Thermodynamic Steam Trap
UTD 21

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:

ASTM A 743 Gr. CA40

SIZES AVAILABLE:-

15 NB and 20 NB

END CONNECTIONS:

Threaded to NPT , BSP and BSPT

Socket Weld to ASME B 16.11

Flanged End- #150/#300

INSTALLATION:-

Preferably in horizontal position.

ON REQUEST:-

IBR/Non-IBR

Blow down cock

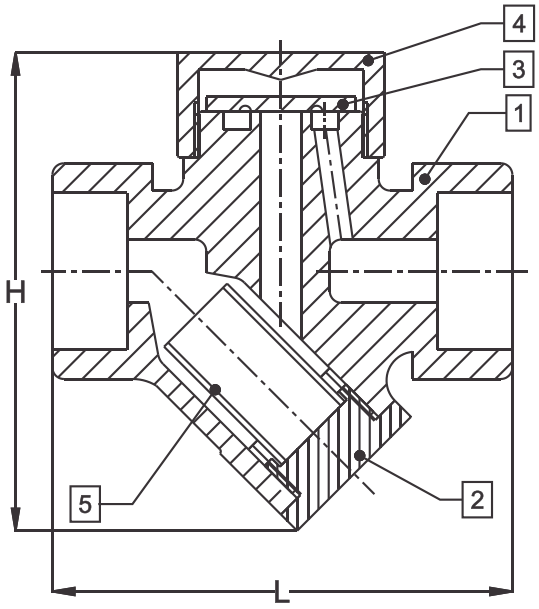
Isotub

Flanges weld on type

OPERATING CONDITIONS

End Conn.		BSP	NPT	SW
Size (mm)	Press. Kg/cm2	12.5	42	42
15,20,25	Temp ° C	260	454	454

Thermodynamic Steam Trap
UTD 21



BILL OF MATERIAL:-

No.	PART NAME	MATERIAL	MATERIAL CODE
1	Body	SS	ASTM A 743 Gr. CA40
2	Filter Cap	SS	ASTM A 743 Gr. CA40
3	Disc	SS	AISI 420
4	Cover	SS	ASTM A 743 Gr. CA40
5	Filter	SS	AISI 304 (Perforated Sheet)

Notations		Dimensions (mm)	
		15 NB	20 NB
L		96	96
H		86	86
ØA	SW	21.80	27.2
	t	10	13
ØA		BSP / NPT / BSPT	
Weight (kg)		0.750	0.750

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 re-assembling 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.

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

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

UNI KLINGER LIMITED
A joint venture of the Neterwala group of companies and KLINGER AG. Switzerland.
AN ISO 9001 : 2015 COMPANY

HARSH ENGINEERING SALES & SERVICE PVT. LTD
Only Authorized Dealers for UNI KLINGER products, Telangana
Add: 2-3-692/22/13 Lal Bagh, Zinda Tilismath Road, Ganga Nagar, Amberpet, Hyderabad - 500013
Tel: +91-40-2740 3329 | Website: harsh-engineering.com | E-mail: sales@harsh-engineering.com

Thermodynamic Steam Trap
UTD 55/UTD55 F

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:

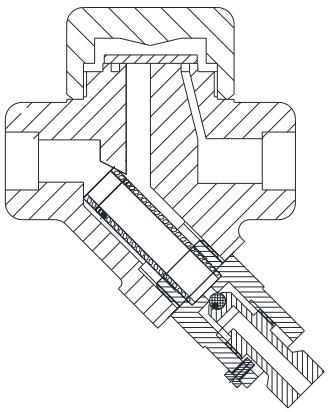
Threaded to NPT , BSP and BSPT
Socket Weld to ASME B 16.11
Flanged End- #150/#300/DIN

INSTALLATION:-

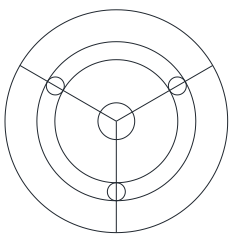
Preferably in horizontal position.

