



Clean Air Source Model 5

Instruction Manual

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Clean Air Source Model 5

Introduction

The Clean Air Source is designed to provide a source of clean air to any equipment requiring a compressed air source. It filters, dries and regulates the air from a compressed air line.



Figure 1
Clean Air Source

Unpacking

The Clean Air Source consists of pre-assembled filtering and drying components mounted on a stand, including the following:

Table 1

Packing List for the Clean Air Source

Qty.	Item	Part Number
1	Clean Air Source Assembly	0200292
1	Quick Coupling Connector Kit	N/A
1	Instructions Manual	1800113

After unpacking, if anything is missing or appears to be damaged, contact ATI Customer Service at (410) 363-9696.

Installation

1. Prior to installing the Clean Air Supply, turn off or disconnect the compressed gas supply and depressurize the filter housings.
2. Connect the inlet connector to compressed air using a female fitting compatible with the Parker H2C ¼" male, quick-disconnect fitting.
3. Make sure the polycarbonate bowls on the filters housing are turned fully counter-clockwise into the body (while looking from the top) before pressurizing.
4. Pressurize the line and adjust the regulator to suit your application.



Caution

All installation and maintenance activities should be performed by suitable personnel using reasonable care.



Caution

This product is intended for industrial compressed air only. Do not use this product where pressures and temperatures can exceed those listed in the product specifications.

The Clean Air Source components

This section gives descriptions of the components in the Clean Air Source. Refer to Figure 2 for the location of the components.

