FMSCM4X, FMSCM8X, FMSCM12X

Forbes Marshall Steam and Condensate Manifold Class 800

Description

The Forbes Marshall Steam and Condensate Manifolds (FMSCM4X, FMSCM8X, FMSCM12X) are forged carbon steel compact manifolds with integral piston type stop valves. They can be used for either steam distribution or condensate collection depending on the way they are installed.

Available Types, Size and Pipe Connections

FMSCM manifolds are available with 4, 8 or 12 connections with ends,

- socket weld to ANSI B 16.11 Class 6000
- screwed BSPT or NPT.

The steam main / condensate return connection is DN 40.The tracer line and drain connections are available as DN 15, DN 20 Screwed BSPT, NPT and socket weld to ANSI B 16.11

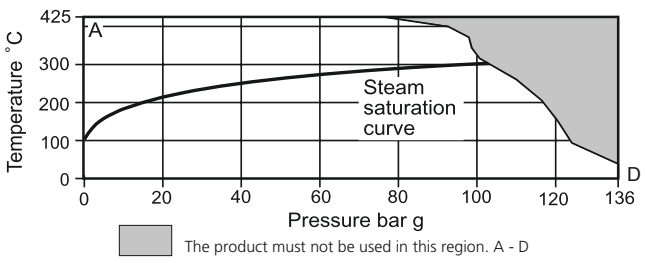
Optional Extras

The following are available at extra cost.

- Mounting kit comprising of studs, spacers and nuts
- Insulation jacket for body and flanges

Limiting Conditions	
Body design conditions	Class 800
PMA max. allowable pressure	136.2bar g @ 38°C
TMA max. allowable temperature	425°C @ 76.7 bar g
Min. allowable temperature	-29°C
PMO Max. operating pressure for saturated steam service	Class 800 104.5 bar g @ 315°C
TMO Max. operating temperature	Class 800 425°C @ 76.7 bar g
Max. cold hydraulic test pressure	204.3 bar g

ASME Class 800 - Body design condition

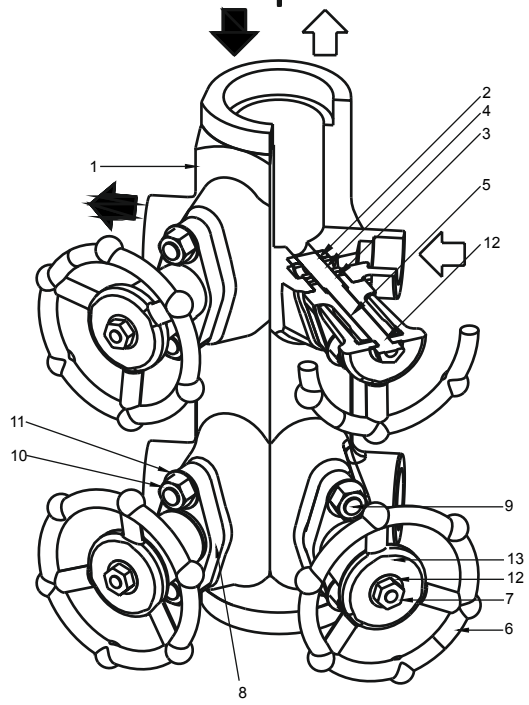


The product must not be used in this region. A - D socket weld

Alternatives

Flow direction when used for steam distribution duty

Flow direction when used for condensate collection duty



Material			
No	**Part**	**Material**	**Standard**
1	Body	Carbon Steel	ASTM A105N
2	Lower ring	Graphite and stainless steel	
3	Upper ring	Graphite and stainless steel	
4	Lantern ring	Stainless Steel	ASTM A 276 SS410
5	Piston	Stainless Steel	ASTM A 276 SS316
6	Handwheel	SG Iron / Malleable Iron	
7	Hand wheel nut	Stainless Steel	AISI 1010 GR 8
8	Bonnet	Carbon steel	ASTM A105N
9	Studs	Stainless Steel	ASTM A 193 Gr. B7
10	Nuts	Stainless Steel	ASTM A 194 Gr. 2H
11	B. washer	Spring Steel	50CRV4
12	Washer	Stainless Steel	SS304
13	Name-plate	Stainless Steel	ASTM A 240 SS304

How to Order

Example : 1 No. Forbes Marshall Class 800 Steam distribution and condensate collection manifold FMSCM8008X in forged carbon steel body with integral piston valves having 8 x DN 20 socket weld connections to ANSI B 16.11 class 6000.

