



CYCLONE SEPARATOR TRAP FOR STEAM

MODEL DC3S DUCTILE CAST IRON

SEPARATOR WITH BUILT-IN STEAM TRAP

Features

Cyclone separator and steam trap incorporated into one unit provide high-quality dry steam.

1. Separator achieves condensate separation efficiency as high as 98%.
2. Self-modulating free float steam trap continuously discharges condensate as it is separated.
3. Precision ground spherical float and positive three-point seating provide a complete seal, even under no-load conditions.
4. The large screen surface of the built-in strainer guarantees trouble-free service.
5. Only one moving part, the free float, prevents concentrated wear and increases service life.

Pressure Equipment Directive (PED)

Classification according to PED 2014/68/EU, fluid group 2

Size	Category	CE marking
DN 15 to DN 25	—*	Art. 4, Sec. 3 (sound engineering practice), CE marking not allowed
DN 32 to DN 50	I	With CE marking and Declaration of Conformity
DN 65 to DN 100	II	With CE marking and Declaration of Conformity

* Manufactured in accordance with sound engineering practice



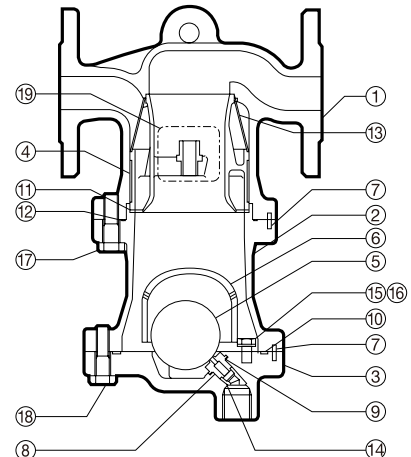
Specifications

Model		DC3S	
Connection		Screwed	Flanged
Size		1/2", 3/4", 1"	DN 15, 20, 25, 40, 50, 65, 80, 100
Maximum Operating Pressure (barg)	PMO	21	
Minimum Operating Pressure (barg)		0.1	
Maximum Operating Temperature (°C)	TMO	220	

PRESSURE SHELL DESIGN CONDITIONS (**NOT** OPERATING CONDITIONS): Maximum Allowable Pressure (barg) PMA: 21 1 bar = 0.1 MPa
 Maximum Allowable Temperature (°C) TMA: 220
 Minimum Allowable Temperature (°C): 0 (FCD450), -10 (EN-GJS-400-18-LT)

No.	Description	Material	DIN/EN*	ASTM/AISI*	
①	Body	Screwed: S	Ductile Cast Iron FCD450	0.7040	A536
		Flanged: F	Ductile Cast Iron EN-GJS-400-18-LT	0.7043/EN 5.3103	A395
②	Separator Body	S	Ductile Cast Iron FCD450	0.7040	A536
		F	Ductile Cast Iron EN-GJS-400-18-LT	0.7043/EN 5.3103	A395
③	Trap Cover	S	Ductile Cast Iron FCD450	0.7040	A536
		F	Ductile Cast Iron EN-GJS-400-18-LT	0.7043/EN 5.3103	A395
④	Separator	Cast Stainless Steel A351/A351M Gr.CF8	1.4312	—	
⑤	Float	Stainless Steel SUS316L	1.4404	AISI316L	
⑥	Float Cover	1/2" - 1", DN 15-50	Cast Iron FC250	0.6025	A126 Cl.B
		DN 65-100	Ductile Cast Iron FCD450	0.7040	A536
⑦	Guide Pin	Stainless Steel SUS304	1.4301	AISI304	
⑧	Trap Valve Seat	—	—	—	
⑨	Valve Seat Gasket	Fluorine Resin PTFE	PTFE	PTFE	
⑩	Trap Cover Gasket	Fluorine Resin PTFE	PTFE	PTFE	
⑪	Wave Spring	Stainless Steel SUS301	1.4310	AISI301	
⑫	Body Gasket	Fluorine Resin PTFE	PTFE	PTFE	
⑬	Screen	Stainless Steel SUS304	1.4301	AISI304	
⑭	Bushing	Stainless Steel SUS303	1.4305	AISI303	
⑮	Float Cover Bolt	Stainless Steel SUS304	1.4301	AISI304	
⑯	Spring Washer	Stainless Steel SUS304	1.4301	AISI304	
⑰	Body Bolt	Carbon Steel S45C	1.0503	AISI045	
⑱	Trap Cover Bolt	Carbon Steel S45C	1.0503	AISI045	
⑲	Nameplate	Stainless Steel SUS304	1.4301	AISI304	
⑳	Baffle**	Stainless Steel SUS304	1.4301	AISI304	
㉑	Baffle Bolt**	Stainless Steel SUS304	1.4301	AISI304	
㉒	Baffle Nut**	Stainless Steel SUS304	1.4301	AISI304	

CAUTION To avoid abnormal operation, accidents or serious injury, DO NOT use this product outside of the specification range. Local regulations may restrict the use of this product to below the conditions quoted.



