SERVICE GUIDE

FOR COMPRESSOR INTAKE FILTER

INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

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1.0 PRE-INSTALLATION INSTRUCTIONS

1.1 SAFETY CONSIDERATIONS

- Read this Service Manual carefully. Be thoroughly familiar with the controls and the proper use of the equipment.

- This manual should be retained with the unit because it contains the information necessary for proper maintenance. There is a pocket envelope provided for this purpose. Attach it permanently to the unit.

- Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.

CAUTION:

- Installer should be a trained, experienced service person.

- Check the assembly and component weights to be sure that the rigging equipment can handle them safely.

- Be sure that the unit is balanced well in the transporting device.

- Always conduct a thorough check when the installation is complete.

1.2 RECEIVING INSTRUCTIONS

Systems are normally shipped assembled. All units are attached securely to skids. It is recommended that units be left on their skids for protection and ease of handling while transporting. Straps, rigging, slings, or hooks attached to the skids may be used, with proper care. The units are well protected with triple wall board and are secured with metal bands. Forklifts may be used under the skids, but exercise caution to prevent damage.

Upon receiving systems from Purafil, Inc., note any shipping damage, obvious or hidden, to your carrier and on your Bill of Lading. All problems should be handled between the customer and carrier except for U.P.S. shipments, which require the customer to contact Purafil, Inc. for action.

- If the unit is to be stored before use, see Section 1.4 in this manual.
- If the unit is to be installed immediately, be sure to check Section 3.0 in this manual.
- To uncrate unit, cut metal bands and remove packaging.
- For positioning and special handling, see Section 3.1 in this manual.

1.3 INSPECTION

The condition of the unit upon its arrival is critical to its proper operation. Prior to start-up, inspect the unit carefully, according to the checklist below. Correct any inadequacies before start-up to prevent possible damage or inefficiency. Note, should there be any questions concerning the unit, refer to the numbers found on the unit identification plate, when contacting the PURAFIL® representative.

PRE-OPERATION CHECK LIST

YES	NO	CONDITION
____	____	1. Configuration and material are as specified on the sales order form
____	____	2. Measurements fit submittal requirements
____	____	3. Parts are all present including modules, particulate filters, media, and gage units
____	____	4. Modules/PuraGRID filters, prefilter, and final filter all fit properly.
____	____	5. Latches hold securely and gaskets seal properly
____	____	6. Labels and serial numbers are present
____	____	7. Airflow direction is consistent with installation requirements (check labels attached to unit)

Note: Checking specific points is also imperative after the unit is started up. See section 3.4 in this manual for checklist.

1.4 STORAGE

The unit should be protected from the elements of weather during storage, especially when storage time is extensive. While indoor storage is considered best, outdoor storage can be adequate when precautions are taken.

OUTDOOR STORAGE PRECAUTIONS

- Cover the equipment with a waterproof tarp. Intake and discharge openings must be well covered. (Use of black plastic as a cover may cause excessive condensation and rusting.)
- If there is the possibility of moisture collection, allow for proper drainage.

- Do not place heavy equipment on top of the unit.
- Store Purafil® media/PuraGRID filters in a dry place with less than 95% relative humidity.

1.5 FOUNDATION AND CLEARANCES

FOUNDATIONS

Some units may require new or reinforced foundations, due to their weight. Always be sure to check that the existing foundation is adequate for the unit to be installed. Units to be used indoors require particular attention to strength of foundation. In some instances, a concrete base is best suited to the system. Concrete lessens the chance for vibration than metal structures.

CLEARANCE

All units should be easily accessible for the required periodic maintenance. Do not block return and discharge openings. Sufficient minimum clearances can be recommended by the local PURAFIL® representative.

