Form 100400-55
15301781
Revision D
February 2025

Pneumatic Filters, Regulators, Lubricators, Filter/Regulators and Combination Units

F35XXX-XXX Filters
R37XXX-XXX Regulators
L36XXX-XXX Lubricators
P39XXX-XXX Filter/Regulators
C38XXX-XXX Combinations

Maintenance Information

Save These Instructions

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Product Description

The Air line Filters, Regulators, Lubricators, Filter/Regulators and Combination Units are intended for use in industrial compressed air systems only. No other use is recommended.

⚠ WARNING

General Product Safety Information

- Read and understand this manual before operating this product.
- It is your responsibility to make this safety information available to others that will operate this product.
- Failure to observe the following warnings could result in injury.
- The Units must not be used with fluids, other than air, for nonindustrial applications, or for life support systems.
- Always install, operate, inspect and maintain this product in accordance with all applicable standards and regulations (local, state, country, federal, etc.).
- Filters, regulators, lubricators and filter/regulators contain high pressure air.
- Always wear eye protection when operating or performing maintenance of these units.
- Only Service Technicians that are qualified to work on pressurized pneumatic systems should install, maintain or repair this system.
- Always turn off the air supply and disconnect the air supply hose before installing, removing or adjusting any accessory on this product or before performing any maintenance on this product.

Note: When reading the instructions, refer to exploded diagrams in parts Information Manuals when applicable (see under Related Documentation for form numbers).

General Installation of Units

- Install in an accessible location where product is safe from damage or puncture.
- Do not expose this product to direct sunlight, radiant heat, heavy vibration, shock, corrosive gases, chemicals, vapors from organic solvents, water, salt water or steam.
- Polycarbonate Bowl: To avoid rupture that can cause personal injury or property damage.
  - Do not use incompatible chemicals.
    Thinner, Certain Alcohols, Aniline, Carbon Tetrachloride, Chlorinated Hydrocarbons, Chloroform, Esters, Ethyl Acetate, Kerosene, Ketones, Lactic Acid, Nitric Acid, Nucleic Acid, Organic solvents, Chemical Solvents, Paints and fumes, Trichloro Ethylene, Compressor Oils containing Ester based additives, Synthetic Oils, and fumes with any of the above substances.
- Use a metal bowl in applications where a polycarbonate bowl might be exposed to substances or conditions that are incompatible with polycarbonate.
- Product that contains bowls need to be securely locked into position noted by the "Lock" and "Unlock" symbols on the bowls and bases of the units.
- Be sure all hoses, accessories and fittings are the correct size, are tightly secured and rated above the maximum compressed air inlet pressure.
- Ensure an accessible emergency shut off valve has been installed in the air supply line, and make others aware of the location.
- Install Filter, Regulator then Lubricator or Filter/Regulator and Lubricator with air flow in direction of arrows located on product.
- All maintenance instructions must be followed to ensure proper and safe system operation.
- Always wear eye protection when operating or performing maintenance on this product.

⚠ WARNING

- Do not exceed the maximum rated temperature or maximum rated pressure for the product. That may result in hazardous situations including rupture of fittings, hoses, bowls or other parts of the system.
- Do not remove any labels. Replace any damaged labels.
- Never use a damaged or malfunctioning product or accessory.
- Do not modify this product, safety devices, or accessories.
- Always turn off the air supply and bleed the air pressure before performing any maintenance on the system.
- Do not use this product for purposes other than those recommended.
- Use only accessories recommended by **ARO**.

NOTICE

- Do not disassemble the unit any further than necessary to replace or repair damaged parts.
- Do not remove any part which is a press fit in or on a subassembly unless the removal of that part is necessary for repairs or replacement.
- Do not disassemble the unit unless you have a complete set of new gaskets and seals for replacement.

