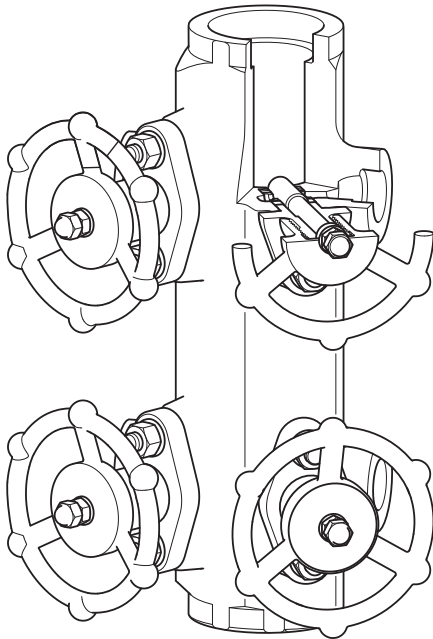




MSC04-160  
shown having socket weld connections

## GMF Manifolds for Steam Distribution and Condensate Collection

### MSC-125 and MSC-160

#### 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.

#### 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.

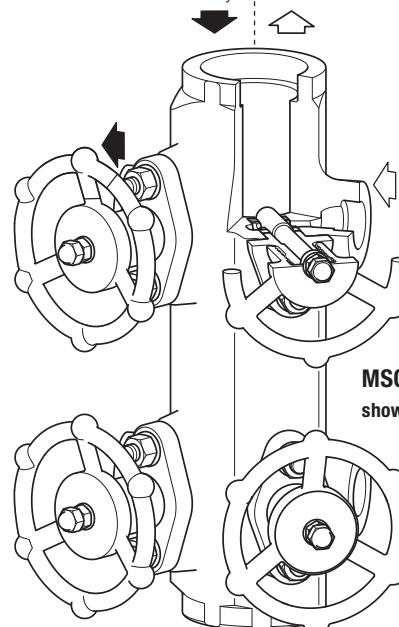
Alternative connections, including flanged, are available on request.

#### 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.

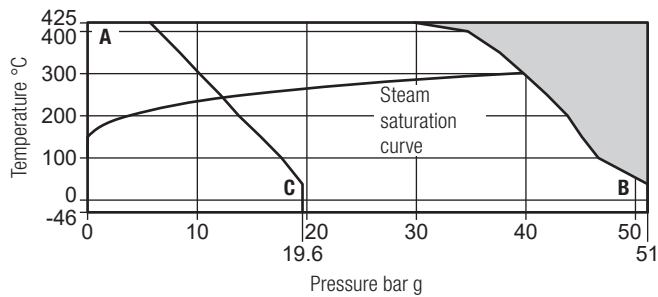
#### Recommended alternatives

Flow direction when used for steam distribution duty      Flow direction when used for condensate collection duty



MSC04-160  
shown having socket weld connections

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 <b>Note:</b> For lower operating temperatures consult GESTRA |                                                        |                           | 0 °C                 |
| Designed for a maximum cold hydraulic test pressure of                                     |                                                        |                           | 76 bar g             |

