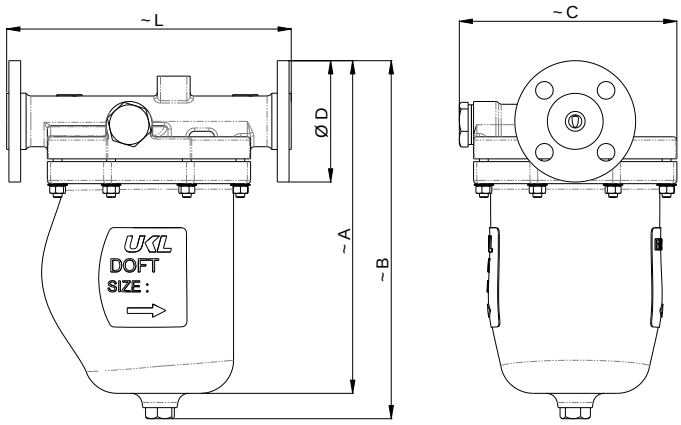
ENJS 1025 (SG Iron)

SIZES AVAILABLE	
Class Rating	**Size**
Flange End # 150	15 / 20 / 25 NB
Flange End # 300	15 / 20 NB
Flange End # PN10	15 / 20 / 25 NB
Flange End # PN16	15 / 20 / 25 NB

Flanged End - #150 / #300 to ASME B 16.5
PN 10 & PN 16 to DIN 1092

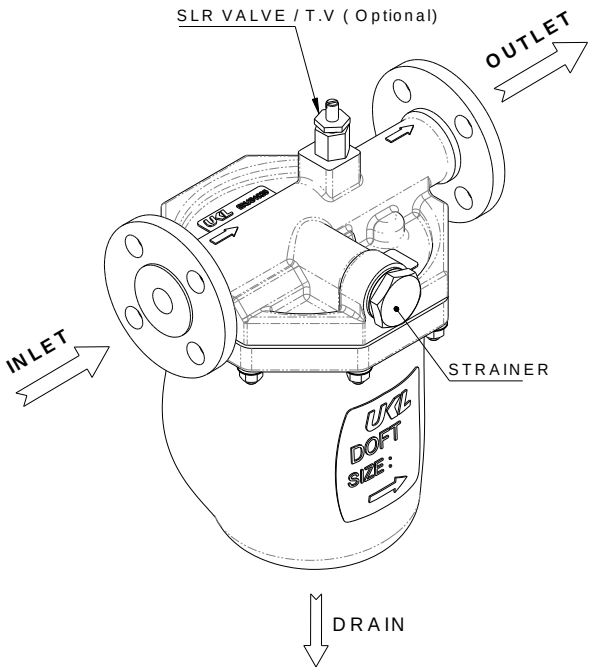
INSTALLATION :- Horizontal Position
OPTIONAL: IBR / NON IBR
STEAM LOCK RELEASE (SLR) VALVE / THERMOSTATIC AIR VENT (T.V) / STRAINER.

GENERAL ARRANGMENT:

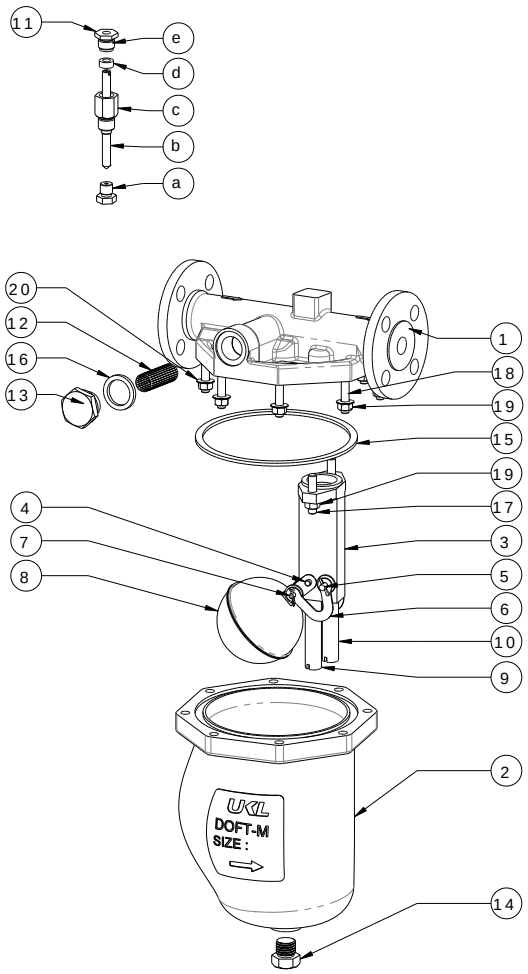


FLANGE END

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



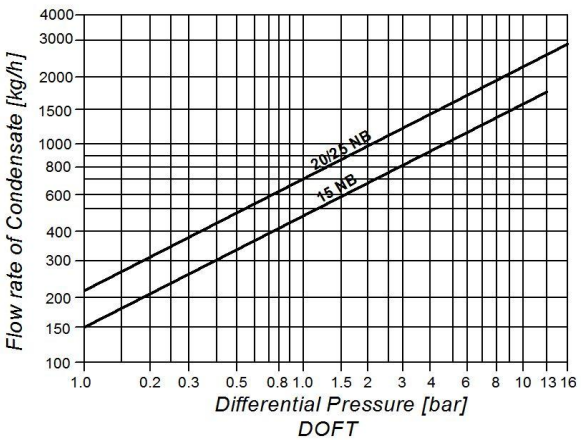
BILL OF MATERIAL OF DOFT		
No.	**PART NAME**	**MATERIAL CODE**
01	Body	ENJS 1025
02	Cover	ENJS 1025
03	Controller Housing	ASTM A276 Gr. TP.316 / AISI 316
04	Main Valve Pin	ASTM A276 Gr. TP.316 / AISI 316
05	Secondary Valve Pin	ASTM A276 Gr. TP.316 / AISI 316
06	Lever Bracket assly	AISI 316
07	Floating 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 11		
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

CAPACITY CHART :-



SPARES AVAILABLE:

Controller Assembly –(3, 4, 5, 6, 7, 8, 9, 10)Full set

SLR / Thermostatic Air Vent- 11

Gasket- 15, 16

Strainer -12

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