

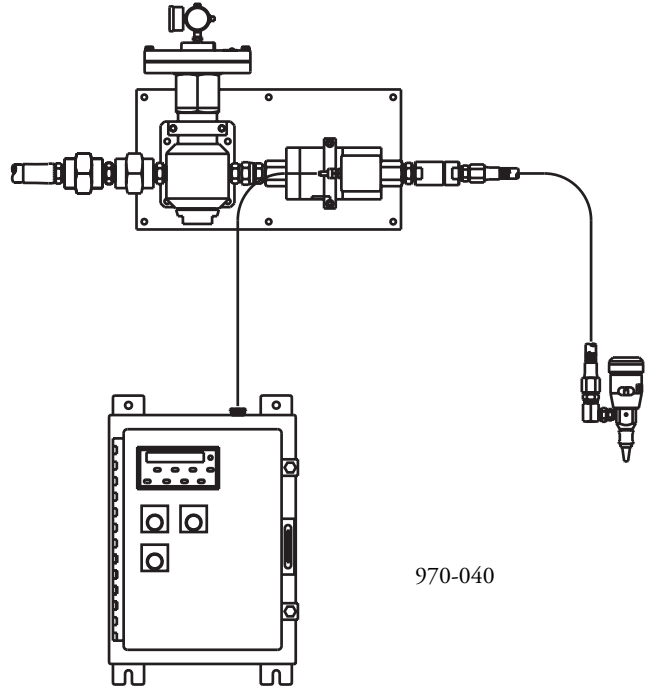


First choice when  
quality counts.™

# VVM™

## Volume Verification Meter

- **Simple on/off robotic interface with constant flow rate**
- **Setable volume verification**
- **Alarm output for deviation from preset values**



970-040

**Fluid regulating  
system with  
batch flow  
monitoring**

Graco's VVM (Volume Verification Meter) is a fluid regulating system with a built-in fluid flow monitor to verify the volume of material dispensed.

Graco has designed a series of VVM packages to meet the needs of most sealant and adhesive applications. These packages are available ambient, heated and temperature conditioned. Modules can be used to create a unique system for a new application.

These VVM packages include a filter to eliminate contaminants before measuring flow. The flow meter provides a volume signal to the control panel. The panel has a batch controlled monitor to set the minimum and maximum acceptable dispensed volume. The control panel features indicator lamps for within limits and volume fault results. Customer analog interface signals are provided through the control. VVM control indicates and provides an alarm output for any deviation, within a set percent range, from the preset dispense volume value.

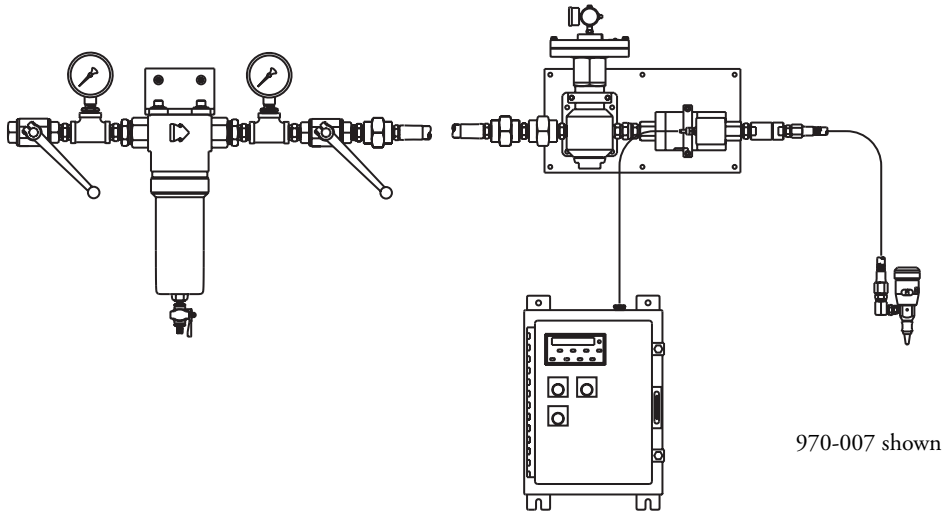
### **Typical Fluids Handled**

- PVC sealant
- Epoxy adhesives
- Body sealants
- Waterborne deadener

### **Typical Applications**

- Anti-flutter mastic dispensing
- Hem flange adhesive bonding
- Structural adhesive bonding
- Body sealing dispensing
- Interior/exterior seam sealing
- Underbody deadener/rocker coating

