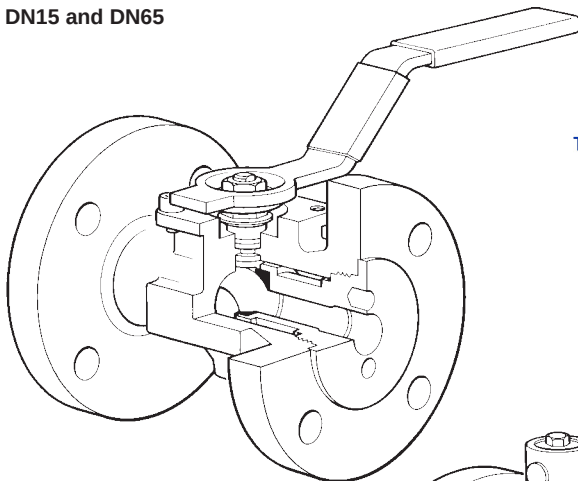


## M21S ISO Ball Valve Installation and Maintenance Instructions

DN15 and DN65



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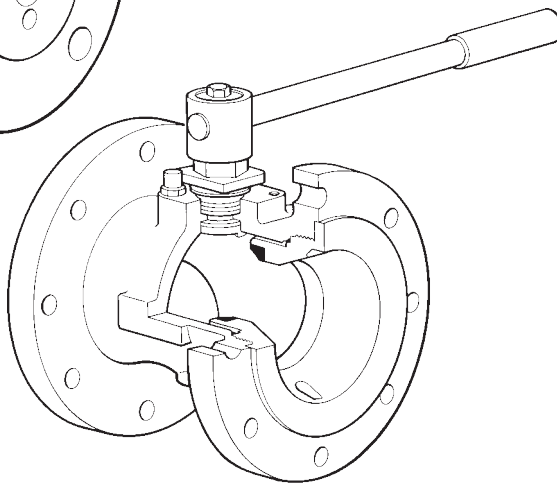
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DN80 - DN100



### Installation

Although the valve has great structural integrity, severe misalignment and / or the pulling effect of incorrect pipe length will have a detrimental effect on the valve and must be avoided. Particular attention should be paid to correct pipe alignment such that the inlet pipework and valve are all on the same axis.

Valves are for on/off applications and may be installed with flow in either direction. When used on steam services:

1. Fit a trapped drain pocket upstream of the valve.
2. Open valve slowly to prevent the risk of waterhammer damage.

### Safety note

Before commencing any dismantling work ensure that no flow is taking place in the pipeline; that the line is isolated elsewhere, or that the flow of the fluid is discontinued. Any fluid remaining in the line should be drained off before dismantling the valve.

## Maintenance

### General

When seats are replaced and the valve is reassembled its advisable to conduct a hydraulic test to the body at 60 bar g and a seat leakage test using compressed air at 7 bar g.

**Note:** A special tool is required in order to remove the insert (2). This service is only available at Spirax Sarco.

### To replace main stem seals and seats.

#### WARNING:

If the old insert 'O' ring has been subjected to a temperature approaching 315°C or higher then it may have decomposed and formed hydrofluoric acid. Avoid skin contact and inhalation of any fumes as the acid will cause deep skin burns and damage the respiratory system.

Further details about viton are available from Spirax Sarco in the form of an information sheet.

1. Remove valve from line (see safety note).
2. Using special tool - an example of which is available from Spirax Sarco, unscrew the insert (2). See warning.
3. It is now possible to remove the seats (5) and the ball. Withdraw the stem and replace the main stem seal (6A)
4. Reassemble using a new insert 'O' ring (11). See warning.
5. Ensure that a PTFE based sealant compound is applied to the insert thread.
6. The insert (2) should be tightened to the torques shown in the table opposite.

### To replace secondary stem seals

1. Remove nuts (10 and 9).

2. Replace stem seals (6).

**Note:** If leakage is observed through the stem it may be stopped by tightening gland nut (9) without necessitating the replacement of stem seals.

The gland nut (9) should be tightened to the torques shown in the table below.

## Spare parts

The spare parts available are shown in heavy outline. Parts drawn in broken line are not supplied as spares.

### Available spare

Seat, stem seal and gasket set	5, 6, 11
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### How to order spares

Always order spares by using the description given in the column headed Available Spare and stating the size and type of ball valve required.

**Example:** 1 - Seat, stem seal and gasket set for DN50 PN40 M21S ISO ball valve.

### Recommended tightening torques

#### Insert

Item	Size	N m
2	DN15 - DN32	108 - 135
	DN40	135 - 160
	DN50	215 - 245
	DN65	245 - 270
	DN80	405 - 605
	DN100	540 - 740

#### Gland nut

Item	Size	N m
9	DN15 - DN20	5.4 - 8.1
	DN25 - DN65	34 - 41
	DN80 - DN100	54 - 61

