Cert. No. LRQ 0963008

ISO 9001

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ST Issue 3

MSC - ASTM Manifolds with Flanged Connections for Steam Distribution and Condensate Collection

Description
A range of flanged forged carbon steel compact manifolds with integral piston type stop valves for steam distribution and condensate collection duty.
Manifolds type MSC can be used for either steam distribution duty **or** condensate collection duty depending on the way they are installed.
They are supplied with EN 10204 3.1.B certification as standard for the body, flanges, reducers and bonnet.

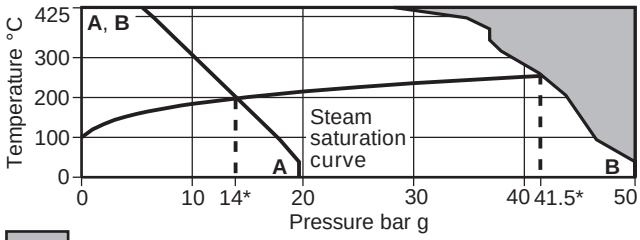
Available types, sizes and pipe connections
Available as 4, 8 or 12 connection manifolds designated MSC04, MSC08 and MSC12 respectively and flanged BS 1560 (ANSI) class 150 or 300.
The steam main/condensate return connection is DN40.
The tracer line and drain connections are available as DN15, DN20 or DN25.

Optional equipment
The following are available as optional items:
- Mounting kit comprising of studs, spacers and nuts.
- Insulation jackets for body and flanges.

Limiting conditions

Body design conditions	ANSI Class 300 (ISO PN50)	
Designed for a maximum cold hydraulic test pressure of:	ANSI Class 150	30 bar g
	ANSI Class 300	76 bar g

Operating range

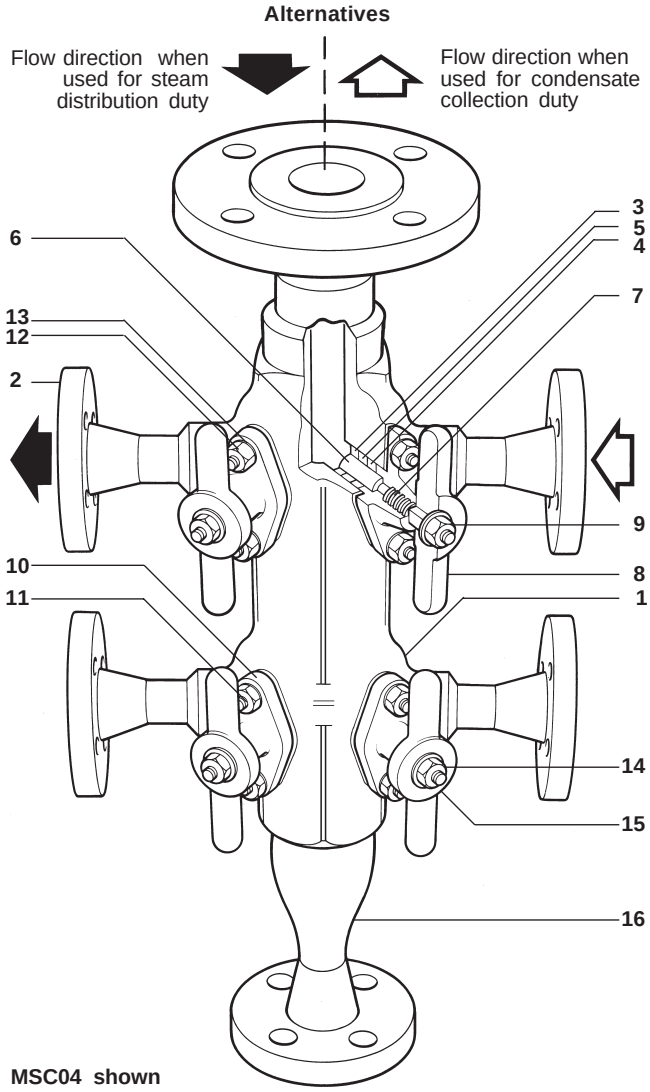


The product must not be used in this region.

