



Cert. No. LQR 0963008

ISO 9001

# spirax sarco

## M80i ISO

# Stainless Steel Ball Valve for Sanitary Applications

### Description

The M80i investment cast 316L stainless steel, three-piece body ball valve has ISO mounting as standard. It has been designed in accordance with ASME BPE for use as an isolating valve, not a control valve on clean steam and other high purity and aseptic processes where bacteria and media deposits can put product quality at risk. The low maintenance, clean design is suitable for steam, liquid and gas services ranging from vacuum to the higher temperatures and pressures. Applications include the pharmaceutical, biotech, food and beverage and cosmetics industries.

### Principal features:

- **True port design** - The internal diameter of the end connections and ball precisely match that of the connecting tubing to guarantee drainability.
- **Low ferrite** - The M80i has <3% ferrite content on all wetted parts helping to prevent rouge.
- **Designed with orbital welding in mind** - ASME BPE compliant extended tube weld end connections means that automatic orbital welding can be performed without valve disassembly and low sulphur (0.005% to 0.017%) content helps a consistent and fully penetrated weld.
- **Designed for automation** - ISO 5211 mounting pad as standard enabling simple actuator mounting.
- **Lockable handle** - A lockable handle allows the valve to be locked in the open or closed position – ensuring system integrity.

### Surface finish

The M80i standard internal surface finish is electropolished to 0.375 micron Ra (15 micro inch)  
External surface finishes are as cast / machined.

### Available types

<b>M80iVEP ISO</b>	Virgin PTFE TFM 1600 electropolished to 0.375 micron Ra
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### Standards

This product fully complies with the requirements of the European Pressure Equipment Directive 97/23/EC.

### Certification:

- Material certification to EN 10204 3.1
- Elastomer FDA / USP compliance certificate.
- Surface finish certification.

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

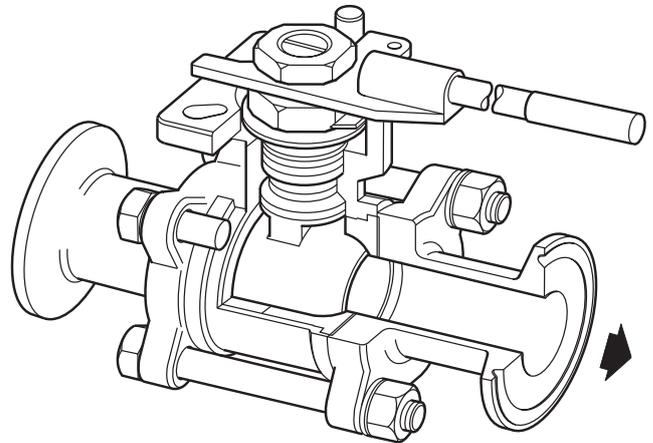
### Packaging

The M80i is finished and packaged in a segregated clean environment. Each valve is end capped and sealed in a plastic bag, in accordance with ASME BPE, to ensure the ingress of dirt is avoided.

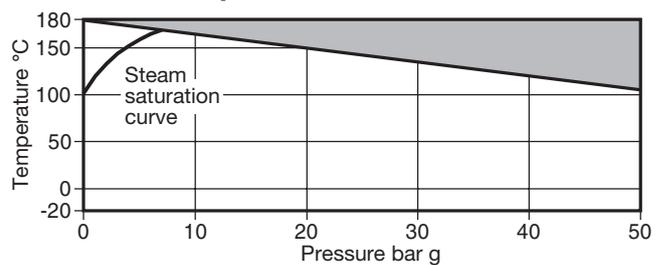
### Sizes and pipe connections

2½", 3" and 4" Sanitary clamp (ASME BPE)  
2½", 3" and 4" extended O/D tube weld ends (ETO) (ASME BPE).  
**Alternatively:** ½", ¾", 1", 1½" and 2" sanitary ball valves are available through our M70i range - see TI-P182-05.

