

Alpha® Installation Manual: Filter and Regulator for Air Tools

SYSTEM



Part No: 1040-1000
Part No: 1040-1001

KIT ONLY



Part No: 1040-0001
Part No: 1040-0010

Version 1

 **Alpha Professional Tools®**

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INTRODUCTION

Thank you for purchasing the Alpha® Filter/Regulator Manifold System. This manual provides step-by-step instructions for installing a filter and regulator unit to ensure clean, dry, and properly pressurized air for your pneumatic tools. Proper installation enhances tool performance and longevity. To ensure correct use, read this Instruction Manual and the Instruction Manual for the pneumatic tool and follow the operating instructions. Keep this manual in a place where operators can access it easily whenever necessary!

ABOUT THE SYMBOLS

According to the hazard level, all safety notes in this manual are classified into “DANGER”, “WARNING”, and “CAUTION”.

 **DANGER** - Death or serious personal injury is imminent when handling this manifold incorrectly.

 **WARNING** - There is a possibility of death or serious personal injury when handling this manifold incorrectly.

 **CAUTION** - There is a possibility of personal injury or property damage when handling this manifold incorrectly.

Note: In some situations, failing to observe WARNING notes could result in death or serious personal injury. Be sure to read and observe the safety notes to ensure safety and correct use of the tool.

SAFETY INSTRUCTIONS

- Disconnect air supply before installation.
- Wear safety glasses and gloves.
- Ensure all components are rated for your system's pressure.

TOOLS AND MAINTENANCE

► TOOLS NEEDED

1. Adjustable Wrench
2. Teflon Tape or Pipe Sealant
3. Mounting Bracket (if wall-mounting)
4. Filter-Regulator Unit
5. Air Hose and Fittings

► INSTALLATION STEPS

STEP 1: Choose Installation Location

- Install the unit as close to the air tool as possible.
- Ensure easy access for pressure adjustment and maintenance.
- If wall-mounting, use a bracket and ensure it's securely fastened.

STEP 2: Prepare the Air Line

- Shut off the air supply and bleed the system.
- Cut the air line where the unit will be installed.

STEP 3: Apply Thread Sealant

- Wrap Teflon tape or apply pipe sealant to all threaded fittings to prevent leaks.

STEP 4: Connect the Filter-Regulator

- **Attach the inlet side of the unit to the air supply line.**
- **Attach the outlet side to the air hose leading to the tool.**
- **Ensure the airflow direction matches the arrow on the unit.**

STEP 5: Secure the Unit

- If wall-mounted, ensure the unit is level and firmly attached.
- If inline, ensure hoses are supported and not under strain.

STEP 6: Test the System

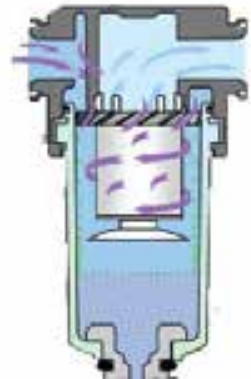
- Slowly turn on the air supply.
- Check for leaks at all connections.
- Adjust the regulator to the desired pressure using the knob.

MAINTENANCE

- **Drain the filter bowl regularly to remove water and debris.**
- **Inspect the filter element periodically and replace if dirty.**
- **Check pressure settings before each use.**

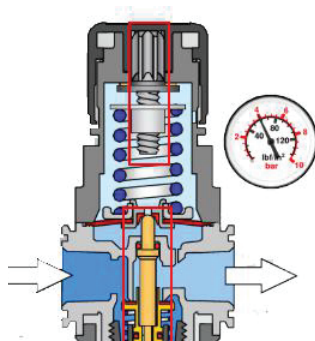
► REGULAR MAINTENANCE OF FILTER COMPONENTS:

1. Replace the filter cartridge ---- It is recommended to replace the filter cartridge when the inlet and outlet pressure difference exceeds 30PSI.
2. Clean the water cup - clean the water cup with neutral non-corrosive detergent and check whether the water cup has cracks.
3. Check the drainage mechanism regularly.
4. According to the frequency of use and working environment, develop a suitable filter replacement plan.
5. Check the filter seals to make sure they are not damaged or aged to prevent air leaks.
6. When installing filters, ensure that they are firmly fixed in place to reduce the impact of vibration on the filter



► Product Regulator Components Maintenance:

