

#### UKL THERMODYNAMIC STEAM TRAP

The enthalpy in the steam basically has two components. The Latent heat and the Sensible heat. Whereas condensate has only sensible heat. This condensate has to be removed as soon as it is formed, because it hinders to efficient heat transfer as well as leads to water hammer phenomenon as it is 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 and which is damaging to the plant pipelines as well as piping equipments. Hence, need to remove condensate from steam main and trap steam. This is done by steam trap.

The thermodynamic traps separate condensate and steam based on velocity which in case of steam is higher than that of condensate. These are used mainly on drip lines of the main steam distribution line, platen presses and super heated steam lines to remove condensate.

Condensate pressure is used to open the trap by lifting the disc, discharging condensate in low pressure. Due to low pressure flashing of condensate takes place. High flash steam velocity (approximately 5 times of condensate) creates a low pressure zone below the disc. Accumulated flash steam force over the disc becomes greater than the incoming condensate pressure this leads to closure of the disc. Subsequently the flash steam condenses and the incoming higher pressure condensate pushes the disc opening the trap and thus the cycle continues.



#### MATERIAL OF CONSTRUCTION:

UTD55 : -ASTM A 743 Gr. CA40

UTD 55F : - AISI 420

#### SIZES AVAILABLE:-

UTD 55 :- 15NB and 20 NB

UTD 55 F :- 25 NB

#### END CONNECTIONS:

Threaded to NPT, BSP and BSPT Socket Weld to ASME B 16.11 Flanged End- #150/#300/DIN

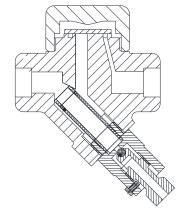
#### INSTALLATION:-

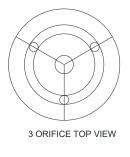
Preferably in horizontal position.

#### ON REQUEST:-

IBR/Non-IBR Blow down cock Isotub Flanges weld on type

Single Orifice/Three orifice Compactable with UITVS



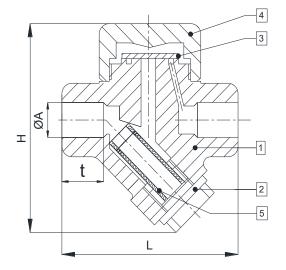


OPTIONAL BLOWDOWN COCK

#### OPERATING CONDITIONS

End Conn.		BSP	NPT	SW	FL 150	FL 300
Size (mm)	Press. Kg/cm2	12.5	55	55	20	52
15,20,25	Temp ° C	260	454	454	425	425





		Materials		
Sr.	Part	UTD55	UTD55F	
		15 and 20 NB	25 NB	
1	Body	A743 Gr. CA 40	AISI 420	
2	Filter Cap	A743 Gr. CA 40	AISI 420	
3	Disc	A743 Gr. CA 40	AISI 420	
4	Cover	A743 Gr. CA 40	AISI 420	
5	Filter	AISI 304	AISI 304	
6*	Blow down	SS	SS	
	* Parts a	are available on Reque	st.	

Notations		Dimensions (mm)				
		15 NB	20 NB	25 NB		
I		75 75 90				
I	H	108 108 125				
α.	SW	21.80	27.2	33.90		
ØA t		10	13	13		
Ø	A	BSP / NPT / BSPT		SPT		
Weigh	nt (kg)	0.920 0.920 1.800				

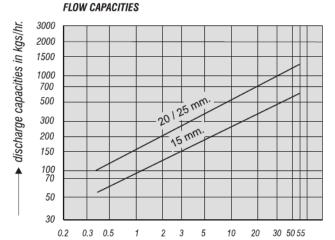
#### HOW TO SERVICE:

Unscrew the main bore cap using spanner. If the wear on the surface of disc and body is minor they can be refaced by lapping individually on a flat surface.

If the wear on the surface of body is major then seating surface must be ground and lapped. The total amount of metal removed in this way should not exceed 0.3mm. The disc, however may be replaced by a new one. While reassembling suitable high temperature anti seize grease should be applied to threads. Screw the cover and tighten it with suitable torque. Ensure the disc is free by shaking the trap.

#### HOW TO CLEAN OR REPLACE FILTER.

Unscrew filter cap using spanner. Withdraw filter and clean. If damaged replace with new one.



(△ P) differential pressure in bar

Other Products

U(L)

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

A joint venture of the Neterwala group of companies and KLINGER AG. Switzerland.

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

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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

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The thermodynamic traps separate condensate and steam based on velocity which in case of steam is higher than that of condensate. These are used mainly on drip lines of the main steam distribution line, platen presses and super heated steam lines to remove condensate.

Condensate pressure is used to open the trap by lifting the disc, discharging condensate in low pressure. Due to low pressure flashing of condensate takes place. High flash steam velocity (approximately 5 times of condensate) creates a low pressure zone below the disc. Accumulated flash steam force over the disc becomes greater than the incoming condensate pressure this leads to closure of the disc. Subsequently the flash steam condenses and the incoming higher pressure condensate pushes the disc opening the trap and thus the cycle continues.

The UTD 62 is a steam trap with integral strainer specifically designed to meet above application. An insulating cover can be fitted as a option on superheated steam mains.

#### **MATERIAL OF CONSTRUCTION:**

ASTM A 217 Gr. WC6

#### SIZES AVAILABLE:-

15 NB. 20 NB and 25 NB

#### **END CONNECTIONS:**

Threaded to NPT, BSP and BSPT Socket Weld to ASME B 16.11 Flanged End-#600/#900 (On Request)

#### INSTALLATION:-

Preferably in horizontal position.

#### ON REQUEST:-

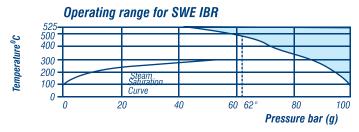
IBR/Non-IBR Isotub Flanges weld on type



#### **OPERATING CONDITIONS**

End Conn.	BSPT / NPT / SW / BW	
Max. Allowable Pressure	103 bar at 93 °C	
Max Allowable Temperature	525 °C at 42.7 bar	
Max. Operating Pressure	62 bar at 482 °C	
Max. Operating Temperature	525 °C at 42.7 bar	

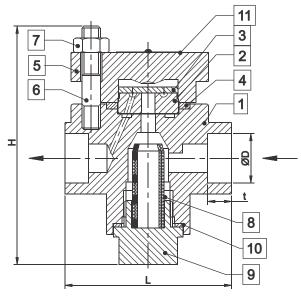
Hydro Test Pressure :- 1.5 times design pressure



The product must not be used in this region. \*PMO - Max. operating pressure recommended PMOB - Max. operating back pressure 80% of upsteam pressure.



# Thermodynamic Steam Trap UTD-62



Notations	Dimensions (mm)			
	15 NB	20 NB	25 NB	
L	92	92	120	
Н	130	130	130	
ØD	21.80	27.20	33.10	
t	10	13	13	
Weight(kg)	2.2	2.2	2.5	

#### How to fit disc :-

Unscrew the four nuts and remove the top cover. Lift off the disc. Fit the new disc. Ensure that the seating surface is not unduly worn. Lapping is necessary for worn out seats. Re- assemble cover using a new gasket making sure that gasket faces are perfectly clean.

To clean or replace strainer remove strainer cap. Remove strainer screen. Fit new or cleaned strainer screen into recess in cap. A new gasket should be fitted and the cap screwed into the body.

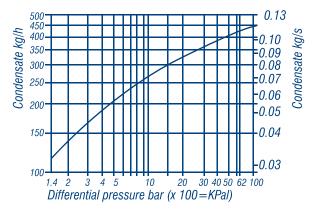
To replace cover studs after removing old cover studs fit new cover studs.

#### BILL OF MATERIAL :-

No.	PART NAME	MATERIAL	MATERIAL CODE
100.	PART IVAIVIE	IVIATENIAL	WATERIAL CODE
1	Body	Alloy Steel	ASTM A217 WC6
2#	Disc	Tool Steel	ASTM A 681 Gr D2
3	Seat	Tool Steel	ASTM A 681 Gr D2
4#	Gasket	Spiral Wound	Reinforced Exfoliated S.W.
4#	Gaskel	Spirai Wound	AISI304 With Graphite Filler
5	Top Cover	Alloy Steel	ASTM A217 WC6
6#	Stud	Alloy Steel	ASTM A 193 Gr B16
7#	Nut	Alloy Steel	ASTM A 194 Gr 8M
8#	Filter	Stainless Steel	AISI 304
9	Filter Cap	Alloy Steel	ASTM A217 WC6
10#	Gasket For Filter Cap	Spiral Wound	Reinforced Exfoliated S.W. AISI304 With Graphite Filler
11	Name Plate	Stainless Steel	AISI 304
12	Isotub (Optional)		

# Available as spares

UTD-62 Flowchart :-



Note: Minimum Differential pressure for satisfactory operation 1.4 bar g with Positive Pressure and Discharge to atmosphere.

