TI-P148-15
CMGT Issue 5

CA10S
Air and Gas Trap

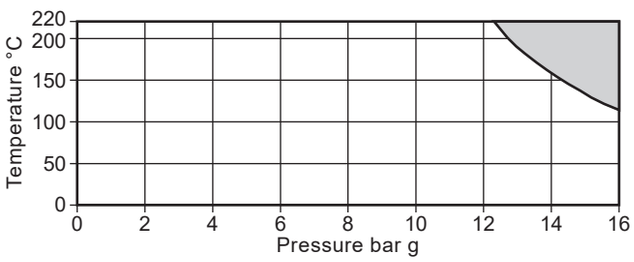
Description
The CA10S is a float type automatic liquid drain trap for air and gas systems. It has a cast iron body and cover with stainless steel valve head for use on high temperature or where corrosive condensate would adversely affect a rubber valve.

Certification
The product is available with material certification to EN 10204 2.2 for body and cover as standard.

Sizes and pipe connections
¾" screwed BSP (BS 21 parallel) or NPT.
A ½" tapping is provided for a balance pipe.

Optional extras
Drain cock tapping: The cover can be drilled and tapped ⅜" BSP or NPT to enable a **drain cock** to be fitted.

Pressure/temperature limits



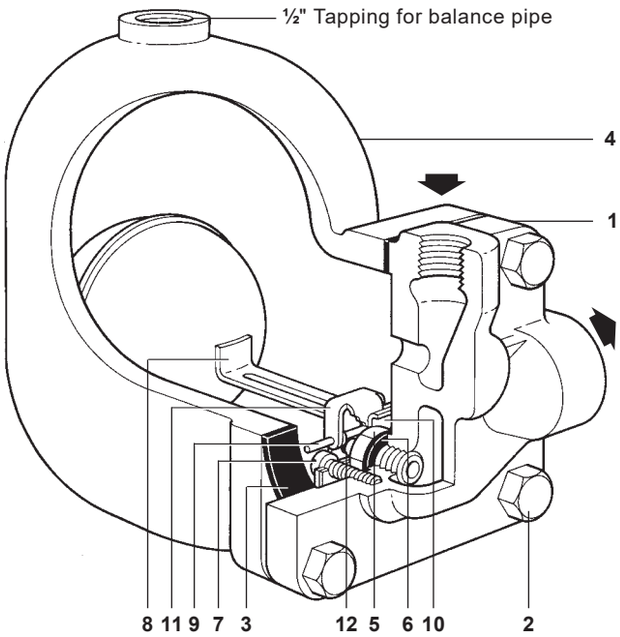
The product **must not** be used in this region.

Body design conditions		PN16
PMA	Maximum allowable pressure	16 bar g
TMA	Maximum allowable temperature	220 °C
TMO	Maximum operating temperature	220 °C
ΔPMX	Maximum differential pressure	14 bar
Designed for a maximum cold hydraulic test pressure of 24 bar g		

ΔPMX Maximum differential pressure

Depending on the specific gravity of the liquid being drained.

Specific gravity	1.0	0.9	0.8	0.7	0.6
ΔPMX bar	14.0	13.8	11.7	8.6	5.0



Material

No.	Part	Material	
1	Body	Cast iron	DIN 1691 GG 20
2	Cover bolts	Steel	BS 3692 Gr. 8.8
3	Cover gasket	Reinforced exfoliated graphite	
4	Cover	Cast iron	DIN 1691 GG 20
5	Valve seat	Stainless steel	BS 970 431 S29
6	Valve seat gasket	Stainless steel	BS 1449 304 S11
7	Pivot frame assembly set screws	Stainless steel	BS 6102 Gr. A2 Class 50
8	Ball float and lever	Stainless steel	BS 1449 304 S16
9	Pin	Stainless steel	B 970 431 529
10	Support frame	Stainless steel	BS 1449 304 S16
11	Pivot frame	Stainless steel	BS 1449 304 S16
12*	Valve cone	Stainless steel	

