



APT10 and APT10SS Automatic Pump Traps

Description

The Spirax Sarco APT10 and APT10SS automatic pump traps are screwed displacement receivers, pressure rated to PN10 and PN16 respectively. Both units are capable of automatically trapping or pumping, depending on line conditions. The units are operated by steam and are used to remove condensate from process and heating plant under all operating conditions, including vacuum. The shell body and cover are available in SG iron (designated APT10) and stainless steel (designated APT10SS).

The APT10 is available with a standard blue paint finish or coated in ENP (Electroless Nickel Plate), while the APT10SS is available with electropolish as the standard finish.



Certification

This product is available with certification to EN 10204 3.1.

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

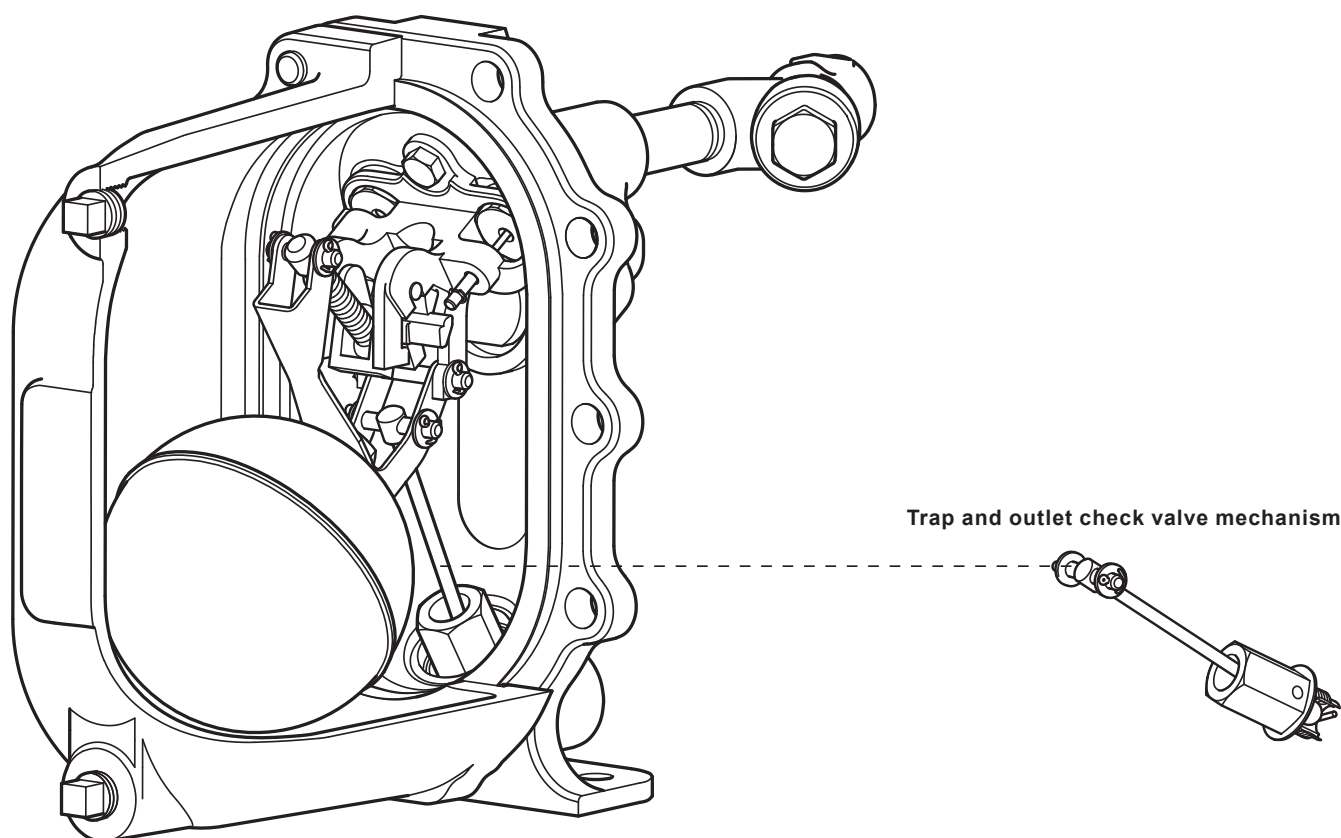
Standards

This product fully complies with the requirements of the European Pressure Equipment Directive 2014/68/EU, ATEX Directive 2014/34/EU

