# CYCLONE SEPARATOR TRAP FOR AIR

## MODEL DC3A DUCTILE CAST IRON CAST IRON

**SEPARATOR WITH BUILT-IN AIR TRAP**

## Features

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

1. Separator achieves condensate separation efficiency as high as 98%.
2. Self-modulating free float air 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 surface area of the built-in screen guarantees trouble-free service.
5. Only one moving part, the free float, prevents concentrated wear and increases service life.

## Specifications

| Model | | DC3A | |
|---|---|---|---|
| Connection | | Screwed | Flanged |
| Size | | ½″, ¾″, 1″ | DN 15, 20, 25, 40, 50, 65, 80, 100 |
| Maximum Operating Pressure (barg) | PMO | 10 | |
| Minimum Operating Pressure (barg) | | 0.1 | |
| Maximum Operating Temperature (℃) | TMO | 100 | |
| Applicable Fluid* | | Air | |

*Do not use for toxic, flammable or otherwise hazardous fluids.

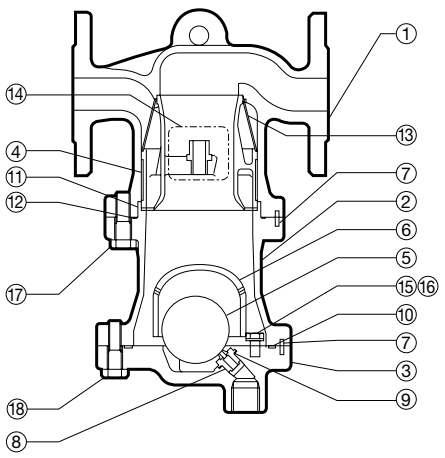
1 bar = 0.1 MPa

PRESSURE SHELL DESIGN CONDITIONS (**NOT** OPERATING CONDITIONS): Maximum Allowable Pressure (barg) PMA: 21 (Flanged), 13 (Screwed)
Maximum Allowable Temperature (℃) 220 (Flanged), 200 (Screwed)

| 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 | Cast Iron FC250 | 0.6025 | A126 Cl.B |
| | | F | Ductile Cast Iron EN-GJS-400-18-LT | 0.7043 | A395 |
| ③ | Trap Cover | S | Cast Iron FC250 | 0.6025 | A126 Cl.B |
| | | 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 | | Nitrile Rubber NBR/ Stainless Steel SUS303 | NBR/ 1.4305 | D2000BF/ AISI303 |
| 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 | Nameplate | | Stainless Steel SUS304 | 1.4301 | AISI304 |
| ⑮ | Hexagon Bolt | | Stainless Steel SUS304 | 1.4301 | AISI304 |
| ⑯ | Spring Washer | | Stainless Steel SUS304 | 1.4301 | AISI304 |
| ⑰ | Body Bolt | | Carbon Steel S45C | 1.0503 | AISI1045 |
| ⑱ | Trap Cover Bolt | | Carbon Steel S45C | 1.0503 | AISI1045 |
| ⑲ | Baffle** | | Stainless Steel SUS304 | 1.4301 | AISI304 |
| ⑳ | Baffle Bolt** | | Stainless Steel SUS304 | 1.4301 | AISI304 |
| ㉑ | Baffle Nut** | | Stainless Steel SUS304 | 1.4301 | AISI304 |

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

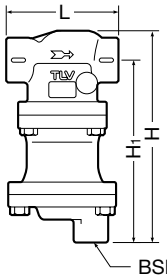
**CAUTION** To avoid abnormal operation, accidents or serious injury, DO NOT use this product outside of the specification range. Local regulations may restrict the use of this product to below the conditions quoted.



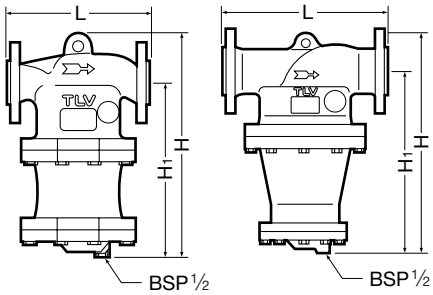

DN 15 - 50 shown. Configuration of larger sizes differs slightly.

