



FTS23 Stainless Steel Body and Cover FTC23 Carbon Steel Body with Stainless Steel Cover Ball Float Steam Traps

Description

FT_23 ball float steam traps are suitable for use with saturated and superheated steam, on process equipment, and the first choice for drainage of temperature controlled systems.

They are the perfect choice in solving problems caused by steam that is carrying solid and incondensable contaminants such as salts and gasses; These quickly lead to fouling and the accumulation of sediment and debris, resulting in failure of the internal mechanism. They are typically used on geothermal steam.

The main design feature is the innovative self-cleaning float closing mechanism, which allows automatic safe operation even in cases of severe steam contamination. Furthermore, the position and size of the main valve and seat makes it easier for the discharge of condensate and solid contaminant. The trap is able to modulate the condensate flow adapting immediately to sudden and large variations of flow and pressure.

Another key feature of the unit is the external manual lever that allows the valve ball to be fully opened regardless of the presence or absence of condensate in the unit - This facilitates the fast removal of any sediment/condensate that may be in the unit and easier inspection in maintaining optimum performance of the internal mechanism.

Available types

FTS23-07	Stainless steel body, cover and internals	PMO 7 bar g
FTS23-23		PMO 23 bar g
FTC23-07	Carbon steel body with Stainless steel cover and internals	PMO 7 bar g
FTC23-23		PMO 23 bar g

Standards

These products fully comply with the requirements of the European Pressure Equipment Directive 97/23/EC and carry the **CE** mark when so required.

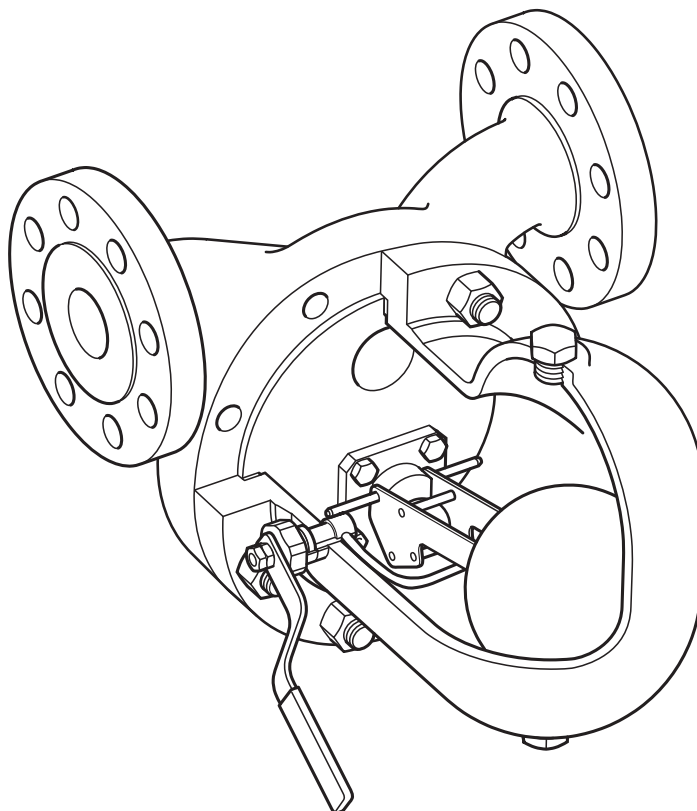
Approvals

These products are available with a manufacture's Typical Test Report or Certification to EN 10204 3.1.

