

TI-P117-40
CMGT Issue 4

MSC-125 and MSC-160 Manifolds for Steam Distribution and Condensate Collection.

Description

A range of forged carbon steel compact manifolds with integral piston type stop valves for steam distribution and condensate collection duty.

MSC manifolds can be used for either steam distribution duty or condensate collection duty depending on the way they are installed.

Operation

In operation the piston valve should be either fully 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. Please note that manifolds without piston valves fitted are also available.

Standards

This product fully complies with the requirements of the European Pressure Equipment Directive (PED).

Certification

The product is available with certification to EN 10204 3.1.

Note: All certification/inspection requirements must be stated at the time of order placement.

Available types, sizes and pipe connections

MSC manifolds are available with 4, 8 or 12 connections, with and without integral piston isolation valves designated:

MSC04-125, MSC08-125 and MSC12-125 with 125mm pitch respectively DN15 and DN20 screwed BSP, NPT or socket weld to B16.11 Class 3000 tracer ports are available as standard.

MSC04-160, MSC08-160 and MSC12-160 with 160mm pitch respectively DN15 and DN20 screwed BSP, NPT or socket weld to B16.11 Class 3000 tracer ports are available as standard.

The steam main/condensate return connection is **DN40** socket weld to ASME B 16.11 as standard.

Alternative connections, including flanged, are available on request.

Optional extras

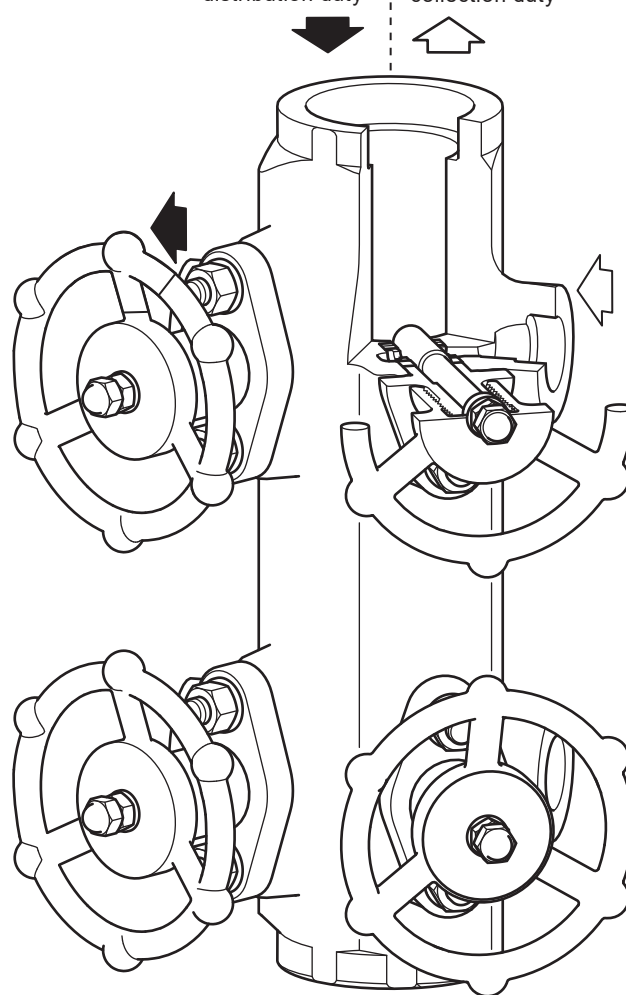
The following are available at extra cost:

- Mounting kit comprising of studs, spacers and nuts.
- Insulating jacket.
- Fitted with steam traps for quick installation projects.

Recommended alternatives

Flow direction when
used for steam
distribution duty

Flow direction when
used for condensate
collection duty



MSC04-160 shown having socket weld connections

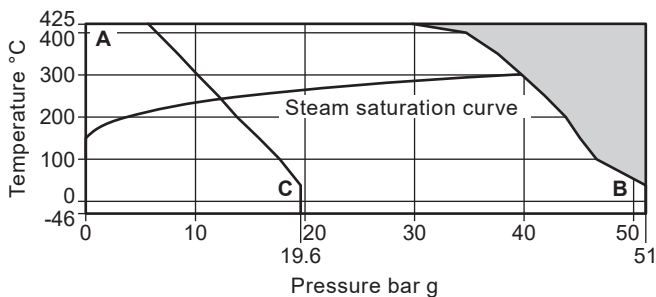
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Steam traps
Manifolds and insulation jackets

Pressure / temperature limits



- The product **must not** be used in this region.
- A - B** Flanged ASME Class 300, screwed and socket weld.
- A - C** Flanged ASME Class 150.