*PMO Maximum operating pressure recommended for saturated steam service.
A - A Flanged ANSI Class 150
B - B Flanged ANSI Class 300

Materials

No.	Description	Material	
1	Body	Carbon steel	ASTM A105N
2	Flange	Carbon steel	ASTM A105N
3	Lower ring	Graphite and stainless steel	
4	Upper ring	Graphite and stainless steel	
5	Lantern bush	Carbon steel	
6	Piston	Stainless steel	ASTM A479 F316
7	Spindle	Stainless steel	ASTM A479 F410
8	Handle	Carbon steel	ASTM A105N
9	Handle nut	Stainless steel	ASTM A193 B8
10	Bonnet	Carbon steel	ASTM A105N
11	Nut	Carbon steel	ASTM A194 Gr. 8
12	Studs	Carbon steel	ASTM A193 B.8
13	Washers	Stainless steel	
14	Washer	Stainless steel	
15	Name-plate	Stainless steel	
16	Reducer	Carbon steel	ASTM A234 WPB



MSC04 shown

Alternative materials
Low temperature carbon steel, low alloy steel and austenitic stainless steel versions are available on request.

Certification
The product is available with certification to EN 10204 3.1.B for body, flanges, reducers and bonnet as standard.

K_V valves
The K_V stated is for each valve rather than the complete manifold.

	DN15	DN20
	K_V1.8	K_V1.8

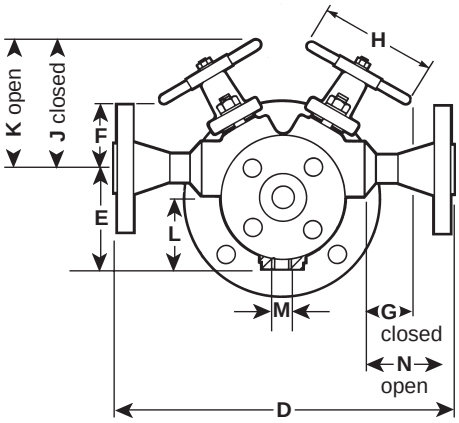
For conversion: $C_V(UK) = K_V \times 0.963$ $C_V(US) = K_V \times 1.156$

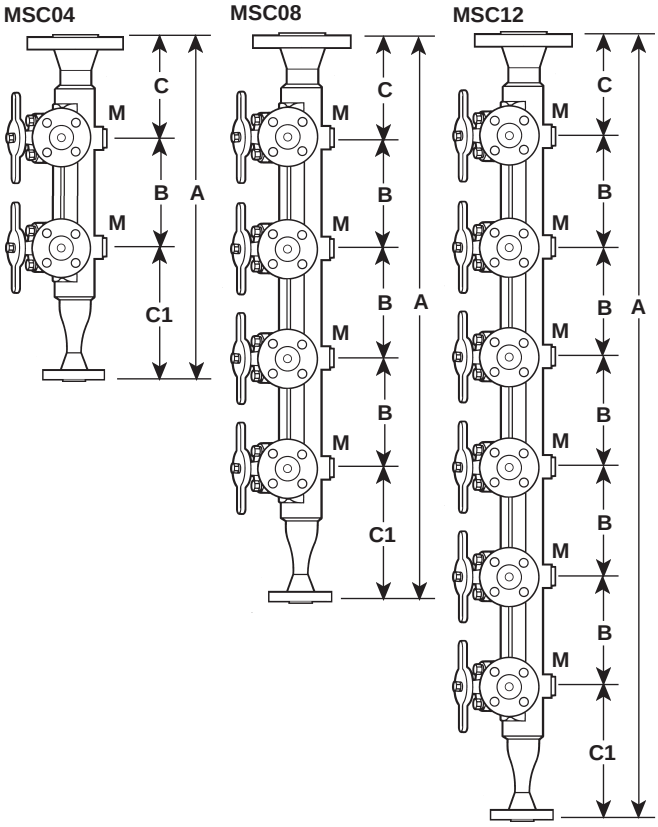
How to specify
Steam distribution and condensate collection manifold MCS08 in forged carbon steel body with integral piston valves and with 8 connections DN20 flanged ANSI Class 300. Complete with EN 10204 3.1.B certification as standard for the body, flanges, reducers and bonnet.

