

UKL THERMODYNAMIC STEAM TRAP COMPACT MODULE:

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 CM is a steam trap with integral strainer, up stream isolation valve, by-pass valve and de-pressurisation valve specifically designed to meet above application.

UTD 120 CM is a Thermodynamic Steam Trap Compact Module 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

END CONNECTIONS:

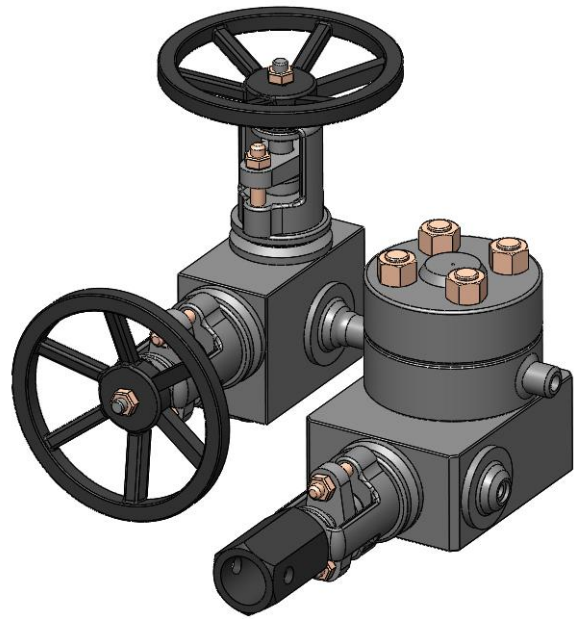
Butt weld end to suit SCH 160

Max Operating Back Pressure:-

50% of the upstream pressure

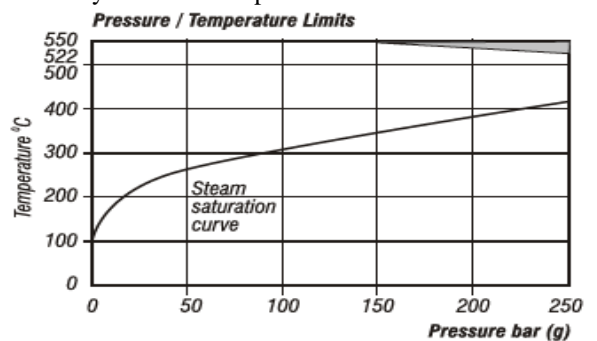
Min Operating Pressure for satisfactory

Operation :- 8 bar



INSTALLATION:-

Preferably in horizontal position.



The Product MUST NOT BE USED in this section

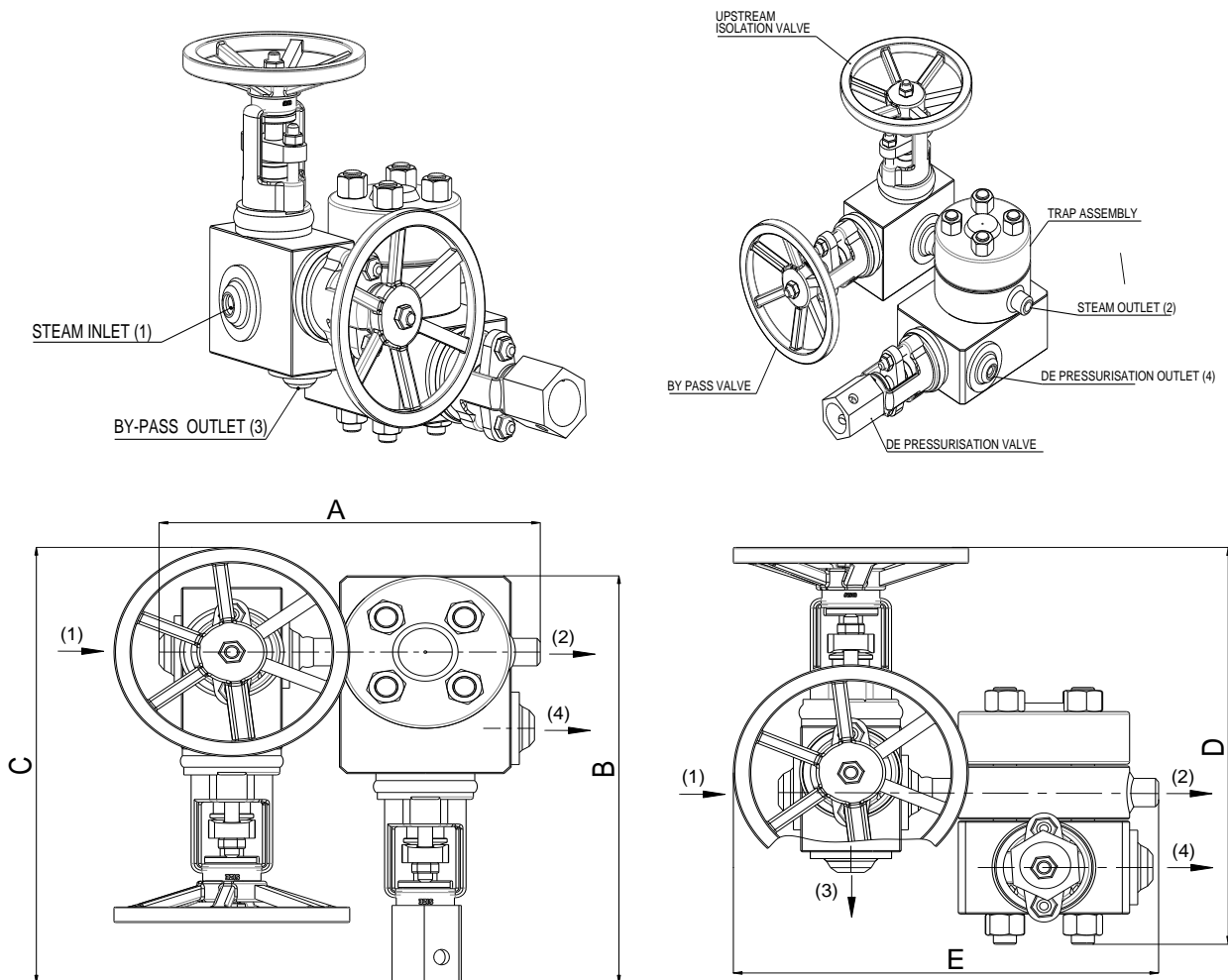
Note: If the product is used at pressures above 170 bar then a reduction in working life may be experienced.