Body design conditions		ASME B16.5 Class 300
PMA	Maximum allowable pressure	51 bar g @ 38 °C
TMA	Maximum allowable temperature	425 °C @ 28 bar g
Minimum allowable temperature		-46 °C
PMO	Maximum operating pressure for saturated steam service	ASME 150 14 bar g
		ASME 300, SW, NPT and BSP 41.5 bar g
TMO	Maximum operating temperature	ASME 150 425 °C @ 5.5 bar g
		ASME 300, SW, NPT and BSP 425 °C @ 28 bar g
Minimum operating temperature		0 °C
Note: For lower operating temperatures consult Spirax Sarco		
Designed for a maximum cold hydraulic test pressure of		77 bar g

K_v values

All sizes	K _v 1.8
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For conversion:
C_v (UK) = K_v x 0.963
C_v (US) = K_v x 1.156

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

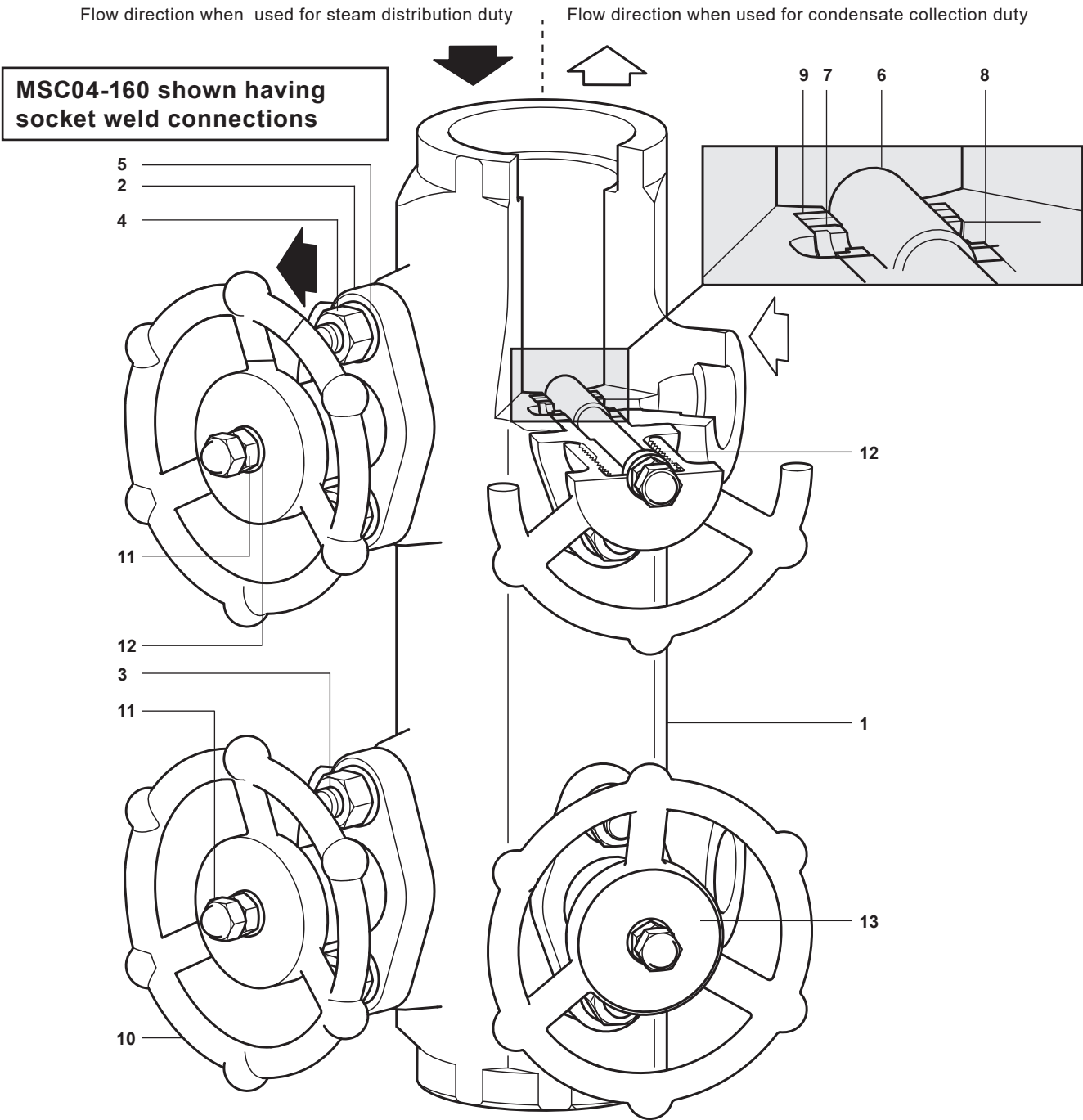
Recommended alternatives

Materials

No. Part	Material		
1	Body	Carbon steel	ASTM A105N/LF2
2	Bonnet	Carbon steel (Zinc plated)	ASTM A105N/LF2
3	Studs	Steel (plated)	ASTM A193 B7
4	Nuts	Steel (plated)	ASTM A194 2H
5	Washers	Stainless steel	