Dimensions (approx.) in mm

Type	A	B	C	D	E	F	G	H	J	K	L	M	N	Wt (kg)
FMSCM8004X	255	125	65	110	70	60	45	96	110	130	50	M12	55	8.5
FMSCM8008X	505	125	65	110	70	60	45	96	110	130	50	M12	55	17
FMSCM80012X	755	125	65	110	70	60	45	96	110	130	50	M12	55	25.5

General

The FMSCM has been designed for vertical installation. The back is provided with threaded connections M12 for ease of installation by attaching to a supporting structure. It is recommended that spacers are fitted to give the manifold a standoff of at least 50mm.

Mounting Kits Available (optional extra)

- A single set comprising 2 of each stud, nut and spacer suitable for installing one FMSCM8004X
- A single set comprising 4 of each stud, nut and spacer suitable for installing one FMSCM8008X
- A multiple set comprising 12 of each stud, nut and spacer suitable for installing 6xFMSCM4X, 3xFMSCM8X, or 2xFMSCM12X (class 800)
- After installing, it is recommended that the manifolds is insulated to minimize radiated heat losses and to protect personnel from burn risks. This is most easily done using the optional insulation jacket.

Steam Distribution Duty

The recommended installation is with the steam inlet connection at the top of the manifold. A trap set should be fitted to the bottom. The discharge from this trap set should ideally be returned. If it is to be discharged to atmosphere we recommend that a diffuser is fitted.

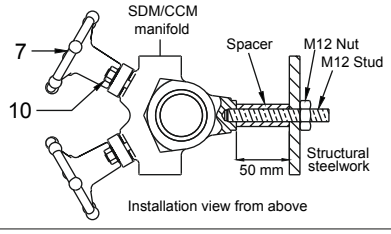
Condensate Collection Duty

The recommended installation is with the condensate outlet at the top. The bottom of the manifold should be fitted with a stop valve for blow down purposes. Again, we recommend that a diffuser is fitted.

Operation

In operation the piston valve should be either full open or fully closed. It is not intended for throttling duties.

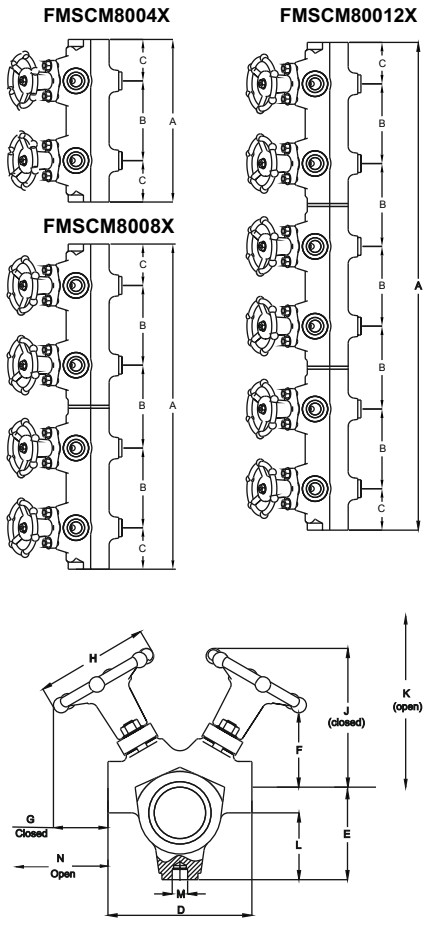
As the piston valve has such a large sealing area it is not necessary to use a valve key to ensure dead tight shut-off.



Installation view from above

Spare Parts

The spares parts available are detailed above. For ease of replacement an extractor tool is available for removing the sealing rings. Refer User Manual for spare parts.



Recommended Tightening Torques

Item	Nut	Threading	Nm
7	10 A/F	M6	5
10	16 A/F	M10	9-10

Available spares	
Sealing ring set	2, 3
Valve internals set	2, 3, 5

How to Order Spares

Always order spares by using the description given in the column headed “Available Spares” and state the type and size of manifold.

Example: Sealing ring set for an integral piston valve on a forged manifold FMSCM800 DN 15 socket weld.

FORBES MARSHALL

www.forbesmarshall.com

Forbes Marshall Arca

Codel International

Krohne Marshall

Forbes Vyncke

Forbes Marshall Steam Systems

A: Forbes Marshall Pvt. Ltd.
Opp. 106th Milestone, CTS 2220,
Mumbai-Pune Road, Kasarwadi,
Pune MH 411034 INDIA
P: +91(0)20-68138555
F: +91(0)20-68138402
E: ccmidc@forbesmarshall.com

Forbes Marshall International Pte. Ltd.
16A, Tuas Avenue 1,
#05-21, JTC Space @Tuas
Singapore - 639533
P: +65 6219 3890

CIN No: U28996PN1985PTC037806

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