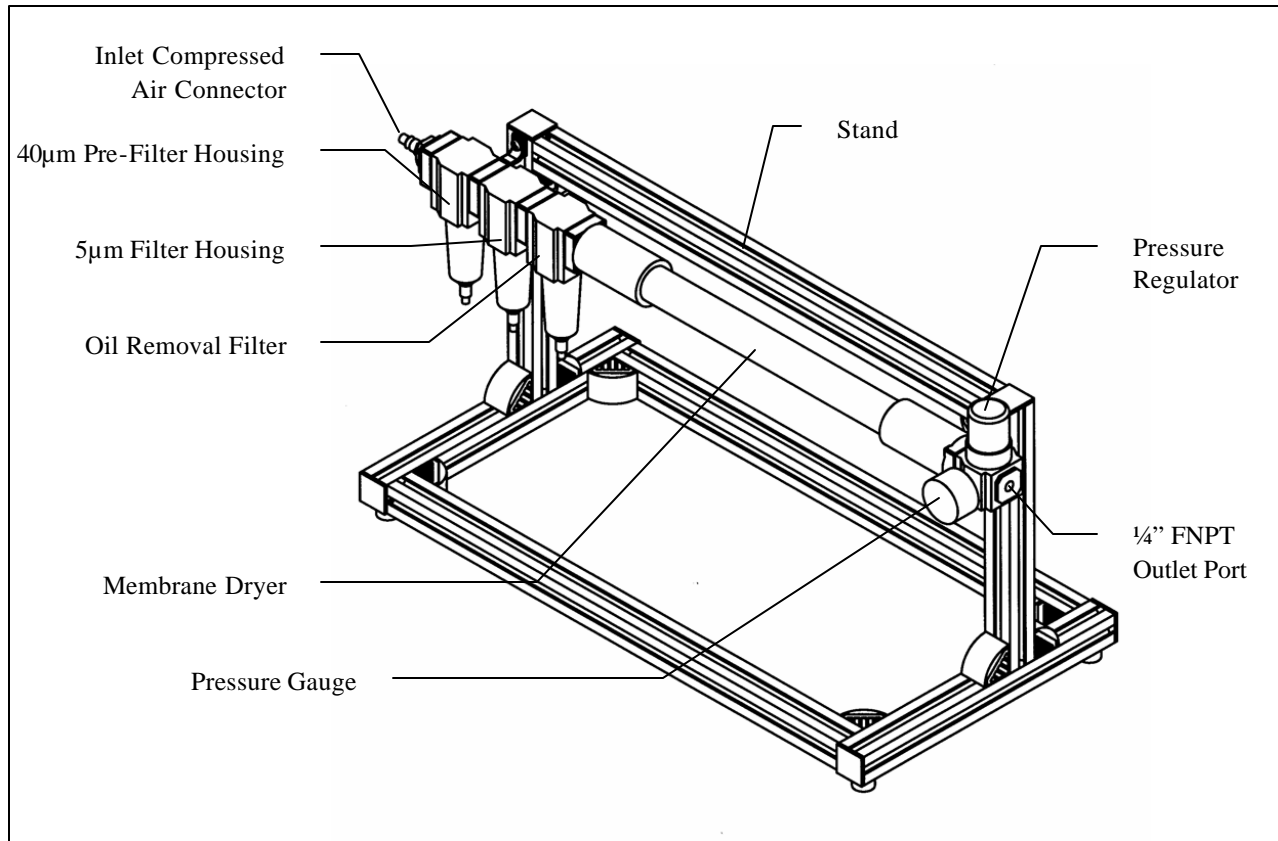


Figure 2
Clean Air Source Assembly

Inlet Connector

The inlet connector to compressed air is a Parker BH2C 1/4" male, quick-disconnect fitting or equivalent. This fitting mates with female fittings of the same size, conforming to MIL-C4109 requirements.

Pre-Filter with manual Drain Valve

The 40µm pre-filter prevents very large particles and water droplets from entering the Clean Air Source. The pre-filter meets ISO 8573-1:1991 Air Quality Class 5. The air is filtered to 40µm solid particle size.

The polycarbonate bowl drains accumulated water from the rough filter when it is not under pressure.

Filter with manual Drain Valve

The 5µm filter is an intermediate grade of coalescing filter that further prevents particles, water and oil droplets from entering the Clean Air Source. The filter meets ISO 8573-1:1991 Air Quality Class 3. The air is filtered to 5µm solid particle size.

The polycarbonate bowl drains accumulated water from the rough filter when it is not under pressure.

Oil Removal Filter

The final filter contains a coalescing element that provides a last stage of filtration. The oil removal filter meets ISO 8573-1:1991 Air Quality Class 1. The air is filtered to 0.1µm solid particle size and filtered to an oil concentration of less than 0.01ppmat +21°C (+70°F) with an inlet concentration of 17ppm.

The polycarbonate bowl drains accumulated oil and water from the rough filter when it is not under pressure.

Membrane Dryer

The Clean Air Source membrane dryer utilizes the latest membrane technology to achieve optimal water vapor removal rates from the supply gas.

The water vapor in the compressed air is removed by the principle of selective permeation through a membrane. The membrane dryer consist of bundles of hollow membrane fibers, each permeable only to water vapor. As the compressed air passes through the center of these fibers, water vapor permeates through the walls of the fiber, and dry air exits from the other end of the fiber. A small portion of the dry air, also called regeneration flow, is redirected along the length of the membrane fibers to carry away the moisture-laden air which surrounds the membrane fibers. The remainder of the dry air is piped to the regulator.

The regeneration flow exit the dryer through a small gap between the inlet end cap and housing.

Pressure Regulator

The pressure regulator adjusts and maintains constant downstream pressure over the range of 0 to 60 PSIG (0.3 to 4 bar).

Pressure Gauge

The pressure gauge measures the air pressure downstream of the regulator over the range of 0 to 60 psig

Outlet Connector

The outlet of the Clean Air Source has a ¼” FNPT threaded port size. A set of mating CPC™ quick coupling connectors with ¼” nominal flow is provided for ease of use.

Servicing the Clean Air Source



Caution

- All installation and maintenance activities should be performed by suitable personnel using reasonable care.
- Prior to servicing the Clean Air Supply, turn off or disconnect the compressed gas supply and depressurize the filter housings

Replacing the 40µm Pre-Filter

The Pre-Filter should be replaced or maintained annually. The filter element can lose 15% efficiency each time it is cleaned. Since elements are low cost, it is advisable to replace them.

