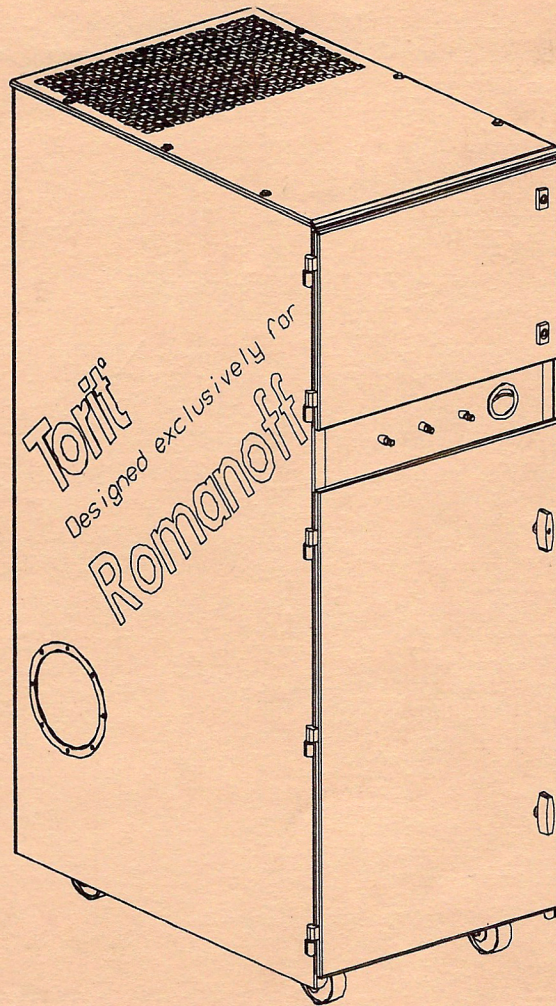




TYPHOON DUST COLLECTOR

Installation and Operation Manual



IMPORTANT

This manual contains specific precautionary statements relative to worker safety in appropriate sections. Read this manual thoroughly and comply as directed. It is impossible to list all of the potential hazards of dust control equipment. It is imperative that use of the equipment be discussed with a Torit representative. Personnel involved with the equipment or systems should be instructed to conduct themselves in a safe manner.

NOTE

Statements indicate precautions necessary to avoid potential equipment failure.

CAUTION

Statements indicate potential safety hazards.

CAUTION

APPLICATION OF DUST CONTROL EQUIPMENT:

- Special care must be exercised in the use of dust collection equipment when combustible material, such as buffing lint, paper, wood, aluminum, or magnesium dust are present. These materials may present a fire or explosion hazard. A prudent user of Torit equipment should consult and must comply with all National and Local Fire Codes and/or other appropriate codes when determining the location and operation of dust collection equipment.
- Under no conditions should anyone, including the machine operator, allow burning objects or lit cigarettes to enter the hood or ducting of any dust control system.
- Avoid mixing combustible materials with dust generated from grinding of ferrous metals due to the potential fire hazard caused by sparks being pulled into the dust collection equipment.
- When collection equipment is used to collect flammable or explosive dusts, as a minimum, the dust collection equipment should be located outside the building. Also, an installer of fire extinguishing equipment, familiar with the type of fire hazard and local fire codes, should be consulted for recommendations and installation of the proper fire extinguishing equipment. Torit equipment does NOT contain fire extinguishing equipment.
- Explosion relief vents are required on some applications. Consult with an insurance underwriter or a NFPA Manual to determine proper vent sizing requirements. Vents installed on dust collection equipment must relieve to the outside of the building to minimize chances of a secondary explosion. Consult the proper authority to determine proper method of venting the dust collection equipment. Torit equipment does NOT contain explosion relief vents.
- To insure optimum collector performance, always use Torit-Built® replacement filters.