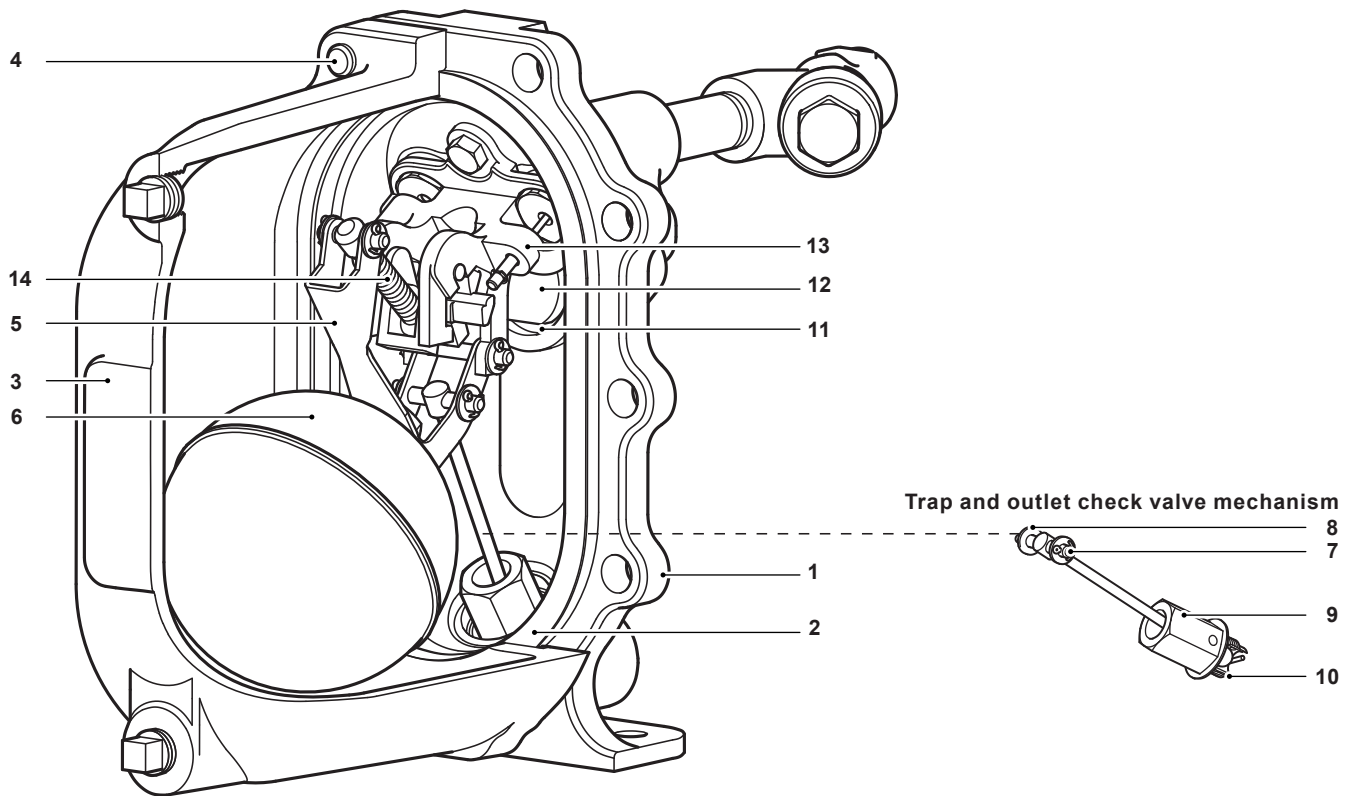
and carries the  and  marks when so required.

Design compliance

Shell designed in accordance with A.D. Merkblatter/ASME VIII.