Local regulations may restrict the use of this product to below the conditions quoted.
In the interests of development and improvement of the product, we reserve the right to change the specification.

Dimensions / weights (approximate) in mm and kg

Connections		Flanged ANSI Class 150			Flanged ANSI Class 300		
Steam / condensate main		DN40	DN40	DN40	DN40	DN40	DN40
Tracer / drain		DN15	DN20	DN25	DN15	DN20	DN25
A	MSC04	497	501	504	507	512	517
	MSC08	828	833	836	839	844	849
	MSC12	1148	1153	1156	1159	1164	1169
B		160			160		
C		149			155		
C1	MSC04	188	193	196	193	197	202
	MSC08/12	200	204	207	204	209	214
D		239	248	254	247	258	267
E		69			69		
F		43			43		
G		95			95		
H		100			100		
J		96			96		
K		110			110		
L		50			50		
M		M12			M12		
N		103			103		
Weight	MSC04	15.0	16.0	18.0	16.5	19.0	20.0
	MSC08	17.0	19.5	22.0	20.0	24.0	26.5
	MSC12	19.5	22.5	26.0	23.0	30.0	33.0





Installation

General

The manifold has been designed for vertical installation. The back is provided with threaded connections M12 for ease of installation by attaching to a supporting structure.

Mounting kits

The manifold is generally conveniently attached to the structural steelwork supporting the plant.

For ease of insulation it is recommended that spacers are fitted to give the manifold a stand-off of at least 50 mm.

For convenience the following sets of mounting kit are available:

- A single set comprising 2 off each stud, nut and spacer suitable for installing one MSC04 or MSC08.
- A single set comprising 4 off each stud, nut and spacer suitable for installing one MSC12.
- A multiple set comprising 12 off each stud, nut and spacer suitable for installing 6 x MSC04, 6 x MSC08 or 3 x MSC12.

After installation it is recommended that the manifold is insulated to minimise radiated heat losses and to protect personnel from burn risks. This is most easily done using the optional insulation jacket.

Steam distribution duty

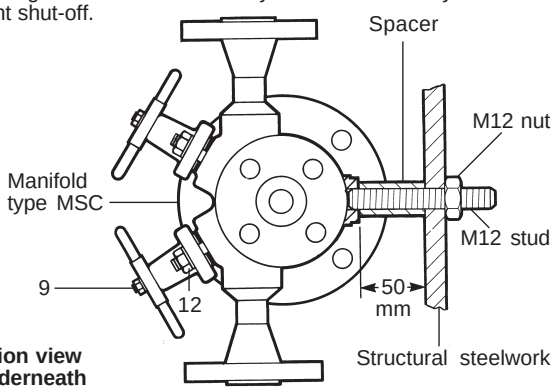
The recommended installation is with the steam inlet connection at the top of the manifold. A trap set should be fitted to the bottom. The discharge from this trap set should ideally be returned. If it is to be discharged to atmosphere we recommend that a diffuser is fitted.

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 blowdown purposes. Again, we recommend that a diffuser is fitted.

Operation

In operation the piston valve should be either fully open or 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 underneath

Maintenance

Detailed Installation and Maintenance Instructions are available on request.

Spare parts

The spare parts available are detailed below. For ease of replacement an extractor tool is available for removing the sealing rings.

Available spares

Sealing ring set	**3**, **4**
Valve internals set	**3**, **4**, **5**, **6**, **8**, **9**, **14**
Extractor tool	

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 equipment.
Example: 1 - Sealing ring set for integral piston valve on carbon steel manifold MSC04 DN15 flanged ANSI Class 300.

Recommended tightening torques

Item		or mm		N m
12	14		$^5/_{16}$" UNC	10
9	10		M6	0.1