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Data Sheet

Customer Name _____	
Address _____	
Shipping Date _____	Installation Date _____
Model Number _____	Serial Number _____
Filter Medium _____	
Accessories _____	
Other _____	

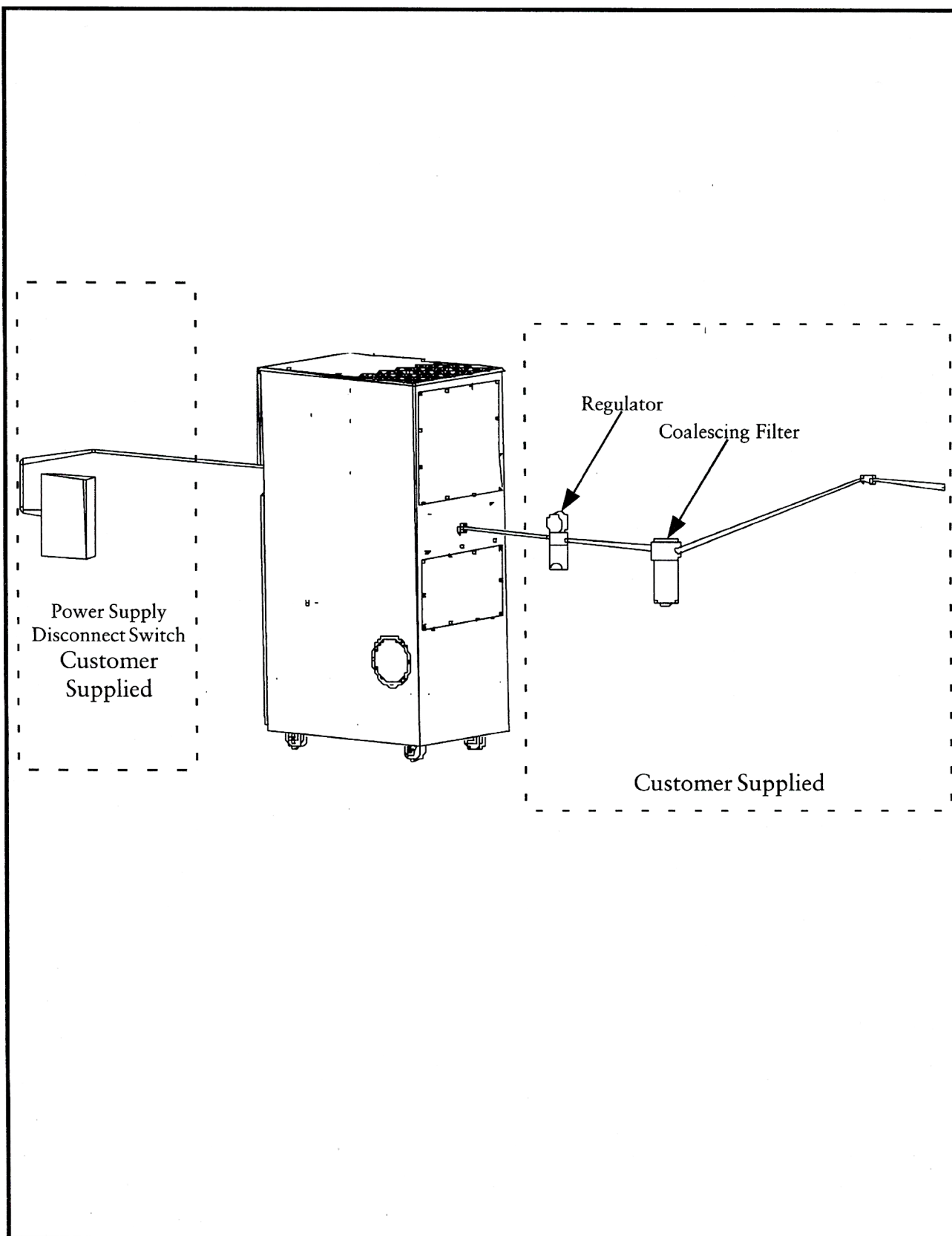


Figure 1
Typical Installation View

1.0 Introduction

The Torit® dust collector is used for the collection of airborne dust and particulate. Whether in answer to the problem of air pollution, or as part of a manufacturing process, this collector provides highly efficient, continuous, on-line dust collection.

