

Masoneilan™ Models 78-4 & 78-40

Air Filter Regulators



Model 78 Air Filter Regulators

Product Description

The 78 Series pressure regulators are compact, lightweight, high-performance pressure reducing valves. They are used primarily for supplying a stable source of air to process control equipment such as current to pneumatic transducers and control valve positioners.

Principle of Operation

Rotation of the pressure setting knob compresses the range spring against the diaphragm plate, opening the main supply valve. As the outlet pressure increases, it flows through the aspirator and acts on the lower side of the diaphragm, causing it to move upward until it balances the force of the range spring. This balanced condition maintains constant output pressure, with changes in supply pressure and output load. If the output pressure rises above the set pressure, the relief valve opens and bleeds the excess pressure to atmosphere.

Should dirt or other foreign substance lodge under the inlet valve seat resulting in increased outlet pressure, the additional pressure exerted on the diaphragm will cause the relief valve to open, relieving the excess air through the relief valve seat and spring case vent to atmosphere.

Numbering System

| Model No. | Pressure Range | Description |
|-----------|---------------------------------------|------------------------------------|
| 78-4 | 5-40 psi (35-280 kPa), (0.35-2.8 bar) | Air Loading with Relief and Filter |
| 78-40 | 5-100 psi (35-700 kPa), (0.35-7 bar) | Air Loading with Relief and Filter |

General Data

| | |
|---------------------------|--|
| Inlet Pressure Rating | 210 psi (1.5 Mpa, 15 bar) maximum |
| Pressure Set Range | 5-4 psi (35-280 kPa, 0.35-2.8 bar) 5-100 psi (35-700 kPa, 0.35-7 bar) |
| Connection | 1/4 NPT or Rc |
| Rated C _v | 0.25 |
| Filter Element | Sintered Porous Polyethylene (5μ) |
| Ambient Temperature Range | -40°C to +83°C (-40°F to +182°F) |
| Low Temperature Range | -50°C to +60°C (-58°F to 140°F) |
| High Temperature Range | 0°C to 100°C (32°F to 212°F) |
| Air Consumption | 0.004 scfm (100 sccm) |
| Weight | 1 lb. (0.45 kg) |
| Materials of Construction | See the corresponding list below |

Features and Benefits

- Excellent pressure regulation.
- Lock screw ensures output pressure remains at desired value.
- Small size and light weight allows the regulator to be nipple mounted in most installations, eliminating the need for a mounting bracket. A mounting bracket is available if required.
- Two pressure gauge ports allow installation of gauge on either side for flexibility when mounting.
- Soft seat plug on main valve provides positive shutoff.
- Sintered polyethylene filters provide 5 micron filtration rating.
- Stainless steel drain.
- Corrosion resistant finish and stainless assembly hardware permit use in corrosive environments.

Certifications

- . Azerbaijan (AZSERTCENTER)
 - . Armenia
 - . Belarus
 - . Kazakhstan
 - . Russian Federation (CU-TR Ex)
 - . Uzbekistan (UZSTANDART)
- and is also ATEX compliant.

