

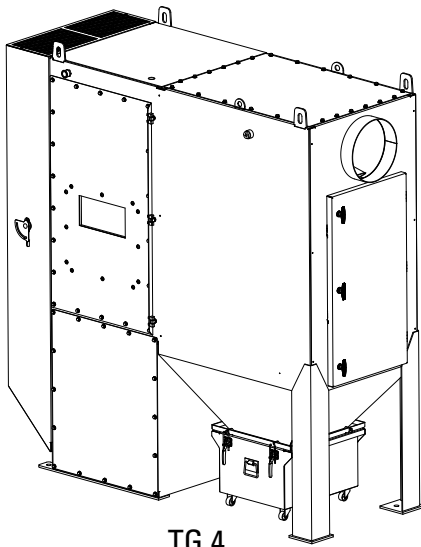


## Torit® PowerCore®

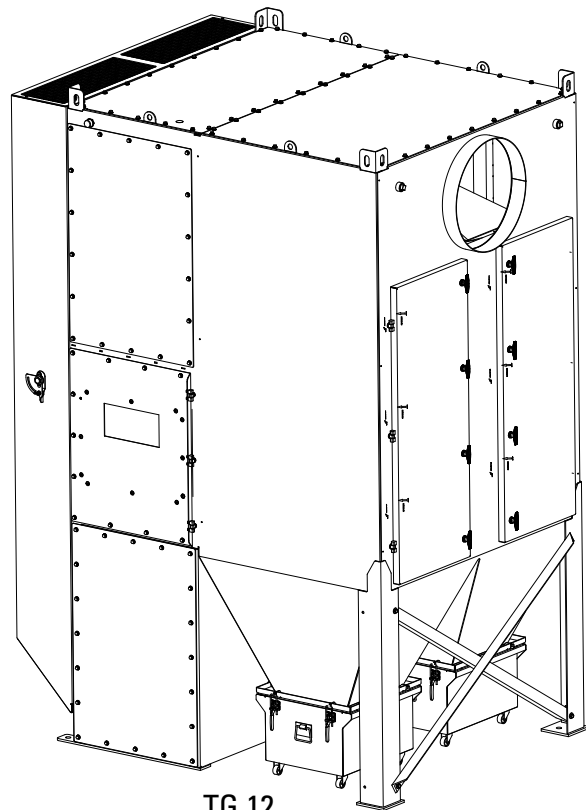
TG 2, 4, 6, 8, and 12

### Installation and Operation Manual

Installation, Operation, and Service Information



TG 4



TG 12



This manual contains specific precautions related to worker safety. The hazard alert image denotes safety related instructions and warnings in this manual. **DO NOT** operate or perform maintenance on this collector until you have read and understood the instruction and warnings contained within this manual.

## IMPORTANT NOTES

This manual has been supplied to assist with the installation, operation and maintenance for the collector purchased. Please read the manual before installing, operating, or performing maintenance on the collector as it contains specific precautions for worker safety. It is the owner's responsibility to ensure that this manual is available for use by installers, operators and maintenance personnel that will be working with this collector. This manual is the property of the owner and should be left with the collector when installation has been completed. DO NOT operate this collector until you have read and understood the instructions and warnings located in the installation and operation manual.

For additional copies of this manual, contact Donaldson Torit



The Safety Alert Symbol indicates a hazardous situation which, if not avoided could result in death or serious injury. Obey all safety messages following this symbol to avoid possible injury or death. The possible hazards are explained in the associated text messages.



**CAUTION**, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**NOTICE**

**NOTICE** indicates a potential situation or practice which is not expected to result in personal injury, but which if not avoided, may result in damage to equipment.

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## Safety Communication



Improper operation of dust collectors and/or dust control systems may contribute to conditions in a work area or facility which could result in severe personal injury, and product or property damage. All dust collection equipment should be used only for its intended purpose and should be properly selected and sized for its intended use.

Process owners have important responsibilities relating to identifying and addressing potential hazards in their processes. When the potential for handling combustible dust exists within a process the process owner should include combustion hazards in their risk management activities and should comply with applicable codes and standards related to combustible dust.

Electrical installation must be performed by a qualified electrician.

This equipment is not designed to support site ducts, piping, or electrical services. All ducts, piping, or electrical services must be adequately supported to prevent injury and/or property damage.

Site selection must account for wind, seismic zone, and other load conditions.

Equipment may reach peak sound pressure levels above 80 dB (A). Noise levels should be considered when selecting collector location.

## Combustible Dust Hazards

Among other considerations, the current NFPA standards require owners whose processes involve potentially combustible materials to have a current Dust Hazard Analysis, which can serve as the foundation for their process hazard mitigation strategy. Mitigation may include but is not limited to:

- Prevention of all ignition sources from entering any dust collection equipment.
- Selection and implementation of fire and explosion mitigation, suppression, and isolation strategies appropriate for the risks in their process.
- Development and use of work practices to maintain safe operating conditions, and to ensure combustible dust does not accumulate within their plant or process equipment.