**Note:** Other connection options are available on request. Please consult Spirax Sarco.



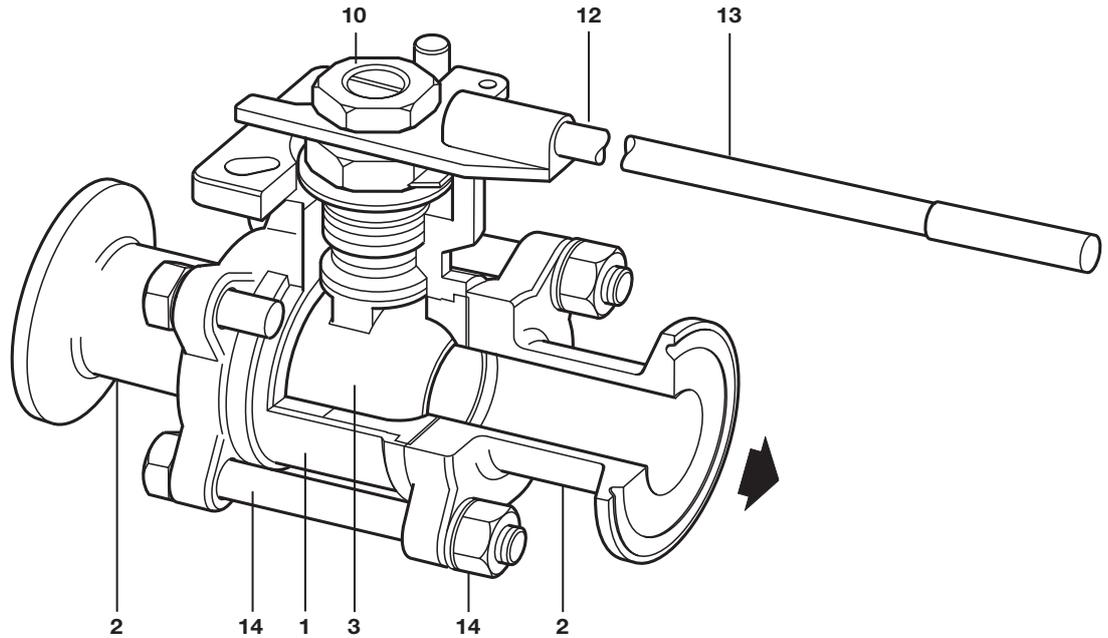
### Pressure / temperature limits



The product **must not** be used in this region.

**A - B** Virgin PTFE TFM 1600

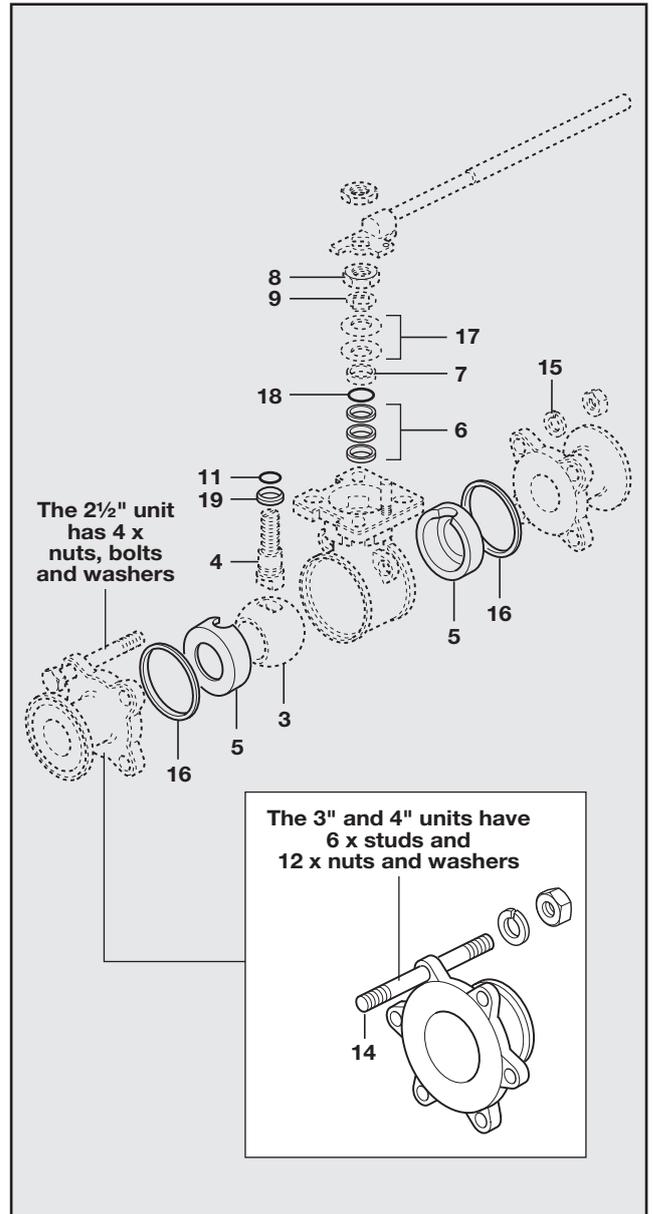
Body design conditions	720 psi
PMA Maximum allowable pressure	50 bar g @ 109°C
TMA Maximum allowable temperature	180°C @ 0 bar g
Minimum allowable temperature	-20°C
PMO Maximum operating pressure for saturated steam service	7 bar g
TMO Maximum operating temperature	180°C @ 0 bar g
Minimum operating temperature	-20°C
ΔPMX Maximum differential pressure is limited to the PMO	
Designed for a maximum cold hydraulic test pressure of 75 bar g	