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

Sizes and pipe connections

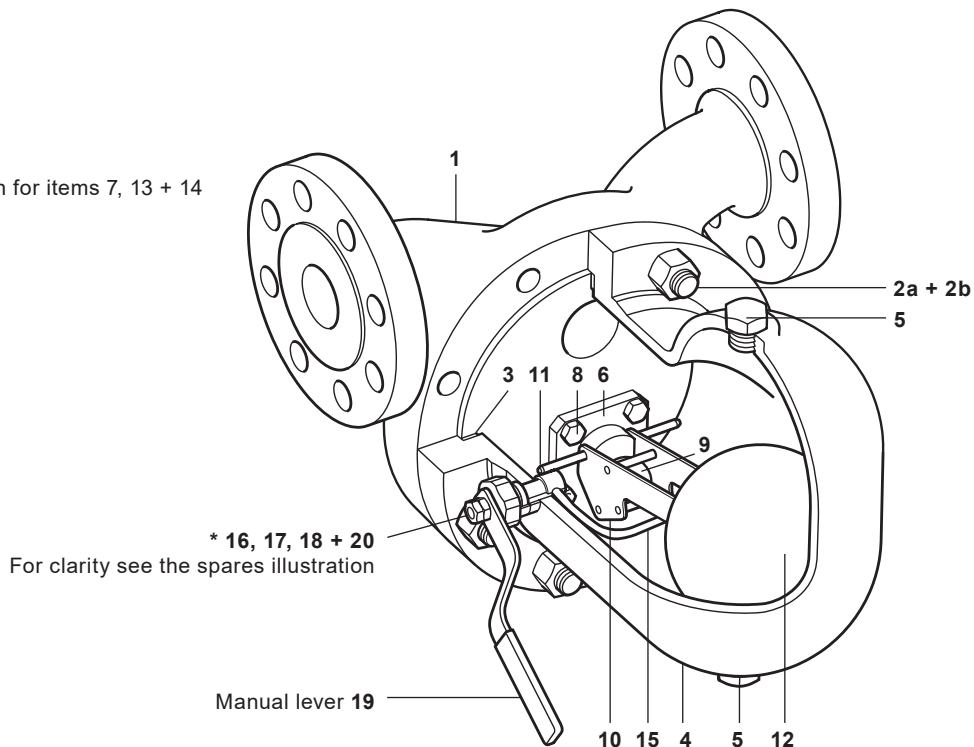
DN25, DN40 and DN50	Flanged EN 1092 PN40
1½" and 2"	Flanged ASME B16.5 Class 150
	Flanged ASME B16.5 Class 300



Materials

*** Please note**

For clarity see the spares illustration for items 7, 13 + 14

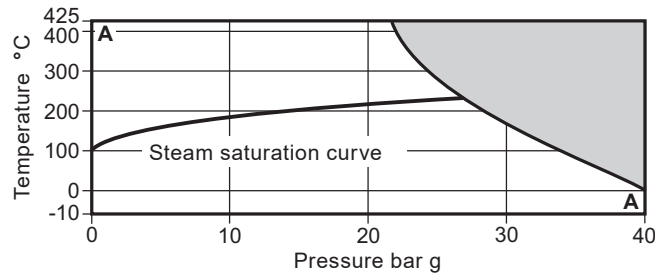


No.	Part	Material
1	Body	Carbon steel ASTM A216 WCB
		Stainless steel ASTM A351 CF8 (on request)
2a	Cover studs	Carbon steel ASTM A193 B7
		Stainless steel ASTM A193 B8 Cl.1
2b	Cover nuts	Carbon steel ASTM A 194 Gr. 2H
		Stainless steel ASTM A194 Gr.8
3	Cover gasket	Exfoliated graphite reinforced steel
4	Cover	Stainless steel ASTM A351 CF8
5	Cover plug (½")	Carbon steel ASTM A105
6	Valve seat	Stainless steel ASTM A479 316
7 *	Valve seat gasket	Exfoliated graphite reinforced steel
8	Valve assembly screws	Stainless steel AISI 304
9	Valve ball	Stainless steel AISI 316
10	Float lever	Stainless steel ASTM A240 316
11	Float lever pin	Stainless steel ASTM A479 316
12	Float	Stainless steel AISI 316
13 *	Washer	Stainless steel AISI 304
14 *	Screw	Stainless steel AISI 304
15	Internal lever	Stainless steel AISI 316
16 *	Graphite packing seals	Graphite Graphite
17 *	Spacer	Stainless steel AISI 316
18 *	Gland nut	Stainless steel AISI 316
19	Manual lever	Stainless steel ASTM A240 304
20 *	Nut and lock-nut	Stainless steel AISI 304

FTS23 - Pressure/temperature limits (ISO 6552)