***Note:** The valve cone of the CA10S is permanently attached to the ball float and lever.

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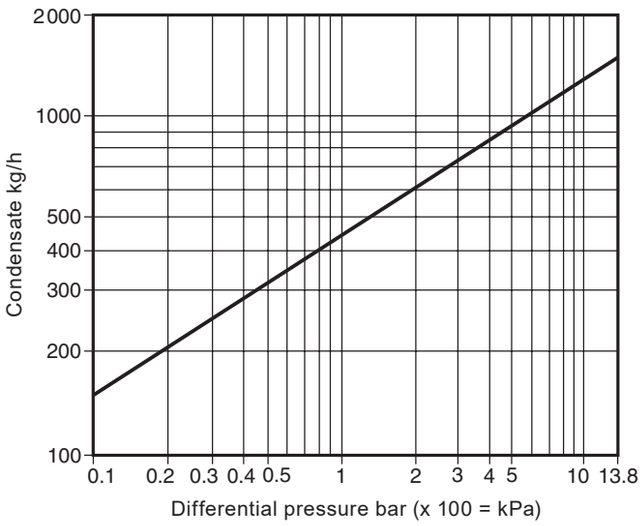
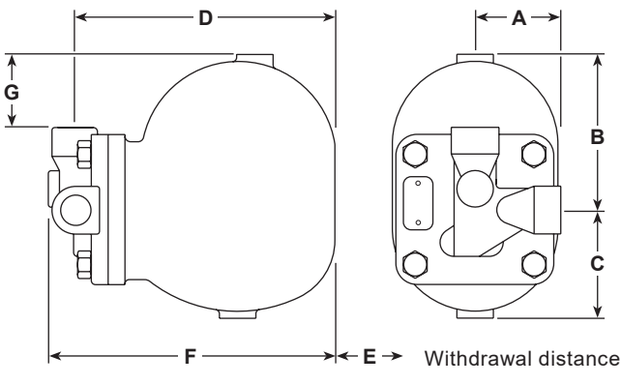
Capacities



Dimensions/weight

(approximate) in mm and kg

Size	A	B	C	D	E	F	G	Weight
¾"	60	111	77	195	165	217	50	6.8



Safety information, installation and maintenance

Pressure

Before attempting any maintenance of the trap, consider what is or may have been in the pipeline. Ensure that any pressure is isolated upstream and downstream of the trap and safely vented to atmospheric pressure before attempting to maintain the trap. This is easily achieved by fitting Spirax Sarco depressurisation valves type DV (see separate literature for details). Do not assume that the system is depressurised even when a pressure gauge indicates zero.

5.5
12

Temperature

Allow time for temperature to normalise after isolation to avoid the danger of burns and consider whether protective clothing (including safety glasses) is required.

Installation

The air and gas trap must always be fitted with the inlet at the top so that the float mechanism is rising and falling in a vertical plane. The high point of the cover is provided with ½" tapping for a balance pipe which is essential for satisfactory operation. From the tapping provided at the high point of the cover a balance pipe having a continuous rise must be fitted and connected into the space being drained.

Maintenance

How to fit the main valve assembly

- Isolate, undo cover bolts, remove existing mechanism.
- Using a little jointing paste on the thread and gasket, fit the new valve seat to the body.
- Attach the support frame, and pivot frame to the body with assembly set screws, but do not tighten.
- Fit the float arm to the pivot frame using the pin and by moving the complete assembly centre the valve head onto the seat orifice.
- Hold the assembly firmly in place and tighten up set screws to the recommended tightening torque.
- Check operation by raising and lowering the float several times making sure that the valve head is centring properly on the seat.
- Make sure all joint faces are clean, apply a thin coating of jointing paste to seat threads.
- Tighten cover bolts uniformly to the recommended tightening torque. Open up isolating valve slowly.

Disposal

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

How to order

Example: 1 off Spirax Sarco ¾" screwed BSP CA10S drain trap with cast iron body and cover.