Filters

Installation – Filters

- Install filter with the air flow as indicated by the arrow on the unit.
- Install filter as close as possible to the air operated equipment for best performance.
- Filter must be installed with the bowl downward for proper operation.
- Locate the filter upstream from the regulator and lubricator.
- When using filter featuring the sight glass on the bowl, orient the bowl so it is most visible for the operator.
- Air line piping should be the same size as filter ports.
- Locate filter in air line upstream of cycling directional control valves, and away from any heat source. If used as a main filter, install as close as possible to the air supply.

- Use pipe thread sealant on male threads only when connecting piping. Do not allow sealant to enter the interior of the filter.
- For maximum coalescing element life and efficiency, install a general purpose filter with a 5-micron element upstream from the coalescing filter.
- Connect flexible tubing with 1/8" minimum I.D. to the automatic drain connection (1/8" NPT). Avoid restrictions in the drain line.

Operation – Filters
- Monitor the sediment accumulation.
- If the pressure drop across the filter becomes excessive, empty the filter bowl, replace the filter element to assure good performance.
- Soak the filter bowl and clean with soap and water. Refer to warnings concerning polycarbonate bowls.

Maintenance – Filters
Filter Elements:
1. Depressurize Unit.
2. Remove Bowl/Bowl Guard Assembly by:
   Polycarbonate Bowl/Bowl Guard Assemblies – Firmly grasp the bowl assembly and pull down on the locking tab while pushing the bowl in an upward direction and turning counterclockwise 1/8 of a turn. The "Lock Position Arrow" should now be in-line with the "Unlocked" symbol. Slowly pull down on the bowl assembly.
   Metal Bowl Assemblies – Firmly grasp the bowl assembly and push the bowl in an upward direction while turning counterclockwise. The "Lock Position Arrow" should now be in-line with the "Unlocked" symbol. Slowly pull down on the bowl assembly.
3. Remove Baffle located at the bottom of the filter element.
4. Install new filter element.
5. Reassemble in reverse order.
6. Before returning unit to service, insure that all seals have been installed or replaced properly and the bowl is in the locked position.

Maintenance – Filters
Service Indicator:
1. Do NOT perform any maintenance on the service indicators.
2. Replace defective unit with a new unit.

Automatic Drain and Manual Drain:
1. Do NOT perform any maintenance on the Automatic Drains or Manual Drains.
2. Replace defective unit with a new unit.

⚠ WARNING

BOWL REMOVAL HAZARD THE BOWL MUST BE SECURELY LOCKED INTO POSITION BEFORE EXPOSING THE UNIT TO THE LINE PRESSURE. The bowls are designed with a feature which inhibits removal while under pressure. When reinstalling, push the bowl up into the body and rotate to the right 1/8 turn. Failure to lock bowl could cause it to blow off, which could result in personal injury or property damage.
- Polycarbonate Bowl: To avoid rupture that can cause personal injury or property damage.
  - Do not use incompatible chemicals.
    Thinner, Certain Alcohols, Aniline, Carbon Tetrachloride, Chlorinated Hydrocarbons, Chloroform, Esters, Ethyl Acetate, Kerosene, Ketones, Lactic Acid, Nitric Acid, Nucleic Acid, Organic solvents, Chemical Solvents, Paints and fumes, Trichloro Ethylene, Compressor Oils containing Ester based additives, Synthetic Oils, and fumes with any of the above substances.

NOTICE

- Wash bowl only with soap and warm water.
- Filters with manual drain must be drained as frequently as necessary to keep the liquid level below the baffle, which could cause liquid to be carried downstream. Replace filter element if necessary.
- Automatic drains can be operated manually by depressing the needle inside drain outlet.
- Collect water/oil from filter bowl and dispose of properly.
- Replace element when pressure drop reaches or exceeds 10 psig (0.7 bar) or when service life indicator shows approximately one-half red / green. An excessive pressure drop across a saturated but uncontaminated element could indicate operation above the maximum flow rate (see Specifications).
- Inspect and replace any parts found to be worn or damaged.