#### Other Products:



Factory:

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 / Gland Packing

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UTD 120 is a Thermodynamic Steam Trap manufactured in forged Alloy Steel construction. It is a very rugged design built for high pressure applications such as in power plants. Also used for superheated applications.

#### **MATERIAL OF CONSTRUCTION:**

ASTM A 182 Gr. F22

#### SIZES AVAILABLE:-

15 NB, 20 NB and 25 NB

#### **END CONNECTIONS:**

Socket Weld to ASME B 16.11 #6000 Butt weld end to suit SCH 160 Flanged End Connections On Request

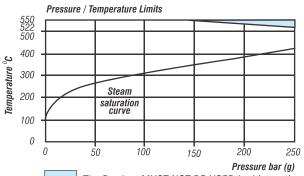
#### Max Operating Back Pressure:-

50% of the upstream pressure Min Operating Pressure for satisfactory Operation:- 8 bar

#### **INSTALLATION:-**

Preferably in horizontal position





The Product MUST NOT BE USED in this section Note: if the product is used at pressures above 170 bar then a reduction in working life may be experienced

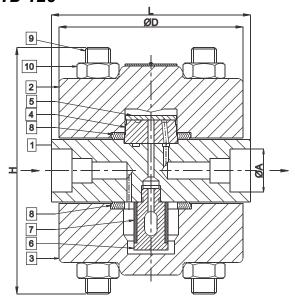
#### **OPERATING CONDITIONS**

Size (NB)	End Conn.	SW	BW
15,20,25	Press. Kg/cm2	255	255
	Temp°C	550	550

Hydro Test Pressure : 1.5 times design pressure



## Thermodynamic Steam Trap UTD 120



Notations	Dimensions (mm)					
	15 NB(BW)	20 NB(BW)	25 NB(BW)			
L	158	158	265			
Н	158	158	158			
ØD	118	118	118			
ØA	21.80	27.20	33.90			
Weight(kg)	10.5	10.5	11.0			

#### How to fit disc :-

Unscrew the four nuts and remove the top cover. Lift off the disc. Fit the new disc. Ensure that the seating surface is not unduly worn. Lapping is necessary for worn out seats. Re- assemble cover using a new gasket making sure that gasket faces are perfectly clean.

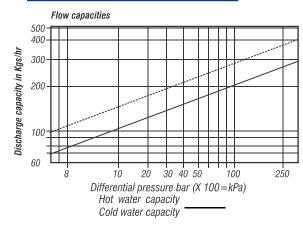
To clean or replace strainer remove strainer cap. Remove strainer screen. Fit new or cleaned strainer screen into recess in cap. A new gasket should be fitted and the cap screwed into the body. To replace cover studs after removing old cover studs fit new cover studs.

#### BILL OF MATERIAL :-

No.	PART NAME	MATERIAL	MATERIAL CODE			
1	Body	Alloy Steel	ASTM A182 F22-Cl3			
2	Top Cover	Alloy Steel	ASTM A182 F22-Cl3			
3	Bottom Cover	Alloy Steel	ASTM A182 F22-Cl3			
4	Seat	Tool Steel	ASTM A 681 Gr D2			
5#	Disc	Tool Steel	ASTM A 681 Gr D2			
6	Filter Housing	Stainless Steel	AISI 316			
7#	Filter	Stainless Steel	AISI 304			
8#	Gasket	Spiral Wound	S.S. With Graphite Filler			
9#	Stud	Alloy Steel	ASTM A 193 Gr B16			
10#	Nut	Alloy Steel	ASTM A 194 Gr 4 / Gr7			
#	# Available as Spares.					

#### Recommended Tightening Torques

Item	Part	Ō	or mm	Nm
9	Stud	23A/F	M16	85-90
10	Nut		M16	160-180



In view of technical progress designs and dimensions are subject to change without notice.

#### Other Products :



Factory:

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 / Gland Packing

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#### UKL Bi-metallic Thermostatic Steam Trap.

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UKL make Bi-metallic steam traps are equipped with corrosion resistant regulator unaffected by water hammer and superheat. The cover features an external adjustment device that can be utilized while in the operation, independent seal and cone valve continues discharge. When the temperature starts to rise the upper thermo-state will expand producing the progressive closure of the valve. When the temperature decreases the lower thermo-state opens the valve adding pressure balancing feature. The cone valve is placed on upper stream far from the flash steam zone resulting in long life and reduces maintenance costs.



- Innovative Technology
- Autonomous Operation
- Online External Adjustment
- Reduction in operation costs
- Reduction in maintenance costs
   Reliability, Released Pressure Region
- Reliability, Balanced Pressure Design
- Integral strainer

#### **MATERIAL OF CONSTRUCTION:**

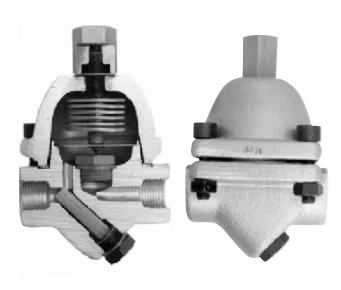
UG25/UT25 :- ASTM A 105 UG45Ti :- ASTM A 105 UP45Ti :- ASTM A 105 Special material available on request.

#### SIZES AVAILABLE:-

15 NB, 20 NB and 25 NB

#### **OPERATING CONDITIONS:**

Model	РМО	TMO	Max Diff. Pressure
UT25 and UG25	25 bar(g)	400 °C	25 bar(g)
UP45Ti and UG45Ti	45 bar(g)	400 °C	42 bar(g)



#### BI METALLIC TRAP With SMART WATCH

UKL Bi Metallic Trap is compactable with Patented technology for online monitoring of steam traps know as SMART WATCH.

#### FEATURES :-

Patented Technology

Microprocessor based monitoring device.

High network integration capacity

Monitoring of 4 parameters with integrated sensors.

Simple cabling & wiring with 12 V DC supply

RS 485 networking over a range of 1200 m

Certified for intrinsic safety requirements

Variety of Alarm Modes

#### **END CONNECTIONS:**

Socket Weld as per ASME B 16.11 Flanged End Connections #150/#300 Threaded to BSP, NPT and BSPT

#### OPTIONAL:-

IBR/Non-IBR

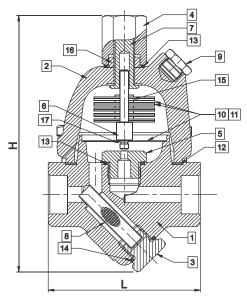
Suitable for online steam trap monitoring

Compactable with UITVS

Blow Down

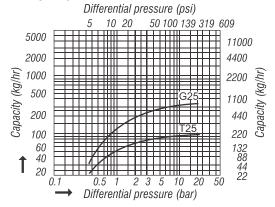


### Bi-metallic Thermostatic Steam Trap UG25 / UT25 / UP45Ti / UG45Ti



Sr.	Size	L	Н
1	15 NB	95.00	160.00
2	20 NB	95.00	160.00
3	25 NB	160.00	160.00

#### Capacity Curves for Model Ut25 & UG25

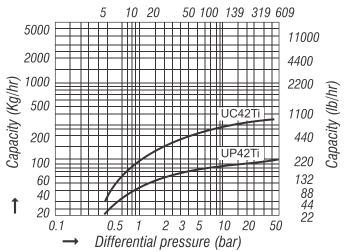


#### BILL OF MATERIAL:-

No.	PART NAME	MATERIAL	MATERIAL CODE
1	Body	Carbon Steel	ASTM A 105
2	Cover	Carbon Steel	ASTM A 105
3	Strainer Cap	Carbon Steel	ASTM A 105
4	Cver Nut	Stainless Steel	AISI 304 / AISI 316
5	Valve Seat	Stainless Steel	AISI 304 / AISI 316
6	Stem	Stainless Steel	AISI 304 / AISI 316
7	Stem Guide	Carbon Steel	ASTM A 105
8	Strainer	Stainless Steel	AISI 304
9	Cover Plug	Brass / C.S. / S.S.	
10 11	Bi-Metallic Controller Plates		Klingr Standard Set
12	Body Gasket		Graphite / CAF / Non CAF.
13	Valve Seat Gasket	Copper	
14	Strainer Cap Gasket	Copper	
15	Plain Washer	Stainless Steel	AISI 304 / AISI 316
16	Nut (1/4" BSP)	Stainless Steel	AISI 304 / AISI 316
17	Circlip	Carbon Steel	

# Capacity Curves for UP45Ti & UG45Ti

Differential pressure (psi)



Other Products:



Factory:

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 / Gland Packing

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New Delhi: 1003,10th Flr., Indra Prakash Bldg. 21, Barakhamba Rd, Connaught Place New Delhi-110001, Tel.: 91-11-41658767, Fax.: 91-11-41658768. E-mail: salesdel@uniklinger.com





#### UKL Bi-metallic Thermostatic Steam Trap.

The enthalpy in the steam basically has two components: The Latent heat and the Sensible heat. Whereas condensate has only sensible heat. This condensate has to be removed as soon as it is formed, because it hinders to efficient heat transfer as well as leads to water hammer phenomenon as it is 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 and which is damaging to the plant pipelines as well as piping equipments. Hence, need to remove condensate from steam and trap steam. This is done by steam trap.