Spare parts

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

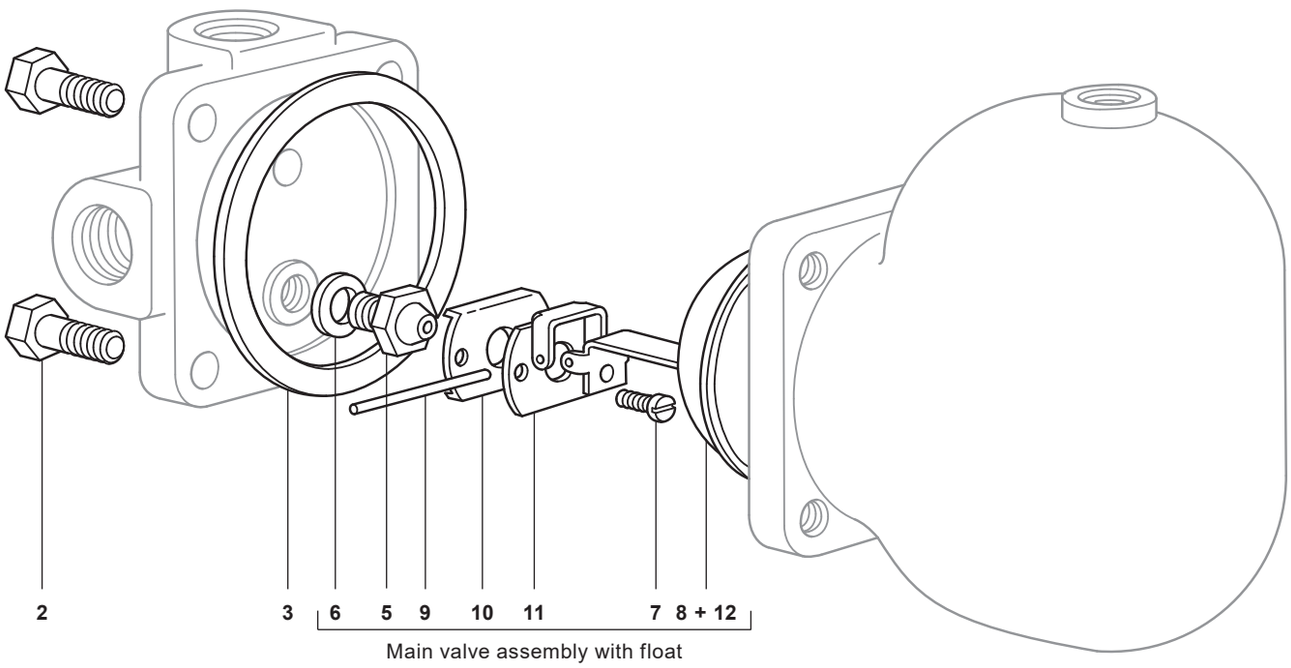
Available spares

Main valve assembly with float	**5**, **6**, **7**, **8** + **12**, **14**, **15**, **16**
Gasket set (packet of 3 sets)	**3**, **6**

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 trap.

Example: 1 off main valve assembly for ¾" Spirax Sarco CA10S air and gas trap.



Main valve assembly with float

Recommended tightening torques

Item	or mm		N m
2	17	M10 x 30	29 - 32
5	17	M12 x 8	50 - 55
7	Cheesehead	M5 x 20	2.5 - 2.8

