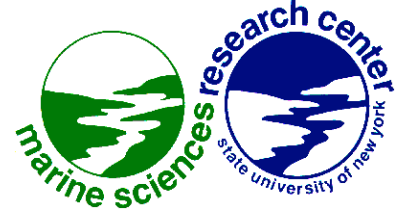
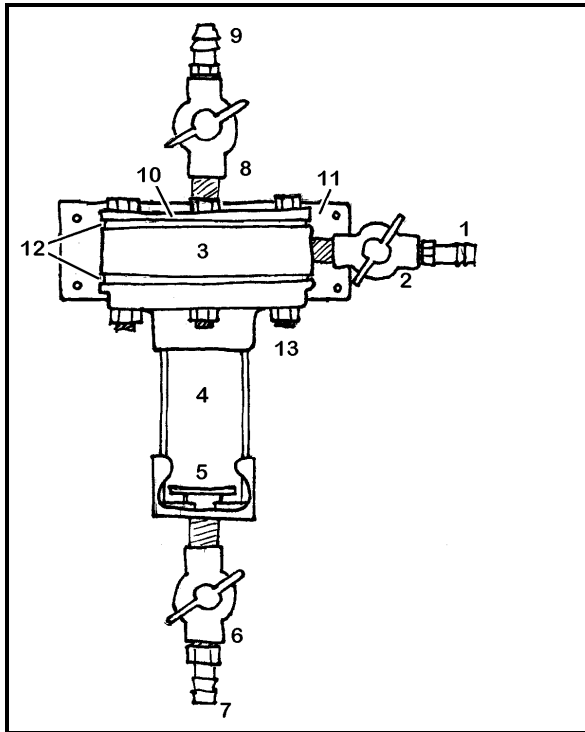


Ocean Instrument Laboratory
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MSRC VDB-1 VORTEX DEBUBBLER DESCRIPTION AND ORDER SPECIFICATION

SPECIFICATIONS



Construction: All internal surfaces are corrosion proof nylon, PVC plastic, and BUNA-n elastomer. Metal hardware is 316 stainless steel.

Connections: Plumbed connections are PVC plastic ball valves with female NPT threaded ends. Male NPT barb hose adapters are provided to allow an alternate connection option.

- ? Input: for input of process seawater.
- ? Waste exhaust: for output of bubbles and approximately 25% of seawater.
- ? Output: for output of bubble-free seawater.

Controls: Ball valves at input, waste, and output.

Chamber pressure: Prototype units have been tested at MSRC with our commercial potable water supply at 40 PSIG for 30 minutes. Ultimate (destructive) pressure testing of this design has not been done. Subjecting the unit to pressures above 30 PSIG is therefore not recommended.

The MSRC vortex debubbler is designed to remove nuisance air bubbles from an input seawater stream before sending the water to bubble-sensitive instruments (e.g. salinometers, fluorometers). The main part of the device is a vertical cylinder. Seawater is injected tangentially into this cylinder causing the water inside to spin rapidly. Centripetal acceleration causes bubbles to migrate to the center axis, where they are drawn off at top center. Cleared output water is drawn off at the bottom periphery.

SPECIFICATIONS (continued)

Two standard sizes are available:

- ? 3 inch diameter, internal volume approximately 1 liter. Suggested flow rate 18 to 24 liters per minute (4.75 - 6.35 gallons/min). Recommended for larger instruments such as the Seabird SBE21 Seacat thermosalinograph. Connections $\frac{3}{4}$ inch NPT female thread, $\frac{3}{4}$ inch hose barb fitting adapters provided. 18-24 liter/min.
- ? 2 inch diameter, internal volume approximately 0.5 liter. Suggested flow rate 9 to 12 liters per minute (2.4 - 3.2 gallons/min). Recommended for smaller instruments such as the Turner Model 10 fluorometer. Connections $\frac{1}{2}$ inch NPT female thread, $\frac{1}{2}$ inch hose barb fitting adapters provided.
- ? Custom units can be made in other sizes. Please inquire regarding pricing and delivery.

Output flow rate: 75% of input flow.

Waste flow rate: 25% of input flow.

ORDERING INFORMATION

All prices and specifications are subject to change without notice.

Vendor:

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FEIN: 14-6013200

Item specification:

MSRC Vortex Debubbler, Model VDB-1.
Please specify size:

? 3 inch diameter.

? 2 inch diameter.

Price of either size standard unit: \$550.00 USD each. Custom units can be made in other sizes. Please inquire regarding pricing and delivery.

Sales terms:

FOB: Stony Brook NY. Vendor can prepay and add shipping charges.

Payment terms: Purchase orders accepted, terms net 30 days. Credit cards can be accepted.

Delivery: Normal quoted delivery is 30-60 days ARO. We generally build equipment to order, but do try to keep a small stock on hand. If there is a logistically urgent situation we can attempt to do a rush order, but delivery will depend in part on our ability to obtain parts from suppliers.

Warranty: Hardware is warranted to be free from defects in materials and workmanship for a period of one year. Software and firmware are provided "as is". Within one year of initial delivery, MSRC will repair or replace at its option hardware found to be defective in materials or workmanship. Buyer must return items to MSRC for warranty service at buyer's expense. After repair, MSRC will return items to buyer at MSRC's expense. Under no circumstances will incidental and consequential damages be covered. This warranty does not cover damage caused by accident, misuse or failure to properly maintain the equipment. Damage caused by seawater flooding is specifically excluded unless it can be positively shown that a defect in materials or workmanship caused the seawater leak.