ON REQUEST:-

IBR/Non-IBR
Blow down cock
Isotub
Flanges weld on type
Single Orifice/Three orifice
Compactable with UITVS



OPTIONAL BLOWDOWN COCK

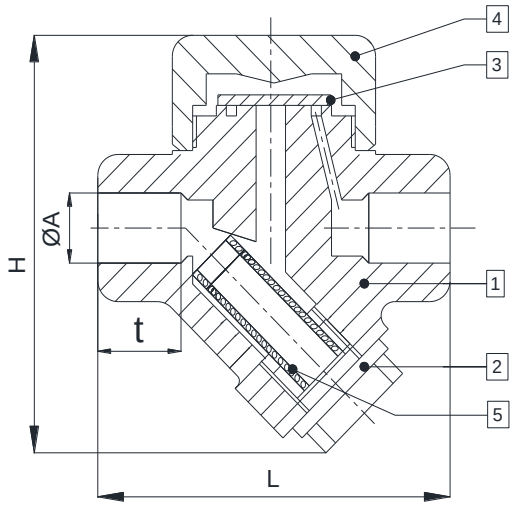


3 ORIFICE TOP VIEW

OPERATING CONDITIONS

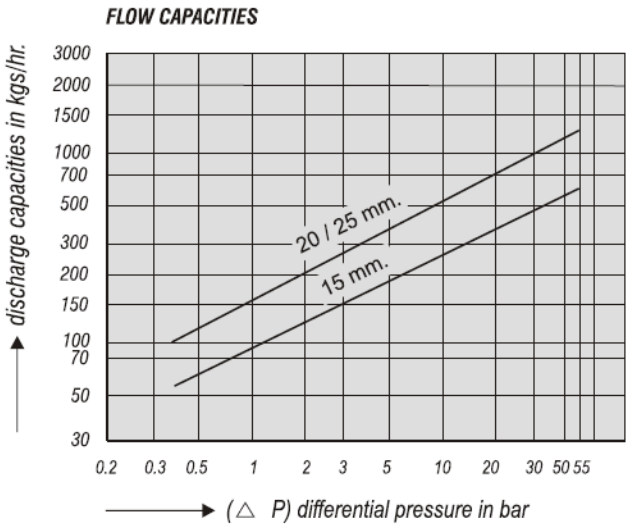
End Conn.		BSP	NPT	SW	FL 150	FL 300
Size (mm)	Press. Kg/cm2	12.5	55	55	20	52
15,20,25	Temp ° C	260	454	454	425	425

BILL OF MATERIAL :-



Sr.	Part	Materials	
		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 are available on Request.			

Notations		Dimensions (mm)		
		15 NB	20 NB	25 NB
L		75	75	90
H		108	108	125
ØA	SW	21.80	27.2	33.90
	t	10	13	13
ØA		BSP / NPT / BSPT		
Weight (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 re-assembling 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.

Thermodynamic Steam Trap
UTD-62

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.

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.

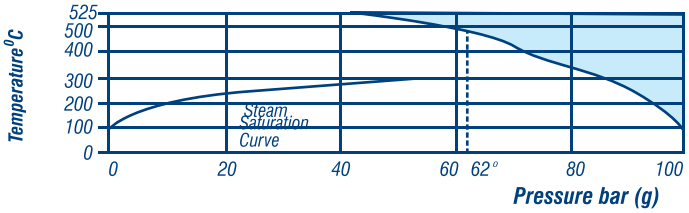
ON REQUEST:-
IBR/Non-IBR
Isotub
Flanges weld on type

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

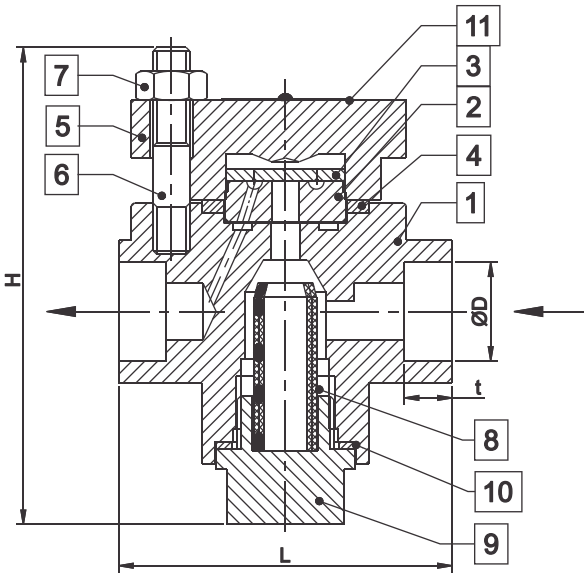
Hydro Test Pressure :- 1.5 times design pressure

Operating range for SWE IBR



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
H	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.

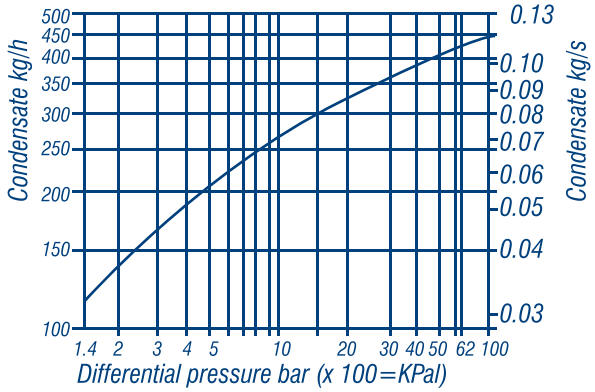
To replace cover studs after removing old cover studs fit new cover studs.