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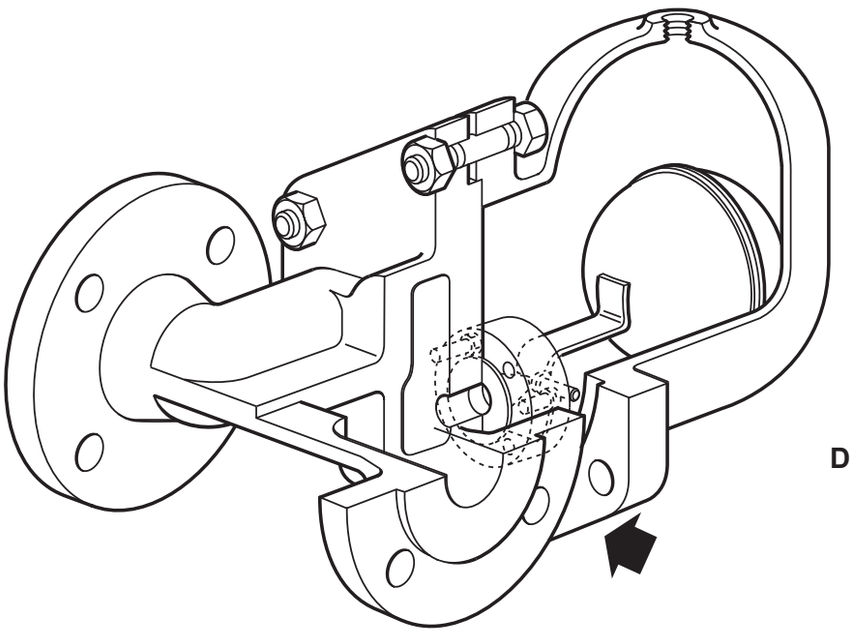
5 Compressed air products
Isolation valves, drain traps and ancillaries

TI-P148-03
CMGT Issue 10

CA44S
Carbon Steel
Air and Gas Trap DN40 and DN50



DIN flange shown

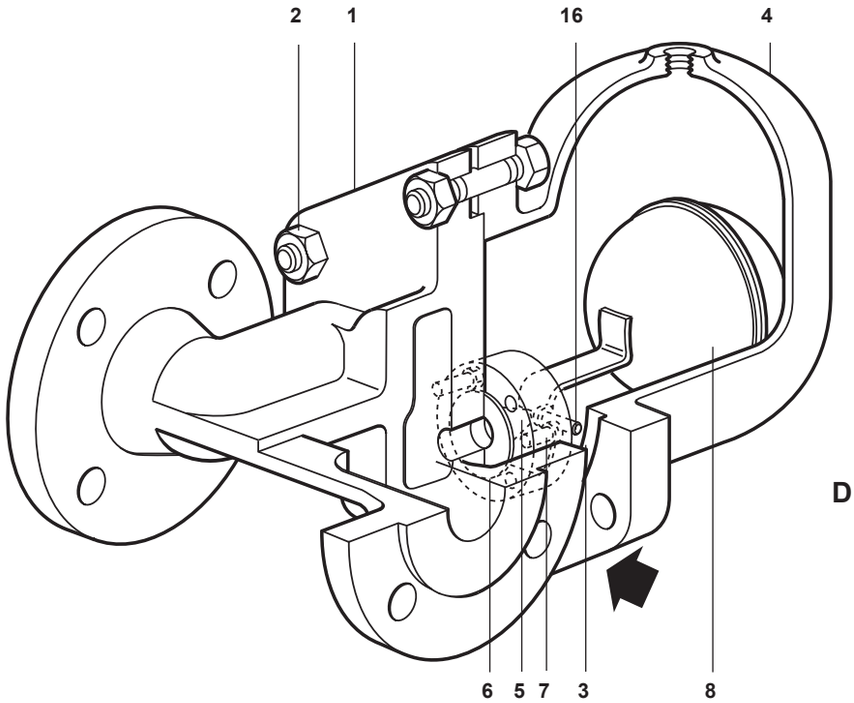
Description
The CA44S is an carbon steel ball float air and gas trap. It has a metal valve cone and is available with horizontal flanged connections. The cover will be drilled and tapped ¾" BSP or NPT for the purpose of fitting a balance line. Body and cover castings are produced by a TÜV approved supplier in accordance with AD-Merkblatt WO/TRD100.