## Ordering Information: Volume Verification Meter/Mastic Regulators



### For Automatic Extrude Only Applications

- 970-006 Temperature Conditioned**  
Includes single filter, temperature conditioner with fluid hoses, mastic regulator with volume verification and temperature conditioned automatic snuff back dispense valve with nozzle.
- 970-007 Ambient**  
Includes single filter, fluid hoses, mastic regulator with volume verification and automatic snuff back dispense valve with nozzle.
- 970-008 Heated**  
Includes single filter, 4-zone control panel, heated fluid hoses, heated mastic regulator with volume verification and heated automatic snuff back dispense valve with nozzle.

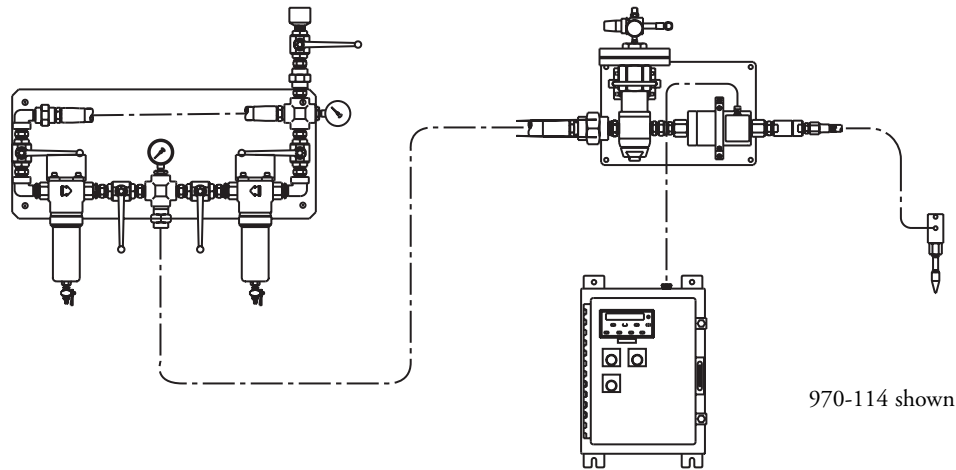
### For Automatic Extrude/Mastic Drop Applications

- 970-014 Temperature Conditioned**  
Includes single filter, temperature conditioner with fluid hoses, mastic regulator with volume verification, isolation shutoff valve, and temperature conditioned automatic snuff back dispense valve with nozzle.
- 970-015 Ambient**  
Includes single filter, fluid hoses, mastic regulator with volume verification, isolation shutoff valve, and automatic snuff back dispense valve with nozzle.
- 970-016 Heated**  
Includes single filter, 4-zone control panel, heated fluid hoses, heated mastic regulator with volume verification, isolation shutoff valve, and heated automatic snuff back dispense valve with nozzle.
- 970-017 Ambient, Multiple Dispense for Multiple Applicators**  
Includes single filter, fluid hoses, mastic regulator with volume verification, isolation shut-off valve. Requires dispense hose kit (970-091), and dispense valves (918-535 and C02-078).

### For Extrusion/Stream Applications

- 970-039 Temperature Conditioned**  
Includes single filter, temperature conditioner with fluid hoses, mastic regulator with volume verification and temperature conditioned automatic snuff back extrude/stream dispense valve with extrusion nozzle and streaming tips.
- 970-040 Ambient**  
Includes single filter, filter hoses, mastic regulator with volume verification and automatic snuff back extrude/stream dispense valve with extrusion nozzle and streaming tips.
- 970-041 Heated**  
Includes single filter, 4-zone control panel, heated fluid hoses, heated mastic regulator with volume verification and heated automatic snuff back extrude/stream dispense valve with nozzle and streaming tips.