Cut-away View

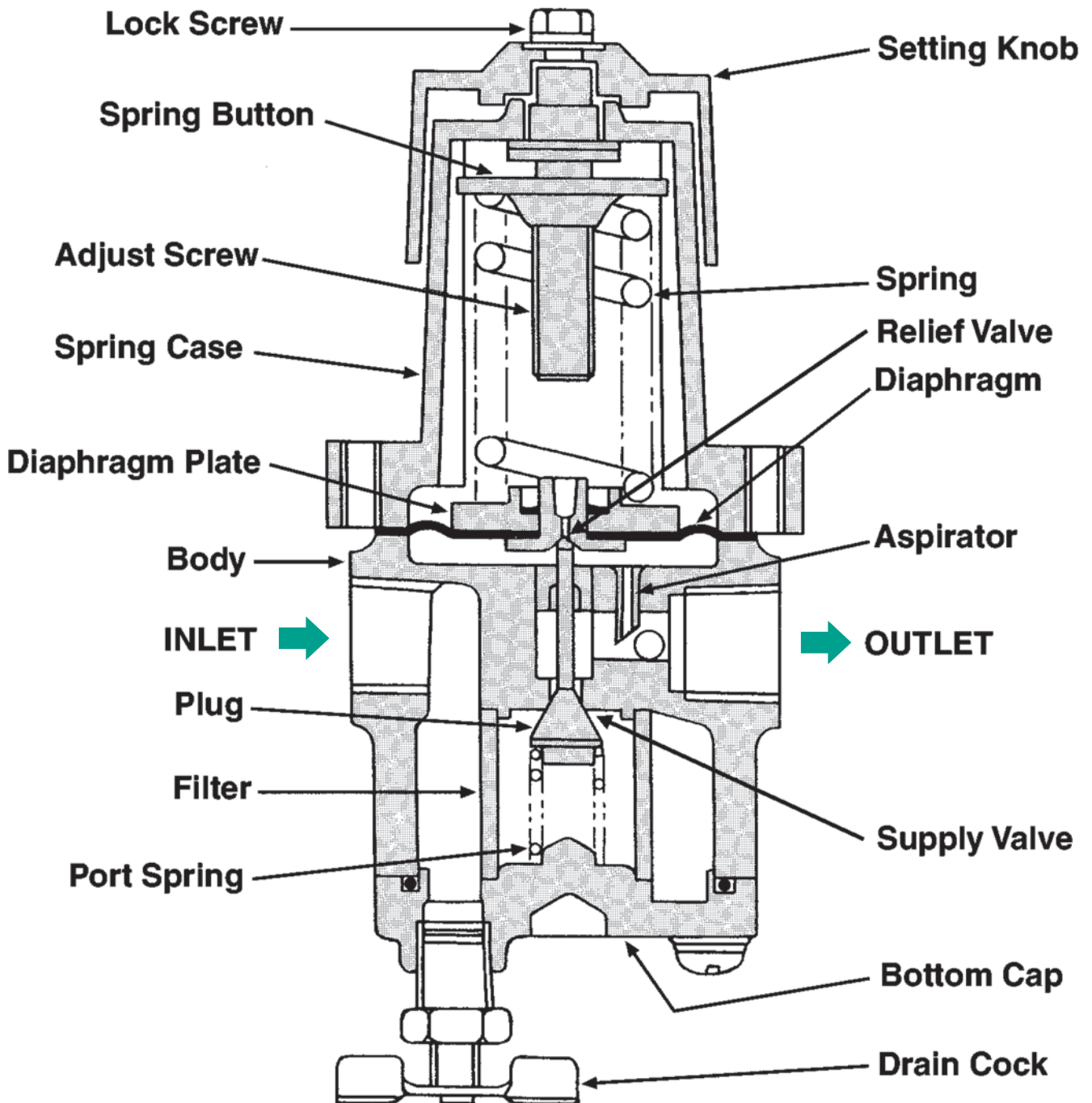


Figure 1

Materials of Construction

| No. | Part | Standard Material |
|------|------------------------|------------------------------|
| 1 | Body | Aluminum Die Casting |
| 2 | Spring Casting | Aluminum Die Casting |
| 3 | Bottom Cap | Aluminum Die Casting |
| 4 | Setting Knob | VALOX™ 420 |
| 5 | Lock Screw | Stainless Steel |
| 6 | Adjusting Screw | Stainless Steel |
| 7 | Spacer | VALOX 420 |
| 8 | Spring Button | Zn-Cr Plated Carbon Steel |
| 9 | Spring | Coated Spring Steel |
| 10 | Diaphragm ¹ | NBR |
| 15 | Plug Guide | VALOX 420 |
| 16 • | Plug | Neoprene/416 Stainless Steel |
| 17 • | Filter | Sintered Polyethylene |
| 18 • | Port Spring | Stainless Steel |
| 19 • | O-Ring | NBR |
| - | | |
| 21 | Drain Cock | Stainless Steel |
| 22 | Screw | Stainless Steel |
| 23 | Pipe Plug | Chrome Molybdenum Steel |
| 24 | Aspirator | VALOX 420 |
| 25 | Nameplate | Aluminum |