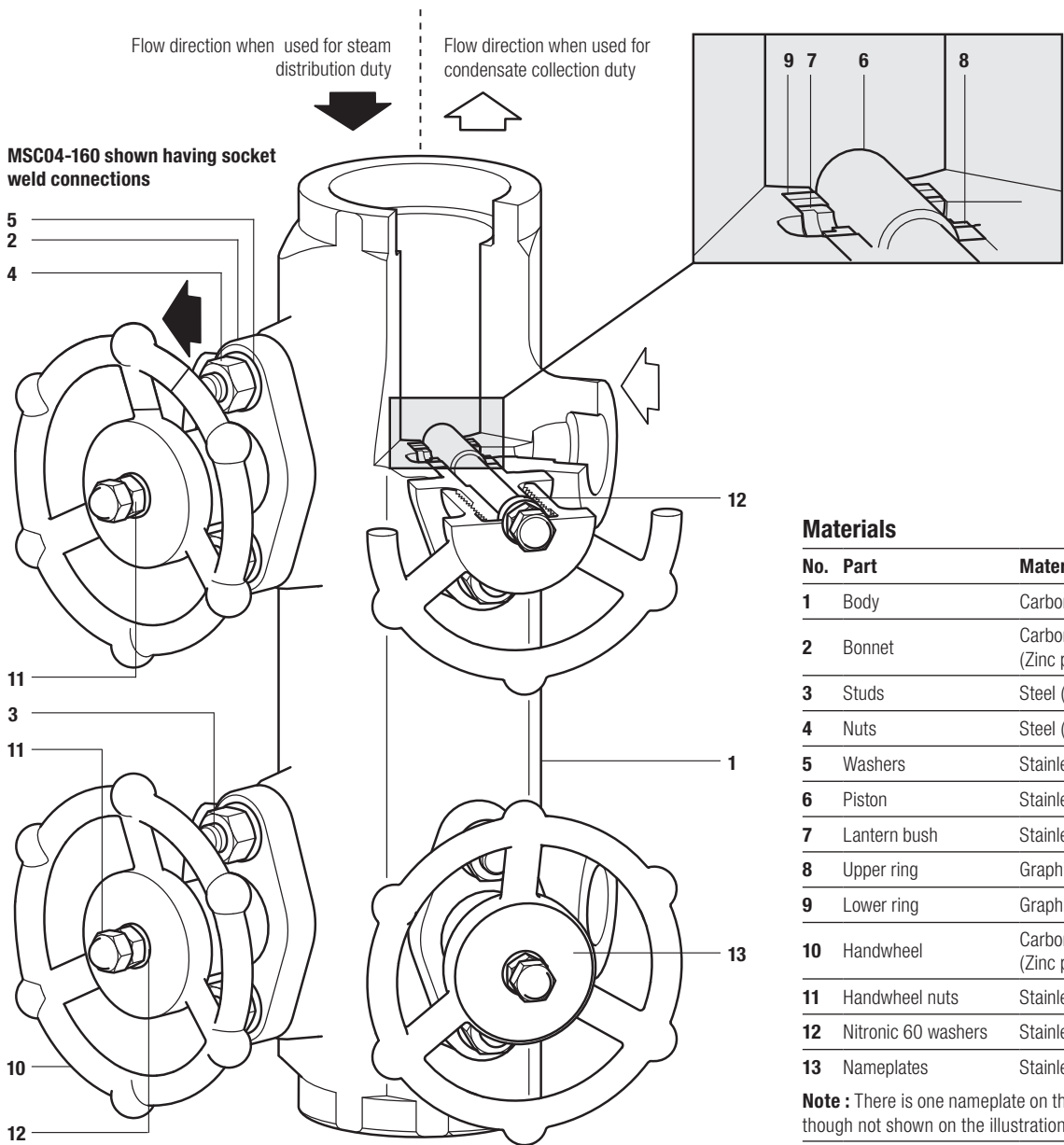
K<sub>V</sub> values

|           |                    |
|-----------|--------------------|
| All sizes | K <sub>V</sub> 1.8 |
|-----------|--------------------|

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

The K<sub>V</sub> stated is for each valve rather than the complete manifold.

Recommended alternatives



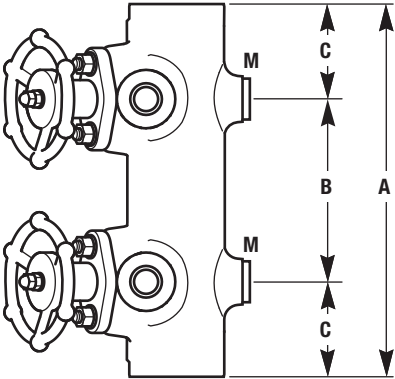
Materials

| 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 |
| 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 washers | Stainless steel              |                      |
| 13  | Nameplates          | Stainless steel              |                      |

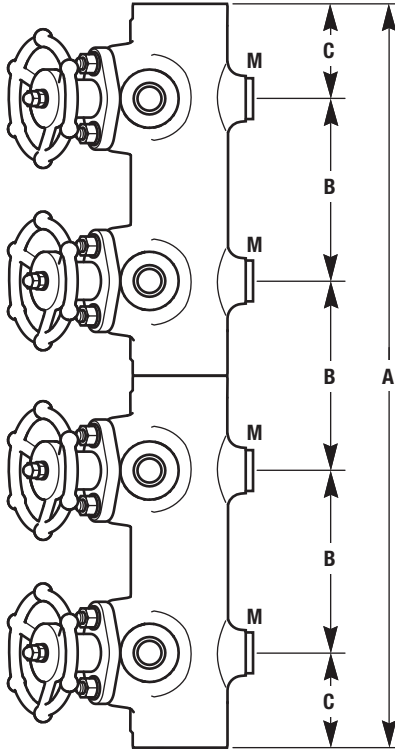
**Note :** There is one nameplate on the handwheel and two on the body, though not shown on the illustration.