Standards
This product fully complies with the requirements of the EU Pressure Equipment Directive/UK Pressure Equipment (Safety) Regulations and carries the CE mark when so required.

Certification
The product is available with material certification to EN 10204 3.1.
Note: All certification/inspection requirements must be stated at the time of order placement.

Sizes and pipe connections
DN40 and DN50
Standard flanges are:
EN 1092-1 PN40 with DIN face-to-face dimensions and ASME 150, ASME 300 and JIS/KS 20K flanges with drilled and tapped bolt holes with DIN face-to-face dimensions.
PN and JIS/KS flanges will be provided with BSP balance line and ASME flanges with NPT balance line.

Materials

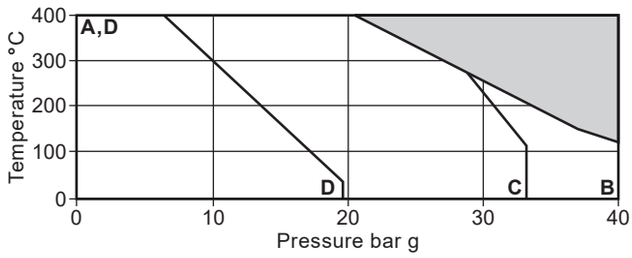


DIN flange shown

No.	Part		Material	
1	Body		Carbon steel	WCB 1.0619+N
2	Cover studs		Steel	DN 17240 21 Cr Mo V57
	Cover nuts		Steel	DN 17240 24 Cr Mo5
3	Cover gasket		Reinforced exfoliated graphite	
4	Cover		Carbon steel	WCB 1.0619+N
5	Valve seat		Stainless steel	BS 970 431 S29
6	Mounting plate gasket		Stainless steel	BS 1449 304 S11
7	Pivot frame assembly set screws		Stainless steel	BS 4183 18/8
8	Ball float and lever		Stainless steel	BS 1449 304 S16
9	Valve cone (The valve cone is permanently attached to the ball float and lever)		Stainless steel	
14	Support frame		Stainless steel	BS 1449 304 S16
15	Pivot frame		Stainless steel	BS 1449 304 S16
16	Pivot		Stainless steel	BS 970 431 S29/ASTM A276 431
18	Mounting plate		Stainless steel	BS 970 431 S29
19	Mounting plate fasteners	DN40 bolts DN50 studs and nuts	Carbon steel	GR8.8

Note: Parts **9**, **14**, **15**, **18** and **19** are shown in 'Spare parts'.

Pressure/temperature limits



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

A - B Flanged EN 1092-1 PN40 and ASME 300.

A - C Flanged JIS/KS 20K.

D - D Flanged ASME 150.

Body design conditions		PN40
PMA	Maximum allowable pressure	40 bar g @ 120 °C
TMA	Maximum allowable temperature	400 °C @ 20 bar g
Minimum allowable temperature		0 °C
PMO	Maximum operating pressure for saturated steam service	40 bar g @ 120 °C
TMO	Maximum operating temperature	400 °C @ 20 bar g
Minimum operating temperature		0 °C
ΔPMX	Maximum differential pressure bar, depending on the specific gravity of the liquid being drained:	

