

CMTD250M

Compact Module - Thermodynamic Trap (Dv1 and DV2)

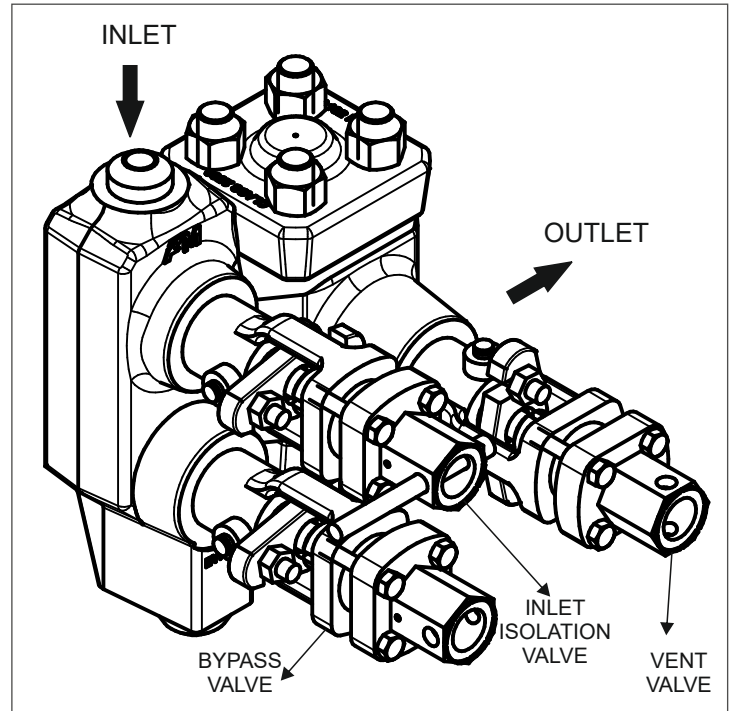
Description

The Forbes Marshall Compact Module - Thermodynamic Trap, CMTD250M is designed with an inbuilt inlet isolation valve, bypass valve and trap vent valve for very high pressure steam applications up to 220 bar g @ 374°C. Replaceable trap internals and inbuilt strainer ease online maintenance.

Available Sizes and End Connections

Inlet (BWE) / Weld On Flanges	Outlet (BWE) / Weld On Flanges	Bypass (BWE)	Vent (SWE)
DN 25	DN 25	DN 25	DN 25
DN 20	DN 20	DN 20	DN 20
DN 15	DN 15	DN 15	DN 15

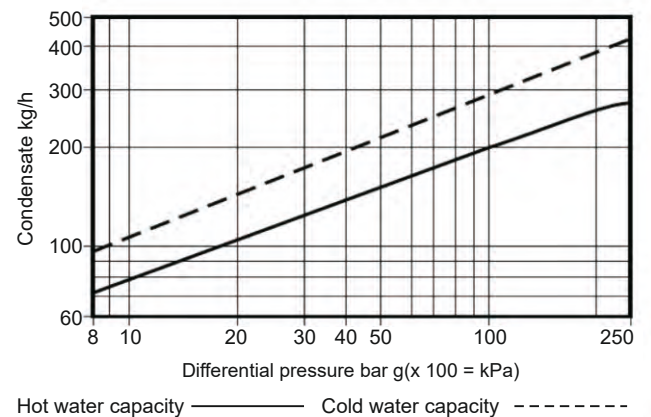
Note : Available with IBR Certificate.



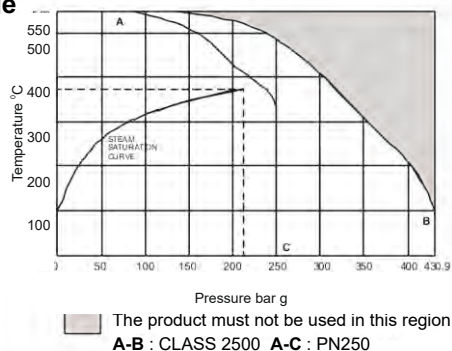
Limiting Conditions

Body design condition	ASME Class #2500
PMA, max allowable pressure	430.9 bar g @ 50 °C
TMA, max allowable temperature	550 °C @ 130.3 bar g
PMO, max operating pressure	220 bar g @ 374 °C
TMO, max operating temperature	550°C @ 80 bar g
Min. allowable temperature	0°C
Max. operating back pressure	80% of upstream pressure
Cold hydraulic test pressure	330 bar g (as per IBR)

Capacity Chart



Operating Range



Materials (refer fig.2)

No.	Description	Material
1.	Module body	ASTM A182 F22 CL3
2.	Top cover	ASTM A182 F22 CL3
3.	Bottom cover	ASTM A182 F22 CL3
4.	Bonnet	ASTM A182 F22 CL3
5.	Spiral wound gasket	SS exfoliated graphite
6.	Seat	Steel BS EN ISO 4957
7.	Disc	Steel BS EN ISO 4957
8.	Spiral wound gasket	SS exfoliated graphite
9.	Spool piece	ASTM A276 SS304
10.	Screen assembly	Sintered stainless steel
11.	Stud	ASTM A193 Gr. B16
12.	Nut	ASTM A194 Gr. 7
13.	Ferrule	ASTM A276 SS304
14.	Valve key	Steel

How to Order

Example: 1 No. of Compact Module - Thermodynamic Trap (DV1 and DV2), CMTD250M, DN 25 butt weldable end connection, IBR.

