

DGC-020-153881

Product Data Sheet

Product number: 115388100001

FULLY SWEEP
INLINE
PATHWAY

TROUBLE
FREE FLUID
CONNECTION

ACTIVE
DISSOLVED GAS
REMOVAL

High-Efficiency Degassing for Your Fluidic System

Improve data quality and reliability in your system with degassing chambers from IDEX Health & Science.

IDEX Health & Science inline degassing chambers provide superior fluid conditioning for life science instrumentation. Our degassing chambers improve instrument precision and assay quality by removing dissolved gases from aqueous system fluids before they outgas and form bubbles that impact precision dispensing, prevent mixing, disrupt separation air gaps, or interfere with detection.

Features:

- › Active dissolved gas removal
- › Fully swept inline fluid path
- › Trouble free fluid connection with 1/4-28 UNF fittings or manifold mountable
- › Vacuum connection for elastomeric tubing
- › Sturdy housing for membrane protection

Applications:

- › Benchtop clinical chemistry
- › Benchtop immunoassays
- › Flow cytometry
- › NGS applications
- › Spatial biology
- › Proteomics

Description

The core functional element of this inline degasser is a fluid path lined by a highly permeable silicone-like membrane. Fluid flows through the membrane pathway, while the space surrounding the membrane is evacuated. A PID-controlled IDEX Health & Science vacuum pump holds a precise vacuum level driving the active removal of dissolved gases across the membrane.



General

| Parameter | Value |
|----------------|-------------------|
| Class | Degassing chamber |
| Series | DGC |
| Product alias | DGC-020-153881 |
| Product number | 115388100001 |

Absolute Maximum Ratings (per channel)

| Parameter | Value | Unit |
|--|-----------|------------------|
| Maximum operating pressure difference between fluid and vacuum | 100 | kPa |
| Maximum operating flow rate | 20 333 | mL/min µL/sec |
| Maximum operating temperature | 40 | °C |
| Maximum operating non-condensing humidity | 70 | % |

Degassing (per channel)

| Parameter | Value | Unit |
|--|---|------------------|
| Degassing | Permeation through solid membrane | |
| Membrane material | Vinyl methyl silicone (VMQ) | |
| Degassing fluid volume | 2 | mL |
| Flow rate for 50% degassing efficiency (Water 25°C, Vacuum level 16.7kPa) | 20 333 | mL/min µL/sec |
| Recommended minimum degassing flow rate | 5 83 | mL/min µL/sec |
| Recommended maximum degassing flow rate | 20 333 | mL/min uL/sec |
| Recommended degassing vacuum | 16.7 | kPa |
| Vacuum volume | 31 | cm3 |
| Pumpdown period to achieve 16.7 kPa vacuum using an IDEX Health & Science double stage vacuum pump | < 10 | sec |
| Vacuum connection | 4.7 mm OD | |
| Vacuum connection location | At end of tank | |
| Vacuum connection material | Polyphenylene sulfide (PPS) | |
| Recommended vacuum connection | Low gas permeability 3 mm ID elastomeric tube | |

Regulatory

| Parameter | Value |
|-----------|-------|
| REACH | Yes |
| RoHS | Yes |

Fluidic (per channel)

The following table contains nominal values for reference:

| Parameter | Value | Unit |
|---|---|------|
| Internal fluid pathway | Parallel circular tubes | |
| Inline fluid volume | 2.1 | mL |
| Pressure drop (Water 25°C, Maximum operating flow rate) | < 20 | kPa |
| Fluid contact materials | Ethylene propylene diene monomer (EPDM) Polyphenylene sulfide (PPS) Vinyl methyl silicone (VMQ) | |
| Fluid connection | Female flat-bottom 1/4-28UNF | |
| Fluid connection location | On top lid | |
| Fluid connection material | Polyphenylene sulfide (PPS) | |
| Fluid connection center-to-center distance | 23.8 | mm |
| Fluid connection edge-to-edge distance | 14.3 | mm |
| Recommended fluid connection | Male 1/4-28UNF nut preferably with a softer ETFE ferrule | |

Mechanical

| Parameter | Value | Unit |
|------------------|-----------------------------|------|
| Housing material | Polyphenylene sulfide (PPS) | |
| Outer dimensions | 75.7 x 49 x 22 | mm |
| Mounting | With 6-32UNC screw | |

Environmental

| Parameter | Value | Unit |
|--|---|------|
| Operating temperature | 5 to 40 | °C |
| Operating non-condensing humidity | 10 to 70 | % |
| Storage temperature (The membrane must be dry inside.) | -10 to 60 | °C |
| Storage non-condensing humidity | 10 to 70 | % |
| Vibration | Liquid delivery pumps with high vibration, such as diaphragm pumps, are not recommended | |