UKL make Bi-metallic steam traps are equipped with corrosion resistant regulator unaffected by water hammer and superheat. The cover features an external adjustment device that can be utilized while in the operation, independent seal and cone valve continues discharge. When the temperature starts to rise the upper thermo-state will expand producing the progressive closure of the valve. When the temperature decreases the lower thermo-state opens the valve adding pressure balancing feature. The cone valve is placed on upper stream far from the flash steam zone resulting in long life and reduces maintenance costs.



- Innovative Technology
- Autonomous Operation
- Online External Adjustment
- Reduction in operation costs
- Reduction in maintenance costs
   Reliability, Released Pressure Region
- Reliability, Balanced Pressure Design
- Integral strainer

#### **MATERIAL OF CONSTRUCTION:**

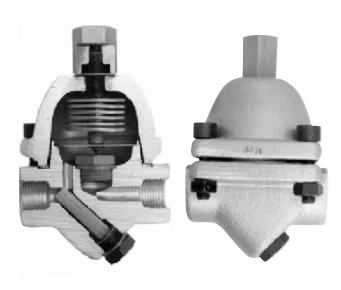
UG25/UT25 :- ASTM A 105 UG45Ti :- ASTM A 105 UP45Ti :- ASTM A 105 Special material available on request.

#### SIZES AVAILABLE:-

15 NB, 20 NB and 25 NB

#### **OPERATING CONDITIONS:**

Model	РМО	TMO	Max Diff. Pressure	
UT25 and UG25	25 bar(g) 400 °C		25 bar(g)	
UP45Ti and UG45Ti	45 bar(g)	400 °C	42 bar(g)	



#### BI METALLIC TRAP With SMART WATCH

UKL Bi Metallic Trap is compactable with Patented technology for online monitoring of steam traps know as SMART WATCH.

#### FEATURES :-

Patented Technology

Microprocessor based monitoring device.

High network integration capacity

Monitoring of 4 parameters with integrated sensors.

Simple cabling & wiring with 12 V DC supply

RS 485 networking over a range of 1200 m

Certified for intrinsic safety requirements

Variety of Alarm Modes

#### **END CONNECTIONS:**

Socket Weld as per ASME B 16.11 Flanged End Connections #150/#300 Threaded to BSP, NPT and BSPT

#### OPTIONAL:-

IBR/Non-IBR

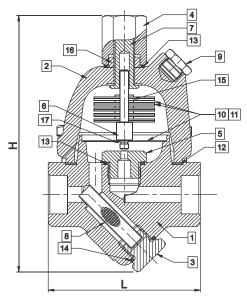
Suitable for online steam trap monitoring

Compactable with UITVS

Blow Down

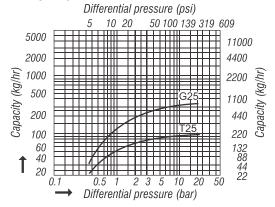


### Bi-metallic Thermostatic Steam Trap UG25 / UT25 / UP45Ti / UG45Ti



Sr.	Size	L	Н
1	15 NB	95.00	160.00
2	20 NB	95.00	160.00
3	25 NB	160.00	160.00

#### Capacity Curves for Model Ut25 & UG25

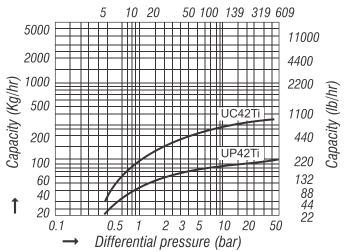


#### BILL OF MATERIAL:-

No.	PART NAME	MATERIAL	MATERIAL CODE
1	Body	Carbon Steel	ASTM A 105
2	Cover	Carbon Steel	ASTM A 105
3	Strainer Cap	Carbon Steel	ASTM A 105
4	Cver Nut	Stainless Steel	AISI 304 / AISI 316
5	Valve Seat	Stainless Steel	AISI 304 / AISI 316
6	Stem	Stainless Steel	AISI 304 / AISI 316
7	Stem Guide	Carbon Steel	ASTM A 105
8	Strainer	Stainless Steel	AISI 304
9	Cover Plug	Brass / C.S. / S.S.	
10 11	Bi-Metallic Controller Plates		Klingr Standard Set
12	Body Gasket		Graphite / CAF / Non CAF.
13	Valve Seat Gasket	Copper	
14	Strainer Cap Gasket	Copper	
15	Plain Washer	Stainless Steel	AISI 304 / AISI 316
16	Nut (1/4" BSP)	Stainless Steel	AISI 304 / AISI 316
17	Circlip	Carbon Steel	

# Capacity Curves for UP45Ti & UG45Ti

Differential pressure (psi)



Other Products:



Factory:

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 / Gland Packing

In view of technical progress designs and dimensions are subject to change without notice.

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#### UKL Bi-metallic Thermostatic Steam Trap.

The enthalpy in the steam basically has two components: The Latent heat and the Sensible heat. Whereas condensate has only sensible heat. This condensate has to be removed as soon as it is formed, because it hinders to efficient heat transfer as well as leads to water hammer phenomenon as it is 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 and which is damaging to the plant pipelines as well as piping equipments. Hence, need to remove condensate from steam and trap steam. This is done by steam trap.

UKL make Bi-metallic steam traps are equipped with corrosion resistant regulator unaffected by water hammer and superheat. The cover features an external adjustment device that can be utilized while in the operation, independent seal and cone valve continues discharge.

The fact that both cone valve and seat be independent and located in allow flow discharge area is controlled by Bimetallic thermostat, continuously adjusting to changes of condensate flow. Automatic air venting. Installation in any position. The independence of the cone valve and seat reduces dramatically the costs of its spare parts joined to the fact that it has an external adjustment device while running makes an extremely low maintenance cost steam trap.

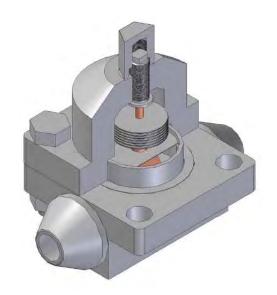
During the start-up, the condensate is cold and the bimetals are flat. When the temperature starts to rise the bimetals will expand producing the progressive closure of the valve. In this way the steam trap is able to adjust itself to changing conditions because if the pressure rises the higher pressure acts on the valve but at the same time the higher temperature will act on bimetals. Its quick automatic air venting prevents air binding. The cone valve is placed on the upper stream far from flash steam zone this avoids erosion and waste contributes to a long effective life and reduces maintenance costs.

#### **MATERIAL OF CONSTRUCTION:-**

UP64 Ti :- ASTM A 182 F11 UP110Ti :- ASTM A 182 F11

#### OPERATING CONDITIONS:-

Model	PMO	TMO	Max Diff. Pressure
UP64 Ti	928 psi	977 °F	928 psi
UP110Ti	1595 psi	977 °F	1595 psi



#### SIZES AVAILABLE:-

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

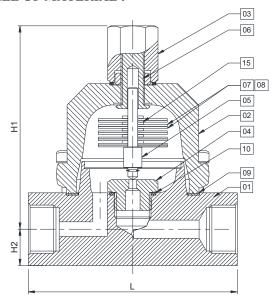
#### **END CONNECTIONS:**

Butt Weld as per ASME B 16.25 Socket Weld as per ASME B 16.11 Flanged End Connections #600/#900/#1500

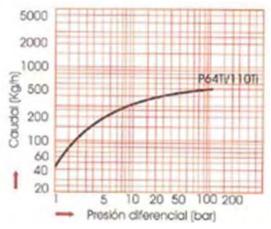
# **OPTIONAL:-**

IBR/Non-IBR





#### FLOW CAPACITIES:-



Capacities given are continuous discharge capacities of hot condensate. The cold water capacity at start-up condition will be 2.5 of the hot condensate capacity.