| 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     |
| 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     |

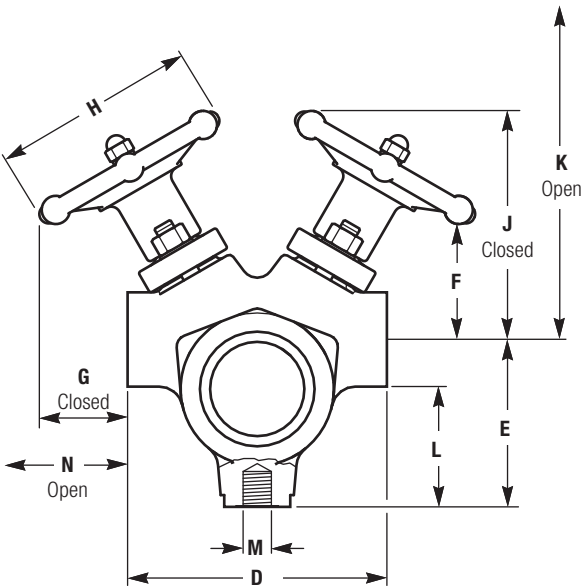
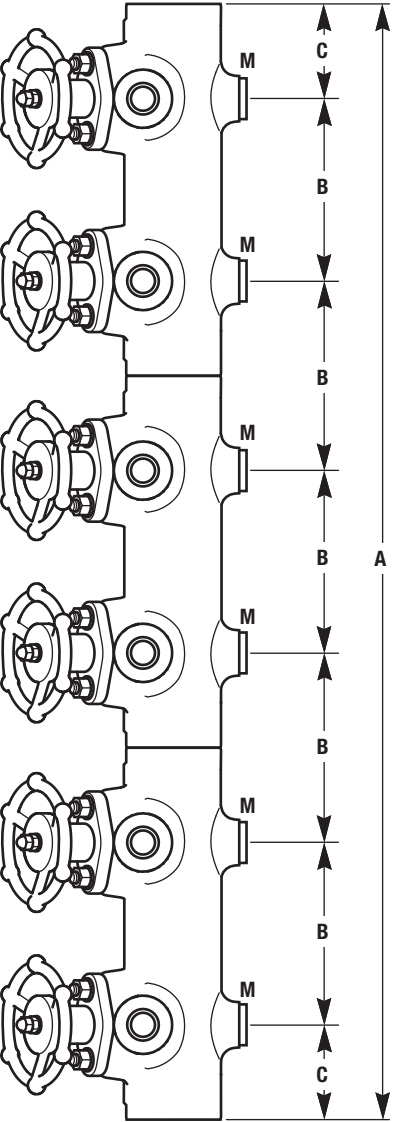
MSC04-125 and 160



MSC08-125 and 160



MSC12-125 and 160



## Safety information, installation and maintenance

For full details see the Original Installation Instructions supplied with the product.

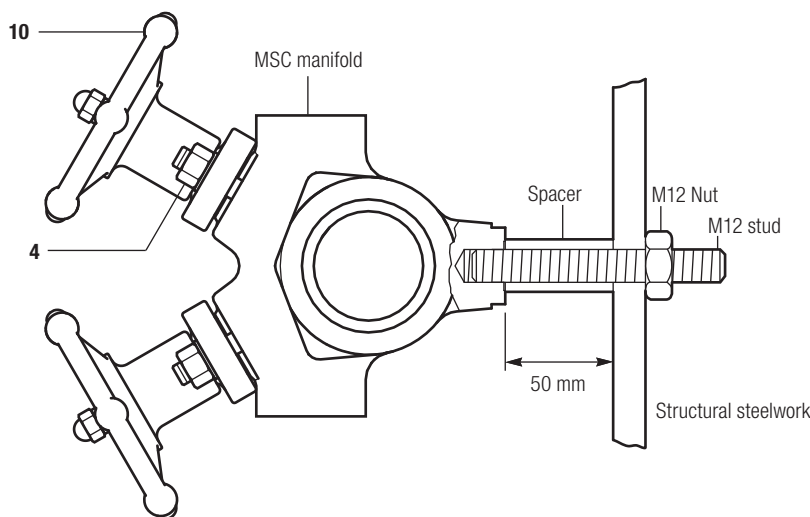
### General

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.

### 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.



Installation view from above

### 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 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.

## How to order

**Example:** 1 off GESTRA MSC08-160 steam distribution and condensate collection manifold, with 160 mm 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.

