



3A.262-E
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CS series Inverted bucket steam traps

Description

The series CS inverted bucket steam traps are manufactured with carbon steel body; internal components are made from stainless steel. They are suitable for use with saturated and superheated steam on process equipments and on medium / high consumption applications even with pressure and temperature control systems. Working is fully automatic also regarding air venting, but on intermittent applications when air and incondensable gas are in relevant quantity may be advisable to install also a separate air eliminator. The internal mechanism minimize any moving friction and valve closure is immediate, without any steam loss and the discharge action is done with determined blast with no equivocal phases.

Standards

These steam traps comply with the requirements of the European Pressure Equipment Directive 2014/68/EU and carry the CE mark when so required.

Certification

The product is available with material certification to EN 10204 3.1.B.
Note: Certification and any tests must be specified at the time of order.

Executions and sizes

DN	1" 25	1½" 40	2" 50
Model	CSD	CSE	CSF

Pipe connections

- Threaded ANSI B1.20.1 NPT
- Socket weld, according to ANSI B16.11 SW (standard)
- Flanged EN 1092 PN 40, 63 e 100
- Flanged ANSI B 16.5 class 150, 300, 600 RF

Optional executions

On request the steam trap can be equipped with an inbuilt stainless steel check valve.

Limiting conditions (ISO 6552)

PMA	- Maximum allowable pressure	@ 350°C	51 bar g
TMA	- Maximum allowable temperature	@ 35 bar g	427°C
	Minimum allowable temperature		-10°C

PMO	- Maximum operating pressure	See table below	
ΔPMX	- Maximum differential pressure		

TMO	- Maximum operating temperature	@ 35 bar g	427°C
		@ 40 bar g	300°C

Minimum operating temperature, danger of freezing considered 0°C
Designed for a maximum cold hydraulic test pressure of 76,5 bar g

PMO e ΔPMX

Model	PMO	ΔPMX	Model	PMO	ΔPMX	Model	PMO	ΔPMX
CSD 35	35 bar g	35	CSE 35	35 bar g	35	CSF 40	40 bar g	40
CSD 25		25	CSE 25		25	CSF 35		35
CSD 18		18	CSE 18		18	CSF 25		25
CSD 12		12	CSE 12	15 bar g	12	CSF 20	20 bar g	20
CSD 8		8	CSE 8		8	CSF 15		15
CSD 4		4	CSE 8		8	CSF 10		10
						CSF 6		6

The maximum values can be restricted by the chosen rating of flanges.



Materials

N°	Denominazione	Materiale	Designazione
1	Body	Carbon steel	ASTMA 105 / 106 Gr.B
2	Cover	Carbon steel	ASTMA 105
3	Cover bolts	Carbon steel	A193 B 7
4	Cover gasket	Reinforced graphite	
5	Channelling pipe	Stainless steel	AISI 304
6	Bucket	Stainless steel	AISI 304
7	Bracket	Stainless steel	AISI 304
8	Bracket screw	Stainless steel	AISI 304
9	Lever pin	Stainless steel	AISI 304
10	Split pin	Stainless steel	AISI 304
11	Valve seat	Stainless steel	405 C series
12	Valve head	Stainless steel	405 C series
13	Valve lever	Stainless steel	AISI 304

Condensate discharge capacities (kg/h)

The discharge capacities in the table are referred to the operating temperature of the saturated steam.

Model	Differential pressure (bar)											
	1	2	4	8	12	14	18	20	25	28	35	40
CSD	35	245	380	570	880	1100	1200	1400	1600	1750	1850	2050
	25	300	480	730	1150	1500	1700	1900	2000	2350	--	--
	18	405	620	1000	1550	2000	2200	2700	--	--	--	--
	12	540	840	1350	2050	2800	--	--	--	--	--	--
	8	680	1100	1850	2950	--	--	--	--	--	--	--
	4	1000	1800	2900	--	--	--	--	--	--	--	--
CSE	35	380	590	1000	1350	1900	1950	2200	2550	2900	3050	3600
	25	470	710	1150	1900	2200	2650	3050	3200	3850	--	--
	18	650	1000	1750	2700	3450	3900	4800	--	--	--	--
	12	800	1300	2150	3600	4900	--	--	--	--	--	--
	8	1100	1900	3050	5150	--	--	--	--	--	--	--
	4	1300	1750	2350	3250	3900	4200	4700	5000	5300	5400	6800
CSF	35	1700	2100	2800	3800	4700	4950	5500	5800	6400	6700	7500
	25	2100	2700	3650	4800	5800	6350	7000	7300	8000	--	--
	20	2600	3300	4500	5900	6900	7200	8000	8500	--	--	--
	15	3000	4100	5300	7200	8800	9100	--	--	--	--	--
	10	3800	5000	6800	8600	--	--	--	--	--	--	--
	6	4800	6500	8200	--	--	--	--	--	--	--	--