Typical Performance (per channel)

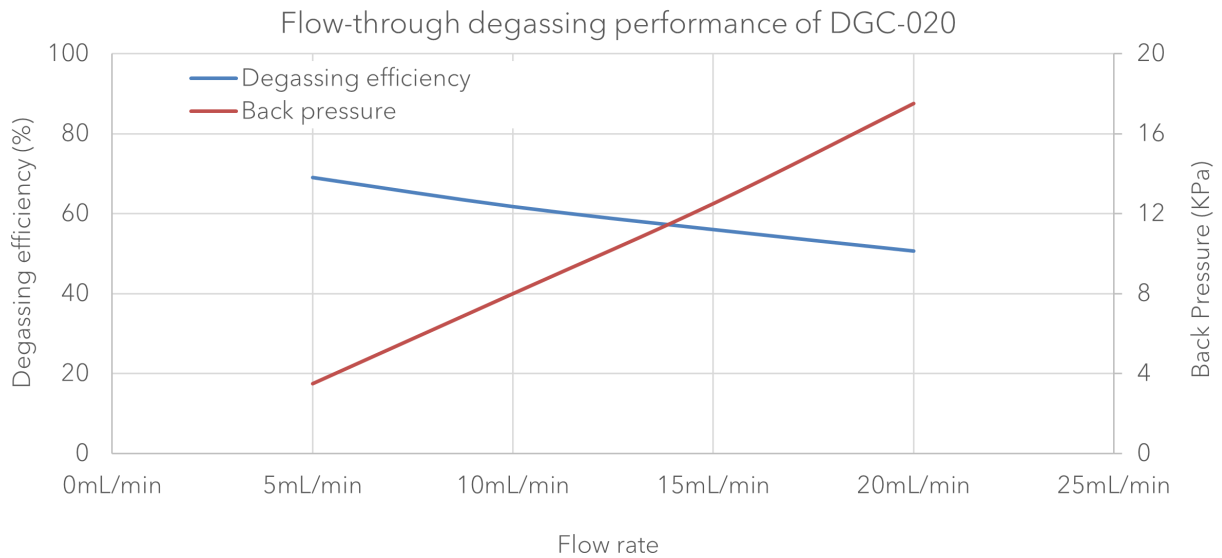
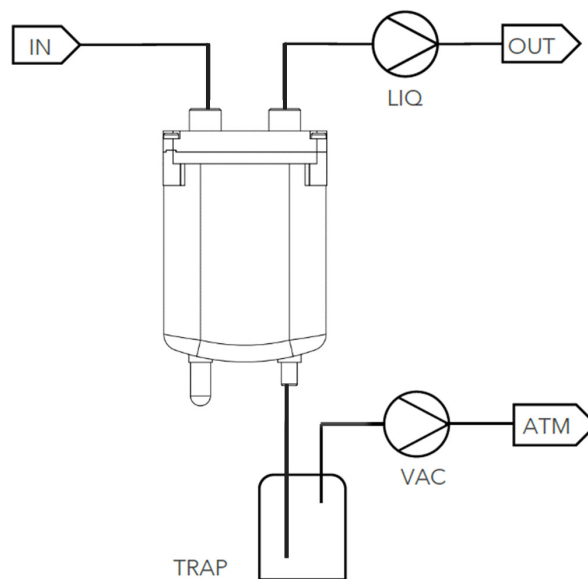


Figure 1: The plot shows the reference degassing efficiency of degassing chamber DGC-020 tested under various flow rates. The degassing efficiency represents the percentage of removed dissolved oxygen with respect to its saturation concentration. The curve shows a typical minimum performance profile gained at 25 °C using deionized water and a vacuum level of 16.7 kPa. The chamber was operated with negligible back pressure connected to the discharge side of a continuous pump. Oxygen content was monitored using a dissolved oxygen sensor while the flow rate was measured using a mass flow meter.