OPERATING CONDITIONS

| Size (NB) | End Conn. → | BW |
|-----------|-------------------|-----|
| 15,20 | Press. Kg/cm2 (g) | 255 |
| | Temp °C | 550 |

Hydro Test Pressure : 1.5 times design pressure

GENERAL ARRANGMENT OF TRAP MODULE:-



ADVANTAGE OF UTD 120CM OVER CONVENTIONAL MODULE :-

General conventional arrangement of module includes many joints and required more space , causing leakage chances, more installation time and ultimately leads to high cost.

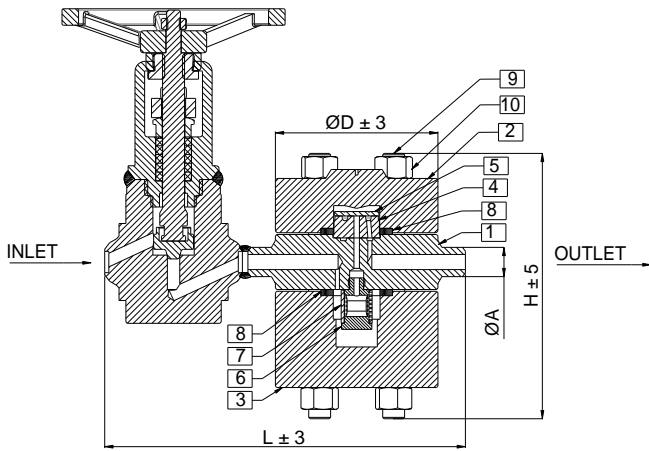
UTD 120 CM is a solution for all the above problems.

Its compact design includes integral strainer, up stream isolation valve, and de-pressurisation valve. UTD 120 CM has unique design which avoids joints so, there are no chances of leakages. Compact design saves more space ultimately saving the cost.

Isolation valve, By -pass and De-pressurisation valve is a high pressure globe type valve and it gives positive shut off.

| Notations | Dimensions (mm) | |
|------------|-----------------|-------|
| | 15 NB | 20 NB |
| A | 262 | 262 |
| B | 330 | 330 |
| C | 345 | 345 |
| D | 300 | 300 |
| E | 293 | 293 |
| Weight(kg) | 29 | 29 |

