

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

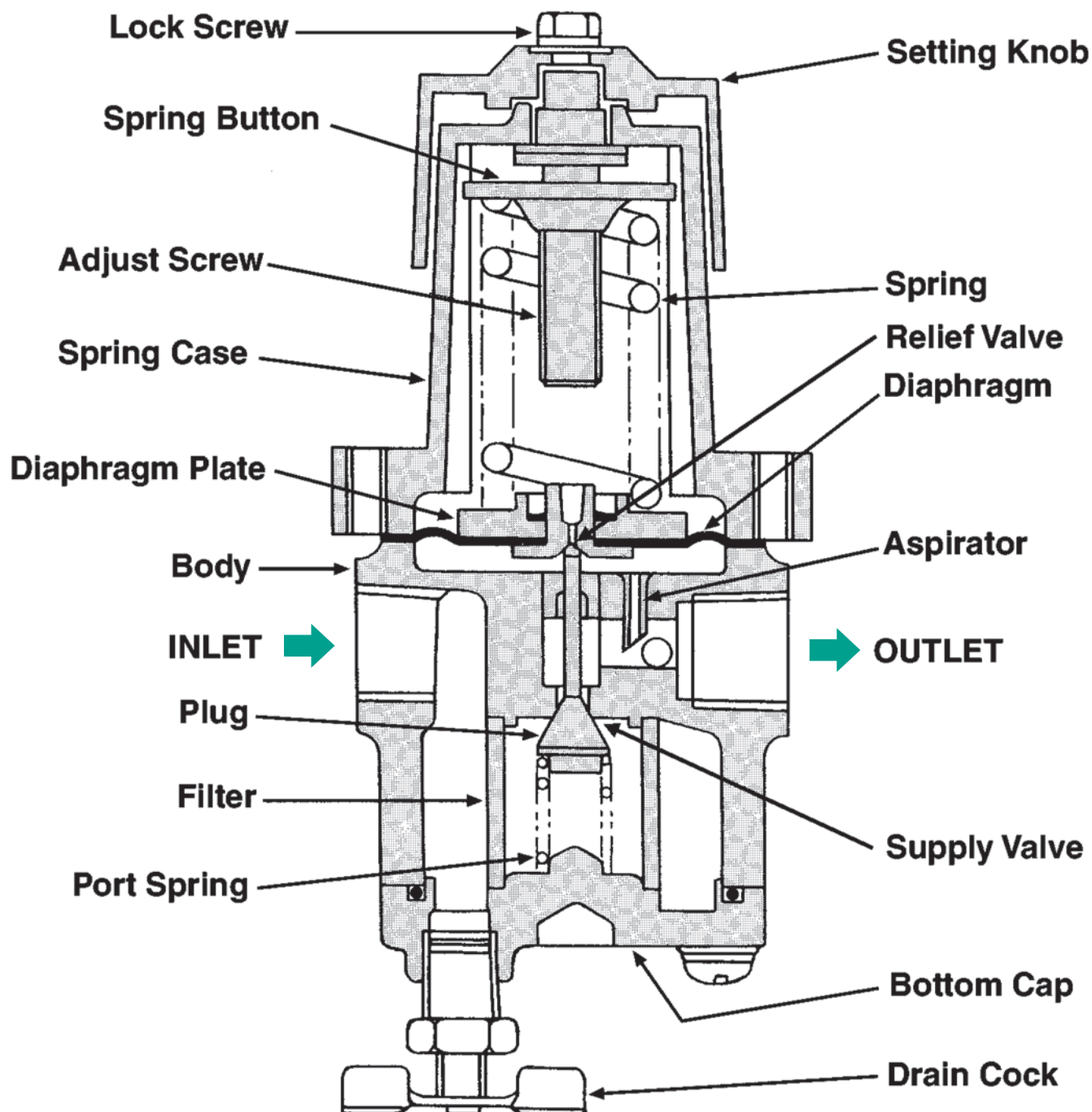


Figure 1

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