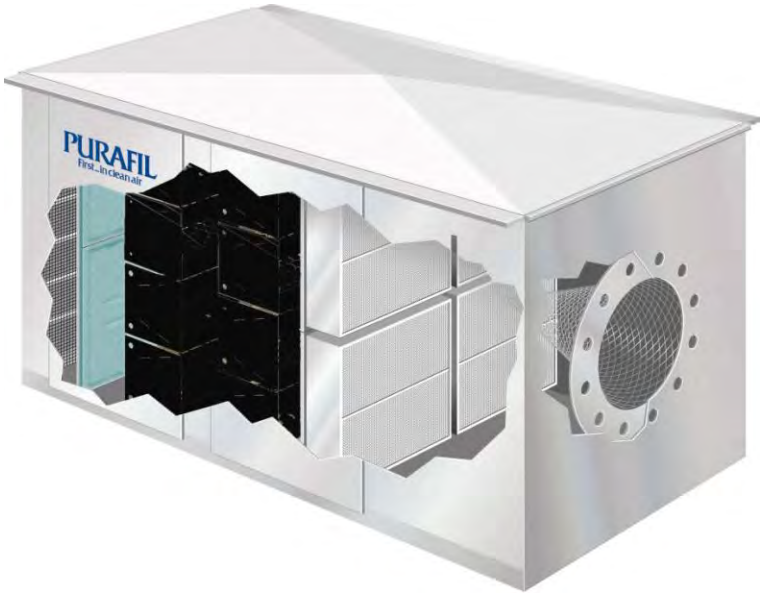
2.0 BASIC DESIGN OF THE CIF

The Purafil® CIF unit is an air purification unit primarily designed for control of corrosive contamination while also eliminating particulate problems. Compression latch doors are provided so that the prefilters and Purafil® modules/PuraGRID filters may be serviced without disturbing the operation of the final filters or shutting down the compressor. The particulate filters and modules are supported by extruded aluminum track.

The unit is designed to house a perforated metal cone, which is supported by the discharge plate and protects the compressor in the event of particulate filter debris. A discharge opening is located in the center of the discharge plate and provides the bolt pattern for an A.S.A. 150 lb. Pipe flange. The inlet opening is rectangular to mate with existing duct work. The weatherproof exterior includes a cross-broken top pan with drip edge. Supported by sturdy support channels, the CIF unit is shipped assembled.

Large systems may be shipped in fabricated sections and assembled on site. See Figure 1.

Figure 1. (See Number Key Below)



The CIF includes one or more of the following sequential components (See Figure 1):

1. **PREFILTER-** as the air enters the unit it passes through a particulate filter, the prefilter collects atmospheric dust and larger particles thereby preventing clogging of the perforated surfaces and pellet pores in the next stage of the unit.

   Prefilter options are:

   TP-25: A low efficiency (ASHRAE 20%) particulate filter which features include a self-sealing, progressive-density, non-woven synthetic media.

   PP-30: A medium efficiency (MERV 6) pleated particulate filter with high surface area and good service life.

   Special Prefilters: Special high efficiency particulate filters can be specified in prefilter section of the unit. Contact the factory or your Purafil® representative for available options.

2. **PURAFIL® MODULES/PURAGRID FILTERS-** the air then passes through PK12, PM-12, CK-24, or PM-18 modules or PuraGRID filters, containing media manufactured by Purafil, Inc. The contaminant gases are removed by the processes of adsorption, absorption and chemisorption in this stage.

3. **FINAL FILTER-** before leaving the unit, the air moves through a final filter. The final filter removes remaining contaminants, such as media dust and airborne contaminants. The options for final filters are:

   JFL-90: a high efficiency (MERV 13) rigid-type, final filter.

   PP-30: a medium efficiency (MERV 6) pleated particulate filter with high surface area and good service life.

   FF-90: a high efficiency (MERV 14) rigid-type particulate filter with self-supportive rigid cartridges.

   HEPA Filter: an ultra-high efficiency (99%) particulate filter.

   Special Final Filters: Contact your Purafil® representative for pricing and sizing information.

4. **PLENUM SECTION-** the final stage houses a perforated metal cone to protect the compressor in the event of particulate filter debris. The discharge plate is designed with a hole that mates with inlet piping to the compressor. The plate has a 150 lb. A.S.A. flange bolt pattern.

3.0 INSTALLATION

After the entire pre-operative inspection is finished (Section 1.3), complete the following sequence for installation by referring to the instructions in Section 3.1 below:

1) Remove the unit from the shipping skid and position it in the designated operation location
2) Fill (if necessary) and install the modules or PuraGRID filters. See Module Filling and Media Replacement Service Guide.
3) Install the particulate filters. See section 3.3.
4) Perform post-start inspection check. See section 3.4

3.1 POSITIONING THE UNIT

Review Section 1.5 in this manual for foundation and clearance instructions. The standard unit can simply be lifted from its skid and "walked" or transported by lift to its pre-designated operation location (if in close proximity to the skid), according to facility safety requirements. Large units must be adequately supported to minimize rocking and misalignment of doors.