• Recommended Spare Parts

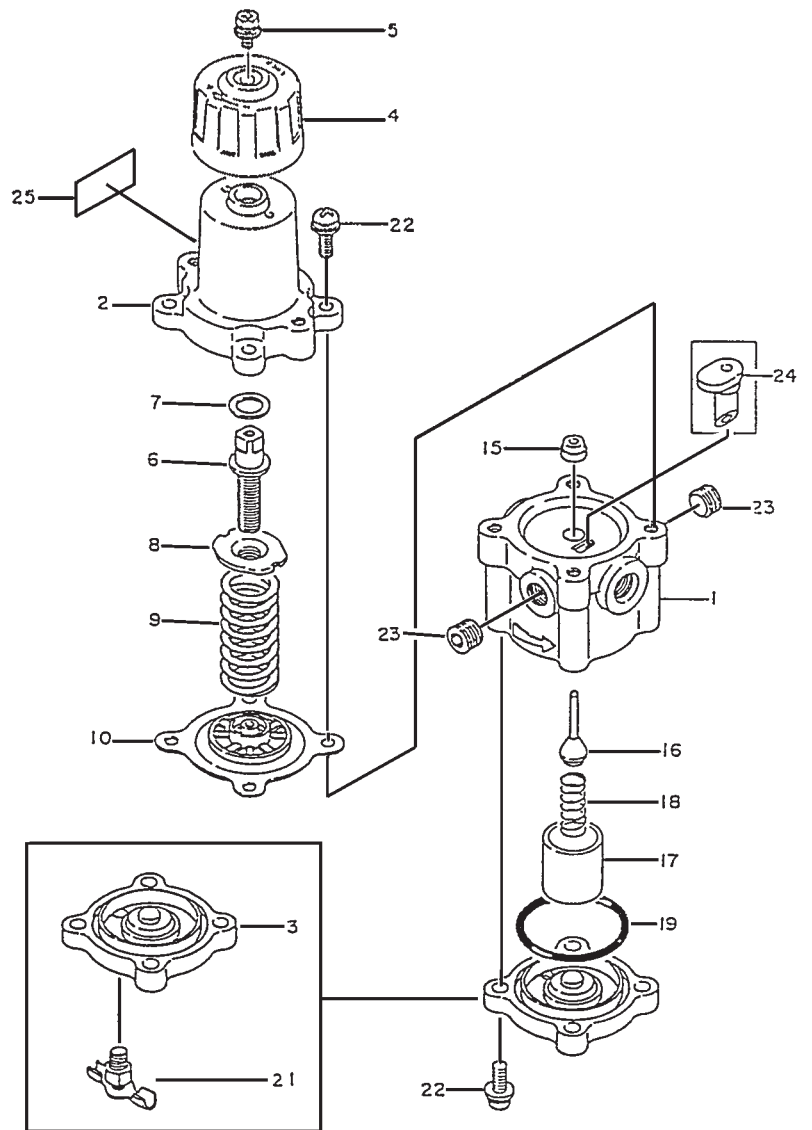


Figure 2

Weights

| Ounces | Grams |
|--------|-------|
| 14 | 400 |

Dimensions

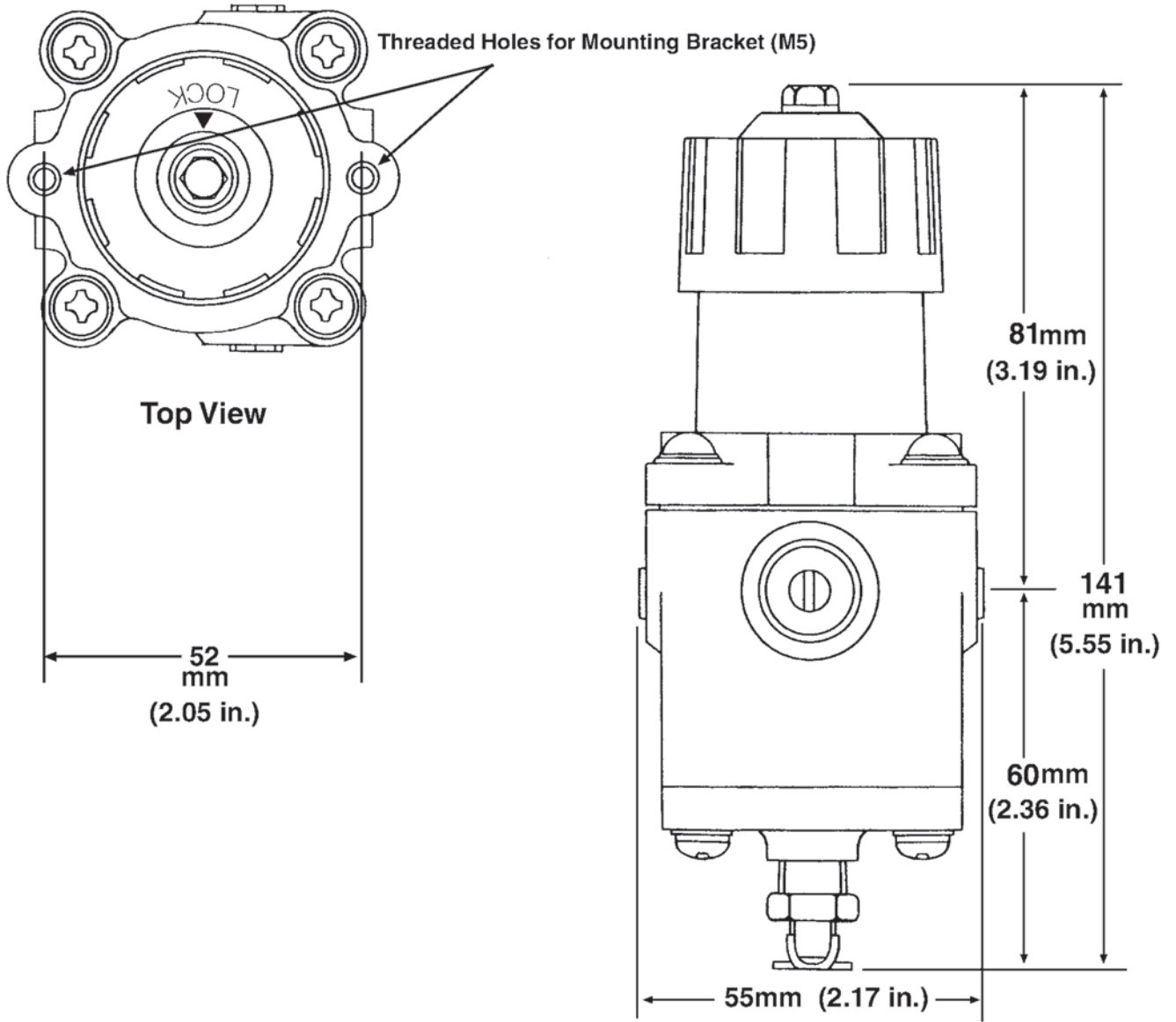


Figure 3



CONTROLS SUPPLY CHAIN

VALVES ACTUATORS INSTRUMENTATIONS