No.	PART NAME	MATERIAL	MATERIAL CODE
1	Body	Carbon Steel	ASTM A 182 F11 C1
			3
2	Cover	Carbon Steel	ASTM A 182 F11 Cl
			3
3	Cver Nut	Stainless Steel	AISI 304 / AISI 316
4	Valve Seat	Stainless Steel	AISI 420
5	Stem	Stainless Steel	AISI 440 B
6	Stem Guide	Carbon Steel	AISI 420
7	Bi- Metallic		28/7NiCr-19/7NiCr
8	Controller Plates		
9	Body Gasket	Graphite / CAF	
		/ Non CAF.	
10	Valve Seat	Copper	
	Gasket		

#### **DIMENSIONS (in)**

Sr.	Size	L	H1	H2
1	1/2"	7.9	4.8	1.1
2	3/4"	7.9	4.8	1.1
3	1"	7.9	4.8	1.1

#### External Adjustment Device:-

With its external adjustment device, the user can easily modify the conditions of evacuation of condensate. To do this simply remove the top cap, loosen the lock nut and turn as necessary the adjustment screw, up to get the required condensate flow or temperature. Once adjusted, fix the safety nut with soft pressure and place back the top cap, fix tightly to achieve the total sealing. If sealing problems through the gasket are observed replace it with an original new one.

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

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### UNI KLINGER LIMIT

A joint venture of the Neterwala group of companies and KLINGER AG. Switzerland.

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Page 2 of 2



#### UKL BALL FLOAT TYPE STEAM TRAP

The enthalpy in the steam basically has two components: The Latent heat and the Sensible heat. Whereas condensate has only sensible heat. This condensate has to be removed as soon as it is formed, because it hinders to efficient heat transfer as well as leads to water hammer phenomenon as it is 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 and which is damaging to the plant pipelines as well as 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 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 un dissolved gases will be automatically vented out when present in condensate.

#### MATERIAL OF CONSTRUCTION:

**CAST IRON MODEL** UFT 14- CI – IS 210 FG260 CAST CARBON STEEL MODEL UFT 20- CS- ASTM A216 Gr. WCB

#### SIZES AVAILABLE:-

UFT 14 Model: 15 NB, 20 NB and 25 NB UFT 20 Model: 15 NB, 20 NB and 25 NB



### **END CONNECTIONS: UFT-14 CAST IRON MODEL**

Threaded to NPT, BSP and BSPT.

#### **UFT-20 CAST CARBON STEEL MODEL:-**

Threaded to NPT, BSP and BSPT. Socket Weld to ASME B 16.11 Flanged - #150/#300/#600

#### **INSTALLATION:-**

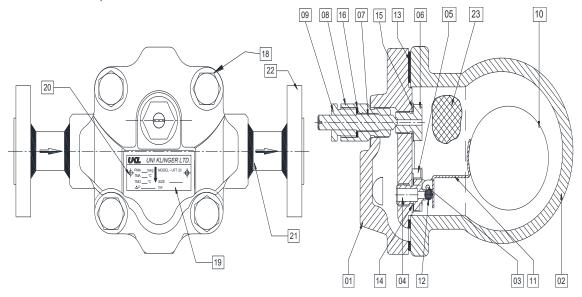
Horizontal/Vertical position.

#### OPTIONAL:-

IBR/Non-IBR With Thermostatic Air vent Inbuilt Strainer

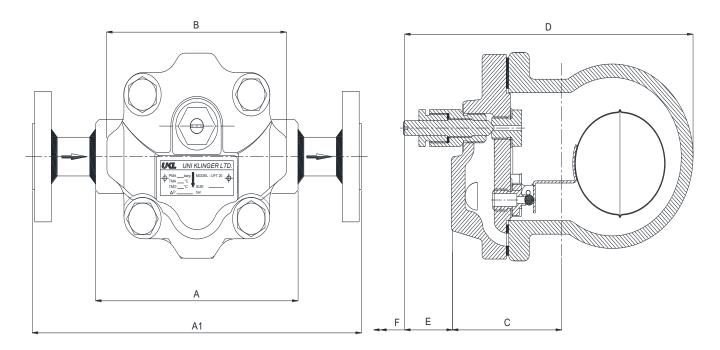


### Ball Float Steam Trap UFT-14/20 Size 15, 20 & 25 NB



		UFT 20 Cas	t Steel Model	UFT 14 Cast	
No.	PART NAME	MATERIAL	MATERIAL CODE	MATERIAL	MATERIAL CODE
01	Body	Cast Steel	ASTM A 216 Gr WCB	Cast Iron	IS 210 FG 260
02	Cover	Cast Steel	ASTM A 216 Gr WCB	Cast Iron	IS 210 FG 260
03	Pivot Pin	Stainless Steel	AISI 304	Stainless Steel	AISI 304
04	Valve Seat	Stainless Steel	AISI 304	Stainless Steel	AISI 304
05	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/ Non 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
*23	Strainer (Optional)	Stainless Steel	AISI 304	Stainless Steel	AISI 304
# AVAI	LABLE AS SPARES				

### Ball Float Steam Trap UFT-14/20 Size 15, 20 & 25 NB



Screwed / Socket Weld End Connections								
Size	Diff Pressure	A	В	С	D	Е	F	Weight (kg)
15 NB	4.5/10/14/	128	111	68	179	30	110	3.8
20 NB	21/32 bar	128	111	68	179	30	110	3.8
25 NB		153	111	75	202	30	130	5.3

Flanged End C					
Size	#1	150	#300		
Size	A1	A1 Weight(kg)		Weight(kg)	
15 NB	278	4.5	278	5.1	
20 NB	278	5.1	278	6.1	
25 NB	303	7.0	303	8.0	

#### Installation :-

The trap must be fitted with the float arm in a horizontal plane so that it rises and falls vertically. Hence the arrow on the name plate must point downwards.

Traps will be generally supplied in horizontal connections with flow from left to right outlet (L-R) & horizontal connections with flow R-L (rotating cover 180° w.r.t L-R) or vertical connections with top inlet and bottom outlet (rotating cover 90° w.r.t L-R) if specified.

The connection orientation can be changed from L-R and R-L in horizontal connections on site itself only by undoing 4 bolts and rotating the cover to required direction and then assembling.

The SLR has to be opened at the time of start up to avoid steam locking of the trap.

#### **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.

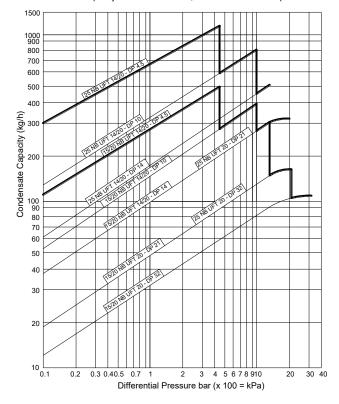


Capacity Chart: For UFT 15, 20 & 25 NB CI/CS Traps

Model	Max Diff. Pressure	PMO (Bar)	Sat. Temp <sup>0</sup> C
UFT 14-4.5	4.5 Bar	14	193
UFT 14-10	10 Bar	14	193
UFT 14-14	14 Bar	14	193
UFT 20-4.5	4.5 Bar	32	237
UFT 20-10	10 Bar	32	237
UFT 20-14	14 Bar	32	237
UFT 20-21	21 Bar	32	237
UFT 20-32	32 Bar	32	237



- Select the model of UFT based on P/T range and MOC
- Select flow capacity on Y axis of the chart for selected model
- Work out actual differential pressure across the UFT.
- Consider all possible pressure losses in the lines.
- Select differential pressure on X axis.
- Move horizontally on Y axis & vertically on X axis.
- The point of cross section will give you the trap size required.



#### MOST IMPORTANT:-

Before doing any maintenance on the trap it is necessary to isolate both supply and return lines and any pressure to normalize to atmosphere pressure by opening SLR. Allow the trap to cool before doing any maintenance and clean all sealing faces before assembling it.

#### How to order and Specify:

15 NB UKL UFT 14- 4.5 Bar, TV, Float Trap, Threaded BSP

Always order spares by stating the type and differential pressure, specify-

EXAMPLE :-

Controller Assembly- valve seat for 15 NB UFT14-4.5 Bar

#### **SPARES AVAILABLE:**

SLR Assembly Float Main controller assembly Cover Gasket Strainer

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.

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Page 4 of 4



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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 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 un dissolved gases will be automatically vented out when present in condensate.

#### MATERIAL OF CONSTRUCTION:

**CAST IRON MODEL** UFT 14- CI – IS 210 FG260 CAST CARBON STEEL MODEL UFT 20- CS- ASTM A216 Gr. WCB

#### SIZES AVAILABLE:-

UFT 14 Model: 15 NB, 20 NB and 25 NB UFT 20 Model: 15 NB, 20 NB and 25 NB



### **END CONNECTIONS: UFT-14 CAST IRON MODEL**

Threaded to NPT, BSP and BSPT.