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                                                                                                                                                                                                                                                                                                                                                            |
| Mounting kit<br>(See previous page) | <div><div>- A single set comprising 2 off each stud, nut and spacer suitable for installing one MSC04 or MSC08.</div><div>- A single set comprising 4 off each stud, nut and spacer suitable for installing one MSC12.</div><div>- A multiple set comprising 12 off each stud, nut and spacer suitable for installing 6 x MSC04, 6 x MSC08 or 3 x MSC12.</div></div> |

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 MSC04-160 DN15 socket weld.

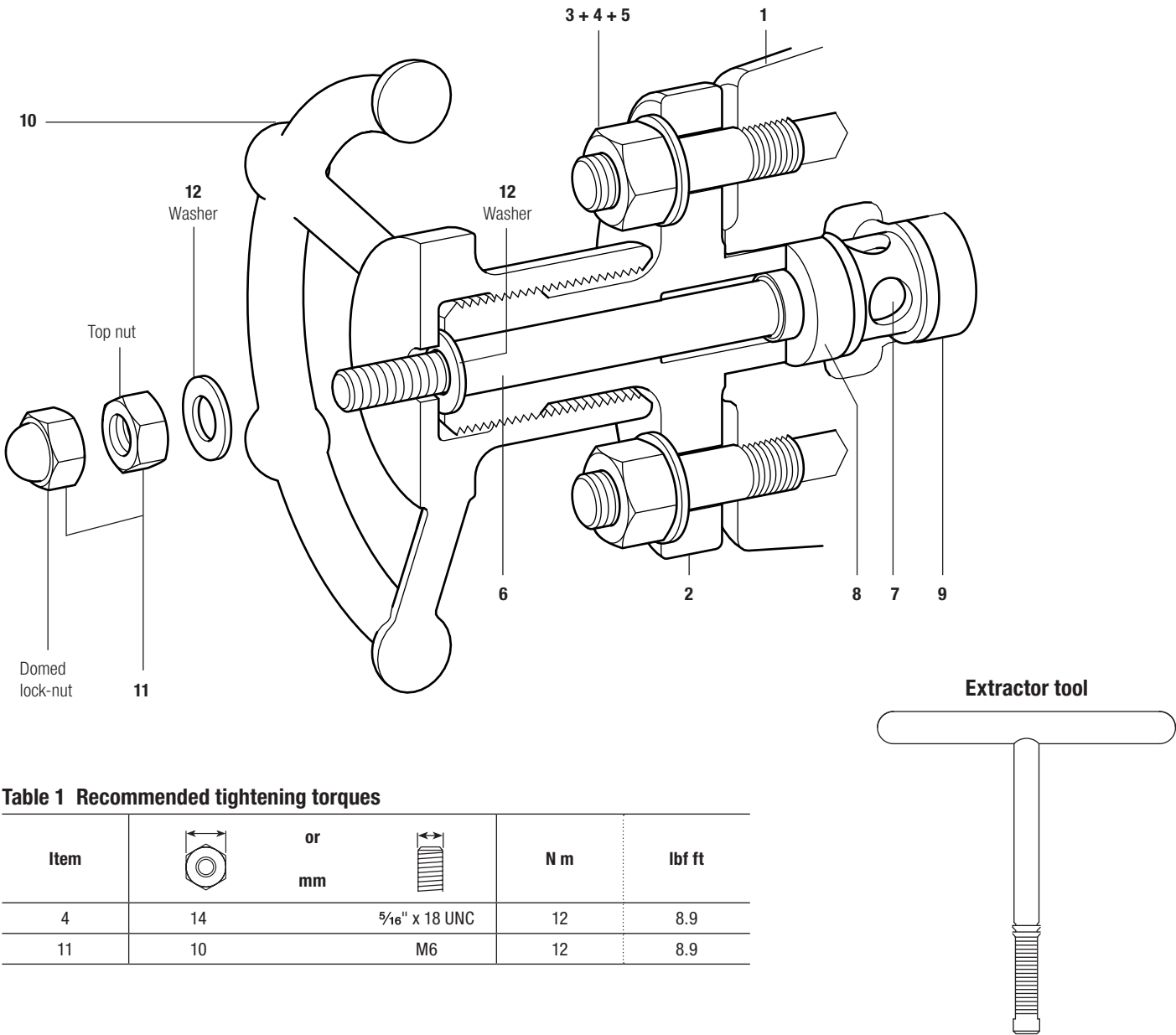


Table 1 Recommended tightening torques

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

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