Stainless steel body and cover

Flanged PN40



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

A - A Flanged PN40

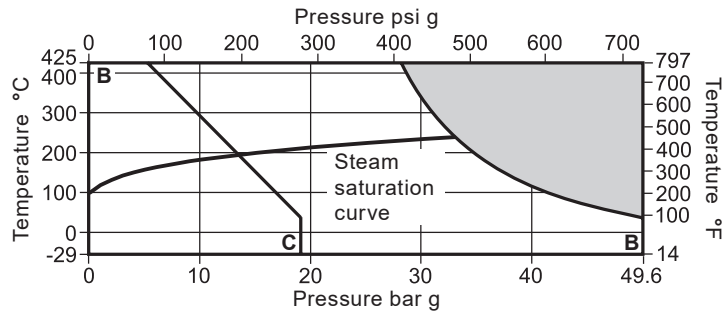
Body design conditions		PN40
PMA	Maximum allowable pressure	40 bar g @ 0 °C
TMA	Maximum allowable temperature	425 °C @ 21.7 bar g
	Minimum allowable temperature	-10 °C
PMO	Maximum operating pressure	FTS23-07 7 bar g @ 425 °C
		FTS23-23 23 bar g @ 350 °C
TMO	Maximum operating temperature	425 °C @ 21.7 bar g
	Minimum operating temperature	0 °C
Note: For lower operating temperatures consult Spirax Sarco		
ΔPMX	Maximum differential pressure	FTS23-07 7 bar
		FTS23-23 23 bar
Designed for a maximum cold hydraulic test pressure of:		60 bar g

Please note that the trap in its complete operational form must not be subjected to pressures greater than 40 bar g as damage to the internals may occur.

FTS23 - Pressure/temperature limits (ISO 6552)

Stainless steel body and cover

Flanged ASME 150 and Flanged ASME 300



The product **must not** be used in this region or beyond the parameter of the PMA or TMA of the relative end connection.

B - B Flanged ASME 300

B - C Flanged ASME 150

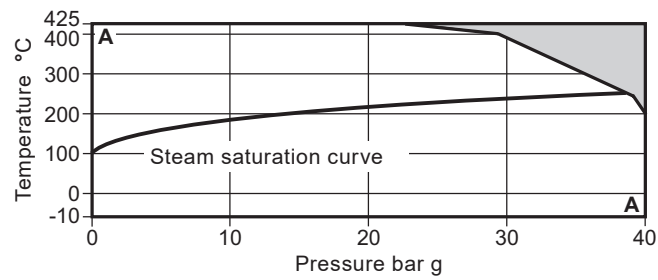
Body design conditions		ASME 150 or ASME 300	
PMA	Maximum allowable pressure	ASME 300	49.6 bar g @ 38 °C 719 psi g @ 100 °F
		ASME 150	19 bar g @ 38 °C 275 psi g @ 100 °F
TMA	Maximum allowable temperature	ASME 300	425 °C @ 28 bar g 797 °F @ 406 psi g
		ASME 150	425 °C @ 5.5 bar g 797 °F @ 79 psi g
Minimum allowable temperature		-10 °C	14 °C
PMO	Maximum operating pressure	ASME 300	FTS23-07 7 bar g @ 425 °C 101 psi g @ 797 °F
			FTS23-23 23 bar g @ 425 °C 333 psi g @ 797 °F
		ASME 150	FTS23-07 7 bar g @ 386 °C 101 psi g @ 726 °F
			FTS23-23 13 bar g @ 194 °C 188 psi g @ 381 °F
TMO	Maximum operating temperature	ASME 300	425 °C @ 28 bar g 797 °F @ 406 psi g
		ASME 150	425 °C @ 5.5 bar g 797 °F @ 79 psi g
Minimum operating temperature		0 °C	32 °F
Note: For lower operating temperatures consult Spirax Sarco			
ΔPMX	Maximum differential pressure	FTS23-07	7 bar 101.5 psi
		FTS23-23	23 bar 333.5 psi
Designed for a maximum cold hydraulic test pressure of:	ASME 300	75 bar g	1087.5 psi g
	ASME 150	28.5 bar g	413 psi g

Please note that the trap in its complete operational form must not be subjected to pressures greater than 40 bar g (580 psi g) as damage to the internals may occur.