Donaldson designs, manufactures, and sells industrial air filtration products for a wide variety of applications. Some applications may include processes or materials with inherent fire and explosion hazards. Donaldson is neither an expert nor a certified consultant in fire, spark, or explosion detection, suppression, or control. Donaldson does not provide engineering consulting services related to process or dust hazard analyses, or code and standard compliance. Complying with applicable codes and standards and managing the risks associated with the process or materials remains the responsibility of the process owner/operator. Donaldson may provide referrals to consultants, suppliers of equipment or services related to the detection and/or mitigation of sparks, fires and/or explosions, but Donaldson does not assume responsibility for any such referrals, nor does Donaldson assume any liability for the fitness of a mitigation strategy or product for a particular installation or application. The process owner's final selection of dust collectors and risk mitigation strategies should be based on the outcome of a Dust Hazard / Process Hazard Analysis performed by the process owner. Although early engagement of a dust collector supplier provides helpful insights on the availability and features of various products, process owners should consult with a combustible dust expert and/or a process safety expert before making actual product and mitigation strategy selections.

Donaldson recommends that all industrial air filtration system designs be reviewed and approved by an expert consultant who is responsible for the integrity of the system design and compliance with applicable codes and standards. It is the process owner's responsibility to understand the risks in their process and mitigate those risks in accordance with all applicable laws, regulations and standards, including those published by the NFPA. Donaldson also recommends that proper maintenance and housekeeping procedures and work practices be evaluated, developed, and followed to maintain any industrial air filtration products in safe operating condition.

Many factors beyond the control of Donaldson can affect the use and performance of Donaldson products in a particular application, including the conditions under which the product is used. Since these factors are uniquely within the user's knowledge and control, it is essential the user evaluate the Donaldson products to determine whether the product is fit for the particular purpose and suitable for the user's application. All products, product specifications, and data (airflow, capacity, dimensions, or availability) are subject to change without notice, and may vary by region or country.

## Description

The standard continuous-duty TG Series, Models TG2, 4, 6, 8, and 12, are a family of completely packaged, fully assembled, and pre-wired dust collectors on a remarkable small footprint. All-welded and designed with clean lines, the compact models integrate effortlessly with operational equipment. The TG Series collectors use rectangular filter packs with proprietary PowerCore filter media. Filter packs can be pulse-cleaned on- or off-line. The downward airflow design through the collector housing delivers high filtration efficiency while using less energy.

Included in the packaged design is a high-performance fan mounted in a separate compartment at the base of the collector for maximum noise control; integrated electrical controls with motor starter in an easy to reach location, installed energy-efficient Torit PowerCore Filter Packs with flame-retardant Ultra-Web media, a state-of-the-art ZERO-TURN Power Pulse cleaning system, integrated solenoid pilot valves, built-in exhaust silencer; built-in airflow damper; and dust discharge container. The filter housing offers completely tool-less serviceability.

Options include anti-static Ultra-Web media, various cleaning controls including low-voltage feedback relay, airflow controller and particulate sensor, high static and premium efficiency motors, HEPA afterfilters, several dust container options, explosion protection devices and spark management options.

## Purpose and Intended Use

### CAUTION

Misuse or modification may result in severe personal injury and/or property damage.

Do not misuse or modify.

Collector configuration may not support the addition of explosion protection systems commonly used when filtering combustible dusts. Before using any filtration equipment you must understand the nature of your dust and any fire or explosion protection strategies you may intend to incorporate into your filtration equipment.

The TG Series collectors are equipped with a group of features tailored to the metal working industry. Typical point-of-use applications include laser cutting, plasma cutting, welding and some thermal spray applications.

Torit PowerCore TG Series dust collectors can be integrated with process equipment such as laser tables, plasma tables, welding, and spray booth equipment. Discuss the use, application, and integration of this equipment with a Donaldson Torit representative.