1. Spot check the spool components and oil the sliding surface of the spool.
2. Oil the guide rod of the main valve.
3. Periodically calibrate the pressure regulator to ensure that the output air pressure meets the system requirements.
4. Regularly clean the valve body and spool of the pressure regulator to remove accumulated dirt and particles and ensure smooth operation of the valve.
5. Check the seals of the valve body and joints to ensure that they are not damaged or aged to prevent air leakage.
6. When installing the regulator, ensure that they are firmly fixed in position to reduce the impact of vibration on the regulator.
7. Avoid exposing the regulator to harsh environments, such as high temperature, high humidity or corrosive Aires, to extend the service life of the regulator.:



OPERATION

ISSUE	POSSIBLE CAUSE	SOLUTION
Air Leaks	Loose Fittings	Tighten Or Reseal Connections
Low Pressure	Clogged Filter	Clean Or Replace Filter Element
Water In Tools	Full Filter Bowl	Drain Bowl Regularly
Outlet Side Pressure Drops	1.1 Cartridge Clogging	Reinstall the filter element
	1.2 Air Leakage	The sealing ring of the connecting component is aged and replaced
The foreign body on the exit side is scattered	1.3 The Filter Element Is Not Installed Properly	Reinstall the filter element
	1.4 The Water Distributor Is Broken	Replace the water distributor
	1.5 The Condensate Cannot Be Discharged	Clean foreign bodies from outfall
External disclosure	1.6 Seal Airket Of Water Cup Is Not Good	Check the Airket or replace it
	1.7 Cup Broken	Change cup
	1.8 The Bottom Drainage Mechanism Of The Cup Is Not Working Properly	Clean or replace the cup

Pressure Regulator Troubleshooting		
Outlet Pressure Cannot Be Adjusted	2.1 Some Impurities Are Embedded In The Spool	Clean The Spool And Diaphragm
	2.2 The O-Ring Of The Spool Guide Rod Is Damaged	Replace The O-Ring
	2.3 The Valve Core Is Stuck	Clean The Spool And Replace The Seal Ring
	2.4 Outlet Measurement Of High Pressure Reflux	Change Loop, Add Check Valve
External Disclosure	2.5 Valve Cover Is Not Tightened	Tighten The Fixing Screws Evenly Diagonally
Excessive Pressure Fluctuation	2.6 Out Of The Appropriate Flow Range	Increase The Size And Flow Rate
	2.7 The Intake Side Pressure Is Unstable	Check For System Instability Or Add Air Tanks
	2.8 Pressure Reducing Valve Product Vibration	Product Fixation Required
The Outlet Pressure Cannot Be Adjusted To Rise	2.9 Rotary Handle Dam	Replace
	2.10 Pilot Port Failu	Pilot Hole Clea

If there is a problem that cannot be solved, please communicate with Alpha®

► Setting the System Pressure

1. To setup and use the F/R unit after installation you need to turn on your air supply.
2. Open up the recommended ball valve in the supply line and check the manifold system for leaks. Make sure the modular clamps are tight.
3. To adjust and set the pressure, lift the gray knob on the top of the Filter/Regulator unit, so the orange ring is showing.
4. Turn the knob clockwise to increase (+) the pressure, and counter clockwise to decrease (-). When running an Alpha® Air Polisher the regulator should be set to 90 PSI, with the line drop through the filter with the outgoing pressure to the air polisher to be 85 PSI.
5. Push the knob back down to lock the pressure at that point.

► Auto Drain Operation

This Filter/Regulator is equipped with an auto drain. This auto drain is normally open, therefore when you start your compressor in the morning and your pressure starts to rise, a small amount of air will come out of the drain and remove any condensation from the bowl.

Once the system pressure rises above 15 PSI, the auto drain will close. When the system is at operating pressure and the bowl fills up with water, the float will rise and open the drain, this will release the standing water, and the drain will close again. At the end of the day when your compressor is turned off and the system pressure drops below 15 PSI, the auto drain will open again and allow any condensation in the bowl to drain out.

► Kill Switch

A Kill Switch has been added to the system to allow you to quickly turn off the air and depressurize the manifold block and connected lines. When your tools are not being used they should be disconnected from the system or the system should be depressurized.

Turn the red knob on the top of the Kill Switch to SUP (SUP = Supply), in the direction as indicated on top of the red knob. SUP should show up in the window on the front of the relief valve. Your system is now pressurized.

Turn the red knob on the top of the Kill Switch to EXH (EXH = Exhaust), in the direction as indicated on top of the red knob. EXH should show up in the window on the side of the relief valve. Your system is now depressurized.



CAUTION!

