

# SERVICE & OPERATING MANUAL

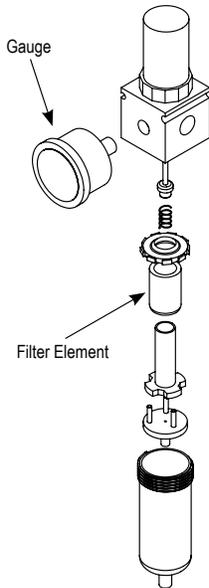
ORIGINAL INSTRUCTIONS

# VM

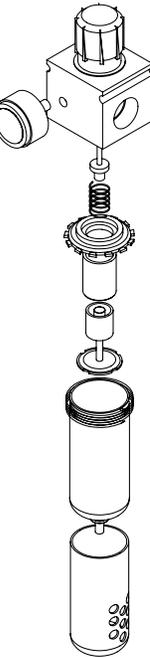
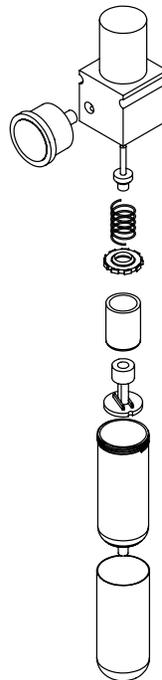
## Air Filter / Regulators

Our Filter/Regulators remove solid and liquid contaminants to increase the service life of your pump and other system components. These units combine the function of a filter, pressure regulator, and liquid filled pressure gauge into one compact, rugged design.

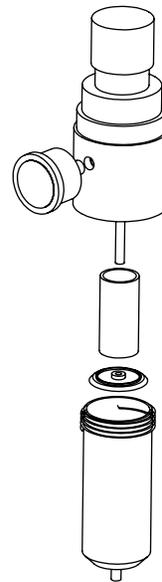
**1/4"** 020.V103.000  
Filter Element: 020.049.004  
Gauge: 020.101.000



**1/2"** 020.V104.000  
Filter Element: 020.050.004  
Gauge: 020.101.000



**3/4"** 020.V105.000  
Filter Element: 020.051.004  
Gauge: 020.102.000



**1"** 020.V106.000  
Filter Element: 020.052.004  
Gauge: 020.102.000

**AirVantage 1"** 020.V107.000  
Filter Element: 020.070.004  
Gauge: 020.102.000



**VERSAMATIC**  
ACCESSORIES

# Installation

1. The Filter / Regulator should be installed with reasonable accessibility for service whenever possible. Keep pipe or tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compound should be used sparingly and applied only to the male pipe, never to the female port. Do not use PTFE tape to seal joints. Pieces of the tape have a tendency to break off inside the unit, possibly causing malfunction. Also, new pipe or hose should be installed between the Filter / Regulator and equipment being protected.
2. The upstream pipe work must be clear of accumulated dirt and liquids.
3. Select a Filter / Regulator location as close as possible to the equipment being protected.
4. Install Filter / Regulator so that the air flows in the direction of the arrow on top of the body.
5. Install Filter / Regulator vertically with the bowl drain mechanism at the bottom. Free moisture will thus drain into the sump at the bottom of the bowl.  
**Note:** *The unit is equipped with an automatic drain. The moisture will be automatically discharged out of the drain port when it is full.*
6. Gauge ports are located on both sides of the unit body for your convenience. It is necessary to install a gauge or pipe plug into each port during installation.

## Introduction

Follow these instructions when installing, operating, or servicing the product.

## Application Limits

These products are intended for use in general purpose compressed air systems only.

## Operation

1. Both free moisture and solids are removed automatically by the filter.
2. The Filter Element should be removed and replaced when pressure differential across the filter is 69 kPa (10 PSIG).
3. Before turning on the air supply, disengage the adjusting knob by pulling upward. Turn adjusting knob counterclockwise until the compression is released from the pressure control spring.
4. Then turn the knob clockwise and adjust regulator to desired downstream pressure. This permits pressure to build up slowly in the downstream line.
5. To decrease regulated pressure settings, always reset from a pressure lower than the final setting required. Example, lowering the secondary pressure from 550 to 410 kPa (80 to 60 PSIG) is best accomplished by dropping the secondary pressure to 350 kPa (50 PSIG), then adjusting upward to 410 kPa (60 PSIG).
6. When desired secondary pressure settings have been reached, push the knob down to lock this pressure setting.

## Piston Drain Operation (1/4" unit only)

The Piston Drain mechanism is operated by the pressure drop created as air flow is initiated or as the air line is depressurized. In order to drain properly, there must be sufficient dynamic pressure drop to trigger the drain mechanism. The Piston Drain will not function with minimal flow and pressure variations or on constant flow applications.

## Maintenance - Cleaning

To clean, it is not necessary to remove regulator from line. If the air is kept clean, the regulator should provide long periods of uninterrupted service. Erratic regulator operation or loss of regulation is most always due to dirt in the disc area. To clean, shut off air and depressurize line and disassemble the unit. Refer to the drawing as a guide to disassembly and subsequent reassembly. Clean parts with household soap and blow out body with compressed air.

## Service

**CAUTION:** Disconnect or shut off air supply and exhaust the primary and secondary pressures before servicing unit. Turning the adjusting knob counterclockwise does not vent downstream pressure on non-relieving regulators. Downstream pressure must be vented before servicing regulator.

**CAUTION:** Grease packets are supplied with kits for lubrication of seals. Use only mineral based grease or oils. Do not use synthetic oils such as esters. Do not use silicones.

**Note:** *After servicing unit, turn on air supply and adjust regulator to the desired downstream pressure. Check unit for leaks. If leakage occurs, do not operate - conduct repairs and retest.*

## Operation Limits

	kPa	PSIG	bar
<b>Maximum Recommended Pressure Drop</b>			
Particulate Filter	70	10	0.7

	kPa	PSIG	bar
<b>Operating Pressure Maximum</b>			
Polycarbonate Bowl (1/4", 1/2", 3/4")	1034	150	10
Metal Bowl with Sight Gauge (1", AV 1")	1207	175	12

	kPa	PSIG	bar
<b>Operating Temperature Range</b>			
Polycarbonate Bowl (1/4", 1/2", 3/4")	4.4°C to 48.9°C(40°F to 120°F)		
Metal Bowl with Sight Gauge (1", AV 1")	4.4°C to 52°C(40°F to 125°F)		

## WARNING

**FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.**

This document and other information from Versa-Matic, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application, including consequences of any failure and review the information concerning the product or systems in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Versa-Matic and its subsidiaries at any time without notice.

## WARNING

**To avoid unpredictable system behavior that can cause personal injury and property damage:**

- Disconnect electrical supply (when necessary) before installation, servicing or conversion.
- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing or conversion.
- Operate within the manufacturer's specified pressure, temperature, and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
- Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

## CAUTION

Polyurethane bowls, sight glass and sight domes on these units may be attacked by certain chemicals. Never use solvents like carbon tetrachloride, trichlorethylene, acetone, ketones, certain alcohols, or paint thinner to clean any parts. These elements can cause crazing or failure of the plastic parts. The polyurethane resin parts are compatible with most hydrocarbon based synthetic lubricants but, before using, check with the manufacturer of the lubricant or oil for compatibility with polyurethane resin.

**TO CLEAN POLYURETHANE BOWLS USE MILD SOAP AND WATER ONLY!**

## Contact Information

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For new order placement, availability, and expediting, contact our Customer Service Team. For application assistance and technical questions, contact our Application Engineering Team. For repairs, returns, warranty questions, and troubleshooting, contact our After Sales Support Team.