Recommended Tightening Torques

Part	Torque
M18 x1.5 STUD (11)	90-100 Nm
M18 x1.5 NUT (12)	180-200 Nm

Spares

Spare type	Description	Part No.
Fastner Kit	Spare consists of cover stud & nut, 04 nos each	11,12
Isolation Valve Kit	Spare consists of complete isolation valve 1 no;	4
Gasket Kit	Strainer gasket -1 no. , seat gaskets -2 no's and cover gasket -1 no's	5,6
Set of Internals	Seat -1 no., disc -1 no, cover gasket -1 no., seat gaskets- 2 no's	5,6,7,8
Screen Kit	Screen assembly and gasket pack of 5 no's	5,9,10

Installation Note

Ensure the following for CMTD250M to operate correctly and remove condensate effectively.

1. CMTD250M is installed such that the flow of condensate is in the direction of the arrow marked on the rear side of the body. Inlet of the flow is vertical while outlet of the condensate is horizontal.
2. Ensure all valves are either fully opened or fully closed.

3. Ensure there is sufficient access to the strainer below the bottom cover to allow it to be cleaned.
4. Ensure that there is sufficient access to the valve keys to allow proper operation of the valves.
5. Ensure trap module is properly supported. 2 nos. of M12 tappings provided on the rear side of the body can be used for this purpose.

After 24 hours in service, the cover nuts should be checked for tightness. Separate installation and maintenance instructions give full details.