Regulators

Installation – Regulators
- Install regulator with the air flow as indicated by the arrow on the unit.
- Install regulator as close as possible to the air operated equipment for best performance.
- Locate the regulator upstream from the lubricator.
- Mount with the knob up or down on regulator.
- If the air line contains water, sludge or foreign materials, a filter should be installed on the upstream side to protect the regulator.
- A tamper resistant feature is available to lock in specific air requirements.
- After a regulator has been installed in the air line, the adjustment knob should be turned counterclockwise until compression is released from the pressure control spring. This prevents over pressurizing the air operated equipment when the air supply is turned on.
- Connect piping to proper ports using pipe thread sealant on male threads only. Do not allow sealant to enter interior of regulator.
- Air line piping should be the same size as regulator ports.

Operation – Regulators

- Pull knob to adjust air pressure.
- Turn clockwise to increase pressure.
- Turn counterclockwise to decrease pressure.
  Note: On non-relieving models only, reduce pressure to lower than estimated final operating pressure, purge air (open or actuate air operated equipment to relieve pressure), adjust pressure upward as needed.
- Push down to lock knob.

Maintenance – Regulators

Diaphragm Assembly:

1. Depressurize Unit.
2. Disengage the handle (adjustment knob) lock by pulling the handle upward.
3. Turn pressure adjustment knob counterclockwise until the compression is released from the adjusting spring.
4. Unscrew the Bonnet and remove the Control Spring, Adjusting Assembly and the Diaphragm Assembly.
5. Inspect parts for wear and/or damage. If replacement is necessary, use parts from Service Kit.
6. Reassemble in reverse order.

R-Valve Assembly:

1. Depressurize Unit
2. Remove Valve Guide by turning 1/8 turn in counterclockwise direction and pulling outwards.
3. Remove Valve Spring and R-Valve Assembly from Body housing.
4. Inspect parts for wear and/or damage. If replacement is necessary, use parts from Service Kit.
5. Reassemble in reverse order.

Integral Gauge:

1. Depressurize Unit
2. Remove Gauge Cover Ring from Body by turning counterclockwise.
3. Remove Gauge Block Screws (2) from Body housing.
4. DO NOT attempt to repair Gauge. If replacement is necessary, replace with new Gauge.
5. Reassemble in reverse order.

Adjusting Integral Gauges:

1000 and 1500 Series Regulators and Filter/Regulators:

1. Depressurize Unit.
2. Remove Gauge Cover by inserting a small, flat screwdriver in between the Gauge Cover and the Body. Note: This will be a seam between the composite cover and the metal body (see figure #1).
3. Once the Integral Gauge is exposed; adjust pressure range displays by gently pushing the yellow indicator pointers toward the center of the Gauge while rotating in the direction required (see figure #2). Both upper and lower limit pointers can be adusted.
4. Once pressure ranges have been set; reinstall Gauge Cover by gently snapping onto the Body.
5. Unit is now ready to be repressurized.

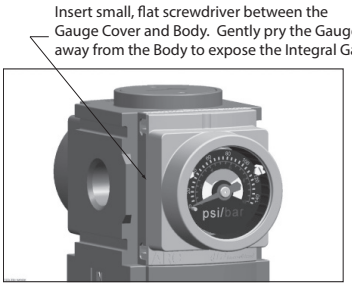

Figure 1 (1000 Series Shown)

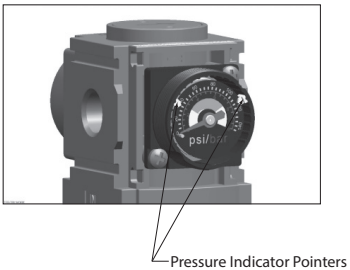

Figure 2 (1000 Series Shown)

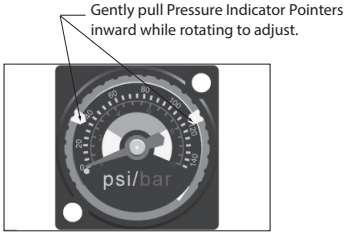

Figure 3 (1000 Series Shown)

Adjusting Integral Gauges:

2000 and 3000 Series Regulators and Filter/Regulators:

1. Depressurize Unit.
2. Remove Gauge Cover by rotating the Gauge Cover counter-clockwise to unthread from the Body (see figure #4).
3. Once the Integral Gauge is exposed; adjust pressure range displays by gently pushing the yellow indicator pointers toward the center of the Gauge while rotating in the direction required (see figure #5 and figure #6). Both upper and lower limit pointers can be adusted.
4. Once pressure ranges have been set; reinstall Gauge Cover by threading Gauge Cover back onto the Body.
5. Unit is now ready to be repressurized.