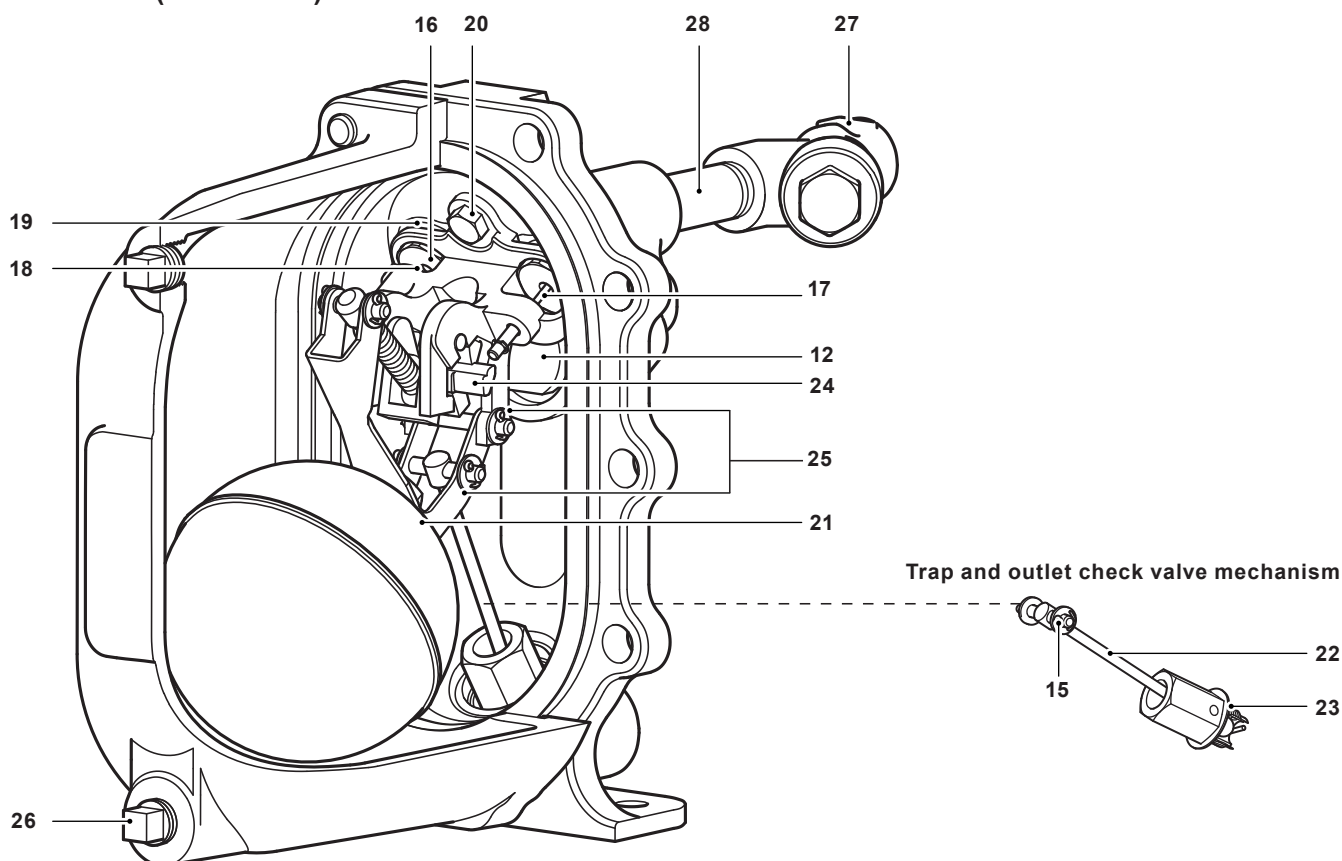
Materials



No.	Part	Material		
1	Cover	APT10	SG iron	EN-GJS-40018-LT (5.3103)/ASTM A395
		APT10SS	Stainless steel	GX5CrNi19-10 (1.4308)/A351 CF8
2	Cover gasket	Graphite laminate with stainless steel insert		
3	Body	APT10	SG iron	EN-GJS-40018-LT (5.3103)/ASTM A395
		APT10SS	Stainless steel	GX5CrNi19-10 (1.4308)/A351 CF8
4	Cover bolts	Stainless steel BS EN ISO 3506 Gr. A2-70		
5	Pump trap lever	Stainless steel BS 1449 304 S15		
6	Float	Stainless steel BS 1449 304 S16		
7	Pivot shaft	Stainless steel BS 970 431 S29/ASTM A276 431		
8	Washer	Stainless steel BS 1449 316		
9	Trap housing	Stainless steel BS 970 431 S29/ASTM A276 431		
10	Ball	Stainless steel ASTM A276 440 B		
11	Seat (inlet check valve)	Stainless steel AISI 420		
12	Flap (inlet check valve)	Stainless steel BS 3146 ANC 4B		
13	Pump mechanism bracket	Stainless steel BS 3146 ANC 4B		
14	Spring (pump)	Stainless steel BS 2056 302 S26 Gr.2		