FTC23 - Pressure/temperature limits (ISO 6552)

Carbon steel body with Stainless steel cover

Flanged PN40



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

A - A Flanged PN40

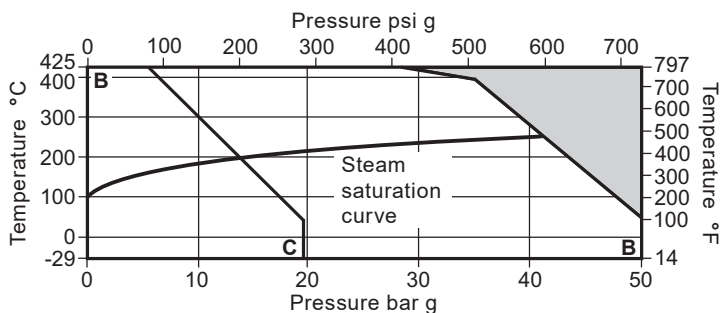
Body design conditions		PN40
PMA	Maximum allowable pressure	40 bar g @ 200 °C
TMA	Maximum allowable temperature	425 °C @ 22.8 bar g
Minimum allowable temperature		-10 °C
PMO	Maximum operating pressure	FTC23-07 7 bar g @ 425 °C
		FTC23-23 23 bar g @ 425 °C
TMO	Maximum operating temperature	425 °C @ 22.8 bar g
Minimum operating temperature Note: For lower operating temperatures consult Spirax Sarco		0 °C
ΔPMX	Maximum differential pressure	FTC23-07 7 bar
		FTC23-23 23 bar
Designed for a maximum cold hydraulic test pressure of:		60 bar g

Please note that the trap in its complete operational form must not be subjected to pressures greater than 40 bar g as damage to the internals may occur.

FTC23 - Pressure/temperature limits (ISO 6552)

Carbon steel body with Stainless steel cover

Flanged ASME 150 and Flanged ASME 300



The product **must not** be used in this region or beyond the parameter of the PMA or TMA of the relative end connection.