Torit filter cartridges are the heart of the dust collector. These filter cartridges help ensure that only clean air is returned to the plant environment.

Technical and field support are always available from your local Torit representative.

CAUTION

Misuse or modification of this equipment may result in personal injury. Do not misuse or modify.

CAUTION

OSHA may have requirements regarding recirculating filtered air back into your facility. Consult with the appropriate local authorities to ensure compliance with all applicable codes.

1.1 Operational Explanation (See Figure 2)

1.1.1 Normal Operation

During normal operation, contaminated air enters the Torit dust collector through the top inlet area and passes down and through the filter cartridges. Dust is collected on the outside surface of the filter cartridges. The clean, filtered air flows through the center of the filter cartridges into the clean air plenum, where it exits through the clean air outlet.

1.1.2 Filter Cartridge Cleaning

Filter cartridges are cleaned manually or when the unit is shut off at high pressure drop (optional feature).

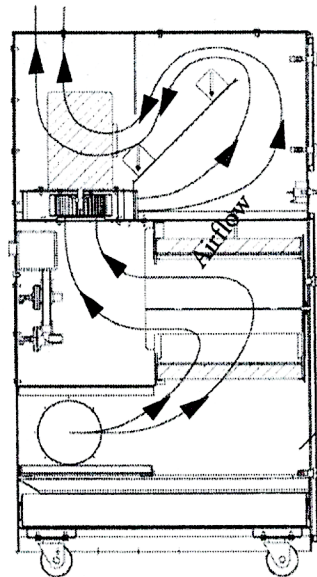


Figure 2
Operational Schematics

During the filter cartridge cleaning purge, either the operator or a solid-state timer (optional) energizes a solenoid valve, causing the corresponding diaphragm valve to send a pulse of compressed air through the filter cartridge (from the inside outward), removing the collected contaminants from the outside surface of the filter cartridge. The dust falls into the hopper and then into the dust storage container.

2.0 Installation

(See Figure 1 Typical Installation View)

2.1 Inspection

The Torit dust collector is normally shipped by truck and should be checked for any damage that may have occurred en route. Any damage should be noted and the carrier notified immediately.

2.2 Ship Loose Items

Items shipped loose with the dust collector may include:

- Starter (If Supplied By Torit)
- Inlet Collar

Cabinets are shipped completely assembled with the filter cartridges installed.

2.3 Equipment/Tools Required

The following is a list of typical tools and equipment required to install and assemble a Torit unit:

- Crane/Lift Truck
- Slings/Spreader Bars/Clevis Pins
- Drift Pins
- Clamps
- Screwdrivers
- Pipe Wrenches
- Socket Wrenches
- End Wrenches
- Large Crescent Wrench
- Pipe Sealant
- Caulking Gun

2.4 Preinstallation

(See Figure 1 Typical Installation View)

The collector should be located with consideration for emptying the hopper storage area, shortest runs of inlet and outlet duct work, electrical and compressed air connections, and convenience of maintenance. In case of hazardous dust collection, consult with local authorities for the proper location of the dust collector.

CAUTION

- A crane or forklift is recommended for unloading, assembly and installation of the collector.
- Locations must be clear of all obstructions, such as utility lines or roof overhang.
- With the blower/motor assembled near the top of the collector, the collector has a high center of gravity. Careful handling is required to avoid overturning during movement.

2.5 Assembly of Standard Equipment (See Figure 1 Typical Installation View)

Remove all crating and strapping from the unit. Remove all miscellaneous parts (bolts, nuts, etc.) before lifting the unit off of the pallet. Check the parts received against the packing slips. If there are parts missing, the carrier and your Romanoff representative should be notified immediately.

NOTE

Each item to be attached to your collector is accompanied by a drawing that shows the attachment process. Refer to both the drawings and this manual when erecting your collector.

2.6 Electrical Operation

2.6.1 Electrical Operation

CAUTION

- All electrical work is to be done by a qualified electrician according to the national and local electrical codes that apply.
- All electrical power must be shut off during installation.
- Do not apply in (classified) hazardous atmospheres without an appropriately-rated enclosure.

