

Fairchild Industrial Products
 3920 West Point Blvd.
 Winston Salem, N.C. 27103
 336-659-3400

Installation & Service Instructions
IS-100A10FR
C10 Miniature Filter / Regulator,
R10 Miniature Regulators
1/8" and 1/4" Ports
ISSUED: October, 2010
Supersedes: None
EN# 100936

⚠ 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

Polycarbonate bowls, being transparent and tough, are ideal for use with Filters and Lubricators. They are suitable for use in normal industrial environments, but should not be located in areas where they could be subjected to direct sunlight, an impact blow, nor temperatures outside of the rated range. As with most plastics, some chemicals can cause damage. Polycarbonate bowls should not be exposed to chlorinated hydrocarbons, ketones, esters and certain alcohols. They should not be used in air systems where compressors are lubricated with fire-resistant fluids such as phosphate ester and diester types.

Metal bowls are recommended where ambient and/or media conditions are not compatible with polycarbonate bowls. Metal bowls resist the action of most such solvents, but should not be used where strong acids or bases are present or in salt laden atmospheres. Consult the factory for specific recommendations where these conditions exist.

TO CLEAN POLYCARBONATE BOWLS USE MILD SOAP AND WATER ONLY!
 DO NOT use cleansing agents such as acetone, benzene, carbon tetrachloride, gasoline, toluene, etc., which are damaging to this plastic.

⚠ WARNING

To avoid polycarbonate bowl rupture that can cause personal injury or property damage, do not exceed bowl pressure or temperature ratings. Polycarbonate bowls have a 150 PSIG pressure rating and a maximum temperature rating of 125°F.

Safety Guide

For more complete information on recommended application guidelines, see the Safety Guide section of Pneumatic Division catalogs or you can download the **Pneumatic Division Safety Guide** at: www.fairchildproducts.com/documents.php

Introduction

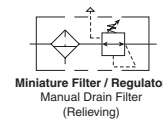
Follow these instructions when installing, operating, or servicing the product.

Application Limits

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

Maximum Operating (Inlet) Pressure:	kPa	PSIG	bar
Miniature Filter / Regulator (with Plastic Bowl)	1030	150	10.3
Miniature Filter / Regulator (with Metal Bowl)	1720	250	17.2
Miniature Regulator (Metal Body)	2000	300	20.0
Ambient Temperature Range: 0°C to 52°C (32°F to 125°F)			

Symbols



Installation

1. This unit should be installed with reasonable accessibility for service whenever possible - repair service kits are available. Keep pipe and tubing lengths to a minimum with inside clean and free of dirt and chips. Pipe joint compounds should be used sparingly and applied only to the male pipe - never into the female port. Do not use PTFE tape to seal pipe joints - pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction.
2. Install unit so that air flow is in the direction of arrow. Installation must be upstream of and close to devices it is to service (valve, cylinder, tool etc.). Mounting of regulators may be in any position; mounting of filter/regulators must be vertical as shown in figure.
3. Gauge ports are located on both sides of the regulator body for your convenience. It is necessary to install a gauge or pipe plug into each port during installation.
4. To protect regulator units against rust, pipe scale, and other foreign matter, install a filter on the upstream (high pressure) side as close to the regulator as possible.

Operation of Regulator

1. Before turning on air supply, turn adjusting handle counterclockwise until compression is released from control spring. Then turn on air supply and adjust regulator to desired secondary pressure by turning adjusting handle clockwise. This permits pressure to build up slowly, preventing any unexpected operation of the valve, cylinders, tools, etc., attached to the line. Adjustment to desired secondary pressure can be made only with primary pressure applied to the regulator.
2. To decrease regulator pressure setting, always reset from a pressure lower than the final setting desired. For 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).

Operation of Filter / Regulator

1. Both free moisture and solids are removed automatically by the Filter / Regulator.
2. Manual drain filters must be drained regularly before the separated moisture and oil reaches the bottom of the element holder. Automatic drain models (pulse drain) will collect and dump liquids automatically. They are actuated when a pressure drop occurs within the filter.
3. The filter element should be removed and replaced when the pressure differential across the filter is excessive.

Service

⚠ Caution: SHUT OFF AIR SUPPLY and exhaust the primary and secondary pressure before disassembling unit. (Units may be serviced without removing them from the air line.)

⚠ 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 The Company, 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 The Company and its subsidiaries at any time without notice.

EXTRA COPIES OF THESE INSTRUCTIONS ARE AVAILABLE FOR INCLUSION IN EQUIPMENT / MAINTENANCE MANUALS THAT UTILIZE THESE PRODUCTS. CONTACT YOUR LOCAL REPRESENTATIVE.

Servicing Regulator:

Note: See Figure 1, 2, & 3 to aid with this procedure.