Materials continued on the next page

Materials (continued)



No.	Part	Material	
15	Split pin	Stainless steel	BS 1574
16	Exhaust seat	Stainless steel	BS 970 431 S29/ASTM A276 431
17	Inlet valve and seat assembly	Stainless steel	BS 970 431 S29
18	Exhaust valve	Stainless steel	BS 3146 ANC 2
19	Valve seat gasket	Stainless steel	BS 1449 409 S19
20	Pump mechanism bolt	Stainless steel	BS EN ISO 3506 Gr. A2-70
21	Float bolt	Stainless steel	BS EN ISO 3506 Gr. A2-70
22	Trap 1st stage valve	Stainless steel	BS 970 431 S29/ASTM A276 431
23	Trap gasket	Stainless steel	BS 1449 409 S19
24	Actuator arm	Stainless steel	BS 3146 ANC 2
25	Name-plate	Stainless steel	BS 1449 304 S16
26	Drain plug	APT10 Carbon steel	C22.8/A105
		APT10SS Stainless steel	1.4308/A351 CF8
27	Motive supply strainer	APT10 SG iron	EN-GJS-400-15
		APT10SS Stainless steel	1.4409/A351 CF3M
28	Threaded barrel	APT10 Steel pipe	
		APT10SS Stainless steel	

Sizes and pipe connections

Size	DN20 x DN20	
Fluid connections		
Inlet	Outlet	Motive/Exhaust
DN20 (¾")	DN20 (¾")	DN15 (½")
BSP T Rp (ISO 7-1)		BSP
NPT		NPT

Limiting conditions

Body design conditions	APT10	PN10	
	APT10SS	PN16	
Maximum motive inlet pressure		4.5 bar g	65 psi g
Maximum operating pressure		4.5 bar g	65 psi g
Maximum backpressure		4.0 bar g	58 psi g
Maximum operating temperature		155 °C	311 °F
Minimum operating temperature		-10 °C	14 °F
Temperature limits (Ambient $\langle \text{X} \rangle$)		-10°C to 200 °C	14 °F to 392 °F
Designed for a maximum cold hydraulic test pressure of:	APT10	15.0 bar g	217 psi g
	APT10SS	24.0 bar g	348 psi g
Minimum installation head (from base of pump)		0.2 m	7.8"
Recommended minimum installation head (from base of pump)		0.3 m	11.8"