Each dust collector comes equipped either with manually-operated push button valves to clean the filter cartridges or with 115-volt AC solenoid valves that control the pulse cleaning valves for downtime cleaning (optional).

Make the proper electrical and pneumatic connections to the collector and motor starter per the diagrams and instructions supplied with the control panel.

Verify proper blower rotation by pushing the start-stop button on and off very quickly. The rotation should be clockwise when looking down at the top of the motor. Also reference the rotation sticker on the fan housing. Proper fan rotation is extremely important.

2.7 Compressed Air Supply Installation (See Figure 1 Typical Installation)

NOTE

- It is important that the compressed air supply be both oil and moisture free. Contamination in the compressed air that is used to clean filter cartridges will result in poor cleaning or cleaning valve failure and poor collector performance.
- Purge compressed air lines to remove debris before connecting to the compressed air manifold on the dust collector.

CAUTION

Shut off and bleed off compressed air supply before doing any service work.

1. Remove the plastic pipe plug from the end of the dust collector compressed air manifold and connect the compressed air supply line.
2. The compressed air supply line should be installed with a safety exhaust shut-off valve, a bleed-type regulator with a gage (adjust pressure to 90 psig), and a coalescing filter with an automatic drain (all supplied by others). Use pipe sealant on all compressed air connections and locate components for convenient service.
3. Be sure that all compressed air components are adequately sized to meet the maximum system requirements of 1.1 scf pulse at 90 psig supply pressure.

3.0 Prestart-Up Check (See Figure 1 Typical Installation)

CAUTION

Check to be sure that the exhaust of the blower fan is free of debris before starting.

NOTE

Make sure that the door openings are sealed correctly (not open to atmosphere). Too much airflow to the blower fan will cause electrical failure.

4.0 Start-Up

1. Turn on the compressed air supply to the dust collector compressed air manifold. Adjust to 90 psig of pressure with the compressed air regulator. Pressure of 90 to 100 psig is the most typical setting for satisfactory cleaning performance (see Section 5.0 Operating Adjustments). The lower the compressed air setting, the less the pulse valve air consumption will be.

CAUTION

Stand clear of blower fan exhaust area, as debris can be exhausted and cause injury.

2. Turn on the blower fan motor and check the fan rotation by looking down from the top of the blower fan motor—it should be clockwise—or reference the rotation direction sticker on the blower fan housing.

NOTE

Too much airflow can cause electrical system failure and result in eventual blower motor failure.

5.0 Operating Adjustments

5.1 Downtime Timer Board in NEMA 4 Enclosure Adjustment (Optional)

Compressed air is recommended to be set at 90 psig. The control timer is factory set to clean one filter cartridge every 10 seconds.

If the filter cartridges are operating at a higher than design ΔP^* (see Section 5.3 Operating Checks), it may be lowered by increasing the frequency of cleaning. The minimum off time (elapsed time) between pulses is 3 seconds. Additional cleaning energy may be obtained by adjusting the pressure upward to a maximum of 100 psig.

NOTE

- Do not increase compressed air pressure beyond 100 psig as component damage may result.
- Do not increase or decrease the pulse ON time on the solid state control timer. Longer or shorter pulse ON times do not aid in cleaning the filter cartridges, they just waste compressed air and cause shortened filter cartridge life.

Pulse ON time can be checked or adjusted by consulting your local Torit representative.

If the filter cartridges are operating at a low operating ΔP (see Section 5.3 Operating Checks), you may want to raise to a higher pressure drop level by increasing the OFF time between pulses on the solid state control board. This will greatly reduce your compressed air consumption.

* ΔP = Pressure drop across filter elements in inches water gage.