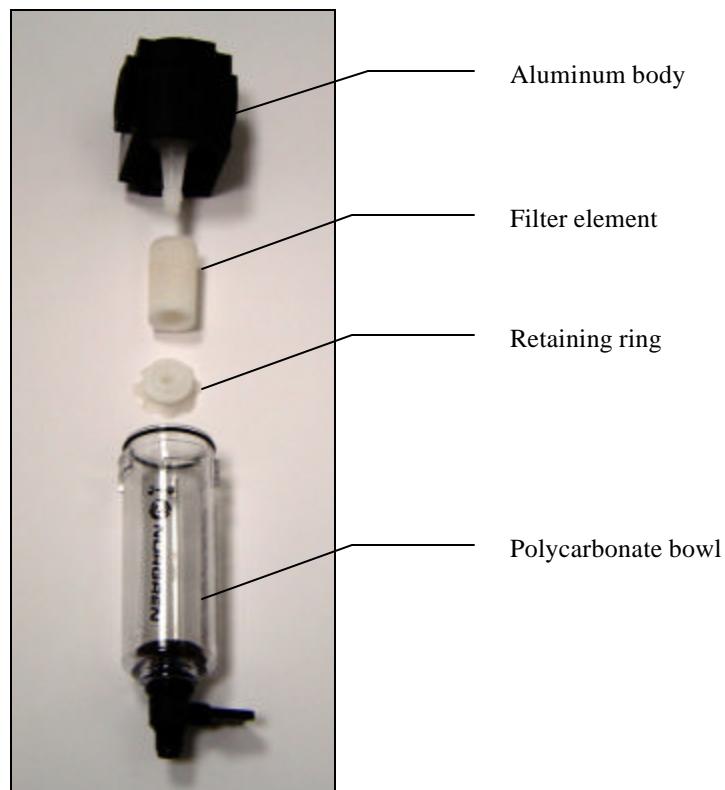


Figure 3

Removing the polycarbonate housing

To replace the filter, proceed according to the steps below.

Disconnect the compressed-air supply from the quick connect fitting

Grip the polycarbonate housing with your hand and twist clockwise while looking at the top of the housing (see Figure 3).

Unscrew the retaining bolt at the bottom of the filter and remove the filter, nylon screen and retaining bolt (see Figure 4).

Replace the filter with a new one and reassemble the filter into the nylon screen. Fasten them in place with the retaining bolt.

Reassemble the outer housing.

Replacing the 5µm filter

The 5µm filter should typically be replaced after one year of service.

To replace the filter, proceed as indicated in the previous section, “Replacing the 40µm Pre-Filter”.

Replacing the Coalescing Filter

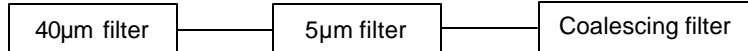
The coalescing element should typically be replaced after one year of service. Evaluate after 12 months of service. If the pressure drop across the element exceeds 10 psig (0.7bar) then the element requires changing.

To replace the filter, proceed as indicated in the previous section, “Replacing the 40µm Pre-Filter”.



Caution

The filters are not interchangeable. When replacing the different filters, always use the following order from the compressed air inlet:



Failure to do so could permanently damage your membrane dryer

Reordering Information

Use the following table to order replacement filters for your Clean Air Source directly from ATI or your area representative.

Table 2

Replacement filters for the Clean Air Source:

Filter type	ATI part number
40µm filter	5500153
5µm filter	5500154
Coalescing filter	5500155
Service Kit (includes drain and bowl o-rings)	4800208

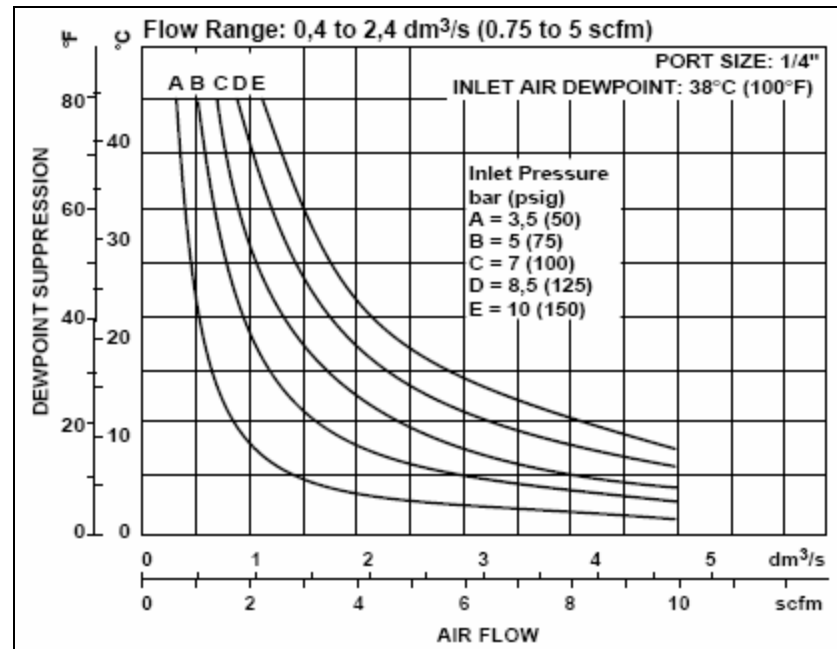
Specifications

The following specifications — which are subject to change — describe the most important data of the Clean Air Source.