Safety information, installation and maintenance

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

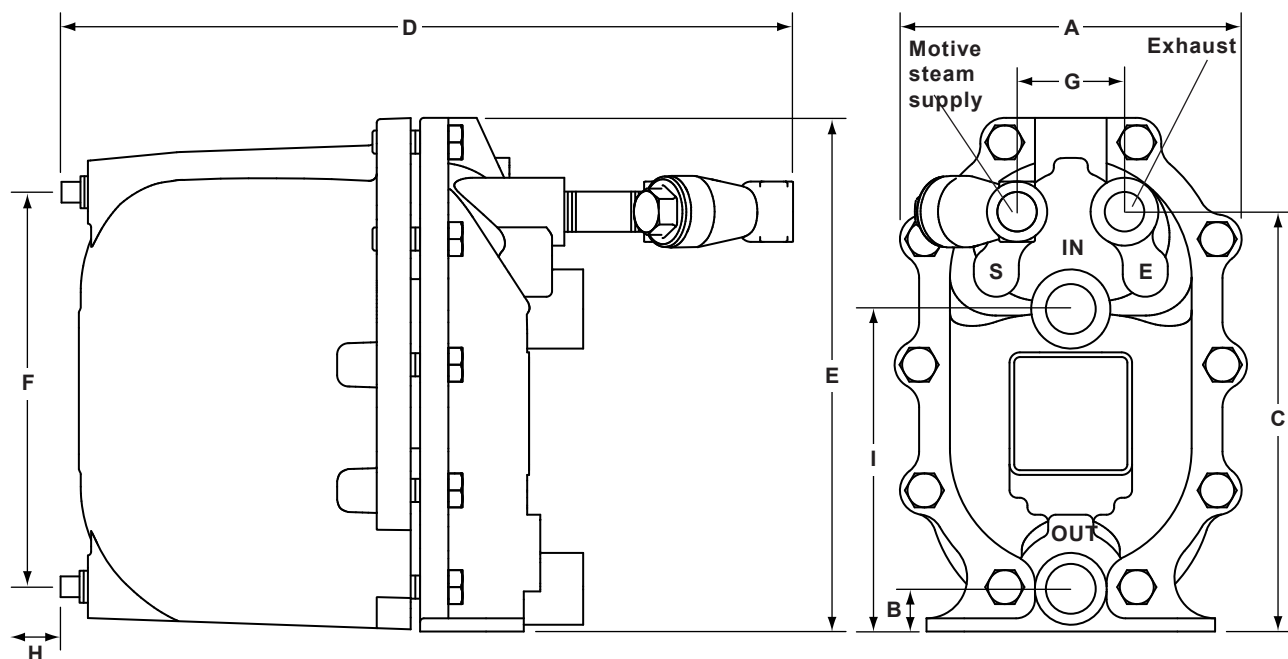
Nominal capacities

For full capacity details for a specific application consult Spirax Sarco.
To accurately size the pump trap, the following data is required.

1. Installation head available, from the base of the pump trap to the centre line of the heat exchanger/process condensate outlet (m).
If the outlet is mounted vertically, then this should be from the base of the pump to the face of the outlet.
2. Motive steam pressure available to power the pump trap (bar g) (psi g).
3. Total backpressure in the condensate return system (bar g) (psi g).
4. Heat exchanger full load operating pressure (bar g) (psi g).
5. Heat exchanger maximum steam load (kg/h) (lb/hr).
6. Minimum temperature of secondary fluid (°C) (°F).
7. Maximum controlled temperature of secondary fluid (°C) (°F).

Size	DN20 x DN20
Pump discharge/cycle	2.6 litres (0.55 gallons)

Dimensions/weights (approximate) in mm (inches) and kg (lbs)



Size	A	B	C	D	E	F	G	H	I	Weight
DN20 x DN20	187 (7.4)	23 (0.9)	223 (8.8)	398 (15.6)	273 (10.7)	209 (8.2)	57 (2.2)	135 (5.3)	171 (6.7)	14 (31)

How to specify

The pump trap shall be a Spirax Sarco automatic pump trap type APT10 operated by steam to 4.5 bar g (65 psi g.). No electrical energy shall be required. Body construction from SG iron (5.3103 or ASTM A395) with a swing type inlet check valve and ball type outlet check valve. The internal trap mechanism shall contain a stainless steel float connected to an internal trap. The pump, trap and check valve mechanisms shall be incorporated into the same body envelope with no external seals or glands and shall be capable of operating with a minimum of 200 mm (7.8") installation head from the base of the unit.

How to order

Example: 1 off Automatic pump trap, type APT10, DN20 x DN20 (¾" x ¾"), complete with motive supply strainer screwed BSP with BSP T Rp (ISO 7-1) motive fluid connections.

Spare parts

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

Available spares (see page 7 for part number identification)

A	Cover gasket	2
B	Inlet check valve	2, 12
C	Spring and actuator arm	2, 14, 24
D	Float	2, 5, 6, 21
E	Trap and outlet check valve mechanism	2, 7, 8, 9, 10, 22, 23
F	Inlet/exhaust valve and seat kit	2, 16, 17, 18, 19
G	Motive supply strainer (Fig. 12 SG iron or Fig 16L Stainless Steel) - see separate literature	27