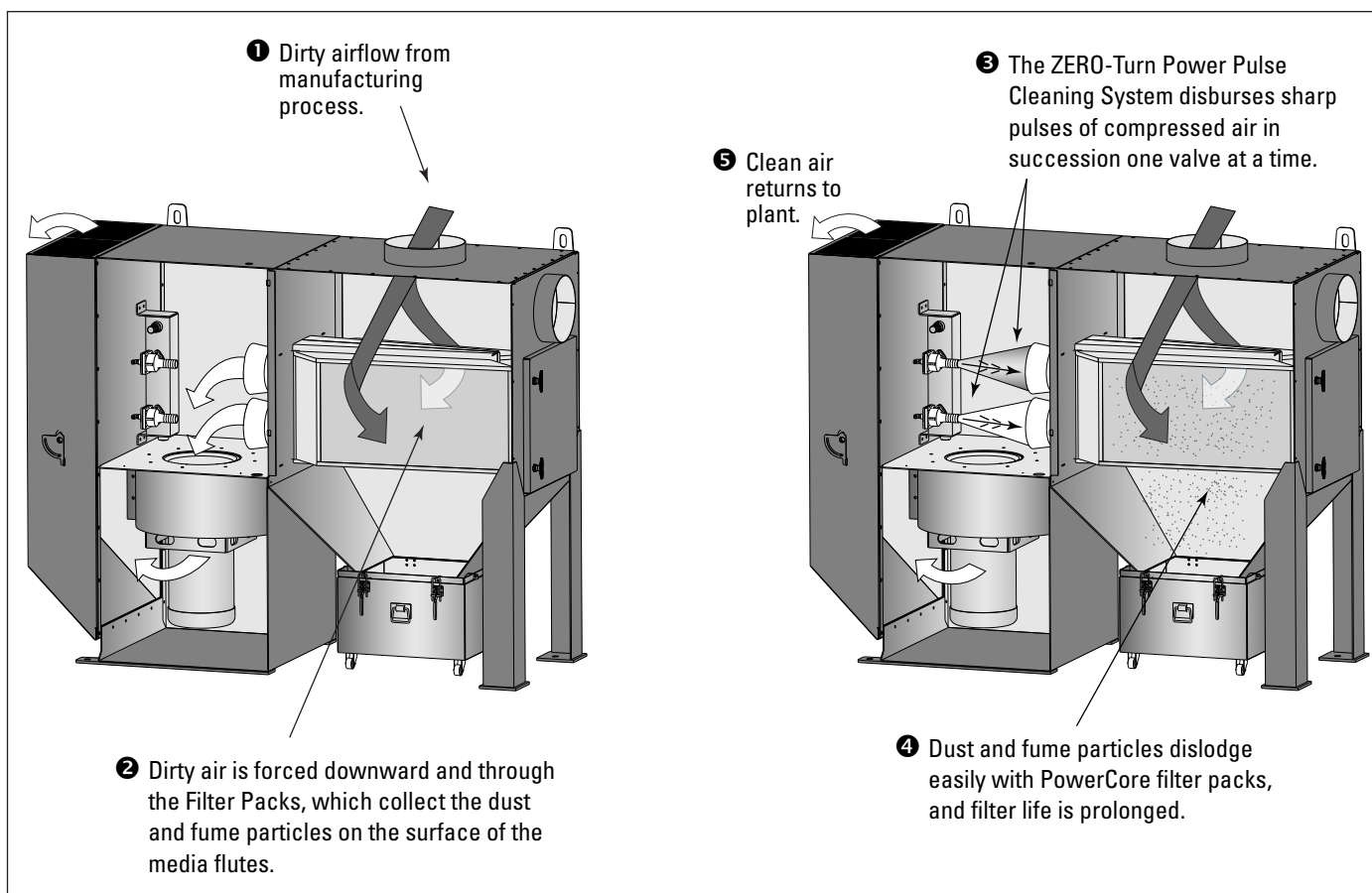
## Rating and Specification Information

General rating and specification information can be found in the product literature provided with the collector or available on the Donaldson website. For specific load values for a collector, see the Specification Control Drawing shipped with the collector.

## Operation

During normal operation, dust-laden air enters the collector through the top, front, or low drop-box inlet. Airflow is then directed downward through the collector and heavier particulate falls directly into the hopper. The filter packs remove fine particulate and clean, filtered air passes through the packs to the clean-air plenum and discharges through the clean-air outlet.

Cleaning is achieved with the Zero-Turn Power Pulse Cleaning System by reverse pulsing filter packs with controlled bursts of compressed air. Cleaning control is determined by pressure drop across the filter packs ("Delta P") or by manually initiating the controls to pulse continuously (when the collector is running). The cleaning sequence starts at the top filter packs and continues down through each filter pack set. Removal, inspection, and change-out of the filter packs is done from outside the collector by opening the filter pack access door, unclamping the right and left filter banks, and sliding the individual filter packs out.



Typical Collector Operation

## Inspection on Arrival

1. Inspect collector upon delivery.
2. Report any damage to the delivery carrier.
3. Request a written inspection report from the Claims Inspector to substantiate any damage claim.
4. File claims with the delivery carrier.
5. Compare collector received with description of product ordered.
6. Report incomplete shipments to the delivery carrier and your Donaldson Torit representative.
7. Remove crates and shipping straps. Remove loose components and accessory packages before lifting collector from truck.
8. Check for hardware that may have loosened during shipping.
9. Use caution removing temporary covers.

## Installation Codes and Procedures



Codes may regulate recirculating filtered air in your facility.

Consult with the appropriate authorities having jurisdiction to ensure compliance with all national and local codes regarding recirculating filtered air.

Safe and efficient operation of the collector depends on proper installation.

Authorities with jurisdiction should be consulted before installing to verify local codes and installation procedures. In the absence of such codes, install collector according to the National Electric Code, NFPA No. 70-latest edition and NFPA 91 (NFPA 654 if combustible dust is present).

A qualified installation and service agent must complete installation and service of this equipment.

All shipping materials, including shipping covers, must be removed from the collector prior to or during collector installation.

### NOTICE

Failure to remove shipping materials from the collector will compromise collector performance.

Inspect collector to ensure all hardware is properly installed and tight prior to operating collector.

## Installation



Use proper equipment and adopt all safety precautions needed for servicing equipment.

Electrical service or maintenance work must be performed by a qualified electrician and comply with all applicable national and local codes.

Turn power off and lock out all power before performing service or maintenance work.

Do not install in classified hazardous atmospheres without an enclosure rated for the application.

Turn compressed air supply OFF, bleed and lock out lines before performing service or maintenance work.

Site selection must account for wind, seismic zone, and other load conditions when selecting the location for collectors.

Codes may regulate acceptable locations for installing dust collectors. Consult with the appropriate authorities having jurisdiction to ensure compliance with all national and local codes regarding dust collector installation.

Collectors must be anchored in a manner consistent with local code requirements. Anchors must be sufficient to support dead, live, seismic, and other anticipated loads.

Consult a qualified engineer for final selection of anchorage.

### NOTICE

Do not set compressed-air pressure above 100-psig as component damage can occur.

All compressed air components must be sized to meet the system requirements of 90-100-psig supply pressure.

The compressed-air supply must be oil and moisture free. Contamination in the compressed air used to clean filters will result in poor cleaning, cleaning valve failure, or poor collector performance.