#### **UFT-20 CAST CARBON STEEL MODEL:-**

Threaded to NPT, BSP and BSPT. Socket Weld to ASME B 16.11 Flanged - #150/#300/#600

#### **INSTALLATION:-**

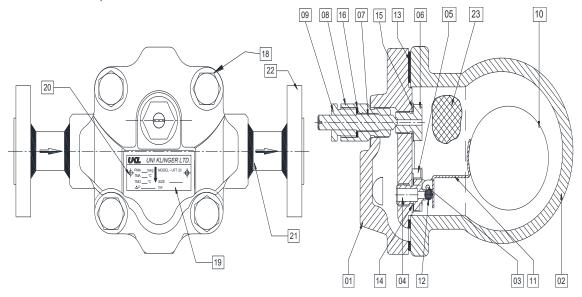
Horizontal/Vertical position.

#### OPTIONAL:-

IBR/Non-IBR With Thermostatic Air vent Inbuilt Strainer

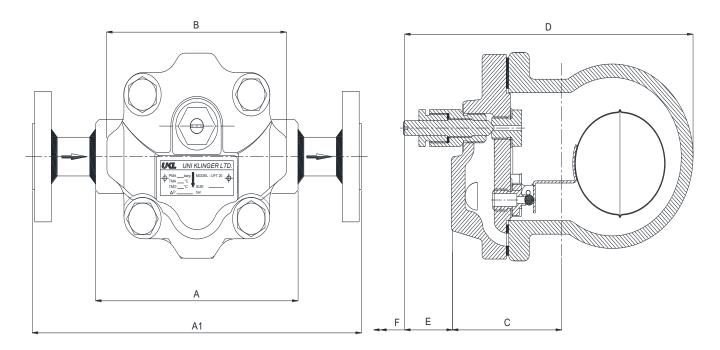


### Ball Float Steam Trap UFT-14/20 Size 15, 20 & 25 NB



		UFT 20 Cas	t Steel Model	UFT 14 Cast	
No.	PART NAME	MATERIAL	MATERIAL CODE	MATERIAL	MATERIAL CODE
01	Body	Cast Steel	ASTM A 216 Gr WCB	Cast Iron	IS 210 FG 260
02	Cover	Cast Steel	ASTM A 216 Gr WCB	Cast Iron	IS 210 FG 260
03	Pivot Pin	Stainless Steel	AISI 304	Stainless Steel	AISI 304
04	Valve Seat	Stainless Steel	AISI 304	Stainless Steel	AISI 304
05	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/ Non 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
*23	Strainer (Optional)	Stainless Steel	AISI 304	Stainless Steel	AISI 304
# AVAI	LABLE AS SPARES				

### Ball Float Steam Trap UFT-14/20 Size 15, 20 & 25 NB



Screwed / Socket Weld End Connections									
Size	Diff Pressure	A	В	С	D	Е	F	Weight (kg)	
15 NB	4.5/10/14/	128	111	68	179	30	110	3.8	
20 NB	21/32 bar	128	111	68	179	30	110	3.8	
25 NB		153	111	75	202	30	130	5.3	

Flanged End C						
Size	#1	150	#300			
Size	A1	Weight(kg)	A1	Weight(kg)		
15 NB	278	4.5	278	5.1		
20 NB	278	278 5.1		6.1		
25 NB	303	278 5.1 278 303 7.0 303				

#### Installation :-

The trap must be fitted with the float arm in a horizontal plane so that it rises and falls vertically. Hence the arrow on the name plate must point downwards.

Traps will be generally supplied in horizontal connections with flow from left to right outlet (L-R) & horizontal connections with flow R-L (rotating cover 180° w.r.t L-R) or vertical connections with top inlet and bottom outlet (rotating cover 90° w.r.t L-R) if specified.

The connection orientation can be changed from L-R and R-L in horizontal connections on site itself only by undoing 4 bolts and rotating the cover to required direction and then assembling.

The SLR has to be opened at the time of start up to avoid steam locking of the trap.

#### **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.

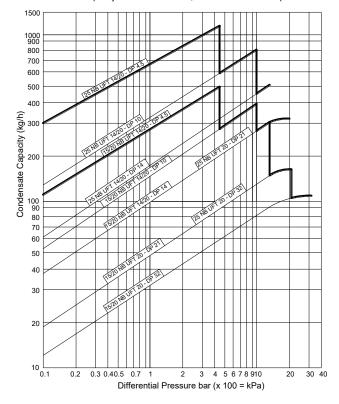


Capacity Chart: For UFT 15, 20 & 25 NB CI/CS Traps

Model	Max Diff. Pressure	PMO (Bar)	Sat. Temp <sup>0</sup> C
UFT 14-4.5	4.5 Bar	14	193
UFT 14-10	10 Bar	14	193
UFT 14-14	14 Bar	14	193
UFT 20-4.5	4.5 Bar	32	237
UFT 20-10	10 Bar	32	237
UFT 20-14	14 Bar	32	237
UFT 20-21	21 Bar	32	237
UFT 20-32	32 Bar	32	237



- Select the model of UFT based on P/T range and MOC
- Select flow capacity on Y axis of the chart for selected model
- Work out actual differential pressure across the UFT.
- Consider all possible pressure losses in the lines.
- Select differential pressure on X axis.
- Move horizontally on Y axis & vertically on X axis.
- The point of cross section will give you the trap size required.



#### MOST IMPORTANT:-

Before doing any maintenance on the trap it is necessary to isolate both supply and return lines and any pressure to normalize to atmosphere pressure by opening SLR. Allow the trap to cool before doing any maintenance and clean all sealing faces before assembling it.

#### How to order and Specify:

15 NB UKL UFT 14- 4.5 Bar, TV, Float Trap, Threaded BSP

Always order spares by stating the type and differential pressure, specify-

EXAMPLE :-

Controller Assembly- valve seat for 15 NB UFT14-4.5 Bar

#### **SPARES AVAILABLE:**

SLR Assembly Float Main controller assembly Cover Gasket Strainer

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.



#### UNI KLINGER LIMITED

A joint venture of the Neterwala group of companies and KLINGER AG. Switzerland.

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Page 4 of 4





#### **UKL BALL FLOAT TYPE STEAM TRAP**

The enthalpy in the steam basically has two components: The Latent heat and the Sensible heat. Whereas condensate has only sensible heat. This condensate has to be removed as soon as it is formed, because it hinders to efficient heat transfer as well as leads to water hammer phenomenon as it is 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 and which is damaging to the plant pipelines as well as 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, [densities 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. valve close 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. 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 un dissolved gases will be automatically vented out when present in condensate.



#### **MATERIAL OF CONSTRUCTION:**

#### **CAST IRON MODEL**

UFT 14- CI - IS 210 FG260 CAST CARBON STEEL MODEL UFT 20- CS- ASTM A216 Gr. WCB

#### SIZES AVAILABLE:-

UFT 14 Model: 40 NB and 50 NB UFT 20 Model: 40 NB and 50 NB

#### **END CONNECTIONS:**

**UFT-14 CAST IRON MODEL** Threaded to NPT, BSP and BSPT.

#### **UFT-20 CAST CARBON STEEL MODEL:-**

Threaded to NPT, BSP and BSPT. Socket Weld to ASME B 16.11 Flanged - #150/#300/#600

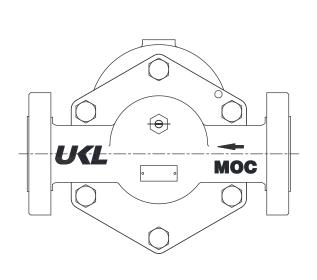
#### INSTALLATION:-

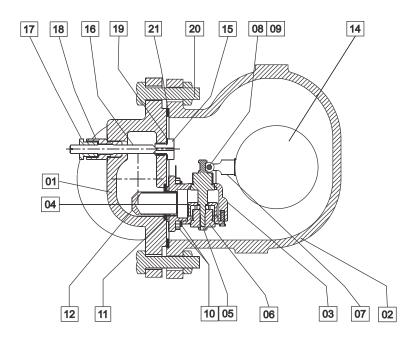
Horizontal position.