Weights

Ounces	Grams
14	400

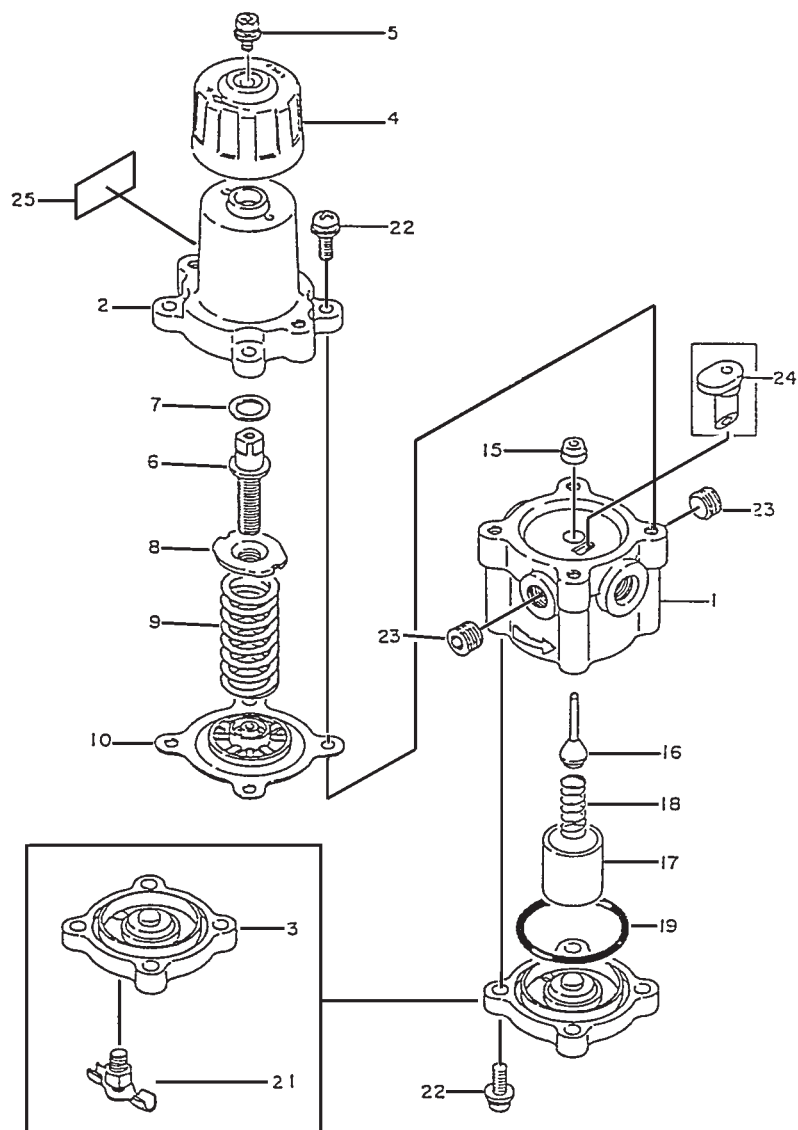


Figure 2

Dimensions

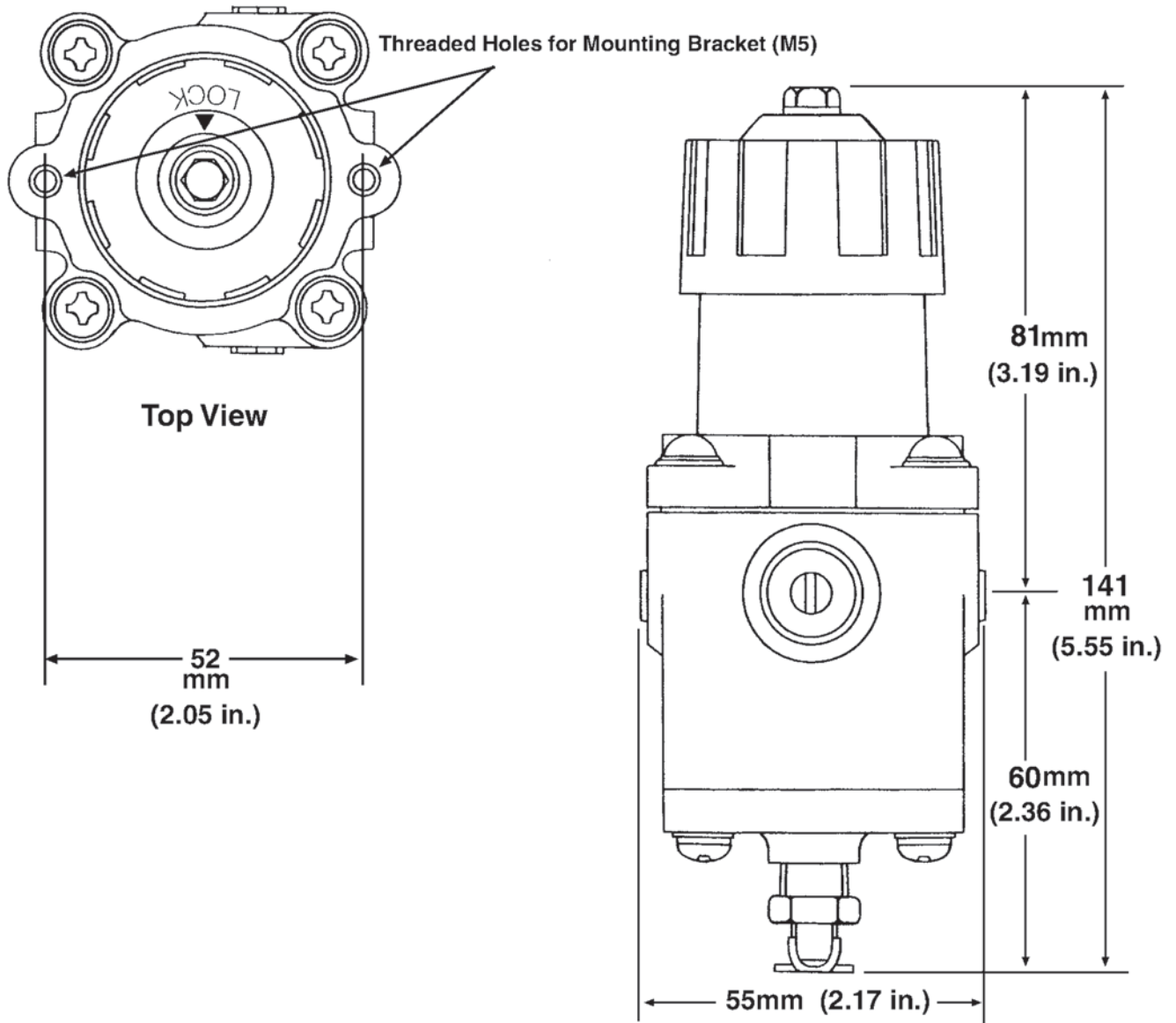


Figure 3