Purge compressed air lines to remove debris before connecting to the collector's compressed air manifold.

The collector is suitable for either indoor or outdoor installations. Reference the Rating and Specification Information.

## Foundations or Support Framing

Prepare the foundation or support framing in the selected location. Foundation or support framing must comply with local code requirements and may require engineering.

Foundation and support framing must be capable of supporting dead, live, wind, seismic and other applicable loads. Consult a qualified engineer for final selection of foundation or support framing.

## Collector Location



Donaldson Torit equipment is not designed to support site installed

ducts, interconnecting piping, or electrical services. All ducts, piping, or electrical services must be adequately supported to prevent severe personal injury and/or property damage.

When hazardous conditions or materials are present, consult with local authorities for the proper location of the collector.

Dust collection equipment may reach peak sound pressure levels above 80 dB (A). Noise levels should be considered when selecting collector location.

Locate the collector to ensure easy access to electrical and compressed air connections, to simplify solids collection container handling and routine maintenance, and to ensure the straightest inlet and outlet ducts.

Provide clearance from heat sources and avoid any interference with utilities when selecting the location.

Portable collectors may require special installation accommodations.

**Note:** Collectors with explosion vents are not available in portable configurations.

## Site Selection

This collector can be located on a foundation or structural framing.

## Hoisting Information



Failure to lift the collector correctly can result in severe personal injury and/or property damage.

Use appropriate lifting equipment and adopt all safety precautions needed for moving and handling the equipment.

A crane or forklift and qualified operator are recommended for unloading, assembly, and installation of the collector.

Location must be clear of all obstructions, such as utility lines or roof overhang.

Use only corner lugs for lifting collector.

Use clevis connectors, not hooks, on lifting slings.

Use spreader bars to prevent damage to collector's casing.

Check the Specification Control drawing for weight and dimensions of the collector and components to ensure adequate crane capacity.

Allow only qualified crane or forklift operators to lift the equipment.

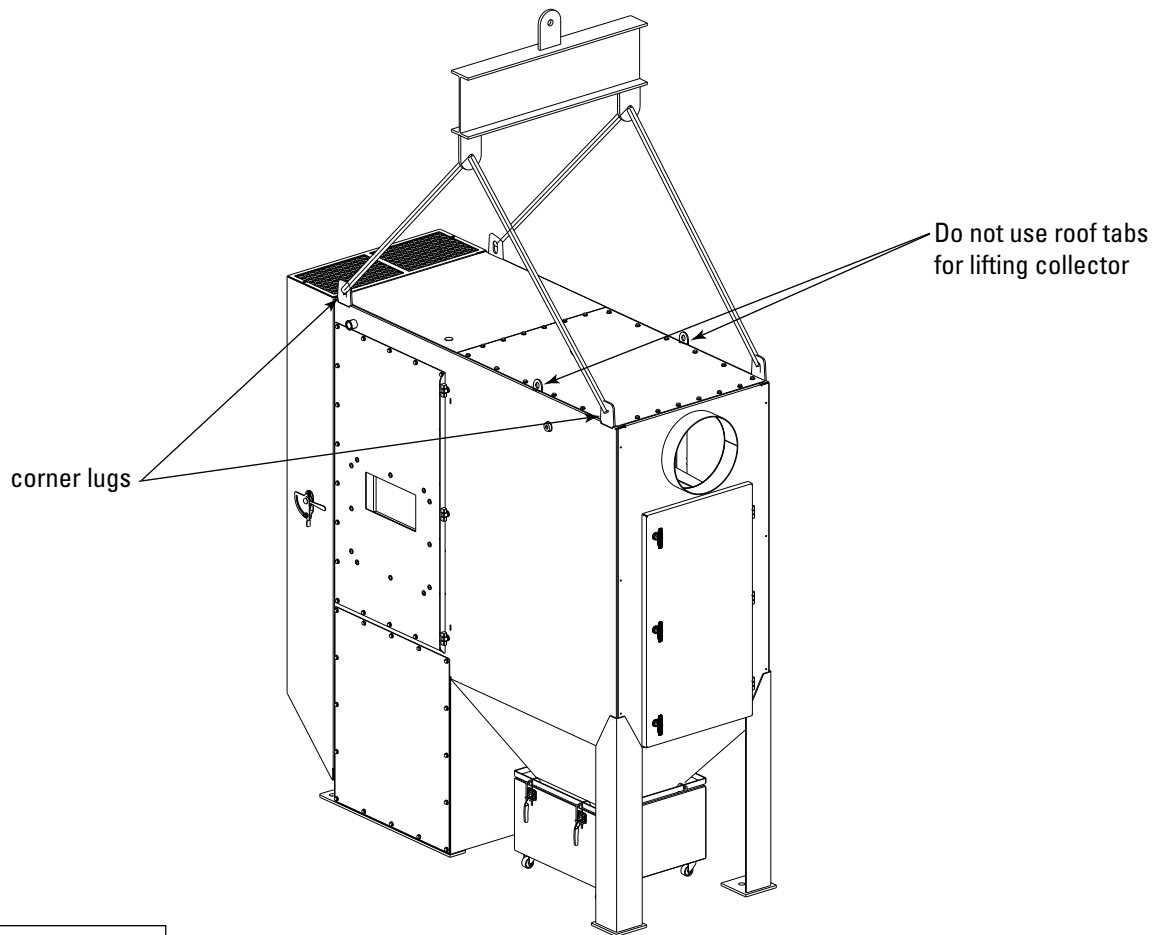
Refer to applicable OSHA regulations and local codes when using cranes, forklifts, and other lifting equipment.