3.2 MODULES

If using Purafil refillable modules, proper filling, installation, and maintenance of the chemical filtration media is critical to the unit's efficient operation. The modules are designed specifically for media manufactured by Purafil, Inc. and allow the media to perform to its maximum efficiency, through proper shape and bed depth.

Purafil MediaPAK Disposable Plastic Modules and PuraGRID filters are factory-filled and come ready to be installed.

3.3 PARTICULATE FILTERS

Proper selection and installation of particulate filters for use in the PURAFIL® unit will require replacement during the normal lifetime of the equipment. Replacement items may be ordered from your local PURAFIL® representative or from Purafil, Inc.

TP-25 PREFILTER: Install this filter by sliding it along the track so that airflow moves through the coarse white side first.

JFL-90: Slide the 1" header into the provided track.

PP-30: Install this filter by sliding it along the track until it is completely housed within the unit.

FF-90: Install this filter by sliding it along the track until it is completely housed within the unit.

3.4 POST-START INSPECTION/CHECK

Before initial start-up of system, contact your local PURAFIL® representative. After unit has been started, use the checklist below to inspect the unit is in proper working order.

YES	NO		CONDITION
___	___	1.	Joints, seals, and gaskets do not leak.
___	___	2.	Modules/PuraGRID filters are completely full of media and fit properly.
___	___	3.	Particulate filters have been installed.

4.0 MAINTENANCE

4.1 REPLACEMENT PARTS AND MATERIALS

While Purafil, Inc. products are built with durability, some parts of the PURAFIL® unit will require replacement during the normal lifetime of the equipment. Replacement items may be ordered from your local PURAFIL® representative or from Purafil, Inc.

Consumables: In order to maintain proper performance levels, particulate filters and PURAFIL® media must be replaced periodically, as they have a finite life. (See the Media Sampling Service Guide)

Modules: Modules are constructed of high impact polystyrene.

Particulate Filters: To ensure proper efficiency of your system change particulate filters often. Dirty filters will inhibit proper functioning of the unit.

4.2 MEDIA REPLACEMENT

Media Life Analysis (MLA) is a complimentary Purafil, Inc. service. MLA Sample Kits are available through Purafil, Inc. See Media Sampling Service Guide for instructions on how to take a media sample from your unit. This serial number represents the components of your CIF system.

5.0 SPECIAL PRECAUTIONS

DISPOSAL

PURAFIL® media is a non-toxic, non-flammable substance. Filtration of contaminants through PURAFIL® media causes molecular changes within the media to occur, and the resulting product is usually not harmful to the environment. Although special precautions are generally not required when disposing of spent media, government regulations may require specific disposal procedures if the resulting product could be harmful to the environment. Large quantities of PURAFIL® media should not be disposed of in dumpster-like equipment because the weight of the media could cause difficulties in handling the dumpster.

Independent laboratory analysis for Environmental Protection Agency toxicity characteristics may be required if the contaminants eliminated from your environment include heavy metals and pesticides.

INHALATION

A well-ventilated work area is suggested for changing the PURAFIL® media, as dusting occurs in fresh media due to handling abrasion.

Workers should avoid direct inhalation of considerable PURAFIL® dust, as it induces sneezing. In closed, unventilated spaces, dust masks such as the 3-M No. 8500 are suggested.

WATER

Avoid exposing the PURAFIL® media to water or precipitation, as this dissolves permanganate content. Storage of media should be in a dry place with less than 95% relative humidity. Exposure of permanganated solution to the skin causes brown staining which is temporary and not harmful. This staining can be removed by washing in a diluted solution of water and sodium bisulfite.

EYE CONTACT

If dust is exposed to the eyes or delicate membrane, flush thoroughly with water and seek treatment by a physician. Follow normal procedures for exposure to abrasive dust.

6.0 PURAFIL® STAIN REMOVAL

The following stain removal procedure is stated here as information only, and neither Purafil, Inc., any of its subsidiaries, nor any agent or employee of Purafil, Inc. make any warranty or other representation regarding the efficacy or safety of this procedure. The stain removal could cause further damage to the garment or to the item from which one may attempt to remove the stain.

If the dust from PURAFIL® Chemisorbant, PURAFIL® Select, or PURAFIL® SP media comes in contact with organic material, there are two possible stain problems:

1. Manganese dioxide (MnO_2) which is insoluble, characterized by a medium brown color, and is found in expended PURAFIL® media, can usually be removed by normal washing.