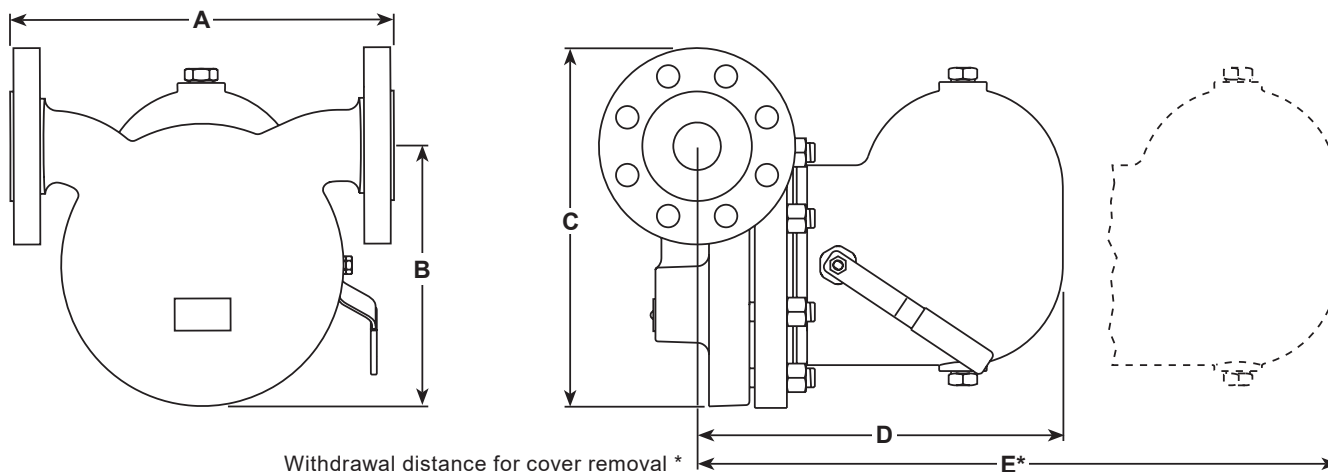
B - B Flanged ASME 300

B - C Flanged ASME 150

Body design conditions		ASME 150 or ASME 300	
PMA	Maximum allowable pressure	ASME 300	50 bar g @ 50 °C 725 psi g @ 122 °F
		ASME 150	19.6 bar g @ 38 °C 284 psi g @ 100 °F
TMA	Maximum allowable temperature	ASME 300	425 °C @ 28.8 bar g 797 °F @ 417 psi g
		ASME 150	425 °C @ 5.5 bar g 797 °F @ 79 psi g
Minimum allowable temperature		-10 °C	14 °C
PMO	Maximum operating pressure	ASME 300	FTC23-07 7 bar g @ 425 °C 101 psi g @ 797 °F
			FTC23-23 23 bar g @ 425 °C 333 psi g @ 797 °F
		ASME 150	FTC23-07 7 bar g @ 386 °C 101 psi g @ 726 °F
			FTC23-23 13 bar g @ 194 °C 188 psi g @ 381 °F
TMO	Maximum operating temperature	ASME 300	425 °C @ 28.8 bar g 797 °F @ 417 psi g
		ASME 150	425 °C @ 5.5 bar g 797 °F @ 79 psi g
Minimum operating temperature		0 °C	32 °F
Note: For lower operating temperatures consult Spirax Sarco			
DPMX	Maximum differential pressure	FTC23-07	7 bar 101.5 psi
		FTC23-23	23 bar 333.5 psi
Designed for a maximum cold hydraulic test pressure of:	ASME 300	75 bar g	1087.5 psi g
	ASME 150	30 bar g	435 psi g

Please note that the trap in its complete operational form must not be subjected to pressures greater than 40 bar g (580 psi g) as damage to the internals may occur.

Dimensions / weights (approximate) in mm and kg



Size	A	B	C	D	E*	Weight
DN25, DN40 and DN50 1½" and 2"	320	PN40 flanged 220	305	310	560	40.0
		ASME flanged				

Capacities

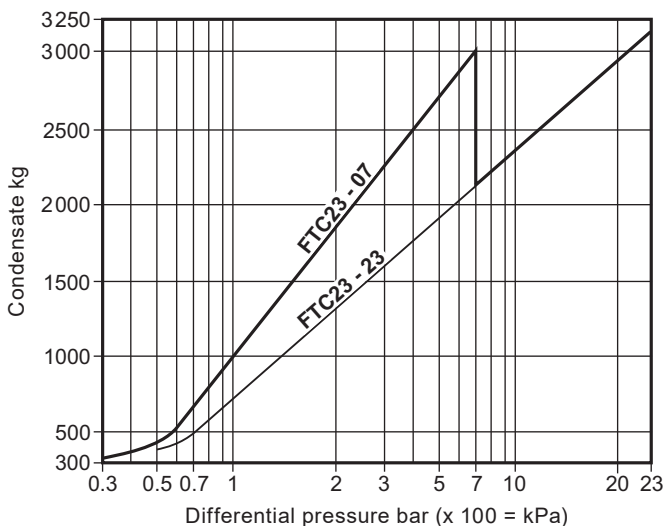
The condensate discharge capacities are based on the actual temperature of operation.

The choice of trap should be based on the following data:

- Hourly amount of condensate to be discharged
- Effective differential pressure

Safety factors:

- 1.25 ÷ 1.5 with continuous duty
- 2 ÷ 3 with intermittent duty



Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-P605-02) supplied with the product.

Installation note:

FT_23 ball float steam traps must be installed below the draining point with the direction of flow as indicated on the body and with the float lever positioned in a horizontal plane so that it rises and falls freely. For optimum working conditions and protection of the unit it is recommended that a strainer be installed upstream to prevent possible damage to the internal mechanism and to ensure peak operation within your plant.

In order to allow simple and safe inspection for cleaning or maintenance purposes install suitable isolation valves. If the trap is to discharge to atmosphere ensure that it is to a safe place, the discharged medium may be at a temperature of 100 °C. In order to ensure an efficient discharge of incondensable medium, it is recommended that a balance line be connected to a drain system (reference the Installation and Maintenance Instructions that are supplied with the unit).

Disposal

The product is recyclable. No ecological hazard is anticipated with the disposal of this product providing due care is taken.

In the event that, during the operation, the trap comes into contact with harmful substances, you will need to dispose of it in accordance with regulations under the current legislation.

How to order

Example: 1 off Spirax Sarco DN50 FTC23-23 carbon steel ball float steam trap with flanged EN 1092 PN40 connections.