6	Piston	Stainless steel	AISI 410 : 1.4006
7	Lantern bush	Stainless steel	ASTM A276 : AISI 431

No. Part	Material		
8	Upper ring	Graphite and stainless steel	
9	Lower ring	Graphite and stainless steel	
10	Handwheel	Carbon steel (Zinc plated)	EN 10213 : 1.0619N
11	Handwheel nuts	Stainless steel	
12	Nitronic 60 washer	Stainless steel	
13	Nameplates	Stainless steel	

Note : There is one nameplate on the handwheel and two on the body, though not shown on the illustration.

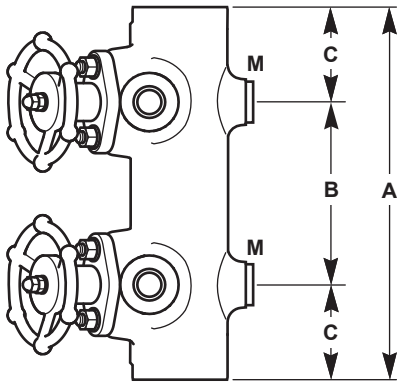


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Manifolds and insulation jackets

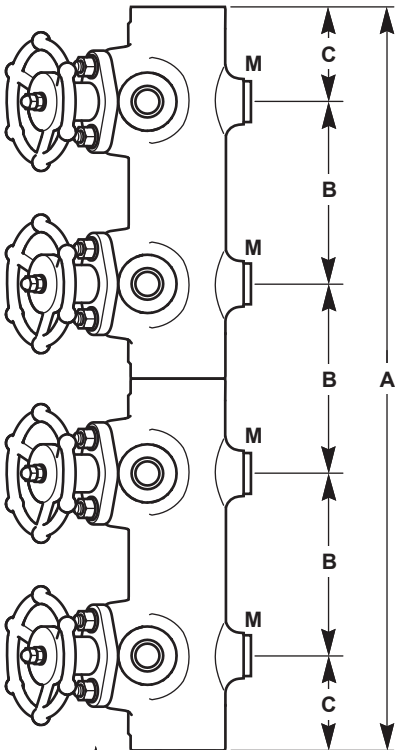
Dimensions/weights (approximate) in mm and kg

160 mm pitch version														
Type	A	B	C	D	E	F	G	H	J	K	L	M	N	Weight
MSC04-160	325	160	82.5	110	71	48	37.5	75	102	120	50	M12	45	10
MSC08-160	645													20
MSC12-160	970													30
125 mm pitch version														
Type	A	B	C	D	E	F	G	H	J	K	L	M	N	Weight
MSC04-125	255	125	65	110	71	48	37.5	75	102	120	50	M12	45	9
MSC08-125	505													18
MSC12-125	755													26