#### **OPTIONAL:-**

UFT-14 Available in Non-IBR UFT-20 Available in IBR/Non-IBR Thermostatic Air vent

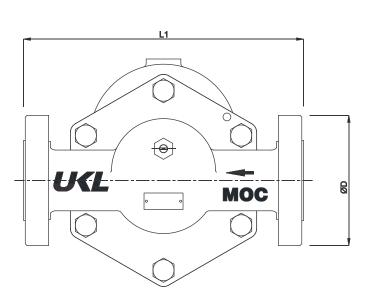


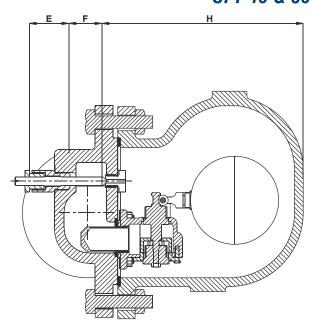




		UFT 14 Ca	st Iron Model	UFT 20 Ca	ast Steel Model
No.	PART NAME	MATERIAL	MATERIAL CODE	MATERIAL	MATERIAL CODE
1	Body	Cast Iron	IS 210 FG 260	Cast Steel	ASTM A 216 Gr WCB
2	Cover	Cast Iron	IS 210 FG 260	Cast Steel	ASTM A 216 Gr WCB
3	Controller Housing	Stainless Steel	ASTM A 743 Gr CA 40	Stainless Steel	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







#### DIMENSIONS (mm)

SOCKET WELD / Screwed End Connections:								
Size	Overall Length	Н	Е	F	ØD	Weight (kg)		
40 NB	299.00	255.00	45.00	34.00	48.80	22.000		
50 NB	321.00	255.00	45.00	36.00	61.70	27.400		

Flanged End Connections #150									
Size	L1	Н	Ε	F	ØD	Weight(kg)			
40 NB	299.00	255.00	45.00	34.00	125.00	26.0			
50 NB	321.00	255.00	45.00	36.00	150.00	33.0			

Flanged E	Flanged End Connections #300									
Size	L1	Н	Ε	F	ØD	Weight(kg)				
40 NB	299.00	255.00	45.00	34.00	125.00	28.0				
50 NB	50 NB         321.00         255.00         45.00         36.00         150.00         35.0									

#### **INSTALLATION:-**

The trap must be fitted with the float arm in a horizontal plane so that it rises and falls vertically. Hence the arrow on the name plate must point downwards.

Traps will be generally supplied in horizontal connections with flow from right to left outlet (R-L) horizontal connections.

The SLR has to be opened at the time of start up to avoid steam locking of the trap.

#### **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



#### **OPERATING CONDITIONS**

Model	Max Diff. Pressure	PMO (Bar)	Sat. Temp <sup>o</sup> C
UFT 14-4.5	4.5 Bar	14	193
UFT 14-10	10 Bar	14	193
UFT-14-14	14 Bar	14	193
UFT 20-4.5	4.5 Bar	32	237
UFT 20-10	10 Bar	32	237
UFT 20-21	21 Bar	32	237
UFT 20-32	32 Bar	32	237
UFT 20-14	14 Bar	32	237

#### For referring the capacity charts, please note following:

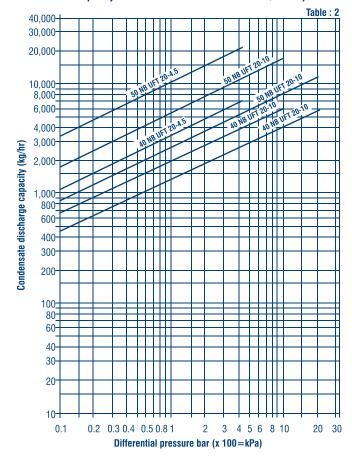
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- Work out actual differential pressure across the UFT.
- · Consider all possible pressure losses in the lines.
- Select differential pressure on X axis.
- Move horizontally on Yaxis & vertically on Xaxis.
- The point of cross section will give you the trap size required.

#### How to order and Specify:

40 NB UKL UFT 14-4.5 Bar, TV, Float Trap, SW End

Always order spares by stating the type and differential pressure, specify-Controller Assembly- valve seat for 40 NB UFT14-4.5 Bar

#### Capacity Chart: For UFT 40 & 50 NB UFT CI/CS Traps



#### SPARES AVAILABLE:

SLR Assembly Float Main controller assembly Cover Gasket

#### 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 / Gland Packing

# UKL

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#### **UKL BALL FLOAT TYPE STEAM TRAP**

The enthalpy in the steam basically has two components: The Latent heat and the Sensible heat. Whereas condensate has only sensible heat. This condensate has to be removed as soon as it is formed, because it hinders to efficient heat transfer as well as leads to water hammer phenomenon as it is 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 and which is damaging to the plant pipelines as well as 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, [densities 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. valve close 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. 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 un dissolved gases will be automatically vented out when present in condensate.



#### **MATERIAL OF CONSTRUCTION:**

#### **CAST IRON MODEL**

UFT 14- CI - IS 210 FG260 CAST CARBON STEEL MODEL UFT 20- CS- ASTM A216 Gr. WCB

#### SIZES AVAILABLE:-

UFT 14 Model: 40 NB and 50 NB UFT 20 Model: 40 NB and 50 NB

#### **END CONNECTIONS:**

**UFT-14 CAST IRON MODEL** Threaded to NPT, BSP and BSPT.

#### **UFT-20 CAST CARBON STEEL MODEL:-**

Threaded to NPT, BSP and BSPT. Socket Weld to ASME B 16.11 Flanged - #150/#300/#600

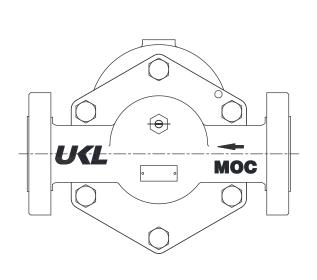
#### INSTALLATION:-

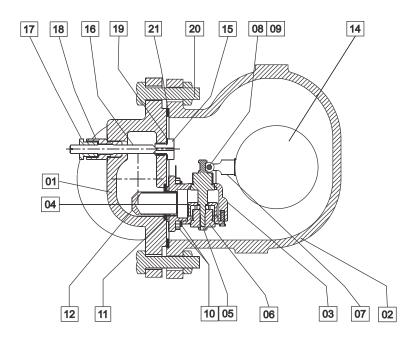
Horizontal position.

#### **OPTIONAL:-**

UFT-14 Available in Non-IBR UFT-20 Available in IBR/Non-IBR Thermostatic Air vent

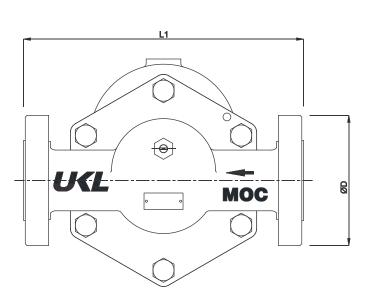


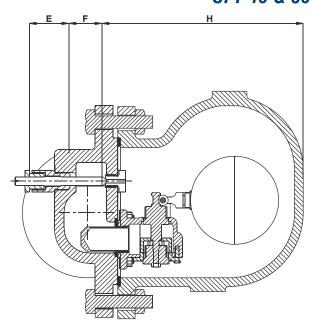




		UFT 14 Ca	st Iron Model	UFT 20 Ca	ast Steel Model
No.	PART NAME	MATERIAL	MATERIAL CODE	MATERIAL	MATERIAL CODE
1	Body	Cast Iron	IS 210 FG 260	Cast Steel	ASTM A 216 Gr WCB
2	Cover	Cast Iron	IS 210 FG 260	Cast Steel	ASTM A 216 Gr WCB
3	Controller Housing	Stainless Steel	ASTM A 743 Gr CA 40	Stainless Steel	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







#### DIMENSIONS (mm)

SOCKET WELD / Screwed End Connections:								
Size	Overall Length	Н	Е	F	ØD	Weight (kg)		
40 NB	299.00	255.00	45.00	34.00	48.80	22.000		
50 NB	321.00	255.00	45.00	36.00	61.70	27.400		

Flanged End Connections #150									
Size	L1	Н	Ε	F	ØD	Weight(kg)			
40 NB	299.00	255.00	45.00	34.00	125.00	26.0			
50 NB	321.00	255.00	45.00	36.00	150.00	33.0			

Flanged E	Flanged End Connections #300									
Size	L1	Н	Ε	F	ØD	Weight(kg)				
40 NB	299.00	255.00	45.00	34.00	125.00	28.0				
50 NB	50 NB         321.00         255.00         45.00         36.00         150.00         35.0									

#### **INSTALLATION:-**

The trap must be fitted with the float arm in a horizontal plane so that it rises and falls vertically. Hence the arrow on the name plate must point downwards.

Traps will be generally supplied in horizontal connections with flow from right to left outlet (R-L) horizontal connections.

The SLR has to be opened at the time of start up to avoid steam locking of the trap.