5.2 Operating Checks

1. Monitor exhaust. Exhaust should remain visually clean. If a dust leak develops, it will be noticed as a visual puff of dust immediately after a cleaning pulse.
2. Monitor filter cartridge pressure drop. The filters are still good when the ΔP is in the green range on the gage. When the ΔP reaches the red range and will not clean down, it is time to replace the filter.
3. The filter is cleaned with compressed air, which blows the particulate off the outside of the filter. The particulate accumulates in the dust drawer. Cleaning the filter on a regular basis will extend the life of the filter.

See the instructions on the front panel for cleaning instructions.

NOTE

With any new filter cartridges, the fan motor may overload because of airflow higher than design level. Be sure to adjust airflow when replacing filters.

6.0 Service

CAUTION

- Disconnect electrical power before servicing any electrical components.
- Shut off and bleed compressed air supply before servicing any compressed air components.
- No welding should be performed inside the unit without fire protection.

6.1 Filter Cartridges (See Figure 3 Filter Cartridge Replacement)

CAUTION

- Turn off and lock out power so that the fan can not be started and pulsing can not start.
- Dust-laden filter cartridges may be heavy and difficult to handle.

6.1.1 Filter Cartridge Removal

When changing the filter cartridge, a key is required for the locked door. Handle the cartridge carefully to reduce loss of the collected dust.

It is recommended that after the nut, washer, and plate are removed from the end of the cartridge, that a plastic bag be placed over the filter cartridge.

6.1.2 Filter Cartridge Installation

NOTE

- Do not drop or rap the clean filter cartridge on the floor or any other hard surface. Damage to the filter cartridge will occur, resulting in leakage.
- It is necessary to clean the dust off of the filter cartridge support panel all around the opening and the access cover gasket to ensure a positive seal of the filter gasket.
- The gasket end of the filter cartridge must be inserted first, facing inward toward the clean air section, or leakage will occur.
- Access cover knobs must be securely tightened. Lack of compression of the filter cartridge gaskets can cause leakage.

1. Wipe off access cover gaskets and reinstall the access covers. Tighten securely by hand.
2. Relock the door to ensure dust recovery.
3. The dust collector is now ready to start-up. Lock on the electrical power and turn on the compressed air supply before starting.

6.2 Dust Removal

NOTE

Do not let the dust storage container overflow. It can cause poor collector performance and create an extensive clean up due to overflow of dust when removing the container.

1. Turn off the dust collector and empty as necessary to keep the dust in the bin to a minimum.

6.3 Original Equipment Filter Cartridge (See Replacement Parts List)

The filter cartridges provided by Torit are the only replacement filter cartridges that will provide the high level of performance that you expect from your investment in the dust collector.

6.4 Compressed Air Components

CAUTION

Shut off and bleed off the compressed air before performing any service work.

1. Periodically check the compressed air components and service them by installing new compressed air filters and draining any moisture off by following manufacturer's instructions.
2. With the compressed air supply turned on, check the cleaning valves, solenoid valves, and tubing for any leakage. Replace any components that are leaking compressed air (reference the Replacement Parts List).