## Dimensions

● **DC3A** Screwed




● **DC3A** Flanged




DN 15-50 DN 65-100

**DC3A** Screwed* (mm)

| Size | L | H | H1 | Weight (kg) |
|---|---|---|---|---|
| ½″ | 170 | 278 | 241 | 9.6 |
| ¾″ | | | | |
| 1″ | | | | |

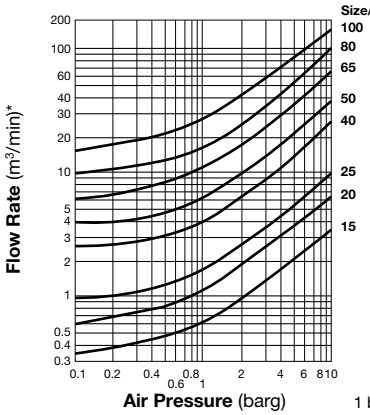
* BSP, DIN 2999, other standards available

**DC3A** Flanged (mm)

| DN | L DIN 2501 PN25/40 | H | H1 | Weight (kg) |
|---|---|---|---|---|
| 15 | 190 | 306 | 241 | 12 |
| 20 | 194 | | | |
| 25 | | | | 13 |
| 40 | 215 | 352 | 269 | 18 |
| 50 | 250 | 418 | 320 | 31 |
| 65 | 374 | 523 | 430 | 71 |
| 80 | | 530 | | 75 |
| 100 | 434 | 638 | 520 | 120 |

Other standards available, but length and weight may vary

## Air Flow Rate

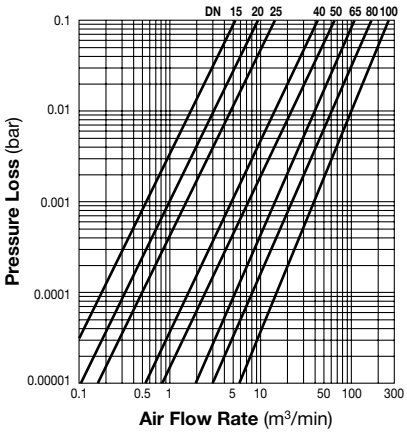



The chart at the left is used to determine the air flow rate through the DC3A separator. It is based on an air velocity of 30 m/sec. For other velocities, calculate the flow rate as follows:
Flow rate at V m/sec = flow rate at

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

* Air at 20°C and atmospheric pressure

## Pressure Loss

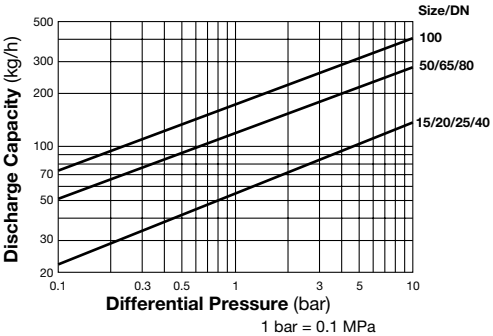



The pressure loss chart is based on an air pressure of 10 barg.
For other pressures, multiply the air flow rate by the correction factor given in the table below. Use the result on the pressure loss chart.

1 bar = 0.1 MPa

| Pressure (barg) | 1 | 3 | 5 | 7 | 10 |
|---|---|---|---|---|---|
| Flow Rate Correction Factor | 5.5 | 2.75 | 1.83 | 1.38 | 1 |

## Condensate Discharge Capacity




1. Differential pressure is the difference between the separator inlet and its trap outlet pressure.
2. Capacities are based on continuous discharge of condensate below 100 °C with specitic gravity of 1.
3. Recommended safety factor: at least 1.5.

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

**Manufacturer**
TLV® CO.,LTD.
Kakogawa, Japan
is approved by LRQA Ltd. to ISO 9001/14001

ISO 9001/ISO 14001