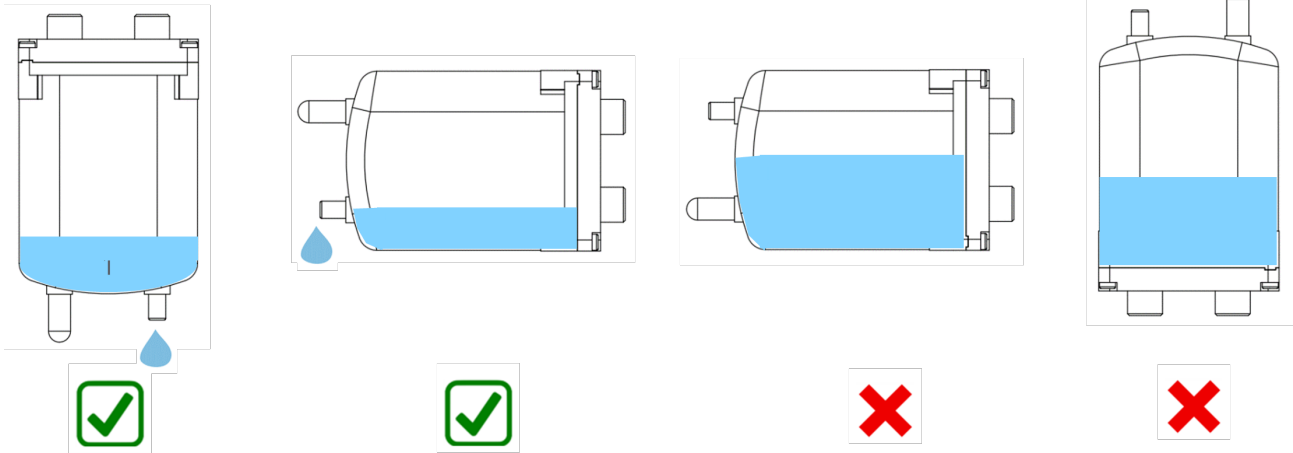
Integration (liquid integration shown for one channel)

The pump should ideally pull fluid through a degassing chamber to prevent from being pressurized above the maximum operating pressure of 100kPaG. It is not recommended to install the degassing chamber on the dispense side of the pump. Leave the cap on the unused vacuum port. Always place a liquid trap between the degassing chamber and a vacuum pump for longer continuous operation in order to avoid spillovers into the vacuum line.

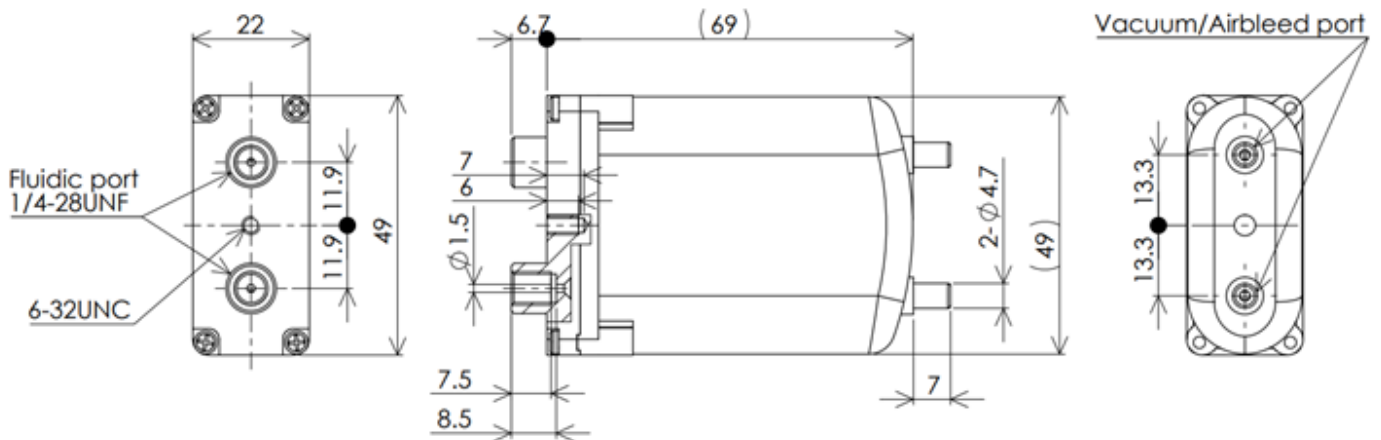


Mounting Orientation

Condensation will reach an equilibrium in the chamber such that a small amount of water will be present at the bottom of the vacuum space. We recommend mounting the DGC-020 either in an upright position with fluid connections pointing upward and vacuum connections pointing downward or horizontally with fluid and vacuum connections pointing sideways with connecting elastomeric tube to the lower vacuum connection.



Dimensions



Warranty

Seller warrants to a buyer that each product will be free of defects in workmanship and material for the period of 1 year. The warranty period for all products commences on the date the product is deposited by the seller with the carrier for shipment. For complete warranty details refer to IDEX Health & Science LLC terms and conditions of sale which can be found at <https://www.idex-hs.com/about-us/legal-notice/terms-conditions-of-sale/>.