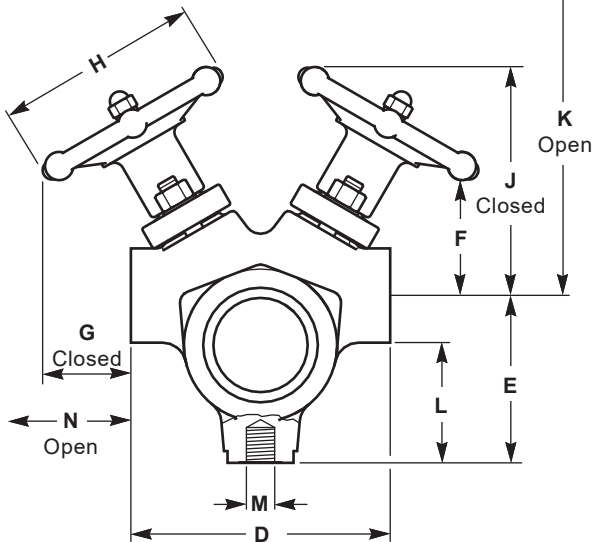
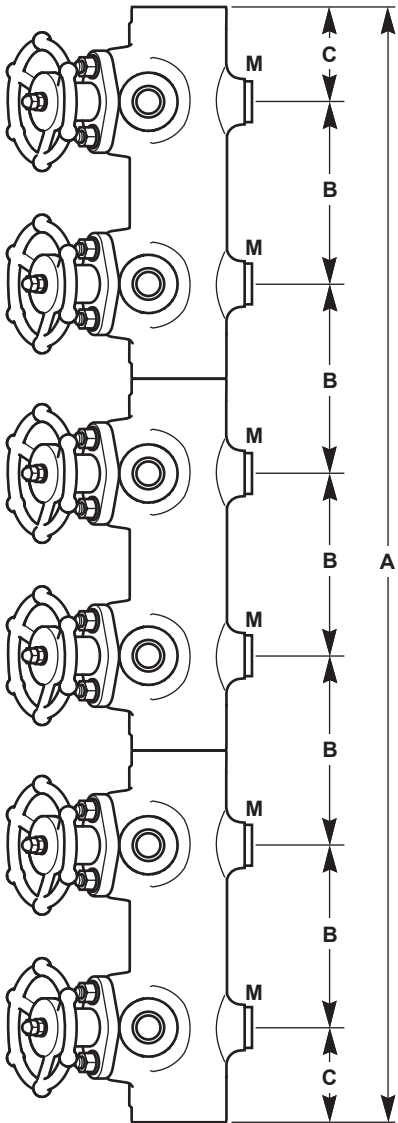
MSC04-160 and 125



MSC08-160 and 125



MSC12-160 and 125

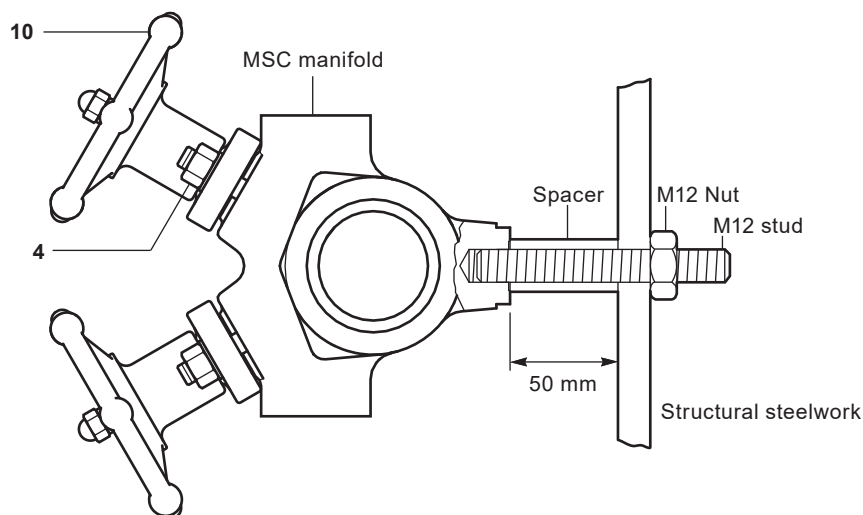


Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions supplied with the product.

General

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



Installation view from above

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 MSC04-160 or MSC08-160.
- A single set comprising 4 off each stud, nut and spacer suitable for installing one MSC12-160.
- A multiple set comprising 12 off each stud, nut and spacer suitable for installing 6 x MSC04-160, 6 x MSC08-160 or 3 x MSC12-160.

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 insulating 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.