The valve must be switched to each position instantly and securely. Stopping the knob between the extreme positions may cause a malfunction.

► Filter Replacement

Warning: Over time, your filter will get clogged and need to be replaced. Replace the element every two years or when you see an additional 10 PSI drop in pressure when you are running a tool. A dirty filter can also be indicated by the filter turning red or yellow from contamination.

Please note: normal operating pressure drop for one tool can be 5 to 10 PSI, so when the pressure is dropping 15 to 20 PSI, the filter should be replaced. Replacement filters should be ordered and kept on hand. The unit should never be used without a filter.

1. To replace the filter, turn off the recommend ball valve installed in the supply line before the unit. If a ball valve was not installed, you will need to shut down your air system and empty the line pressure. When the pressure gauge reads zero, pull down on the bowl lock and rotate Bowl left or right while pulling down. The Bowl will separate from the housing in the position shown.
2. Turn the filter lock (black part at bottom of filter) ½ turn counter-clockwise to unlock. Remove and replace filter, reinstall filter lock, line up the pins in the slot and ½ turn clockwise. Filter should be tight in the housing.
3. Reinstall bowl and make sure bowl lock is recessed in the groove.

► Bowl And Auto Drain Cleaning

The F/R unit is equipped with a NO (normally open) auto drain. When pressure is turned off to the unit, the drain will open and water will drain out the bottom.

When you turn on your compressor and the pressure starts to rise air will vent any condensation out of the drain until the system pressure rises above 15 PSI.

If you do not hear this venting when starting, your auto drain should be checked and cleaned.

► Manual Drain

If the auto drain is not working correctly, you can manually open the drain cock and release any condensation from the bowl.

Turn the knob on the bottom half of the drain cock clockwise two to three turns to open. This will manually open the drain, but if the drain ports inside the bowl are clogged the water and condensation may not be released.

► **Cleaning The Bowl**

- If the water in the bowl is rising above the float your drain is clogged and needs to be cleaned. Turn the air off to the assembly and depressurize the system.
- When the pressure gauge reads zero, remove the bowl and rinse with soap and water to remove the sediment at the bottom of the bowl.
- Because the auto drain is normally open water should flow through the drain. If water is still not draining try blowing air into the bottom drain port to clear out the clogs and sediment.

FILTER/REGULATOR WITH AUTOMATIC DRAIN & REPLACEMENT FILTER

- Protects Your Tools From Contaminants
- Gauge Can Be Adjusted To The Specified Pressure
- Helps Prevent Pressure Drops When Using A Large Volume Of Air
- Comes in Two Sizes (53 CFM and 106 CFM)



PART NO	DESCRIPTION
1040-0001	3/8" NPT Regulator w/ 5 Micron Filter+Drain+Filter
1040-0010	1/2" NPT Regulator w/ 5 Micron Filter+Drain+Filter
1040-0004	3/8" 5-Micron Filter Replacement
1040-0013	1/2" 5-Micron Filter Replacement
1030-1185	Silencer 1/4" NPT
1030-1186	Silencer 3/8" NPT

HI-FLOW COUPLERS

- Push-To-Connect System
- Allow Twice The Flow to your Air Tools



PART NO	SIZE	DESCRIPTION
1030-1085	1/4"	Coupler 1/4" Female NPT
1030-1086	1/4"	Coupler 1/4" Male NPT
1030-1087	1/4"	Plug 1/4" Female NPT
1030-1088	1/4"	Plug 1/4" Male NPT
1030-1089	1/4"	Coupler 3/8"Female NPT
1030-1090	1/4"	Coupler 3/8" Male NPT
1030-1091	1/4"	Plug 3/8"Female NPT
1030-1092	1/4"	Plug 3/8"Male NPT
1030-1093	1/4"	Coupler 1/2"Female NPT
1030-1094	1/4"	Coupler 1/2" Male NPT
1030-1095	1/4"	Plug 1/2" Female NPT
1030-1096	1/4"	Plug 1/2"Male NPT

Couplers interchangeable with:

Milton - V/M Styles, Truflate - Hi-Flo, I/M Style, Flexilla - High-Flow, Primefit - HF, Amflo - Type D, Camel - Type D, Campbell Hausfeld - I/M Style

Plugs interchangeable with:

Milton - V Style, Truflate - Hi-Flo, Flexilla - High-Flow, Primefit - HF

We reserve the right to make modifications
within the framework of technical progress!

To view the Filter Regulator Parts List and Schematics,
visit us on the web at www.alpha-tools.com



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