**Materials**

No. Part	Material
1 Body	Stainless steel ASTM A351 Gr. CF3M (316L)
2 End connections	Stainless steel ASTM A351 Gr. CF3M (316L)
3 Ball	Stainless steel ASTM A351 Gr. CF3M (316L)
4 Stem	Stainless steel AISI 316L
5 Seat and cavity filler	Virgin PTFE TFM 1600
6 Stem seals	Virgin PTFE TFM 1600
7 Spacer	Stainless steel AISI 304
8 Compression nut	Stainless steel AISI 304
9 Lock washer	Stainless steel AISI 304
10 Stem nut	Stainless steel AISI 304
11 Stem 'O'ring	Viton
12 Handle	Stainless steel AISI 304
13 Cover	Vinyl
14 Nuts and bolts	Stainless steel AISI 304
15 Bolt washer	AISI 304
16 Body seal	Virgin PTFE TFM 1600
17 Beleville washer	AISI 301
18 Packing follower	Virgin PTFE TFM 1600
19 Thrust washer	Virgin PTFE TFM 1600

The internals have been exploded below to help identify the position of some of the parts in the materials list.



**Technical data**

Leakage test procedure to ISO 5208 (Rate A) / EN 12266-1 (Rate A)

Stem seal and seat	Materials comply with; - FDA CFR title 21 paragraph 177, section 1550. - USP23 Class VI
Flow characteristic	Modified linear
Port	True port design

**K<sub>v</sub> values**

Size	2½"	3"	4"
K <sub>v</sub>	680	860	1950
For conversion:	$C_v (UK) = K_v \times 0.963$		$C_v (US) = K_v \times 1.156$