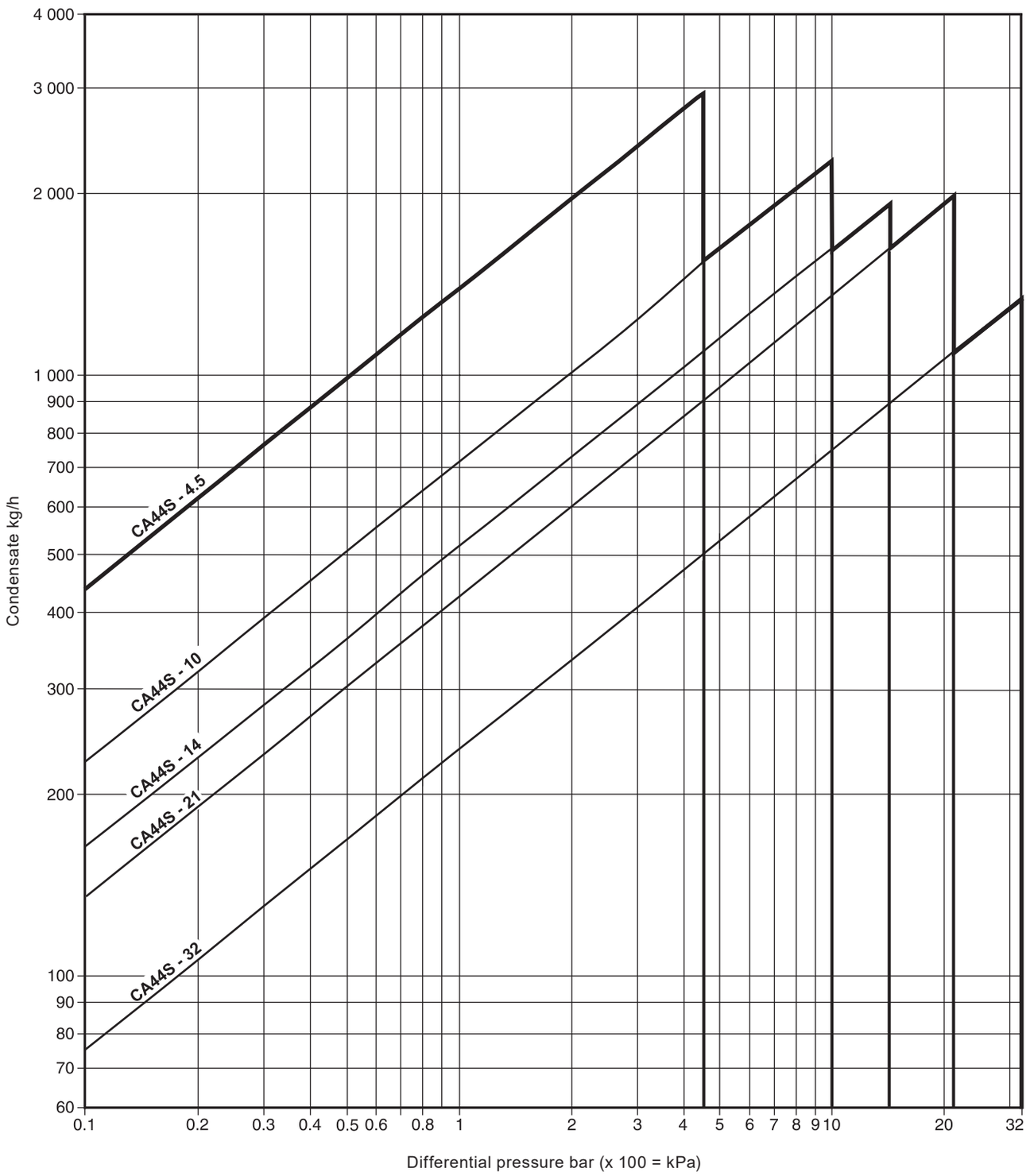
Specific gravity	1.0	0.9	0.8	0.7	Min. 0.6
CA44S-4.5	4.5	4.5	4.5	3.4	2.0
CA44S-10	10.0	9.5	6.8	5.5	3.4
CA44S-14	14.0	14.0	11.0	8.0	5.0
CA44S-21	21.0	19.0	15.0	10.0	6.5
CA44S-32	32.0	30.0	30.0	16.5	10.0

ΔPMX	Maximum operating temperature	0.1 bar

Designed for a maximum cold hydraulic test pressure of:	PN40	60 bar g
	ASME 300	60 bar g
	ASME 150	30 bar g
	JIS/KS 20K	49 bar g