1. Unlock the adjusting knob by pulling upward (with the unit in an upright position.) Then turn adjusting knob counterclockwise until compression of the control spring has been removed.
 2. Remove the bonnet from body. Then remove o-ring (7), piston, lip seal (9), and control spring to service the bonnet subassembly. Unscrew seat (8) to service the poppet (17), return spring (5), and /or poppet seal (6).
- Note:** On filter / regulator units, the poppet assembly & poppet return spring may be accessed by removing filter element.
3. Clean old grease from unit and inspect seals for sign of wear (nicks, cuts, and scratches). Repair kits are available which contain the parts which are typically replaced.
 4. Apply a light film of grease to all seals and sliding surfaces using the grease packet supplied with repair kit.
- Note:** Refer to Figures to determine the correct position and orientation of the various parts during assembly.
5. Install lip seal onto piston with the lips of the seal facing away from the support flange. Then insert control spring and piston assembly into bonnet.
 6. Place poppet return spring and poppet assembly into bore, followed by poppet seal and seat.
 7. Tighten seat to body from 0.9 to 1.1 Nm (8 to 10 in-lbs) of torque. Tighten bonnet onto body from 5.6 to 7.3 Nm (50 to 65 in-lbs) of torque.
 8. Make sure that the control spring is still uncompressed before turning on the air supply. Turn on air supply, then slowly adjust the knob clockwise to increase downstream pressure until the desired pressure has been reached.
 9. To decrease regulator pressure setting, always reset from a pressure lower than the final setting desired. For 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).
 10. When the desired secondary pressure setting has been reached, push the adjusting knob down to lock it.
 11. Check for leaks. If leaks occur, shut off the air supply, exhaust system air pressure, and make necessary adjustments to eliminate leakage.

- 19 Gasket (Miniature Filter Regulator) - deflector to body
- 20 Gasket (Miniature Filter Regulator) - element holder to filter element
- 21 Element Holder (Miniature Filter Regulator)
- 22 O-ring (C10) - body to drain
- 23 Twist Drain (Miniature Filter Regulator)
- 24 Twist Drain Knob

Service Kits Available

The following service kits contain the appropriate seals and parts necessary for ordinary field service.

Description	C10 Filter / Regulator	R10 Regulator
5 Micron Element Kit	21518-1	N/A
Metal Bowl w/Manual Drain	21570-3	N/A
Panel Mount Nut	21584-1	21584-1
Polycarbonate Bowl w/Manual Drain	21570-1	N/A
Polycarbonate Bowl w/Automatic Drain	21570-4	N/A
Pressure 1-30 PSIG Range	21574-3	21574-3
Gauges: 1-60 PSIG Range	21574-2	21574-2
2-160 PSIG Range	21574-1	21574-1

Servicing Filter Element:

Note: See Figure 1 to aid with this procedure.

1. Unscrew threaded bowl and element holder. Then remove filter element, deflector, and gaskets.
2. Clean all internal parts, bowl, and body before re-assembling unit. See Polycarbonate bowl cleaning section.
3. Install deflector, filter element, and gaskets.
4. Attach element holder. Torque 0.9 to 1.4 Nm (8 to 12 in-lbs).
5. To assist with retaining bowl's o-ring while installing bowl, lubricate the o-ring (with a mineral based oil or grease). Then place it on the bowl.
6. Screw bowl into body until it is stopped by body; then back off bowl 1/8 turn.
7. Apply pressure to the system and check for leaks. If leaks occur, shut off the air supply, de-pressurize the system and make necessary adjustments to eliminate leakage.

If you have questions concerning how to service this unit, contact your local authorized dealer or your customer service representative.

Parts Identification List

Item#	Description
1	Bowl (Miniature Filter Regulator)
2	Filter Element (Miniature Filter Regulator)
3	Deflector (Miniature Filter Regulator)
4	O-ring (Miniature Filter Regulator) - bowl to body
5	Poppet Return Spring
6	Poppet Seal
7	O-ring - body to bonnet
8	Seat
9	Lip Seal - piston to bonnet
10	O-ring - piston to poppet (Miniature Regulator & Filter / Regulator relieving units)
11	Piston (relieving shown)
12	Control Spring
13	Knob
14	Hex Nut
15	Adjusting Screw
16	Bonnet
17	Poppet (Miniature Regulator & Filter / Regulator)
18	Body

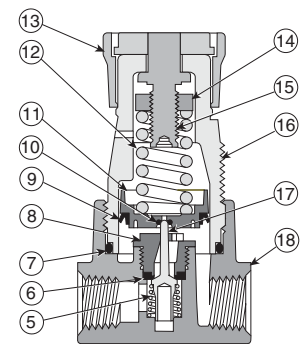
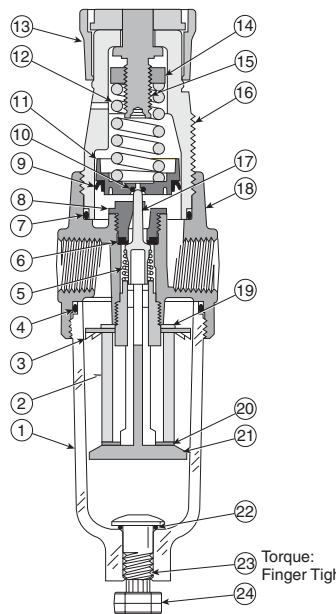


FIGURE 1: Miniature Filter / Regulator - Un-balanced, Relieving

FIGURE 2: Miniature Regulator - Un-balanced, Relieving Unit Shown

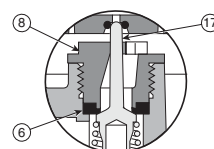


FIGURE 3: Detail of Poppet Seal