TLV®

DC3S
Ductile Iron Cyclone Separator
w/ 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.

Specifications

Model		DC3S	
Connection		Screwed	Flanged
Size		½″, ¾″, 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 (℃)	TMO	220	

PRESSURE SHELL DESIGN CONDITIONS (**NOT** OPERATING CONDITIONS): Maximum Allowable Pressure (barg) PMA: 21

Maximum Allowable Temperature (℃) TMA: 220

1 bar = 0.1 MPa

No.	Description		Material	DIN*	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	A395
②	Separator Body	S	Ductile Cast Iron FCD450	0.7040	A536
		F	Ductile Cast Iron EN-GJS-400-18-LT	0.7043	A395
③	Trap Cover	S	Ductile Cast Iron FCD450	0.7040	A536
		F	Ductile Cast Iron EN-GJS-400-18-LT	0.7043	A395
④	Separator	½″- 1″, DN 15-50	Stainless Steel SCS13	1.4308	A351 Gr.CF8
		DN 65-100	Cast Stainless Steel A351 Gr.CF8	1.4312	—
⑤	Float		Stainless Steel SUS316L	1.4404	AISI316L
⑥	Float Cover	½″- 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

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

⚠ **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.
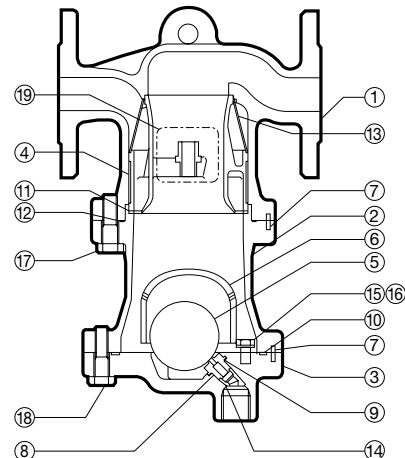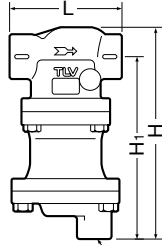

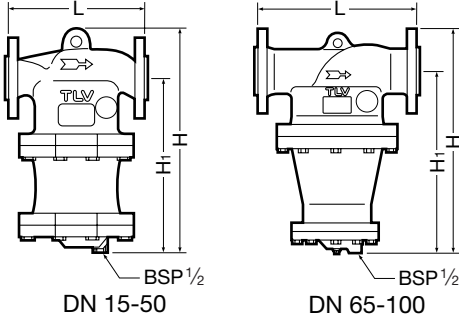DN 15 - 50 shown, DN 65 - 100 configuration differs slightly

Dimensions

- **DC3S** Screwed

- **DC3S** Flanged

DN 15-50   DN 65-100

DC3S Screwed* (mm)

Size	L	H	H$_1$	Weight (kg)
½″	150	243	209	5.8
¾″				
1″	170	278	241	9.6

* BSP DIN 2999, other standards available

DC3S Flanged (mm)

| DN	L DIN 2501 PN25/40	H	H$_1$	Weight (kg)
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
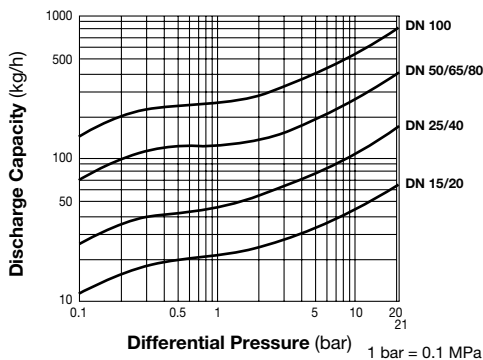
Steam Flow Rate
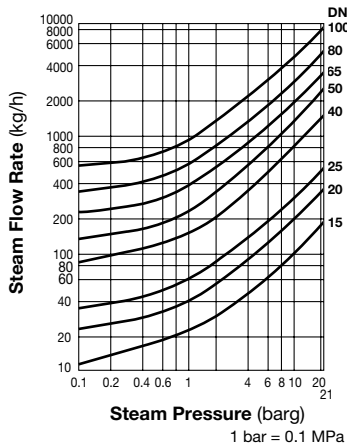
The chart on the left is used to determine the steam flow rate through the DC3S separator. It is based on a steam velocity in the piping of 30 m/sec. For other velocities, calculate the flow rate as follows:

Flow rate at v m/sec = flow rate at

$$30 \text{ m/sec} \times \frac{v}{30}$$

It is recommended that velocities not exceed 30 m/sec.

1 bar = 0.1 MPa
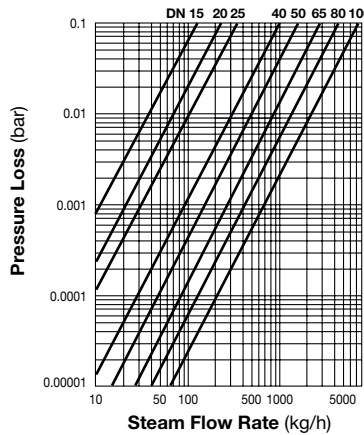
Pressure Loss

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.

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

Condensate Discharge Capacity

1 bar = 0.1 MPa

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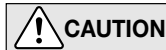
⚠ **CAUTION** DO NOT use traps under conditions that exceed maximum differential pressure as condensate backup will occur!