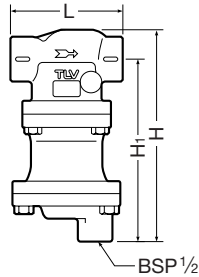
DN 15 - 50 shown, DN 65 - 100 configuration differs slightly

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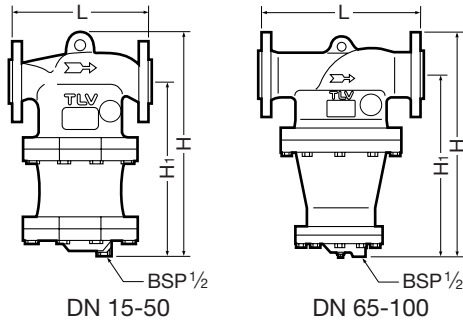
* Equivalent materials ** DN 65-100, above float cover, not shown

Dimensions

● **DC3S**
Screwed



● **DC3S**
Flanged



DC3S Screwed* (mm)

Size	L	H	H ₁	Weight (kg)
1/2"	150	243	209	5.8
3/4"				
1"	170	278	241	9.6

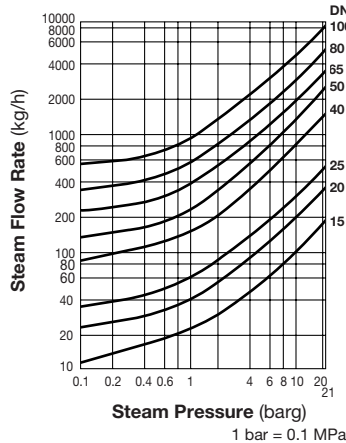
* BSP DIN 2999, other standards available

DC3S Flanged (mm)

DN	L		H	H ₁	Weight (kg)
	DIN 2501	PN25/40			
15	175		265	209	8.5
20	179				8.7
25	194		306	241	13
40	215		352	269	18
50	250		418	320	31
65	374		520	430	71
80					75
100	434		645	520	120

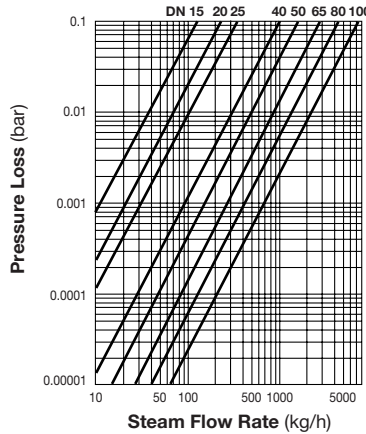
Other standards available, but length and weight may vary

Steam Flow Rate



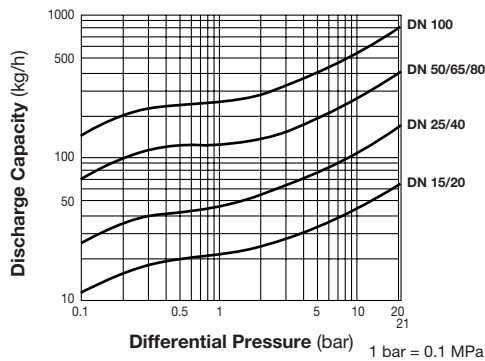
The chart on the left is used to determine the steam flow rate through the DC3S separator. It is based on a steam velocity in the piping of 30 m/sec. For other velocities, calculate the flow rate as follows:
Flow rate at v m/sec = flow rate at 30 m/sec × $\frac{v}{30}$
It is recommended that velocities not exceed 30 m/sec.

Pressure Loss



The pressure loss chart is based on a steam pressure of 10 barg. For other pressures, multiply the steam flow rate by the correction factor given in the table below. Use the result on the pressure loss chart.

Condensate Discharge Capacity



1. Line numbers within the graph to the left refer to orifice numbers.
2. Differential pressure is the difference between the separator inlet and its trap outlet pressure.
3. Capacities are based on continuous discharge of condensate 6 °C below saturated steam temperature.
4. Recommended safety factor: at least 1.5.

CAUTION DO NOT use traps under conditions that exceed maximum differential pressure as condensate backup will occur!

Pressure (barg)	1	3	5	7	10	16	20	21
Flow Rate Correction Factor	2.24	1.62	1.34	1.16	1	0.81	0.73	0.72

Manufacturer

TLV CO., LTD.
Kakogawa, Japan

is approved by LRQA Ltd. to ISO 9001/14001

ISO 9001
ISO 14001