BILL OF MATERIAL :-

No.	PART NAME	MATERIAL	MATERIAL CODE
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. 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 : 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.

Thermodynamic Steam Trap
UTD 120

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. The UTD 120 is a steam trap with integral strainer specifically designed to meet above application.

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.

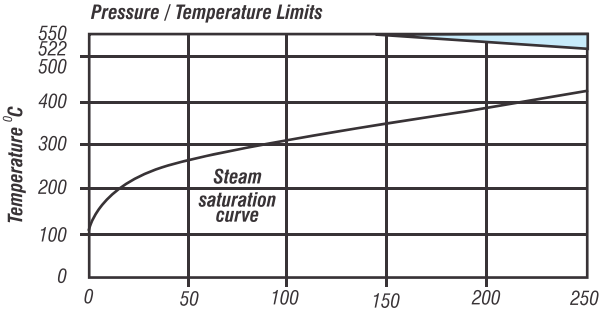
MATERIAL OF CONSTRUCTION:
ASTM A 182 Gr. F22

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



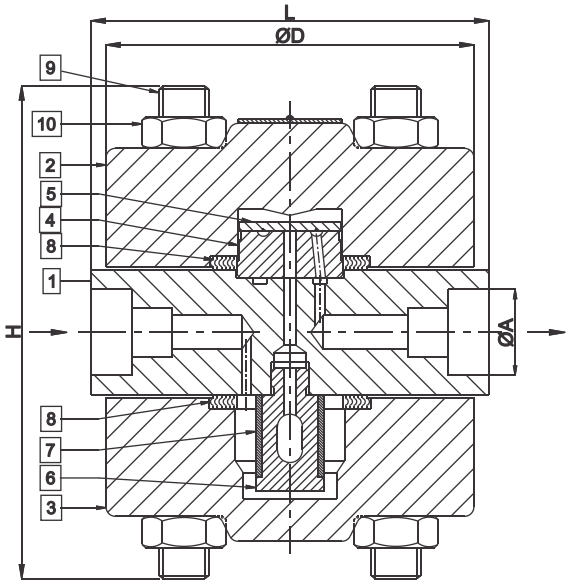
The Product MUST NOT BE USED in this section
Note: if the product is used at pressures above 170 bar then a reduction in working life may be experienced

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



BILL OF MATERIAL :-

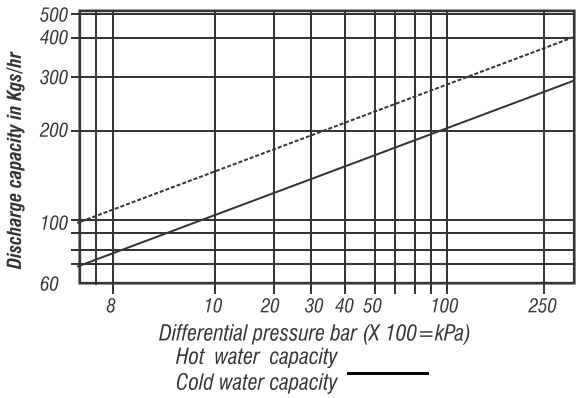
No.	PART NAME	MATERIAL	MATERIAL CODE
1	Body	Alloy Steel	ASTM A182 F22-Cl3
2	Top Cover	Alloy Steel	ASTM A182 F22-Cl3
3	Bottom Cover	Alloy Steel	ASTM A182 F22-Cl3
4	Seat	Tool Steel	ASTM A 681 Gr D2
5#	Disc	Tool Steel	ASTM A 681 Gr D2
6	Filter Housing	Stainless Steel	AISI 316
7#	Filter	Stainless Steel	AISI 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.			

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

Recommended Tightening Torques

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

Flow capacities



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.

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

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

UNI KLINGER LIMITED

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

AN ISO 9001 : 2015 COMPANY

HARSH ENGINEERING SALES & SERVICE PVT. LTD

Only Authorized Dealers for UNI KLINGER products, Telangana

Add: 2-3-692/22/13 Lal Bagh, Zinda Tilismath Road, Ganga Nagar, Amberpet, Hyderabad - 500013

Tel: +91-40-2740 3329 | Website: harsh-engineering.com | E-mail: sales@harsh-engineering.com