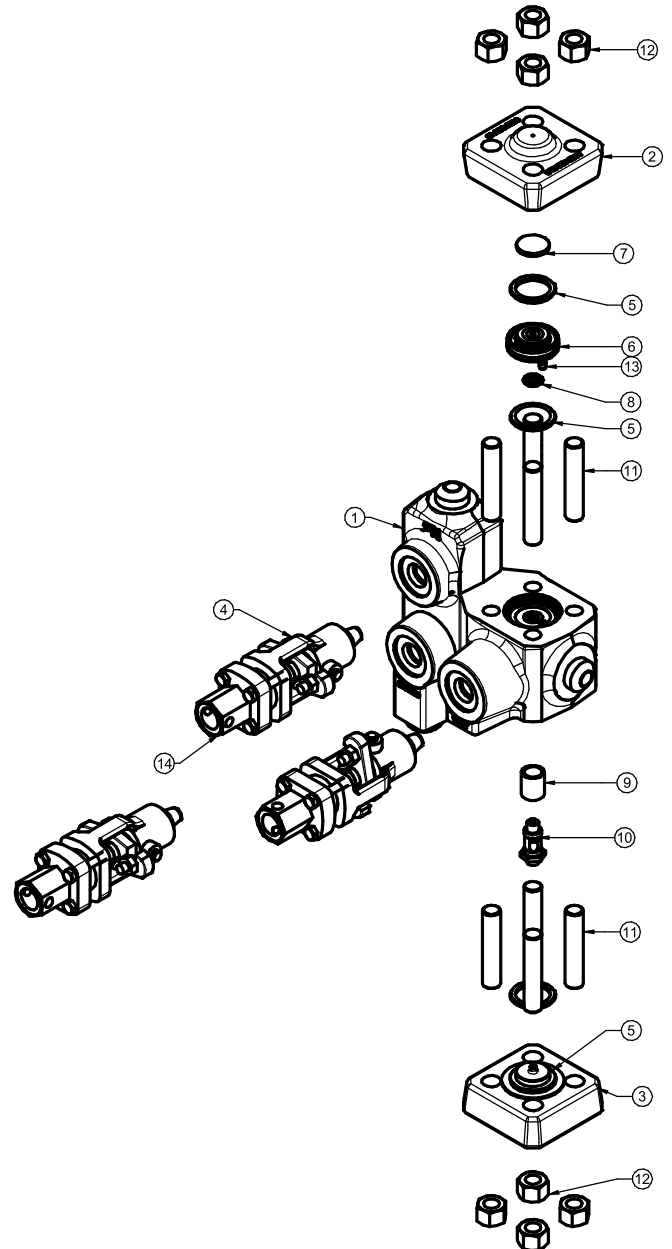


Fig.2 Exploded view of CMTD250M

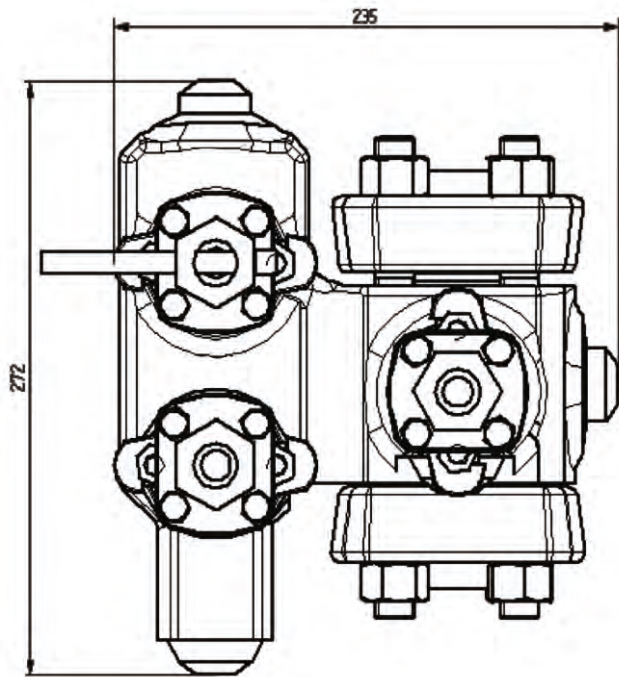


Fig 3. Overall dimensions

Maintenance

To clean or replace strainer screen (refer fig. 2)

Access to the strainer screen (9) can be obtained by removing bottom cover (3). Use spanner size of 22 for removing the spool piece (10) having strainer screen (9). Remove strainer screen and fit new or cleaned strainer screen. A new gasket (5) should be fitted. Fit the cover back to the body. The use of a thread lubricant (loctite 767) is recommended both for fitting the spool piece (10) and the nuts (12).

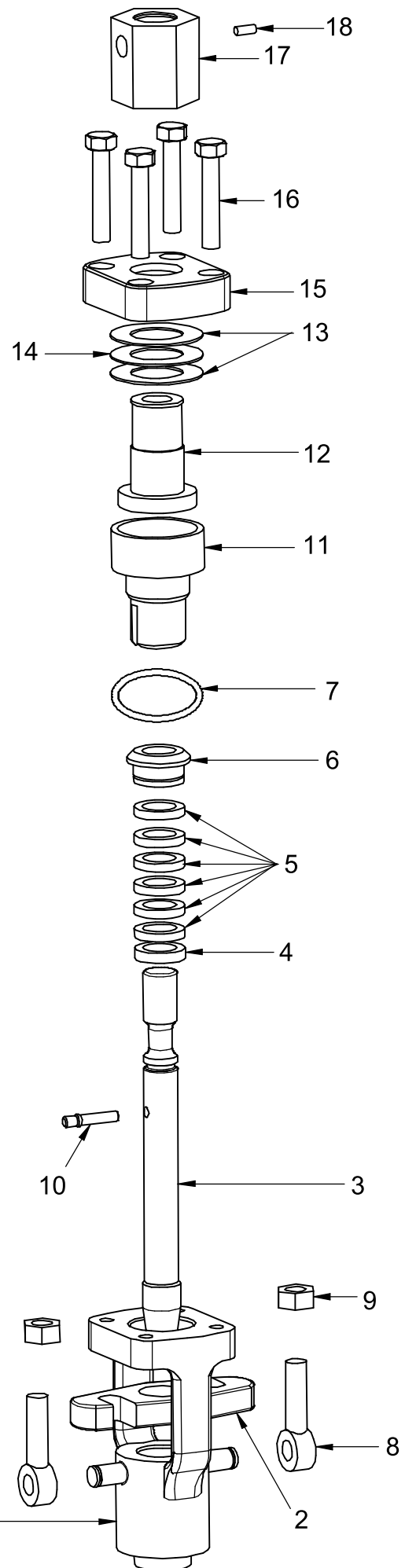
To replace the cover studs

After removing the old cover studs, fit new cover studs until the studs bottom out. Ensure that the side of the stud with less threads engages in the body tapped holes. The use of a thread anti-seize (high temperature grade) is recommended.

Isolation valve, Bypass valve and the Trap Vent valve maintenance (refer fig. 4)

Loosen the grub screw (18) from the valve key (17) and remove the valve key. Loosen allen screws (16) and remove cover (15). Unscrew and remove yoke bush (12) along with needle roller bearing (14) and thrust washers (Left Hand threads)(13). Loosen and remove gland nut (9) and washer. Tilt thrust ring (7) and stuffing box (6). Remove spindle (3), packing rings (5) and bottom ring (4) from the body- use suitable tool for this.

Replace the worn out parts and reassemble.





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