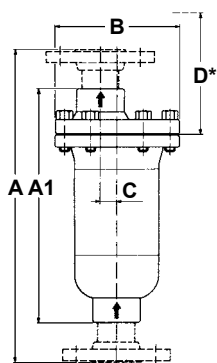
The choice of trap should be based on the following data:

- the hourly amount of condensate to be discharged,
- the effective differential pressure,
- the safety factor: 1,5 for continuous use, 2 to 3 for intermittent use.

Dimensions in mm and weight in kg (approximate)

Model	DN	A1		A					B	C	D*
		NPT	SW	PN 40	PN 100	ANSI 150	ANSI 300	ANSI 600			
CSD	1" - 25	305	316	400	500	400	430	430	165	30	240
		12	12	15	17	14	15	16			
CSE	1½" - 40	365	370	460	550	460	500	500	200	30	290
		16,5	16,5	22	25	20	23	24			
CSF	2" - 50	470	485	586	675	586	620	620	250	40	370
		31	31	37	43	36	39	39			

* Withdrawal distance



How to specify

Inverted bucket steam trap Spirax Sarco CSE 25; Carbon steel body construction and stainless steel internal components. Maximum working and differential pressure 25 bar. Socket weld connections according with ANSI B 16.11 S.W. DN 1½".

Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions 3.343.5275.201 supplied with the product.

Installation note

The trap must be installed below the drain point with the body upright in vertical position, the cover at the top and the inlet connection at the bottom; in this way the bucket mechanism will rise and fall vertically without any friction. The use of an upstream protection strainers is always recommended.

To permit a safe inspection for cleaning or maintenance purpose install suitable shut-off valves.

As the working mode of the trap is with blast discharge, the downstream accessories, if any, should be installed at a minimum distance of 1 m.

Disposal

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

Spare parts

The spare parts are shown in the drawing and are available in groupings as indicated in the table. No other parts, not indicated in the table, are available as spare.

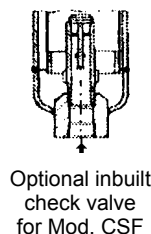
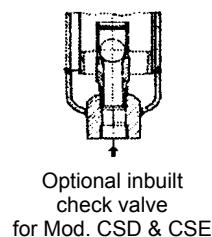
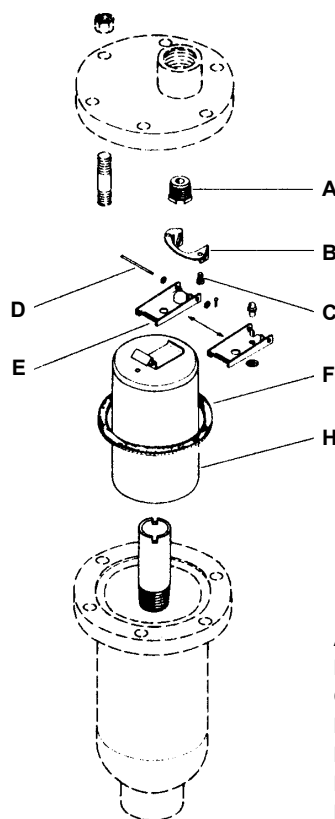
Available spares

Valve assembly	A, B, C, D, E, F
Bucket assembly	F, H
Gasket set (3 pieces)	F

How to order spares

Always order spare parts by using the description given in the table and state the type of trap, pressure rating and size of the connections.

Example: 1 Valve assembly for an CSF 40 Spirax Sarco trap, DN 2".



- A = Valve seat
- B = Bracket
- C = Bracket screws
- D = Lever pin
- E = Lever with valve plug
- F = Cover gasket
- H = Bucket

Recommended tightening torques

Part.	DN	or mm	N m
Cover bolt	1"	22	M 14 x 37
	1½"	24	M 16 x 45
	2"	30	M 20 x 55
Bracket screw	1"		M 5 x 10
	1½"		M 5 x 10
	2"		M 6 x 10