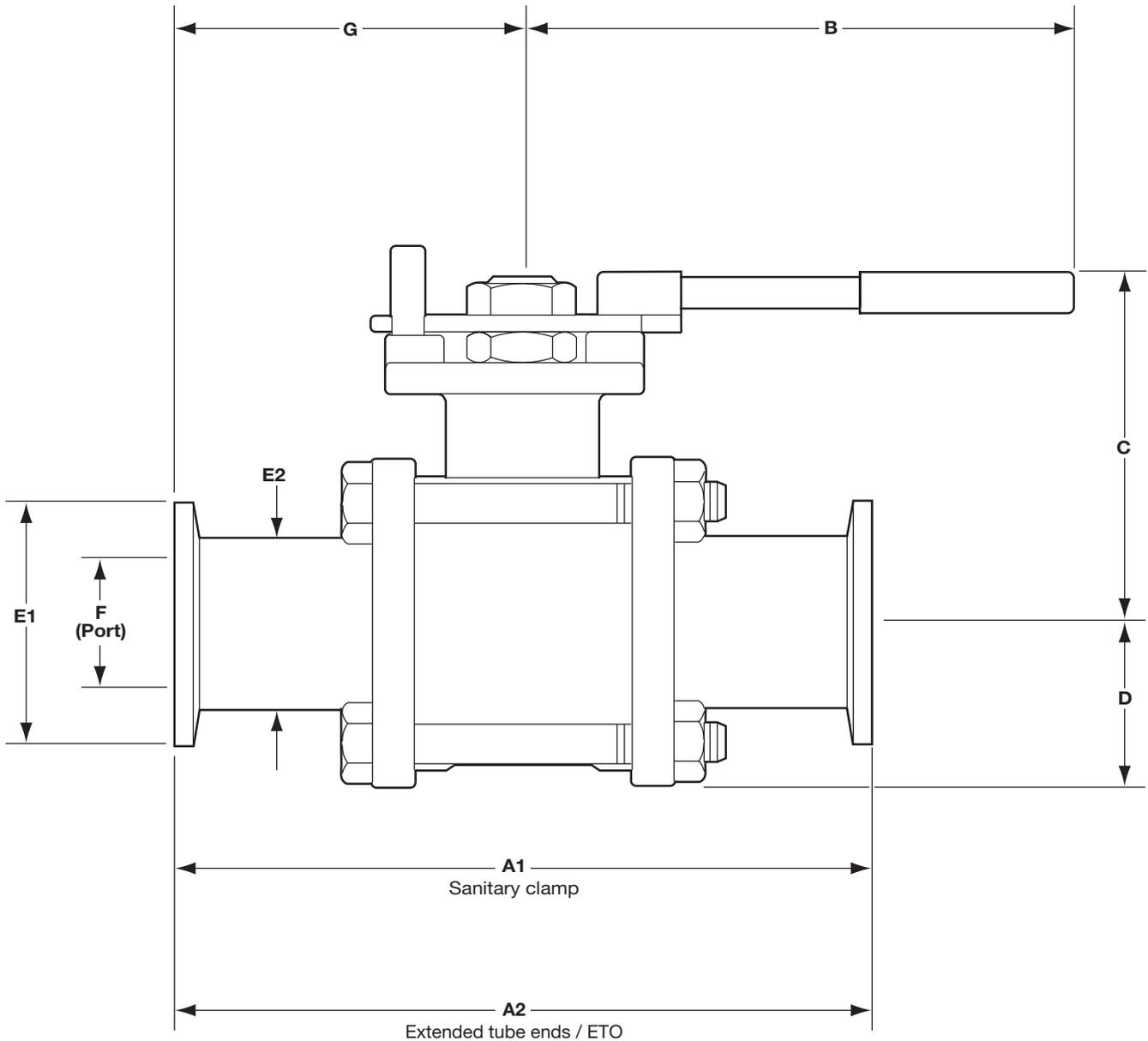
**Torque value**

Size	2½"	3"	4"
N m	110	130	145

The torque figures shown are for a valve at maximum operating pressure that is operated frequently. Valves that are subject to long static periods, may require greater break-out torque.

**Dimensions/weights (approximate) in mm and kg**

Size	A1	A2	B	C	D	E1 (Clamp)	E2 (ETO)	F	G (Clamp)	G (ETO)	Weight
2½"	203.0	222.0	363.5	145.0	62.0	77.5	63.4	60.3	101.5	111.0	9.0
3"	232.8	234.2	363.5	153.0	82.0	90.9	76.2	73.0	116.4	117.1	12.2
4"	259.5	258.9	399.0	194.6	102.0	118.9	101.6	97.4	129.2	129.4	23.0

**Safety information, installation and maintenance**

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

**How to order**

The size, end connections and certification requirements must be specified at the time of order placement.

**Example:** 1 off Spirax Sarco 4" M80iV ISO sanitary ball valve complete with, sanitary clamp (ASME BPE) end connections, electropolished to 0.375 micron Ra (15 micro inch).  
The unit is to be supplied complete with EN 10204 3.1 material certification.