Lift collector and accessories separately and assemble after collector is in place.

Use drift pins to align holes in section flanges during assembly.



## Typical Installation



collector.

Take center of gravity into  
consideration when lifting

## Standard Equipment

Standard collectors include a fan, motor, control panel, 17-gallon dust container, and an exhaust silencer and damper. The collector is fully assembled and ready to connect to electrical supply, compressed air, and ductwork. A detailed drawing, shipped with each collector, provides weight, specifications, and collector dimensions including anchor bolt locations for the collector's base plate.

## Collector Anchoring

### ⚠ CAUTION

Anchors must comply with local code requirements and must be capable of supporting dead, live, wind, seismic, and other applicable loads.

Anchor sizes shown are provisional, as final anchor sizing will depend on jobsite load conditions, collector location, foundation/framing design variables and local codes.

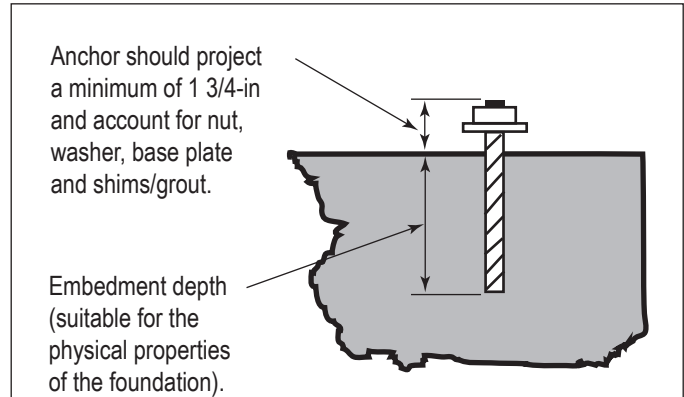
Consult a qualified engineer for final selection of suitable anchors.

Tighten all hardware before removing crane to prevent personal injury and/or property damage.

Prepare the foundation or support framing in the selected location. Locate and install anchors.

## Provisional Anchor Bolt Recommendations

1. Consider Hilti HIT-HY 200 Anchor System or equivalent. Quantity of anchor bolts should match the number of holes provided in the base plates.
2. Anchor diameter is typically 1/8-in less than baseplate hole diameter.
3. Corrosive environment or outdoor installation may require stainless steel anchors.



Typical Foundation Anchor

## Cleaning Controls

There are 14 standard options that are offered with this collector.

### Integrated Torit Delta P

- Manual Motor Control (Standard Control Feature)
- 24VDC Start/Stop and feedback relay, and Manual Motor Control

### Integrated Torit Delta P Plus

- Manual Motor Control
- 24VDC Start/Stop and feedback relay, and Manual Motor Control

### External Remote-Mount Torit Delta P

- Manual Motor Control
- 24VDC Start/Stop and feedback relay, and Manual Motor Control
- Manual Motor Control and Particulate Sensor
- Manual Motor Control and Airflow Controller (VFD)
- Manual Motor Control, Airflow Control (CFD), and Particulate Sensor

### External Remote-Mount Torit Delta P Plus

- Manual Motor Control
- 24VDC Start/Stop and feedback relay, and Manual Motor Control
- Manual Motor Control and Particulate Sensor
- Manual Motor Control and Airflow Controller (VFD)
- Manual Motor Control, Airflow Control (CFD), and Particulate Sensor

The standard controller is the Integrated Torit Delta P with Manual Motor Starter.

**Note:** Reinforced collectors and collectors being located outside require external remote-mount controllers.

## Delta P Control

The Torit Delta P Controller monitors the differential pressure between the clean and dirty air plenums, providing a visual display of the filter condition. It controls the pressure drop by turning the cleaning mechanism On and Off at the chosen limits. There are three (3) set points: High Pressure On, Low Pressure Off, and Alarm. The first two, High Pressure On and Low Pressure Off, control the filter cleaning system. The third, Alarm, provides a relay output to activate an external alarm supplied by others.

For complete information, see the most current version of the Delta P Installation, Operation, and Maintenance manual.



Delta P Control Display

## Delta P Plus Control

The Torit Delta P Plus Controller monitors the differential pressure between the clean and dirty air plenums, providing a visual display of the filter condition. It controls the pressure drop by turning the cleaning mechanism On and Off at the chosen limits. There are three (3) set points: High Pressure On, Low Pressure Off, and Alarm. The first two, High Pressure On and Low Pressure Off, control the filter cleaning system. The third, Alarm, provides a relay output to activate an external alarm supplied by others.

The user can program the Delta P Plus Controller to pulse while the collector is running to maintain a relatively constant pressure drop across the filters, pulse only after the collector is shut down (after-shift cleaning), or a combination of both, cleaning while running as well as end of the shift.

For complete information, see the most current version of the Delta P Plus Installation, Operation, and Maintenance manual.



Delta P Plus Control Display

## 24VDC Motor Start with Feedback Relay

The 24VDC start relay allows a customer supplied piece of equipment to start the dust collector. This is accomplished by the customer's equipment sending a 24VDC signal to the collector controller which then activates the fan and pulsing systems. The low voltage feedback relay allows the dust collector controller to interlock with other customer supplied equipment by relaying the low voltage signal back to the sending equipment. The feedback occurs when the collector is running.