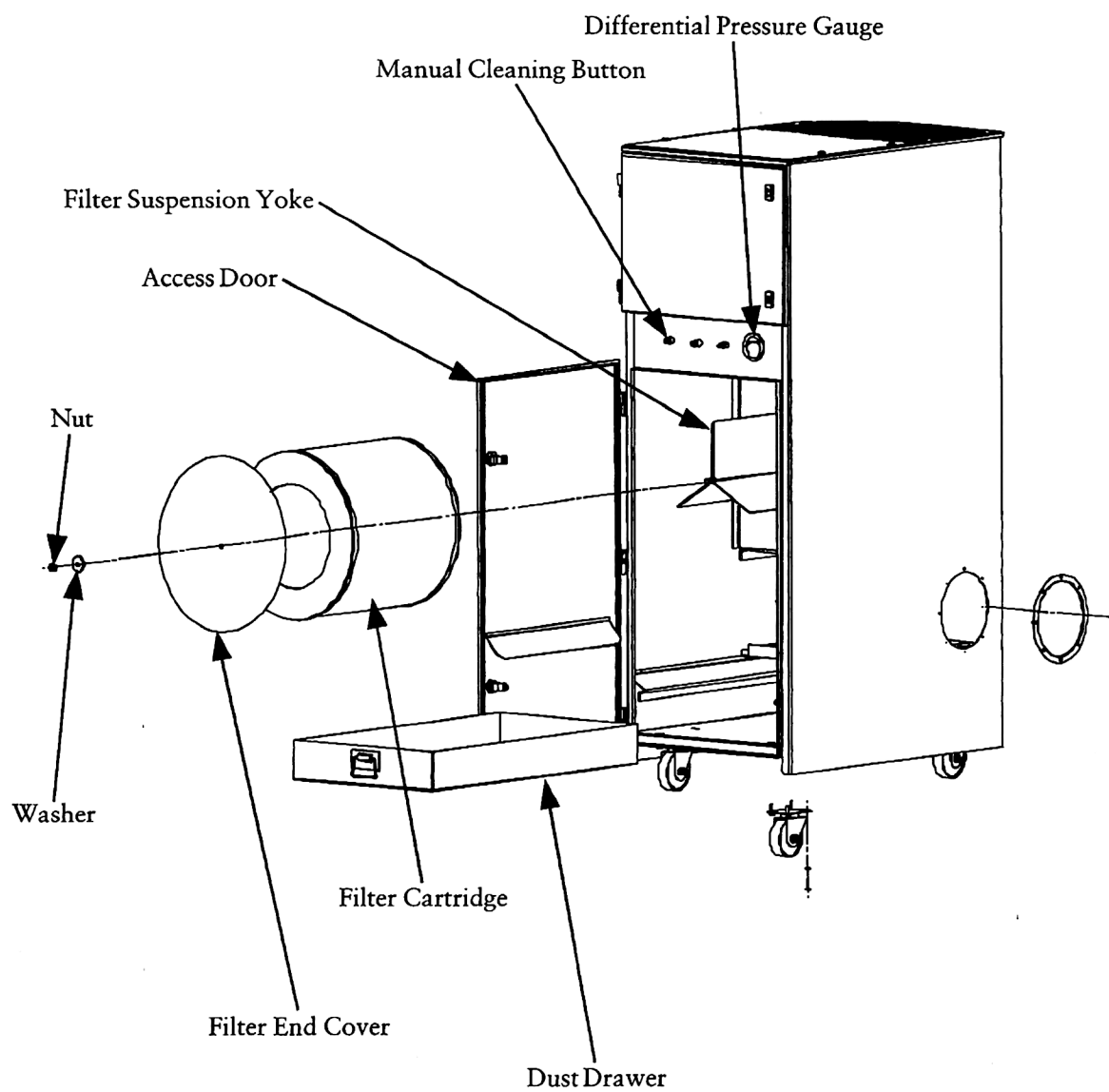


Figure 3
Filter Cartridge Replacement

7.0 Troubleshooting Guide

TROUBLE	POSSIBLE CAUSE	REMEDY
A. Blower fan and motor do not start.	1. Wiring.	
	a. Proper wire size not used for motor.	1a. Rewire per local and national codes for proper wire size.
	b. Not wired correctly.	1b. Check and correct internal motor wiring for proper connections for your voltage (reference Motor Manufacturing Wiring Diagram on motor).
	c. Unit not wired for available voltage.	1c. Correct wiring for proper input voltage.
	d. Input circuit down.	1d. Check input to motor circuits for voltage on all leads.
B. Blower fan and motor starts, but does not keep running.	e. Electrical supply circuit down.	1e. Check the electrical supply circuit for proper output voltage or fuse, circuit breaker fault. Replace if necessary.
	1. Starter kicks out.	
	a. Incorrect starter heater elements are installed.	1a. Check for proper motor starter heater elements. Replace with proper value heater elements if needed.
	b. Collector access covers are off or not closed tight.	1b. Tighten access covers by hand securely.
	c. Hopper discharge open to atmosphere.	1c. Install bin to hopper discharge.