#### **STORAGE**

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#### **OPERATING CONDITIONS**

Model	Max Diff. Pressure	PMO (Bar)	Sat. Temp <sup>o</sup> C
UFT 14-4.5	4.5 Bar	14	193
UFT 14-10	10 Bar	14	193
UFT-14-14	14 Bar	14	193
UFT 20-4.5	4.5 Bar	32	237
UFT 20-10	10 Bar	32	237
UFT 20-21	21 Bar	32	237
UFT 20-32	32 Bar	32	237
UFT 20-14	14 Bar	32	237

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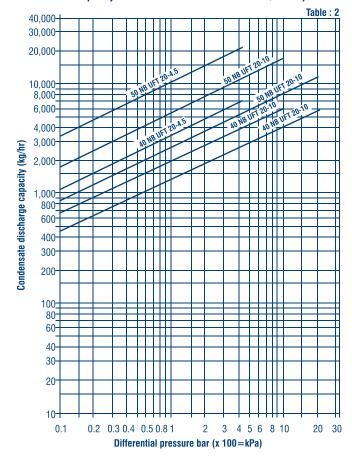
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- Select flow capacity on Y axis of the chart for selected model.
- Work out actual differential pressure across the UFT.
- · Consider all possible pressure losses in the lines.
- Select differential pressure on X axis.
- Move horizontally on Yaxis & vertically on Xaxis.
- The point of cross section will give you the trap size required.

#### How to order and Specify:

40 NB UKL UFT 14-4.5 Bar, TV, Float Trap, SW End

Always order spares by stating the type and differential pressure, specify-Controller Assembly- valve seat for 40 NB UFT14-4.5 Bar

#### Capacity Chart: For UFT 40 & 50 NB UFT CI/CS Traps



#### SPARES AVAILABLE:

SLR Assembly Float Main controller assembly Cover Gasket

#### 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 / Gland Packing

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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 which 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.

#### Features:-

- UKL UIBT-28US is optimally sized for complete removal of condensate.
- UKL UIBT-28US is suitable with universal connector.
- UKL UIBT-28US is designed to eliminate internals damages caused by impingement of condensate.
- Maintenance free and long life.



#### **MATERIAL OF CONSTRUCTION:**

ASTM A 351 Gr. CF8 ASTM A 240 TP304 L

#### SIZES AVAILABLE:-

15 NB / 20 NB 25 NB (on request)

#### **END CONNECTIONS:**

Screwed NPT and BSPT Socket Weld Flanged CL 150 / CL 300 Suitable with UITVS (Universal Flange)

#### **INSTALLATION:**

Horizontal position

#### **OPERATING CONDITIONS:**

Maximum Operating Pressure : 28 kg/cm²(g)
Maximum Operating Temperature : 425°C

#### **DESIGN CONDITIONS:**

Maximum Design Pressure :52 Kg/cm²(g)
Maximum Design Temperature :425°C

#### **OPTIONAL:-**

IBR/Non-IBR UIBT 28US with UITVS (\*on request) Available in Differential Pressure(kg/cm²):-5/8.5/14/17/28 Orientation L-R or R-L available

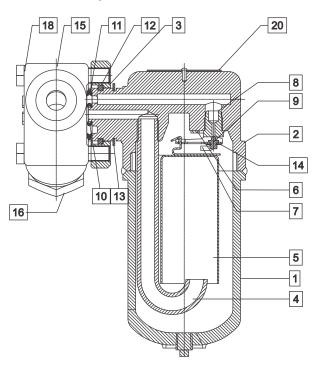


# Inverted Bucket Steam Trap UIBT-28US

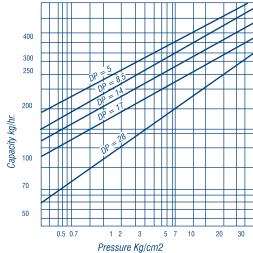
UNIVERSAL CONNECTOR



Connector Body: Stainless Steel CF8
Connector Without integral strainer
Connector with integral strainer
Connector with integral strainer and blow down valve.



#### Flow Chart UIBT - 28US



#### **BILL OF MATERIAL**

ITEM	DESCRIPTION	MATERIAL
1	BODY	ASTM A351 Gr. CF8M ASTM A351 Gr. CF8 /
2	COVER	ASTM A351 Gr. CF8 / CF8M
3	CONNECTOR FLANGE	ASTM A 182 F304 / F316 ASTM A351 Gr.CF8 / CF8M /
4	PIPE (1/4" SCH.80)	AISI 304 / ASTM A 312 TP. 304
5	BUCKET	AISI 304
6	BRACKET	AISI 304
7	LEVER	AISI 304
8	VALVE SEAT (HARDENED)	AISI 420 / AISI410 / ASTM A 681 Gr D2
9	VALVE PIN (HARDENED)	AISI 420 / ASTM A 681 Gr D2
10	SPIRAL WOUND GASKET	SS WITH GRAPHITE FILLER
11	SPIRAL WOUND GASKET	SS WITH GRAPHITE FILLER
12	RETAINER RING	AISI 304
13	CIRCLIP	AISI 304
14	LOCKING STRIP	AISI 304
15	UNIVERSAL CONNECTOR	ASTM A351 Gr. CF8M / CF8
16	BOLT (M10 X 65 - 25 NB) BOLT (M10 X 55 - 15 / 20NB)	EQUI. OR HIGHER Gr. Gr.10.9 /Gr. 12.9 / Gr.8.8 /
17	STRAINER	AISI 304
18	STRAINER (FILTER) CAP	ASTM A 182 F304 / F 316
19	SPRIAL WOUND GASKET	SS WITH GRAPHITE FILLER
20	NAME PLATE	AISI 304

Other Products :

Factory:

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 / Gland Packing



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#### **FEATURES:-**

- UKL UIBT is optimally sized for complete removal of condensate.
- UKL UIBT is designed to eliminate internal damages caused by impingement of condensate.
- UIBT is suitable for high pressure applications.
- Maintenance free and long life.

#### **MATERIAL OF CONSTRUCTION:-**

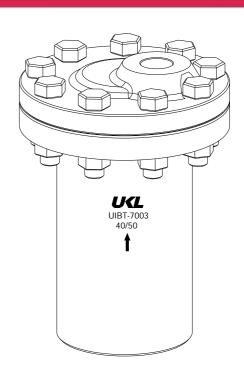
ASTM A216 Gr. WCB (Cast Carbon Steel)
ASTM A217 Gr. WC6 /WC9 (Cast Alloy Steel) (Optional)

#### SIZES AVAILABLE:-

40 NB & 50 NB

#### **END CONNECTIONS:-**

Screwed to BSP / BSPT / NPT Socket Weld to ASME B 16.11 Flanged End #600



#### **OPTIONAL:-**

IBR (On Request)
Flanged End Connections

# AVAILABLE DIFFERENTIAL PRESSURE (DP):-

1 / 1.7 / 3 / 4 / 5.5 / 8.5 / 12.5 / 17 / 25.5 / 34.5 / 41.5 / 48.5 / 69 Kg/cm<sup>2</sup> (g)

#### **OPERATING CONDITIONS:-**

For ASTM A216 Gr. WCB

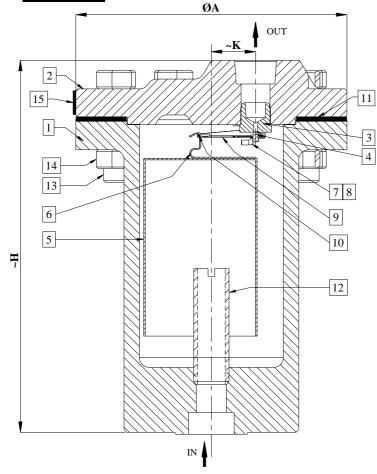
Maximum Operating Pressure :- 69 Kg/cm² (g) Maximum Operating Temperature :- 400°C

#### **DESIGN CONDITIONS:-**

For ASTM A216 Gr. WCB

Maximum Design Pressure :- 69 Kg/cm² (g) Maximum Design Temperature :- 426 °C



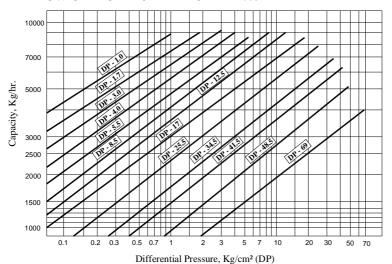


DIMENSIONS UIBT - 7003		
ØA	315 mm	
~H	490 mm	
~K	54 mm	
WEIGHT (Screwed/SW)	~96 Kgs	

	BILL OF MATERIAL		
NO. PART	DESCRIPTION	M.O.C.	
1	BODY	ASTM A 217 Gr. WC6 / WC9 ASTM A 216 Gr. WCB	
2	COVER	ASTM A 217 Gr. WC6 / WC9 ASTM A 216 Gr. WCB	
3	VALVE SEAT	ASTM A 681 Gr.D2	
4	VALVE PIN	ASTM A 681 Gr.D2	
5	BUCKET	AISI 304	
6	BUCKET HOOK	AISI 304	
7	BRACKET	AISI 304	
8	BRACKET PIN	AISI 304	
9	LEVER	AISI 304	
10	LEVER PIN	AISI 304	
11	BODY GASKET	CI-18	
12	INLET TUBE	ASTM A 106 Gr. B	
13	STUDS	ASTM A 193 Gr. B7	
14	NUTS	ASTM A 193 Gr. 2H	
15	NAME PLATE	STAINLESS STEEL	

Note -All dimensions and weights are approximate. - Traps with flanges may have different Pressure -Temperature rating.

