



Certificate No. FM163

ISO 9001

spirax sarco

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ST Issue 6

MFP14 Automatic Pumps

Description

The Spirax Sarco MFP14 Automatic pump is a displacement receiver operated by steam or compressed air. It is generally used to lift liquids such as condensate to a higher level. Subject to the conditions being suitable, the pump can also be used to directly drain closed vessels under vacuum or pressure. In conjunction with a float steam trap the pump can be used to effectively drain temperature controlled heat exchangers under all operating conditions.

Sizes and pipe connections

DN25, DN40, DN50 and DN80 x 50; Flanged BS4504 PN16, ANSI Class 150, JIS/KS10 and screwed BSP (BS21 parallel).

Limiting conditions

Body design conditions PN16

Motive inlet pressure - Steam, air or gas, 13.8 bar g maximum

Total lift or back pressure (static head plus pressure in the return system) which must be below the motive fluid inlet pressure to allow capacity to be achieved:-

Height (H) in metres x 0.0981 plus pressure (bar g) in return line, plus downstream piping friction pressure drop in bar calculated at a flowrate of the lesser of six times the actual condensate rate or 30 000 L/h.

Recommended filling head above the pump is 0.3 m

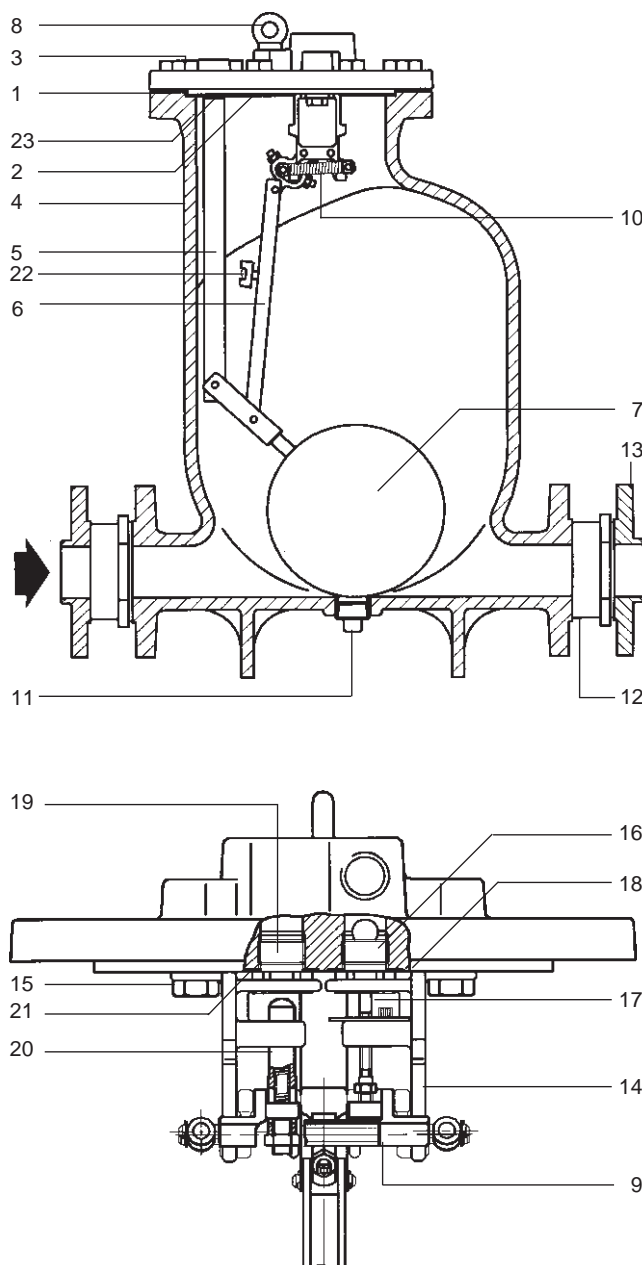
Minimum filling head required is 0.15 m (reduced capacity)

Standard pump operates with liquids of specific gravity 1.0 down to 0.8

	DN80 x 50 and DN50	DN40 and DN25
Pump discharge per cycle	15 litres	7 litres
Steam consumption	20 kg/h maximum	16 kg/h maximum
Air consumption	5.6 dm ³ /s maximum	4.4 dm ³ /s maximum