## External Remote-Mounted Controls

Remote mounted controls are required when the collector is reinforced, the collector is being installed outdoors, or if particulate sensing or airflow control is required. Similar to the integrated controllers, the Torit Delta P and Delta P Plus are the options for pulse control. Locate the control panel as close to the collector as possible to minimize the length of tubesheet differential pressure tubing.

## Particulate Sensor

The particulate sensor constantly samples the clean air exhaust air stream when the collector is on. In instances where a filter leak is detected the controller will stop the fan and pulsing, and turn on a visual warning beacon.

## Airflow Controller

The airflow controller is used to maintain a constant duct static pressure loss, thus a constant air volume through the duct system. It compensates for variations in filter pressure drop such as during startup with new filter packs when the filter pack resistance is low, or towards the end of a filter pack's life when the pressure drop is higher.

The airflow controller varies the speed of the fan wheel to adjust to the required airflow. An energy savings can be realized when the application is not requiring maximum power.

## Compressed Air Installation

### **CAUTION**

Turn compressed air supply OFF, bleed and lock out lines before performing service or maintenance work.

A safety exhaust valve should be used to isolate the compressed air supply. The safety exhaust valve should completely exhaust pressure in the collector manifolds when closed, should be capable of being interlocked with fire or explosion mitigation equipment and should include provisions to allow closed-position locking.

### **NOTICE**

Do not set compressed-air pressure above 100-psig as component damage can occur.

All compressed air components must be sized to meet the system requirements of 90-100-psig supply pressure.

The compressed-air supply must be oil and moisture free. Contamination in the compressed air used to clean filters will result in poor cleaning, cleaning valve failure, or poor collector performance.

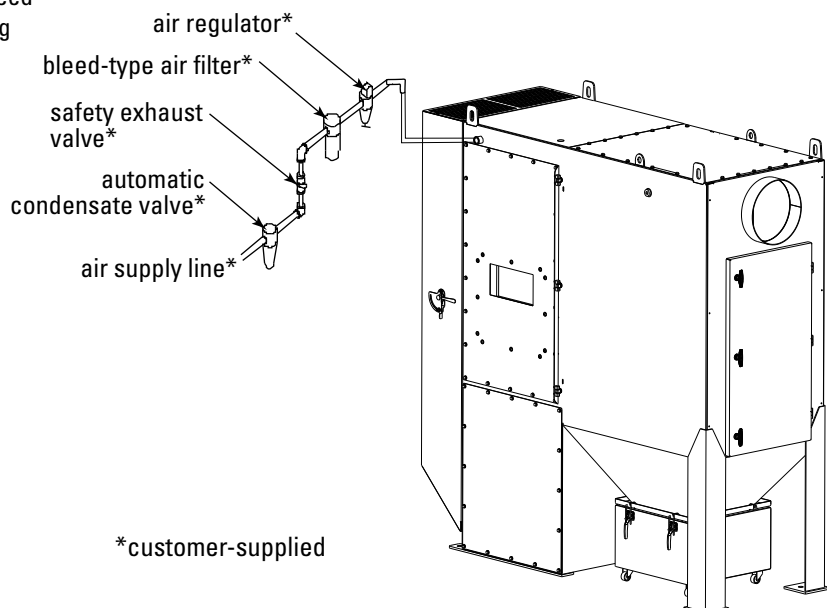
Purge compressed-air lines to remove debris before connecting to the collector's compressed-air manifold.

1. Remove the plastic pipe plug from the collector's air manifold and connect the compressed-air supply lines. Use thread-sealing tape or pipe sealant on all compressed-air connections.
2. Install a customer-supplied shut-off valve, bleed-type regulator with gauge, filter, and automatic condensate valve in the compressed-air supply line.
3. Set compressed-air supply to 90-psig. The pulse-cleaning controls are factory set to clean one filter pack every 10-seconds during each cleaning cycle on the TG2 through TG8 and two filter packs every 10-seconds on the TG12.

### **CAUTION**

Turn power off and lock out electrical power sources.

Turn compressed air supply OFF, bleed and lock out lines before performing service or maintenance work.



Compressed Air Installation

## Electrical Wiring



Electrical installation, service, or maintenance work must

be performed by a qualified electrician and comply with all applicable national and local codes.

Turn power off and lock out all power before performing service or maintenance work.

Do not install in classified hazardous atmospheres without an enclosure rated for the application.

All electrical wiring and connections, including electrical grounding, should be made in accordance with the National Electric Code (NFPA No. 70-latest edition).

Check local ordinances for additional requirements that apply.

The appropriate wiring schematic and electrical rating must be used. See collector's rating plate for required voltage.

An electric disconnect switch having adequate amp capacity shall be installed in accordance with Part IX, Article 430 of the National Electrical Code (NFPA No. 70-latest edition). Check collector's rating plate for voltage and amperage ratings.

Refer to the wiring diagram for the number of wires required for main power wiring and remote wiring.

## Solenoid Connection

(external mounted controls only)

The collector is equipped with 115-Volt solenoid valves to control the pulse-cleaning valves, which clean the filters.

Weatherproof NEMA 4 enclosures with 3D2 solenoids or explosion proof NEMA 9 enclosures with 5D2 solenoids are mounted near the collector's compressed-air manifold.