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How to order

Example: 1 off Spirax Sarco MSC08-125 steam distribution and condensate collection manifold, with 125mm pitch, Dual Certified ASTM A105N/A350LF2 forged carbon steel body with integral piston valves having 8 x DN20 socket weld connections to ASME B 16.11 Class 3000. Complete with EN 10204 3.1 certification as standard for the body and bonnet.

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Steam traps

Manifolds and insulation jackets

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	8 and 9
Piston valve assembly	2, 4, 5, 6, 7, 8, 9, 10, 11 and 12
Piston valve sub-assembly	6, 7, 8 and 9
Extractor tool	See below
- A single set comprising 2 off each stud, nut and spacer suitable for installing one MSC04-160 or MSC08-160.	
Mounting kit	- A single set comprising 4 off each stud, nut and spacer suitable for installing one MSC12-160.
(See page 5)	- A multiple set comprising 12 off each stud, nut and spacer suitable for installing 6 x MSC04-160, 6 x MSC08-160 or 3 x MSC12-160.

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: 1 off Sealing ring set for an integral piston valve on a carbon steel manifold MSC04-125 DN15 socket weld.

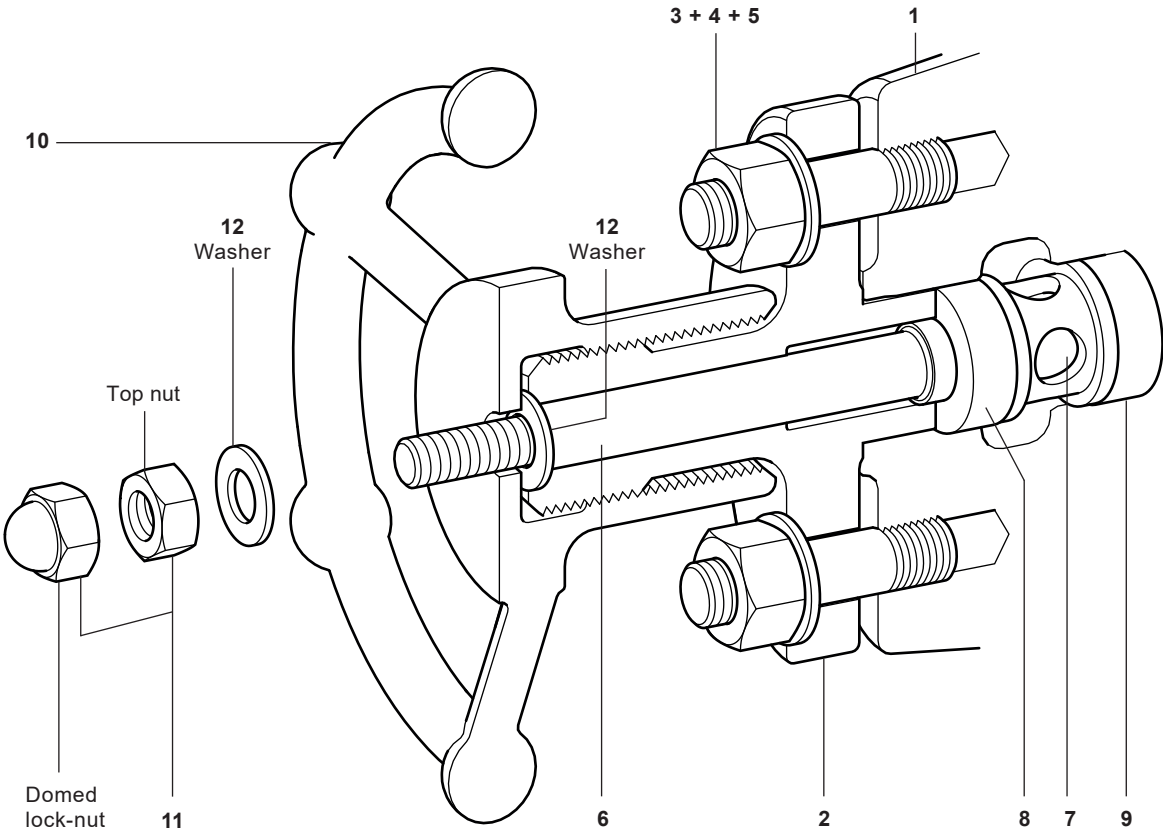




Table 1 Recommended tightening torques

Item		or mm		N m	lbf ft
4	14		5/16" x 18 UNC	12	8.9
11	10		M6	12	8.9

Extractor tool