Materials

No Part	Material	Specification
1 Cover	SG iron	DIN1693, GGG 40.3
2 Cover gasket	Synthetic fibre	
3 Cover screws	Stainless steel	ISO 3506 Gr A2-70
4 Body	SG iron	DIN 1693, GGG 40.3
5 Pillar	Stainless steel	BS 970, 431 S29
6 Connector rod	Stainless steel	BS1449, 304 S11
7 Float and lever	Stainless steel	AISI 304
8 Eyebolt (integral)	SG iron	DIN1693, GGG 40.3
9 Mechanism lever	Stainless steel	BS 3146 pt.2 ANC 2
10 Spring	Stainless steel	BS 2056, 302 S26 Gr2
11 Pressure plug	Steel	DIN267 Part III Class 5.8
12 Check valves	Stainless steel	DIN 17445, WS1.4313
13 Screwed boss flanges	Steel	BS4504 PN16
14 Mechanism bracket	Stainless steel	BS3146 pt2 ANC 4B
15 Bracket screws	Stainless steel	BS6105 Gr A2-70
16 Inlet valve seat	Stainless steel	BS970, 431 S29
17 Inlet valve	Stainless steel	ASTM A276 304
18 Inlet valve seat gasket	Stainless steel	BS1449 409 S19
19 Exhaust valve seat	Stainless steel	BS970 431 S29
20 Exhaust valve	Stainless steel	BS3146 pt2 ANC 2
21 Exhaust valve seat gasket	Stainless steel	BS1449 409 S19
22 EPM actuator	ALNICO	
23 O-ring seal	EPDM	



Certification

All pumps EN10204 (3.1.B.) certifiable. With TÜV approval available on request.

How to specify

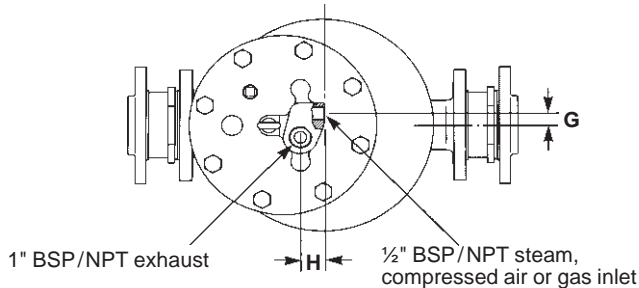
1 - Spirax Sarco automatic pump type MFP14 with SG iron body, size DN50 complete with Spirax Sarco DCV check valves. Pumped fluid connections flanged BS 4504 PN16. Exhaust and motive inlet pressure connections screwed BSP/NPT.

How to order

1 - Automatic pump, type MFP14, DN50 Flanged PN16, with BSP motive fluid connections complete with check valves and 2" BSP screwed boss flanges.

Dimensions/weights (approximate) in mm and kg

Size DN	A	B	C	D	E	F	G	H	J	K	Weights kg	
											Pump only	Including check valves and flanges
25	410	305	498	280	68	68	18	13	480	22	51	58
40	440	305	518	280	81	81	18	13	480	22	54	63
50	557	420	627	321	104	104	18	33	580	22	72	82
80 x 50	573	420	627	321	119	104	18	33	580	22	73	86



Capacities

The nominal hot condensate capacities of the pumps (steam operating inlet pressure 8 bar g, back pressure 1 bar g) are :-

DN25	1 100 kg/h
DN40	1 800 kg/h
DN50	3 800 kg/h
DN80 x 50	5 500 kg/h

Refer to separate chart for full capacity, sizing and selection data.

Note

If you are in any doubt about the size of the pump required or if the conditions are unusual we will be glad to advise you if you give us the answers to the following questions:-

1. Nature of liquid to be pumped.
2. Temperature of liquid to be pumped.
3. Quantity to be pumped (kg/h or L/h).
4. Initial lift horizontal distance and net effective lift (i.e. initial lift less subsequent fall in discharge line).
5. Operating medium (steam, compressed air or gas).
6. Operating pressure available.
7. The pump is generally used to drain water from a vented receiver but under certain circumstances can drain a unit from under steam pressure or vacuum. State which.

Note: To achieve rated capacity, pump must be installed with check valves as supplied by Spirax Sarco. Use of a substitute check valve may affect the performance of the pump.

Installation

For best operation any flash steam must be vented or condensed ahead of pump inlet.

Full details are given in the Installation Instructions supplied with each pump.

Spare parts for sizes 1", 1 1/2", 2" and 3" x 2" (DN25, DN40, DN50 and DN80 x 50)

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

Available spare

Cover gasket	2
Floater	7
Inlet/outlet check valve (each)	12
Cover and internal mechanism assembly	1, 2, 7 (complete)
Valve set (inlet and exhaust valves and seats)	17, 16, 18, 19, 20, 21
Spring set (1 pair springs)	10

How to order spares

Always order spares by using the description given in the columns headed 'Available spare' and by stating the size and type of pump.

Example: 1 - Cover gasket for DN50 Spirax Sarco MFP14 automatic pump.

Optional extra

Flow counter for measuring liquid pumped.

A plugged boss is provided on the pump cover, screwed 1/2" BSP for connecting the counter. The flow counter body is brass and must be installed in a vertical position. Flow counter can only be used when pump exhaust is vented to atmosphere.