If external remote-mounted controls were selected, connect solenoids to the solid-state timer following the wiring diagram supplied with the collector. Wire the solenoids so that pulsing occurs in a top to bottom fashion. Filter life and cleaning operation will be affected if not wired correctly.

## Timer and Solenoid Specifications

### Input

105-135V/50-60Hz/1Ph

### Pulse ON Time

Factory set at 100-milliseconds, or 1/10-second.

### NOTICE

Do not adjust pulse ON time unless the proper test equipment is available. Too much or too little ON time can cause shortened filter life.

### Pulse OFF Time

Factory set at 10-seconds.

### Operating Temperature Range

-20° F to 130° F

### Transient Voltage Protection

50 kW transient volts for 20-millisecond duration once every 20 seconds, 1% duty cycle.

### Solenoid Valves

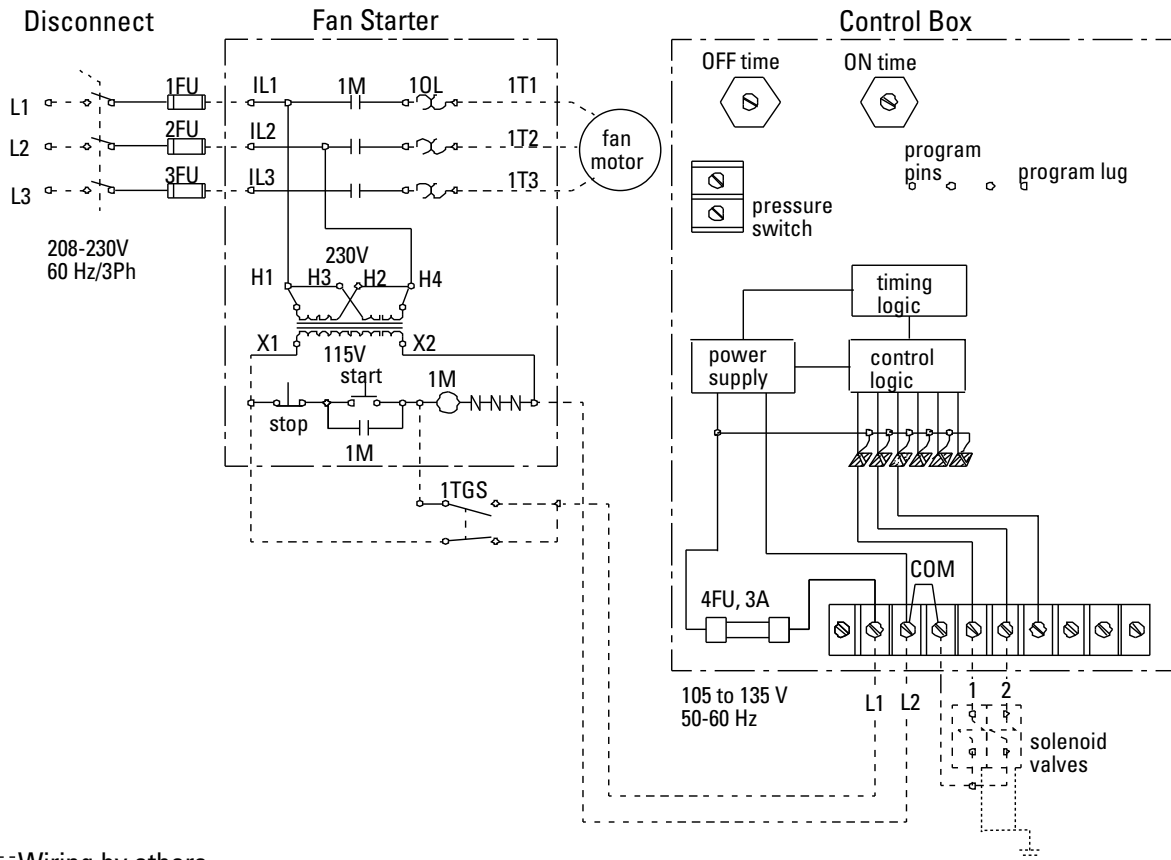
115-Volt at 19.7 watts each

### Compressed-Air

Set compressed-air supply at 90-psig. The timer is factory set to pulse one valve every 10-seconds when pulsing is activated on the TG2 through TG8, and two valves on the TG12.

### NOTICE

Do not increase supply pressure above 100-psig. Component damage can occur.



----- Wiring by others  
 ——— Wiring by factory

Disconnect, fuses, low voltage blower starter, and 1TGS switch are customer-supplied.

Use wiring diagram provided with unit

Solid-State Timer Typical Wiring Diagram

## Preliminary Start-Up Check

Instruct all personnel on safe use and maintenance procedures.

### CAUTION

Electrical work during installation, service or maintenance must be performed by a qualified electrician and comply with all applicable national and local codes.

Turn power off and lock out all power before performing service or maintenance work.

Turn compressed air supply OFF, bleed and lock out lines before performing service or maintenance work.

Check that the collector is clear and free of all debris before starting.

Do not install in classified hazardous atmospheres without an enclosure rated for the application.

Optional fans over 600 lbs must be independently supported.

1. Check all electrical connections for tightness and contact.
2. Check for proper rotation on all motors as described below.

To reverse rotation, single-phase power supply:  
Follow manufacturer's instructions on the motor's nameplate.

To reverse rotation, three-phase power supply:  
Switch any two leads on the motor junction box.