2. New (unused) PURAFIL® media contains potassium or sodium permanganate ($KMnO_4$ or $NaMnO_4$) which is a strong oxidant and will react with and discolor any organic material with which it comes in contact. These stains, which will be brownish black in color, may be removed using a solution of sodium bisulfite in water, after the garment has been removed from the person.

However, if the fiber has been damaged by the permanganate, removal of the stain may make the damage more apparent.

CAUTION: This procedure should start with a very weak solution, gradually increasing the strength until the stain is removed. Use of too strong a solution could conceivably cause additional fabric damage.

NOTE: Sodium bisulfite gives off sulfur dioxide (SO_2) gas; therefore, it must be used in a well-ventilated area.

7.0 WARRANTY INFORMATION

PURAFIL® warrants hardware equipment manufactured by PURAFIL® to be free from defects in material and workmanship under normal use and service for twelve (12) months from startup date or eighteen (18) months from shipment date. PURAFIL'S obligation under this warranty shall be limited to replacing any parts thereof which shall be demonstrated to have been defective. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

PURAFIL MAKES NO WARRANTIES AS TO MERCHANTABILITY OR AS TO THE FITNESS OF THE MERCHANDISE FOR ANY PARTICULAR USE AND SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, DIRECTLY OR INDIRECTLY, ARISING FROM THE USE OF SUCH MERCHANDISE OR FOR CONSEQUENTIAL DAMAGES. No person, firm or corporation is authorized to assume for PURAFIL® any other liability in connection with the sale of these goods. Equipment, parts and material manufactured by others and incorporated in PURAFIL® equipment are warranted by PURAFIL® ONLY TO THE EXTENT OF THE ORIGINAL MANUFACTURERS LIABILITY TO PURAFIL.

8.0 TROUBLE SHOOTING

	SYMPTOM	PROBLEM	CHECKS/REMEDY
Particulate filters	Airflow too low	Heavily soiled particulate filters	Was a sacrifice final filter used during the first few minutes of operation and then replaced by the specified filters?
	Dust blowing out discharge	Final filter not in place	Insert appropriate final filter
Modules	Airflow too low	Modules perforated surfaces may be clogged	Were loaded modules relatively clean and dust-free when installed? Vacuum or blow off with compressed air
	Purafil® media pellets are found in the unit outside enclosed modules	Modules may be improperly filled or end cap is not secure	Media should be contained within the perforated walls of the module and should not simply be poured into the crook of the "V". See Module Filling and Media Sampling Service Guide

9.0 DATA SHEET*

Model Number	Height, Inches (H)	Width, Inches (W)	Depth, Inches (L)	Plenum Depths, Inches	Outlet Dia., Inches (I.D.)	Max. CFM	Quantity of Modules per pass**	Empty Unit Weight, Lbs
CIF 102	16.67	25.50	72.75	6	6	400	1	230
CIF 202	28.52	25.50	72.75	6	8	800	2	280
CIF 204	28.52	49.13	79.25	13	10	1600	4	450
CIF 206	28.52	72.75	92.25	26	12	2400	6	650
CIF 402	52.22	25.50	84.875	18.625	10	1600	4	410
CIF 404	52.22	49.13	79.25	13	14	3200	8	620
CIF 406	52.22	72.75	88.75	22.5	14	4800	12	930
CIF 602	75.92	25.50	92.25	26	12	2400	6	600
CIF 604	75.92	49.13	92.25	26	14	4800	12	900
CIF 606	75.92	72.75	88.75	22.5	20	7200	18	1200
CIF 608	75.92	96.38	95.75	29.5	24	9600	24	1600

Optional equipment is available by contacting the Factory or your PURAFIL® representative.

Plenum depths are included in the "Depth" column. The depth of your system does not include the outlet flange supplied by others.

*Based on standard aluminum double-wall insulated casing

**Assuming modules contain CP Blend or SP Blend.

Represented By:

Important Notice

The information contained in this Bulletin reflects the results of various testing and analytical procedures believed by PURAFIL, INC. (a U.S.A. corporation) to be useful indicators of the relative performance of air filtration systems and media. It is intended for use by persons having appropriate scientific and technical

knowledge and experience at their own risk. This bulletin does not in any way constitute a representation, warranty, promise, or guarantee by PURAFIL, INC. of the installed performance of PURAFIL® media.