#### FLOW CAPACITY CHART - UIBT - 7003



Other Products :



Cast / Forged Steel Piston Valves, Bellow seal valves, High Pressure valves (Gate/Globe), Strainers – "Y" Type Steam Traps (Thermodynamic, Thermostatic, Ball Float Traps), 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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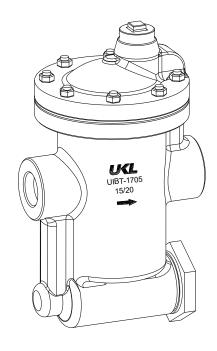
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#### **FEATURES:-**

- UKL UIBT is optimally sized for complete removal of condensate.
- UKL UIBT is designed to eliminate internal damages caused by impingement of condensate.
- Maintenance free and long life.
- UKL UIBT has unique & efficient internal mechanism
- Equipped with inbuilt strainer.

#### **MATERIAL OF CONSTRUCTION:-**

IS 210 Gr. FG 260 (Cast Iron)

ASTM A216 Gr. WCB (Cast Carbon Steel)

Other material on request.

#### SIZES AVAILABLE:-

15 NB & 20 NB

#### **END CONNECTIONS:-**

Screwed to BSP / BSPT / NPT Socket Weld (For Cast Carbon Steel Only) Flanged End - ANSI #150/#300 (Welded - for Cast Carbon Steel Only)

#### **OPTIONAL:-**

IBR (On Request) Flanged End - ANSI #150/#300 (Welded)

# AVAILABLE DIFFERENTIAL PRESSURE (DP):-

1 / 2 / 5 / 8.5 / 14 / 17 Kg/cm<sup>2</sup> (g)

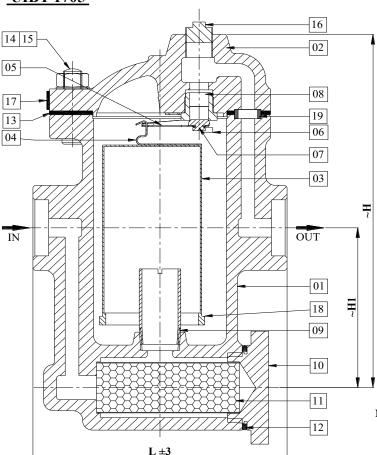
#### **OPERATING CONDITIONS:-**

Maximum Operating Pressure :- 17 Kg/cm² (g) Maximum Operating Temperature :- 400 °C

#### **DESIGN CONDITIONS:-**

Maximum Design Pressure :- 17.0 Kg/cm² (g) Maximum Design Temperature :- 425 °C

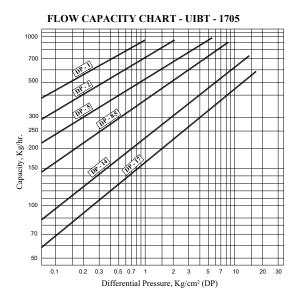




DIMENSIONS UIBT - 1705		
~H1	125 mm	
~H	218 mm	
L	165 mm	
WEIGHT (SW/SCREWED)	~12 Kgs	

ITEM	DESCRIPTION	M.O.C
01	BODY	IS 210 Gr. FG 260 / ASTM A216 Gr. WCB
02	COVER	IS 210 Gr. FG 260 / ASTM A216 Gr. WCB
03	BUCKET	AISI 304
04	BUCKET HOOK	AISI 304
05	LEVER ASSEMBLY	AISI 304
06	BRACKET ASSEMBLY	AISI 304
07	VALVE PIN	ASTM A681 Gr. D2
08	VALVE SEAT	ASTM A681 Gr. D2
09	INLET TUBE / BODY PIPE	ASTM A106 Gr.B
10	FILTER CAP	ASTM A105
11	FILTER	AISI 304
12	SPW GASKET	SS WITH GRAPHITE
13	BODY GASKET	NON-CAF
14	STUDS	ASTM A 193 Gr. B7
15	NUTS	ASTM A 193 Gr. 2H
16	END PLUG	ASTM A105
17	NAME PLATE	AISI 304
18	BUCKET RING (If required)	CARBON STEEL
19	BUSH	AISI 304 / AISI 316

Note -All dimensions and weights are approximate.



Other Products: (



Cast / Forged Steel Piston Valves, Bellow seal valves, High Pressure valves (Gate/Globe), Strainers - "Y" Type Steam Traps (Thermodynamic, Thermostatic, Ball Float Traps), 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.

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#### FEATURES:-

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- UKL UIBT is designed to eliminate internal damages caused by impingement of condensate.
- UIBT is suitable for high pressure applications.
- Maintenance free and long life.

#### MATERIAL OF CONSTRUCTION:-

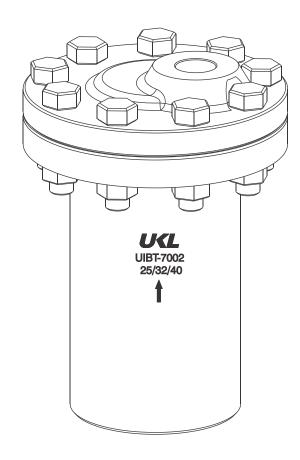
ASTM A216 Gr. WCB (Cast Carbon Steel) ASTM A217 Gr. WC6 /WC9 (Cast Alloy Steel) (Optional)

#### SIZES AVAILABLE:-

25 NB, 32 NB, 40 NB

#### **END CONNECTIONS:-**

Screwed to BSP/BSPT/NPT Socket Weld to ASME B 16.11 Flanged End #600



#### OPTIONAL:-

IBR (On Request) Flanged End Connections

# AVAILABLE DIFFERENTIAL PRESSURE (DP):-

1/2/4/7/9/12.5/15.5/24/34.5/55/69 Kg/cm<sup>2</sup> (g)

#### **OPERATING CONDITIONS:-**

For ASTM A216 Gr. WCB

Maximum Operating Pressure :- 69 Kg/cm<sup>2</sup> (g) Maximum Operating Temperature :- 400°C

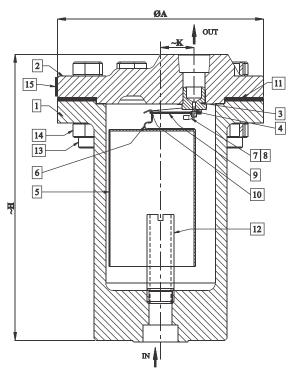
#### **DESIGN CONDITIONS:-**

For ASTM A216 Gr. WCB

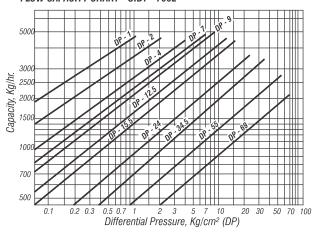
Maximum Design Pressure :— 69 Kg/cm² (g) Maximum Design Temperature :— 426 °C



# Inverted Bucket Steam Trap **UIBT - 7002**



FLOW CAPACITY CHART - UIBT - 7002



DIMENSIONS UIBT - 7002		
ØA	275 mm	
~H	380 mm	
~K	44 mm	
WEIGHT (Screwed/SW)	~58 Kgs	

#### BILL OF MATERIAL:-

	BILL OF MATERIAL		
NO. PART	DESCRIPTION	M.O.C.	
1	BODY	ASTM A 217 Gr. WC6 / WC9 ASTM A 216 Gr. WCB	
2	COVER	ASTM A 217 Gr. WC6 / WC9 ASTM A 216 Gr. WCB	
3	VALVE SEAT	ASTM A 681 Gr.D2	
4	VALVE PIN	ASTM A 681 Gr.D2	
5	BUCKET	AISI 304	
6	BUCKET HOOK	AISI 304	
7	BRACKET	AISI 304	
8	BRACKET PIN	AISI 304	
9	LEVER	AISI 304	
10	LEVER PIN	AISI 304	
11	BODY GASKET	SPW AISI 316 + GRAPHITE	
12	INLET TUBE	ASTM A 106 Gr. B	
13	STUDS	ASTM A 193 Gr. B7	
14	NUTS	ASTM A 193 Gr. 2H	
15	NAME PLATE	STAINLESS STEEL	

Other Products:



Factory:

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 / Gland Packing

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