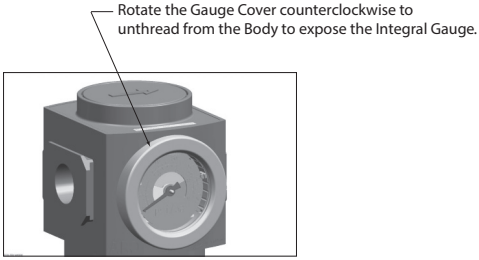

Figure 4 (2000 Series Shown)

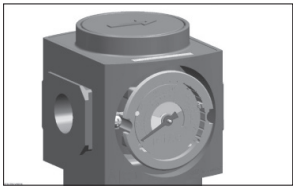

Figure 5 (2000 Series Shown)

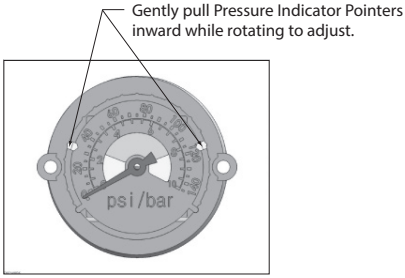

Figure 6 (2000 Series Shown)

NOTICE

- Clean other parts using soap and warm water.
- Do not submerge Handle (adjustment knob), Bonnet or R-Valve in cleaning solution as lubricant will be removed.
- Dry parts and blow out internal passages in body using dry compressed air.
- Inspect and replace any parts found to be worn or damaged.

Lubricators

Installation – Lubricators

- Install lubricator with the air flow as indicated by the arrow on the unit.
- Install lubricator as close as possible to the air operated equipment for best performance.
- Lubricator must be installed with the bowl downward for proper operation.
- Locate the lubricator downstream from the regulator and filter.
- When using lubricators featuring the sight glass on the bowl, orient the bowl so it is most visible for the operator.
- Connect piping to proper ports using pipe sealant on male threads only. Do not allow sealant to enter interior of lubricator.
- Air line piping should be the same size as lubricator ports.

Operation – Lubricators

- Use a good grade of non-detergent oil (IR part # 29665) for use in the air operated equipment. Refer to the air operated equipment operator's manual.
  Note: This lubricator uses a ball check valve located in the lubricator body to restrict the operating pressure to the bowl and allow removal of the fill plug. This will permit filling or lubricator bowl removal while in the normal operating mode.
- Observe the markings (-,+) on the lubricator body which show direction. Turn the adjustment screw counterclockwise to increase and clockwise to decrease.
  Lubricator Adjustment:
  Note: This is a siphon type lubricator design, adjustments need to be made with a constant rate of flow thru the lubricator in an operating mode.
- Use a small screwdriver to adjust the drip rate. The adjustment screw is located in the sight feed cap on the top of the lubricator.
- Determine the average rate of flow (SCFM) thru the lubricator, then turn the adjustment screw to obtain one drop per minute for each 10 SCFM. Example: If the average flow is 20 SCFM, set the drip rate at 2 drops per minute.
  Note: The fill plug must be removed to allow removal of the lubricator bowl or filling of the unit.
- Remove the fill plug carefully.
- Fill to the top of the bowl.

Maintenance – Lubricators

Sight Dome Assembly:

1. Depressurize Unit.
2. Remove Upper Cover from Body
3. Remove Sight Dome Housing (nut).
4. Inspect parts for wear and/or damage. If replacement is necessary, use parts from Service Kit.
5. Clean parts and reassemble in reverse order.