Spare parts

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

Available spares

Valve seat assembly	6, 8
Valve ball	9
Ball float lever and pin assembly	10, 11
Float assembly	12, 13, 14

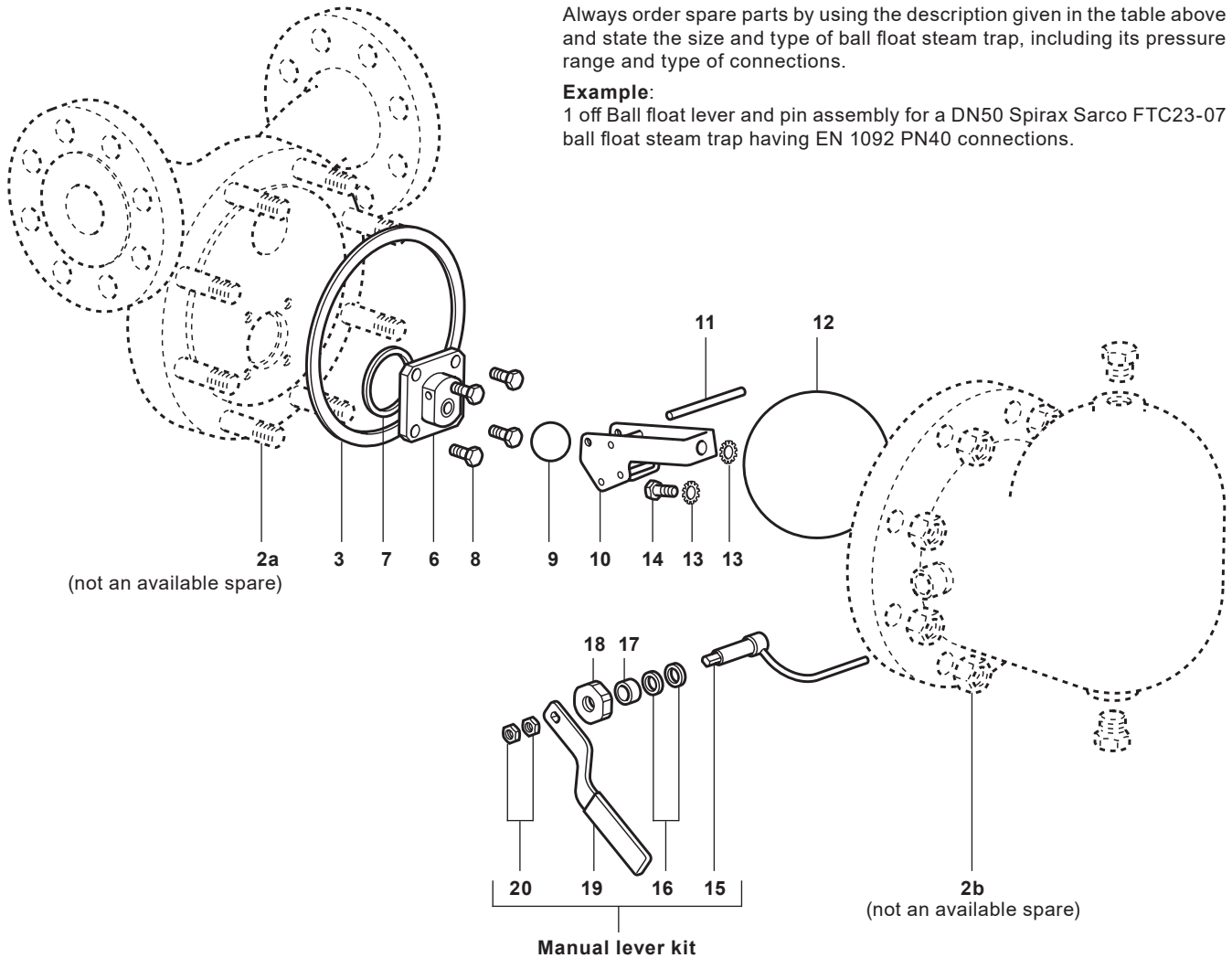
Manual lever kit	15, 16, 17, 18, 19, 20
Stuffing box and manual lever spacer assembly	16, 17
Gasket set (3 + 3 units)	3, 7

How to order spares



Always order spare parts by using the description given in the table above and state the size and type of ball float steam trap, including its pressure range and type of connections.

Example:

1 off Ball float lever and pin assembly for a DN50 Spirax Sarco FTC23-07 ball float steam trap having EN 1092 PN40 connections.



Recommended tightening torques

Model	Item no.	Quantity	Part		mm or		N m
FTC23	2a	8	Cover studs			M16 x 70	
	2b	8	Cover nuts	24			80
	8	4	Valve assembly screws	13		M8 x 20	19
FTS23	2a	12	Cover studs			M16 x 70	
	2b	12	Cover nuts	24			40
	8	4	Valve assembly screws	13		M8 x 20	19