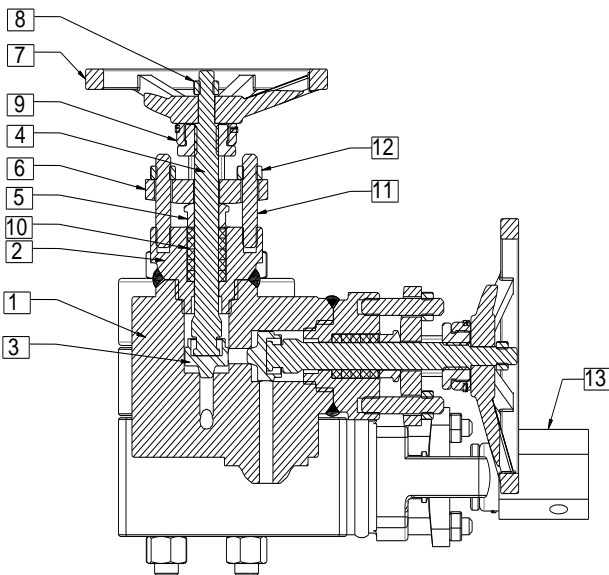
BILL OF MATERIALS OF TRAP :-



| Notations | Dimensions (mm) | |
|-------------------|-----------------|-------|
| | 15 NB | 20 NB |
| L | 262 | 262 |
| H | 193 | 193 |
| ØD | 118 | 118 |
| ØA | 21.80 | 27.20 |
| Weight(kg) | 15.5 | 15.5 |

| BILL OF MATERIAL OF TRAP ASSEMBLY | | | |
|-----------------------------------|----------------|-----------------|---------------------------|
| No. | PART NAME | MATERIAL | MATERIAL CODE |
| 1 | Body | Alloy Steel | ASTM A182 F22- C13 |
| 2 | Top Cover | Alloy Steel | ASTM A182 F22- C13 |
| 3 | Bottom Cover | Alloy Steel | ASTM A182 F22- C13 |
| 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. | | | |

BILL OF MATERIALS OF ISOLATION, BY PASS AND DE PRESSURISATION VALVE ASSEMBLY :-



| BILL OF MATERIAL OF ISOLATION, BYPASS AND DE-PRESSURISATION VALVES | | | |
|--------------------------------------------------------------------|----------------|-----------------|------------------------------------|
| No. | PART NAME | MATERIAL | MATERIAL CODE |
| 1 | Body | Forged Steel | A182F11/F22 |
| 2 | Bonnet | Forged Steel | A182F11/F22 |
| 3 | Plug | Stainless Steel | ASTM A276-TP 410 |
| 4 | Stem | Stainless Steel | ASTM A276 / A479-TP 410 / AISI 431 |
| 5 | Gland Bush | Stainless Steel | ASTM A276-TP410 |
| 6 | Gland Flange | Forged Steel | ASTM A105/A182F11/F22 |
| 7 | Hand Wheel | M.I./C.S. | SG IRON / M.I. |
| 8 | Hand Wheel Nut | Carbon Steel | ASTM A 194 Gr.2H |
| 9 | Yoke Nut | SG Iron 400/12 | SG Iron 400/12 |
| 10 | Gland Packing | Graphite | Embedded -Die Formed Graphite |
| 11 | Stud | Carbon Steel | ASTM A 193 Gr.B7 / B16 |
| 12 | Nut | Carbon Steel | ASTM A 194 Gr.2H/Gr. 4 / Gr. 7 |
| 13 | Hex Hand wheel | Carbon Steel | ASTM A105 |





How to fit disc :-

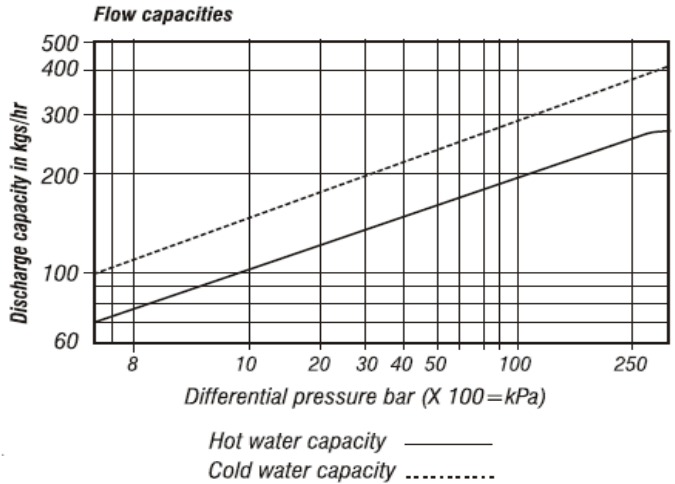
Unscrew the four nuts and remove the top cover. Lift off the disc. Fit the new disc . Ensure that the seating surface is not unduly worn. Lapping is necessary for worn out seats. Re- assemble cover using a new gasket making sure that gasket faces are perfectly clean.

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.

Recommended Tightening Torques

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



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 Sheetting / Cut Gaskets, Spiral Wound Gaskets.

In view of technical progress design and dimensions are subjected to change without notice.



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