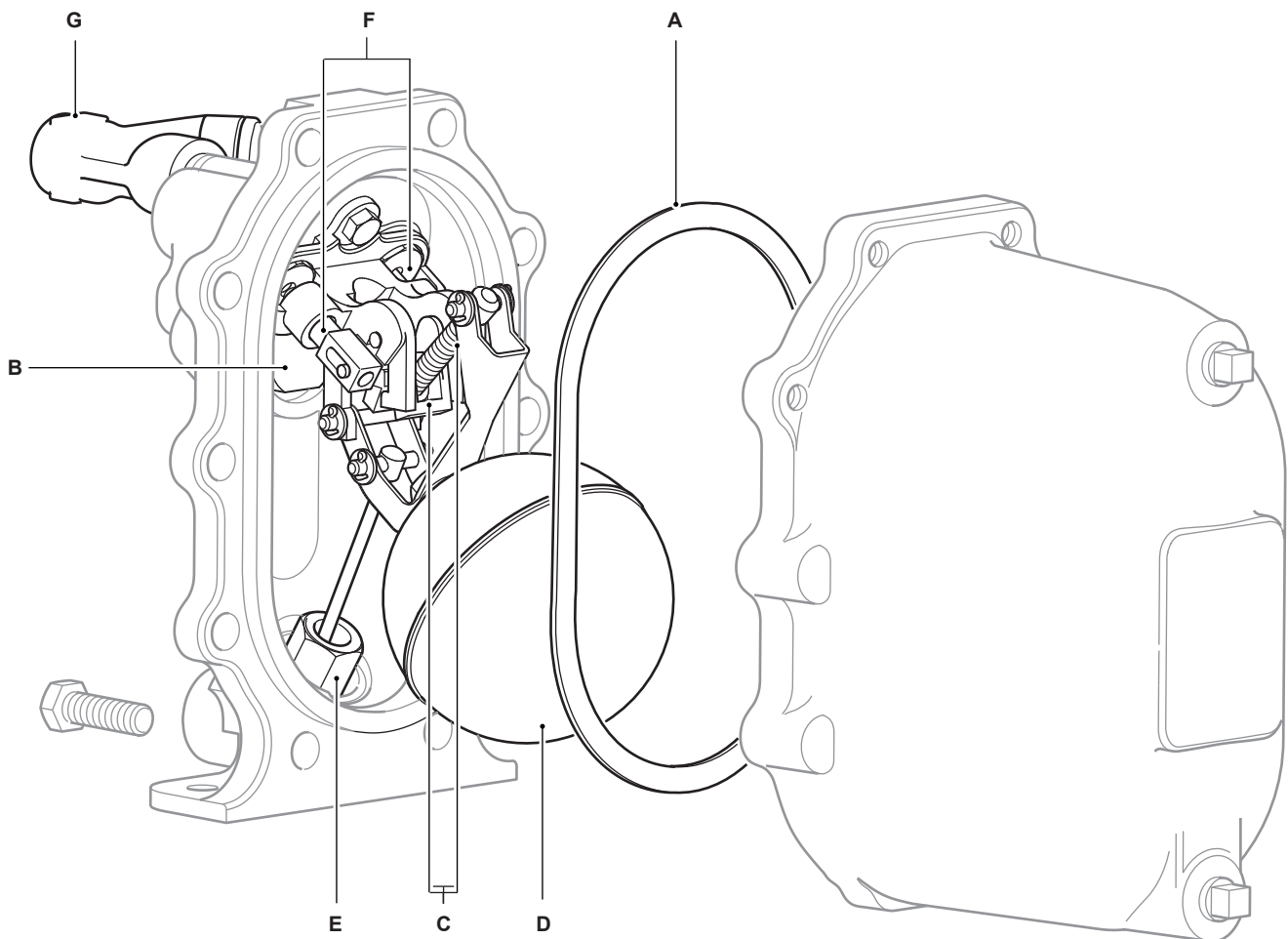
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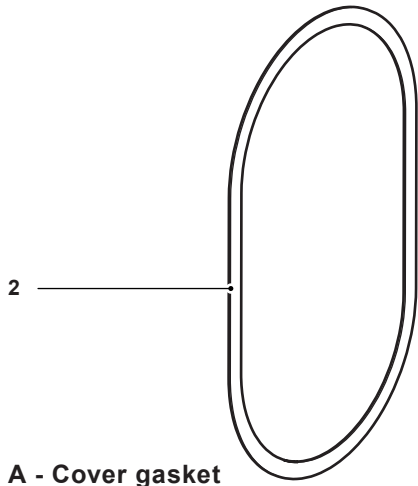
For customer convenience, spares are supplied in kits to ensure all the appropriate replacement parts are available e.g. when an inlet/exhaust valve and seat assembly is ordered, all replacement split pins, washers and gaskets will be provided in addition to the key components listed.