**Spare parts**

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

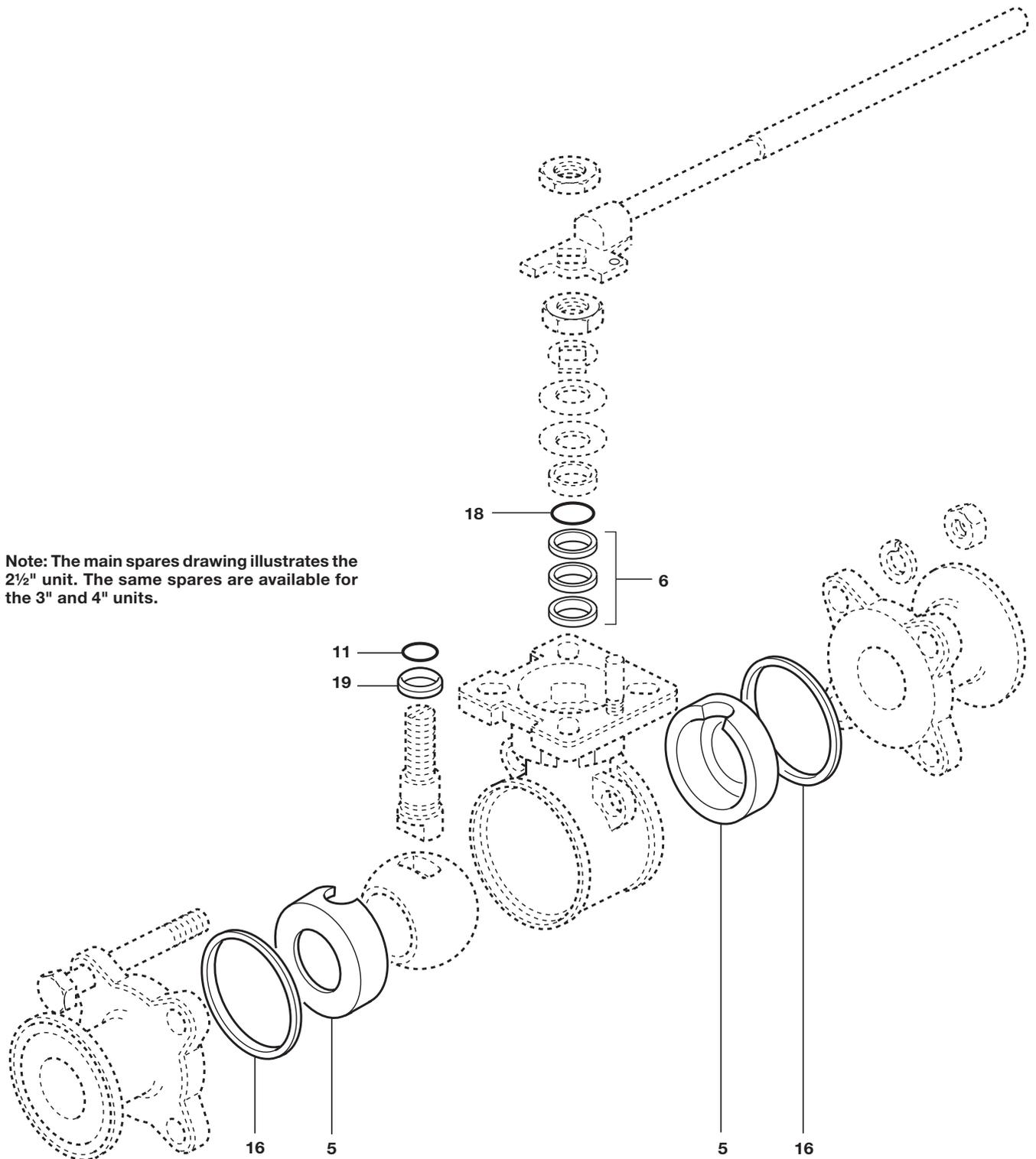
**Available spares**

Integrated seat and cavity filler, stem seals, stem 'O' ring, body seals kit, packing follower and thrust washer **5, 6, 11, 16, 18, 19**

**How to order spares**

Always order spares by using the description given in the column headed 'Available spares' and state the size and type of ball valve.

**Example:** 1 - Integrated seat and cavity filler, stem seals, stem 'O' ring, body seals kit, packing follower and thrust washer for a Spirax Sarco 4" M80iV ISO cast stainless steel ball valve.



**Note:** The main spares drawing illustrates the 2½" unit. The same spares are available for the 3" and 4" units.