Maximum flow output	5 scfm (141.58 lpm)
Maximum inlet air pressure	150 psig (10 bar)
Maximum inlet air temperature	-20° to +125°F (0° to +50°C)
Output Air Quality	Within ISO 8573-1, Class 1.7.2
Maximum remaining oil	0.01 ppm at +21°C (+70°F) with an inlet concentration of 17 ppm
Fittings	
Inlet	Quick Disconnect hose coupling ¼" FNPT
Outlet	
Overall Dimensions	
Length	76.2 cm (30 in)
Width	30.5 cm (12 in)
Height	35.5 cm (14 in)
Weight	12.65 lb (5.73 kg)

Specifications are subject to change.

Dew point suppression characteristic of the Clean Air Source Model 5



Contacting ATI for Service

For Technical or Application Questions

If you have any difficulty setting up the Diffusion Dryer Model 250, or if you have technical or application questions about this instrument, contact an applications engineer at ATI (410) 363-9696.

For Customer Service

If the Diffusion Dryer is not operating properly, or if you are returning the instrument for service, contact ATI Customer Service (410) 363-9696. Customer Service will need this information when you call:

- The instrument model number
- A purchase order number (unless under warranty)
- A billing address
- A shipping address.

Use the original packing material to return the Diffusion Dryer Model 250 to ATI. If you no longer have the original packing material, use sufficient packing material so the instrument is not damaged during shipping.

**Part Number
Address**

1800113 / Revision A/ November 2004
Air Techniques International / 11403 Cronridge Drive / Owings Mills, MD 21117 /
USA

Phone No.

(410) 363-9696

Fax No.

(410) 363-9695

E-mail Address

info@atitest.com

**Limitation of Warranty and
Liability**

Air Techniques International, hereinafter referred to as ATI, warrants the equipment purchased hereunder to be free from defect in materials and workmanship under normal use and service, when used for the purpose for which it is designed, for a period of (1) one year from the date of shipment. ATI further warrants that the equipment will perform in accordance with the technical specifications accompanying the formal equipment offer.

ATI will repair or replace any such defective items that may fail within the stated warranty period, PROVIDED:

- a. That any claim of defect under this warranty is made within thirty (30) days after discovery thereof and that inspection by ATI, if required, indicates the validity of such claim to ATI's satisfaction.
- b. That the defect is not the result of damage incurred in shipment to or from our factory.
- c. That the equipment has not been altered in any way whether as to design or use, whether by replacement parts not supplied or approved by ATI, or otherwise.
- d. That any equipment or accessories furnished but not manufactured by ATI, or not of ATI design, shall be subject only to such adjustments as ATI may obtain from the supplier thereof.

ATI's obligation under this warranty is limited to the repair or replacement of defective parts with the exception noted above. If the equipment includes a scattering chamber, ATI's warranty does not extend to contamination of the scattering chamber by foreign material.

At ATI's option, any defective equipment that fails within the warranty period shall be returned to ATI's factory for inspection, properly packed with shipping charges prepaid. No equipment shall be returned to ATI without prior issuance of a return authorization by ATI.

No warranties, express or implied, other than those specifically set forth herein shall be applicable to any equipment manufactured or furnished by ATI and the foregoing warranty shall constitute the Buyer's sole right and remedy. In no event does ATI assume any liability for consequential damages, or for loss, damage or expense directly or indirectly arising from the use of ATI products, or any inability to use them either separately or in combination with other equipment or materials or from any other cause.

Service Policy

Our service policy is designed to give prompt attention to any problems. If you encounter a defective product or discover a malfunction, please call ATI Customer Service to obtain a return authorization at (410) 363-9696.



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