## Ordering Information: Volume Verification Meter/Mastic Regulators (cont'd)



### *For Automatic Stream/Shower Applications*

#### **970-104 Temperature Conditioned**

Includes dual filter bank, temperature conditioner with fluid hoses, mastic regulator with volume verification, AA3000-S stream dispense valve and streaming tip.

#### **970-105 Ambient**

Includes dual filter bank, fluid hoses, mastic regulator with volume verification, AA3000-S stream dispense valve and streaming tip.

#### **970-106 Heated**

Includes dual filter bank, 4-zone control panel, heated fluid hoses, heated mastic regulator with volume verification, AA3000-S stream dispense valve and streaming tip.

#### **970-119 Shower Dispense Kit**

Includes 6-hole shower nozzle, I/P valve with bracket, cable and air hose for shaping air.

### *For Automatic Extrude Applications*

#### **970-113 Temperature Conditioned**

Includes dual filter bank, temperature conditioner with fluid hoses, mastic regulator with volume verification, automatic dispense valve and 4 in. (10 cm) compliant nozzle.

#### **970-114 Ambient**

Includes dual filter bank, fluid hoses, mastic regulator with volume verification, automatic dispense valve and 4 in. (10 cm) compliant nozzle.

#### **970-115 Heated**

Includes dual filter bank, 4-zone control panel, heated fluid hoses, heated mastic regulator with volume verification, automatic dispense valve and 4 in. (10 cm) compliant nozzle.

### *For Automatic Spray Applications*

#### **970-130 Temperature Conditioned**

Includes dual filter bank, temperature conditioner with fluid hoses, mastic regulator with volume verification, automatic airless dispense valve and fan tip.

#### **970-131 Ambient**

Includes dual filter bank, fluid hoses, mastic regulator with volume verification, automatic airless dispense valve and fan tip.

#### **970-132 Heated**

Includes dual filter bank, 4-zone control panel, heated fluid hoses, heated mastic regulator with volume verification, automatic dispense valve and fan spray tip.

## Technical Specifications

### Mastic Regulator:

#### Regulated fluid pressure

**High range** . . . . . 250-4500 psi (1.7-31 MPa, 17-310 bar)

**Max. fluid inlet pressure** . . . . 5000 psi (34.4 MPa, 344 bar)

**Inlet (1)** . . . . . 3/4 npt(f) at side

**Outlets (2)** . . . . . 3/4 npt(f) at side and bottom

**Weight** . . . . . 17.7 lbs. (7.9 kg)

**Wetted parts** . . . . . zinc-plated CS, brass, SST, Buna-N, urethane, tungsten carbide

**Instruction manual (mastic regulator)** . . . . . 307-517

*Teflon® is a registered trademark of Du Pont.*

*This chart shows the approximate air pressure needed to regulate the air operated regulator to a given fluid outlet pressure.*

Air Pressure			Regulated Fluid Outlet Pressure		
psi	bar	kPa	psi	bar	MPa
10	0.7	70	500	35	3.5
15	1.0	100	800	55	5.5
20	1.4	140	1100	76	7.6
25	1.7	170	1300	90	9.0
30	2.1	210	1600	110	11.0
40	2.8	280	2100	145	14.5
50	3.5	350	2700	186	18.6
60	4.2	420	3200	221	22.1
70	4.9	490	3800	262	26.2
80	5.6	560	4300	296	29.6

## Accessories

### 970-091 Dispense Hose Kit

Maximum working pressure:

4000 psi (25.0 MPa, 250 bar)

Hose: 3/8 in. ID x 3 ft. (0.9 m)

Ball valve on inlet and fitting on applicator.

### 918-535 Automatic Snuff Back Dispense Valve

Maximum working pressure:

4000 psi (25.0 MPa, 250 bar)

Inlet/outlet ports: 1/4 npt(f)

### 918-533 Automatic Ball Seat Valve

With carbide ball and seat for abrasive materials.

Maximum working pressure:

4000 psi (25.0 MPa, 250 bar).

Inlet/outlet ports: 1/4 npt(f).

### C02-078 Automatic Meter Valve (AMV)

Maximum working pressure:

3200 psi (22.0 MPa, 220 bar)

Shot volume: 0-4 cc