7.0 Troubleshooting Guide

TROUBLE	POSSIBLE CAUSE	REMEDY
B. Blower fan and motor starts, but does not keep running (contd).	1. Starter kicks out (contd).	
	d. Blower fan damper control not adjusted properly.	1d. Check airflow in ducting for proper requirements. Adjust the damper control until the proper airflow is achieved and the blower fan motor amperage draw is within manufacturer motor ratings.
	e. Electrical circuit overload.	1e. Check that the supply circuit has sufficient power to run all equipment.
C. Dust discharge out of clean air outlet.	1. Filter cartridges installed improperly.	1. Check that the gaskets on the filter cartridge(s) are facing into the cabinet first (see Figure 3 Filter Cartridge Removal and Section 6.1 Filter Cartridges located in this manual).
	2. Filter cartridge damage, dents in the end caps, gasket damage or holes in pleated media.	2. Replace the filter cartridges. Use only Ultra-Web® II* filter cartridges
	3. Access cover (s) are loose.	3. Tighten access cover knob(s) securely.
		*Ultra-Web® is a registered trademark of Donaldson Company

7.0 Troubleshooting Guide

TROUBLE	POSSIBLE CAUSE	REMEDY
D. Insufficient airflow.	1. Fan rotation backwards.	1. Check fan rotation. The fan rotation should be clockwise, when looking down at the top of the blower fan motor Section 4.0 Start-Up located in this manual).
	2. Collector openings not tight or closed.	2. Check the access covers to make sure that they are in place and tightened securely. Also check hopper discharge area to make sure that the openings are closed off and that the optional hopper attachments are installed.
	3. Fan exhaust area is restricted.	3. Check fan exhaust area for blockage. Remove material or debris blocking the fan exhaust area or adjust damper flow control on fan exhaust area.
	4. Filter cartridges plugged with particulate.	4a. Remove and replace filter cartridges (see Figure 3 Filter Cartridge Replacement and Section 6.1 Filter Cartridges located in this manual, and Replacement Parts List).
	a. Filter cartridges need to be replaced.	
	b. Lack of compressed air.	4b. Check compressed air supply for 90 psig minimum. See Figure 1 Typical Installation View. Increase pressure as described in Section 5.0 Operating Adjustments in this manual.

7.0 Troubleshooting Guide

TROUBLE	POSSIBLE CAUSE	REMEDY
D. Insufficient airflow (contd).	4. Filter cartridges plugged with particulate (contd).	
	c. Pulse cleaning not energized.	4c. Check supply voltage to the timer board with a volt ohm meter. Check the fuse on the timer board. If the fuse is blown, replace it with one of equal value. See Section 2.6 Electrical Operation.
	d. Dust storage area is too full or plugged.	4d. Clean out dust storage area as described in the Section 6.2 Dust Removal in this manual.
	5. Pulse valves are not functioning.	
	a. Pulse valves are leaking compressed air.	5a. Lock out all electrical power and bleed off the compressed air supply. Check for debris, valve wear or diaphragm failure by removing the diaphragm cover on the pulse valves. Also check for solenoid leakage and/or damage. If pulse valves or solenoid valves and solenoid tubing are damaged replace part(s) (reference the Replacement Parts List).

7.0 Troubleshooting Guide

TROUBLE	POSSIBLE CAUSE	REMEDY
D. Insufficient airflow (contd).	5. Pulse valves are not functioning (contd).	
	b. Pulse control timer board has failed.	5b. Check supply voltage to the timer board with a volt ohm meter. Check the fuse on the timer board. If the fuse is blown, replace it with one of equal value. If the fuse and input power to the control board is okay, but there is not any output voltage to the solenoid pulse control valves, replace the pulse control timer board (reference Replacement Parts List and Section 2.6 Electrical Operation).
	c. Pulse control timer board is out of adjustment.	5c. Refer to the Section 2.6 Electrical Operation located in this manual.

Notes

Notes

Notes



Parts and Service Program
For replacement filters and parts:



800-221-7448



sales@romanoff.com



www.romanoff.com

PARTS ORDERING INFORMATION

When ordering parts, give model number and serial number, part number, description and quantity of parts desired.

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