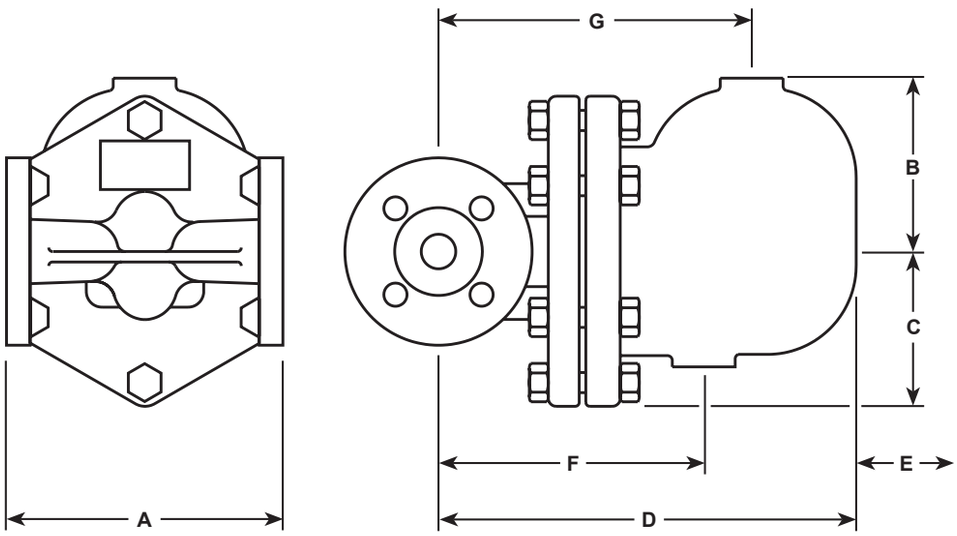
Capacities

Note: The capacities provided here are calculated using water at ambient temperature.
The discharge capacity is affected with a change in specific gravity, for further information contact Spirax Sarco.



Dimensions/weights (approximate) in mm and kg

Size	PN40	ASME 150	ASME 300	JIS/KS 20K			PN40	ASME 150/300 JIS/KS 20K		PN40	ASME 150/300 JIS/KS 20K	PN40	ASME 150/300 JIS/KS 20K	
	A	A	A	A	B	C	D	D	E	F	F	G	G	Weight
DN40	230	321	327	322	130	116	326	248	200	200	154	242	164	33
DN50	230	313	320	311	141	123	332	251	200	225	158	248	167	43



Flange bolt hole tappings

Size	ASME 150	ASME 300	JIS/KS 20K
DN40	½" - 13 UNC - 2B	¾" - 10 UNC - 2B	M16 x 2 - 6H
DN50	⅝" - 11 UNC - 2B	⅝" - 11 UNC - 2B	M16 x 2 - 6H

Safety information, installation and maintenance

For full details, see the Installation and Maintenance Instructions (IM-P148-37) supplied with the product.

Installation note:

The trap must be fitted in the horizontal plane below what it is draining with the direction of flow as indicated on the body so that the float mechanism is free to rise and fall in a vertical plane.
One of the advantages of the float trap for draining air and gas systems is that no bleed is required for satisfactory operation. However, because the trap has no bleed a seperate balance line is needed to prevent it becoming air or gas locked.
It should be noted that the balance line is piped back to the upstream side.
A balance line is essential for the correct operation of this product.
It is recommended that a non-return valve is fitted when discharging condensate into return lines where backpressure is experienced.
It is also recommended that a diffuser is fitted when discharging to atmosphere.
For convenience of maintenance it is recommended that a union is fitted in the balance line near to the trap cover and consideration should be given to fitting isolation valves upstream and downstream of the trap.
The CA44S must not be insulated.

Disposal

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

How to order

Example: 1 off Spirax Sarco DN50 CA44S-32 air and gas trap flanged to EN 1092-1 PN40 having a carbon steel body and cover.