How to order spares

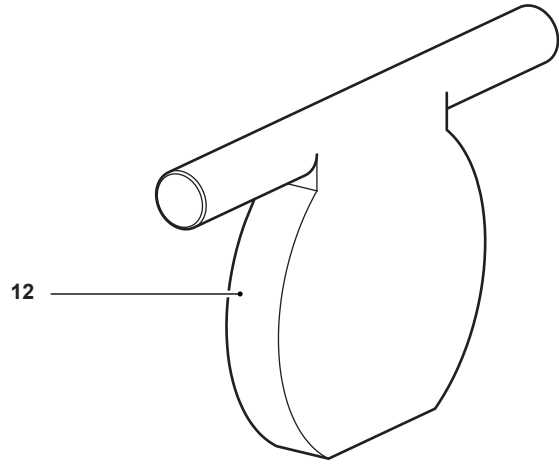
Always order spares by using the description given in the column headed 'Available spares' and state the size and type of unit.

Example: 1 off Inlet/exhaust valve and seat kit for a Spirax Sarco DN20 x DN20 (¾" x ¾") APT10 automatic pump trap.

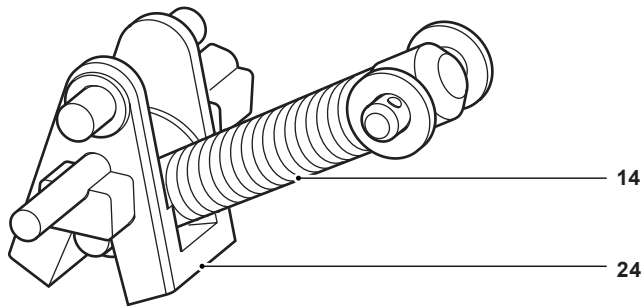




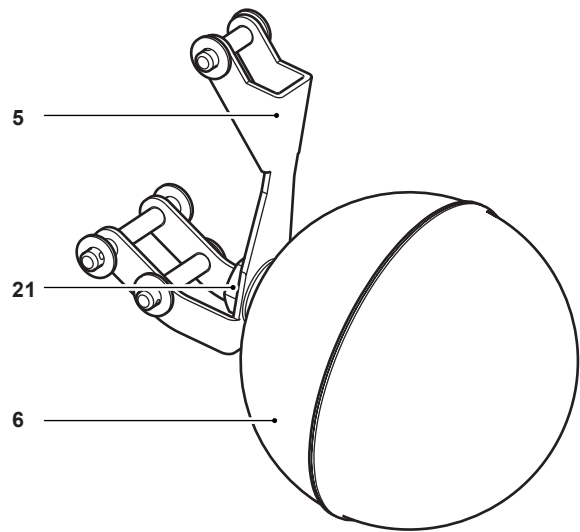
A - Cover gasket



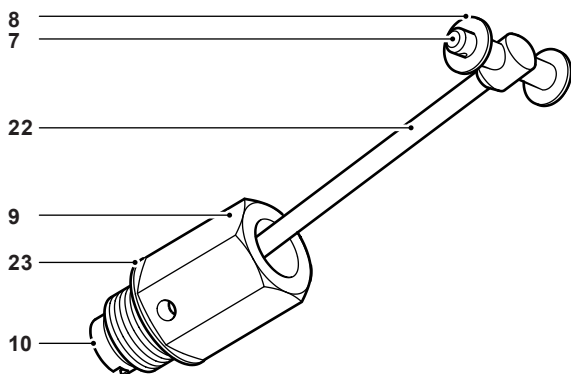
B - Inlet check valve



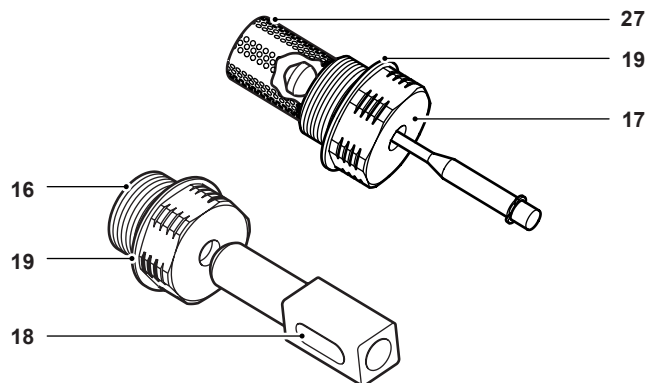
C - Spring and actuator arm



D - Float



E - Trap and outlet check valve mechanism



F - Inlet/exhaust valve and seat kit