Damper Guide Assembly:

1. Depressurize Unit.
2. Remove Bowl/Bowl Guard Assembly by:
   Polycarbonate Bowl/Bowl Guard Assemblies – Firmly grasp the bowl assembly and pull down on the locking tab while pushing the bowl in an upward direction and turning counterclockwise 1/8 of a turn. The "Lock Position Arrow" should now be in-line with the "Unlocked" symbol. Slowly pull down on the bowl assembly.
   Metal Bowl Assemblies – Firmly grasp the bowl assembly and push the bowl in an upward direction while turning counterclockwise. The "Lock Position Arrow" should now be in-line with the "Unlocked" symbol. Slowly pull down on the bowl assembly.
3. Remove Damper Guide Screws (3).
4. Clean parts and reassemble in reverse order.
5. Before returning unit to service, insure that all seals have been installed or replaced properly and the bowl is in the locked position.

⚠ WARNING

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- Polycarbonate Bowl: To avoid rupture that can cause personal injury or property damage.
  - Do not use incompatible chemicals.
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NOTICE

- Wash bowl only with soap and warm water.
- Collect oil from lubricator bowl and dispose of properly.
- Inspect and replace any parts found to be worn or damaged.

Filter/Regulators (Piggybacks)

Installation – Filter/Regulators

Operation – Filter/Regulators

Maintenance – Filter/Regulators

Refer to Filters and Regulators sections above for item specific installation, operation and maintenance.

Combination Units

Installation – Combination Units

Operation – Combination Units

Maintenance – Combination Units

Refer to Filters, Regulators, and Lubricators sections above for item specific installation, operation and maintenance.

Soft-Starts

Installation, Soft-Starts

- Install valve with the air flow as indicated by the arrow on the top of the unit.
- Valves may be installed with the exhaust located on top or the bottom.
- Locate the valve downstream from the filter, regulator, and lubricator for best performance.
- Silencer or equivalent restriction must be installed in exhaust to ensure proper function.

Operation, Soft-Starts

- Turn adjustment screw clockwise to increase fill time.
- Turn adjustment screw counter clockwise to decrease fill time.
- Note: valve will not function properly with adjustment screw screwed in tight.
- Valve opens to full flow at approximately 60% of supply pressure.
- Solenoid must be energized until full flow is achieved.
- Solenoid must be de-energized before pressure is removed from unit.
- Inlet pressure must drop to 30 psi for main valve to close.

Manual Operation, Soft Starts

- Locking or non-locking operation.
- Manual button under valve coil can be pushed in to override solenoid, or pushed in and rotated to lock in manual position.

Maintenance, Soft-Starts

- Units are non-repairable. No maintenance required.
- Avoid maintaining solenoid actuation for long periods of time. This will deteriorate the coil and shorten the life due to overheating.

Product Parts Information

⚠ CAUTION

The use of other than genuine ARO replacement parts may result in safety hazards, decreased product performance, and increased maintenance, and may invalidate all warranties. Repairs should be made only by authorized trained personnel. Consult your nearest ARO Authorized Service Center at 1-866-NSP-SERV (1-866-677-7378).

The original language of this manual is English.

Refer all communications to the nearest **ARO** Office or Distributor.

Related Documentation

For additional information refer to:
Product Safety Information Manual 15301765.
Product Information Manual 15301773.
Parts Information Manuals:

1000 Series	1500 Series	2000 Series	3000 Series
15301799 Filters	15301849 Filters	15301898 Filters	15301948 Filters
15301807 Regulators	15301856 Regulators	15301906 Regulators	15301955 Regulators
15301815 Lubricators	15301864 Lubricators	15301914 Lubricators	15301963 Lubricators
15301823 Filter/Regulators	15301872 Filter/Regulators	15301922 Filter/Regulators	15301971 Filter/Regulators
15301831 Combinations	15301880 Combinations	15301930 Combinations	15301989 Combinations

Manuals can be downloaded from arozone.com.

Part Number: 100400-55

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