Spare parts

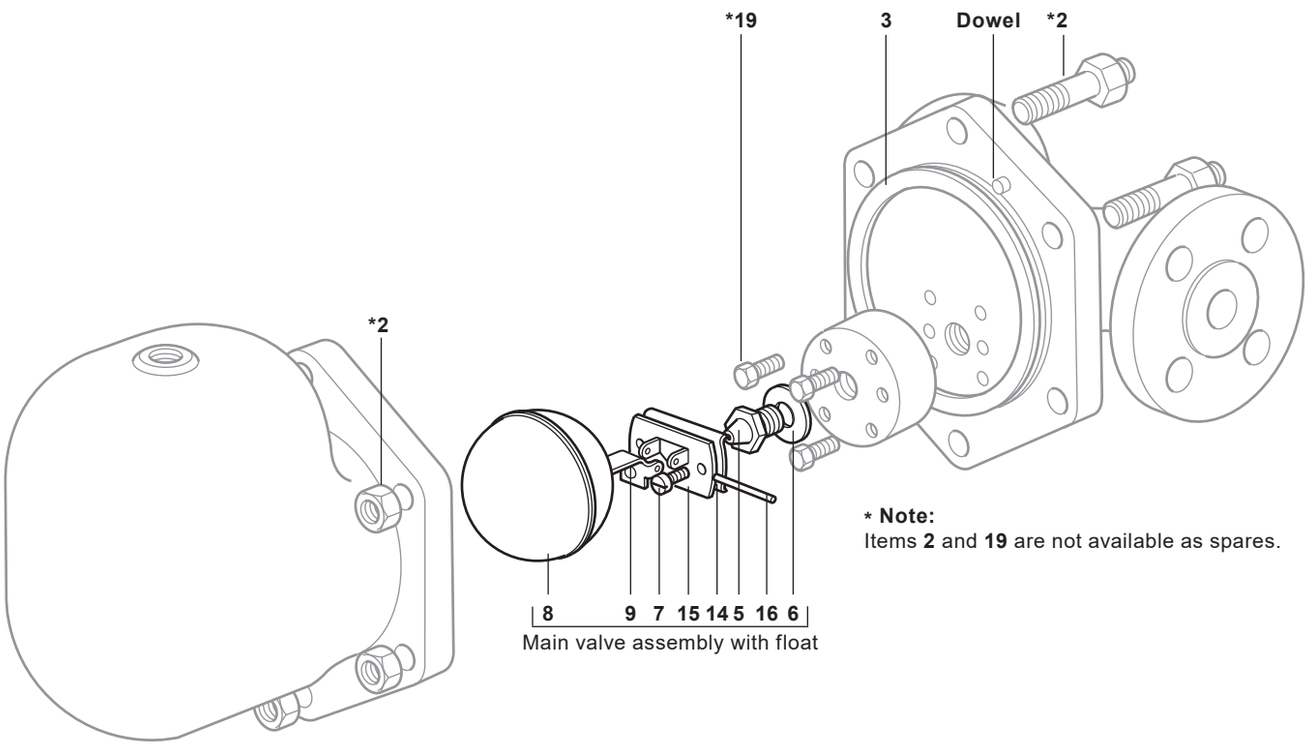
The spare parts available are shown in solid outline. Parts drawn in a grey line are not supplied as spares.

Available spares

Main valve assembly with float CA44S	**5, 6, 7, 8 + 9, 14, 15, 16**
Complete set of gaskets (packet of 3 sets)	**3, 6**

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 trap.
Example: 1 - Main valve assembly with float for a Spirax Sarco DN50 CA44S-32 air and gas trap.



Main valve assembly with float

* **Note:**
Items **2** and **19** are not available as spares.

Recommended tightening torques

Item	Size	or mm		N m
2	DN40	24 A/F	M16 x 85	60 - 66
	DN50	24 A/F	M16 x 85	80 - 88
3		17 A/F	M12 x 8	50 - 55
7		Cheesehead	M5 x 20	2.5 - 2.8
19	DN40	10 A/F	M6 x 20	10 - 12
	DN50	13 A/F	M8 x 20	20 - 24