### CAUTION

Do not look into fan outlet to determine rotation. View the fan rotation through the back of the motor.

Check that the exhaust plenum is free of tools or debris before checking blower/fan rotation.

Stand clear of exhaust to avoid personal injury.

Do not interchange a power lead with the ground wire. Severe personal injury and/or property damage may result.

3. All access panels should be sealed and secure.
4. Check that the dust container is properly sealed and clamped.

5. Check that fan exhaust damper is set to the fully-closed position.
6. Check and remove all loose items in or near the inlet and outlet of the collector.
7. Check that all remote controls and solenoid enclosures (if applicable) are properly wired and all service switches are in the OFF position.
8. Check that all optional accessories are installed properly and secured.
9. Turn power ON at source.
10. Turn the compressed-air supply ON. Set compressed-air supply pressure to a level suitable for the filters (90-psig).
11. Turn fan motor ON.
12. Adjust airflow with the exhaust damper.

### NOTICE

Excess airflow can shorten filter life, cause electrical system failure and fan motor failure.

13. Turn powered hopper discharge devices ON.



## Maintenance Information

Instruct all personnel on safe use and maintenance procedures.

### CAUTION

Use proper equipment and adopt all safety precautions needed for servicing equipment.

Use appropriate access equipment and procedures. Note the standard collector is not equipped with access platforms unless noted on the specification drawings.

Electrical service or maintenance work must be performed by a qualified electrician and comply with all applicable national and local codes.

Turn power off and lock out all power before performing service or maintenance work.

Do not install in classified hazardous atmospheres without an enclosure rated for the application.

Turn compressed air supply OFF, bleed and lock out lines before performing service or maintenance work.

### NOTICE

Do not set compressed-air pressure above 100-psig as component damage can occur.

All compressed air components must be sized to meet the system requirements of 90-100 psig supply pressure.

The compressed-air supply must be oil and moisture free. Contamination in the compressed air used to clean filters will result in poor cleaning, cleaning valve failure, or poor collector performance.

Purge compressed air lines to remove debris before connecting to the collector's compressed air manifold.

- Periodically check the compressed air components and replace compressed air filters.

Drain moisture following the manufacturer's instructions. With the compressed air supply ON, check the cleaning valves, solenoid valves, and tubing for leaks. Replace as necessary.

- Monitor pressure drop across filters.

Abnormal changes in pressure drop may indicate a change in operating conditions and possibly a fault to be corrected. For example, prolonged lack of compressed air will cause an excess build-up of dust on the filters resulting in increased pressure drop. Cleaning off-line with no airflow usually restores the filters to normal pressure drop.

- Monitor exhaust.
- Monitor dust disposal.

## Filter Removal and Installation

### CAUTION

Use proper safety and protective equipment when removing contaminants and filters.

Dirty filters may be heavier than they appear.

Use care when removing filters to avoid personal injury and/or property damage.

Turn power off and lock out all power before performing service or maintenance work.

Turn compressed air supply OFF, bleed and lock out lines before performing service or maintenance work.

Do not operate with missing or damaged filters.

Do not climb on door, door frame, retention parts or filter components.

Use care when servicing the filters as there are rotating parts.

## Operational Checklist

- Monitor the physical condition of the collector and repair or replace any damaged components.

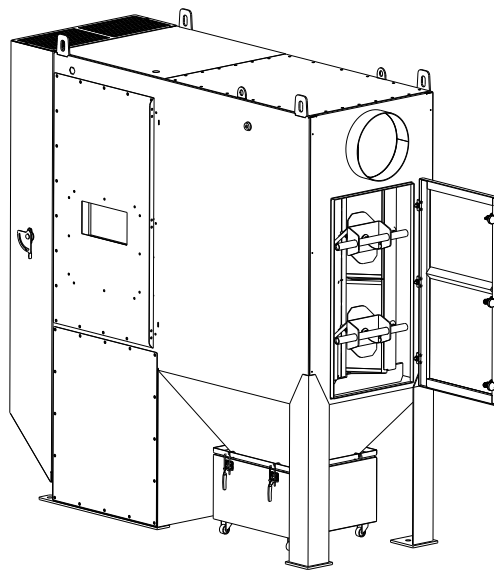
Routine inspections will minimize downtime and maintain optimum system performance. This is particularly important on continuous-duty applications.

1. Turn power off to collector and bleed manifold pressure to 0-psig.
2. Open access door by turning handles counterclockwise and swinging door fully open.
3. Remove each locking pin.
4. Rotate each filter retention mechanism counterclockwise to decompress filters.
5. Detach right side arms and rotate them up and reinstall locking pins to hold arms in place.
6. Detach left side arms and let them rotate down and out of the way.
7. Open cradles fully to access filters.
8. Holding filter handle, push filter back towards the tubesheet and slide the filter towards the center to clear filter cradle. Remove old filter.
9. Install new filter by angling the back of the filter toward the outside of the collector and push filter towards the outside against cradle surface. Slide filter along the back wall of the cradle until the filter is fully inserted. Avoid sliding gasket along any surfaces during installation.
10. After all new filters are installed, close filter cradles by operating the filter retention mechanism in reverse order. Position the left side arm onto the left cradle pin. Remove locking pin from right side arm and position onto the right side cradle. Rotate filter retention mechanism clockwise to seal filters and reinstall locking pins.
11. Close door and secure latches.

**NOTICE**

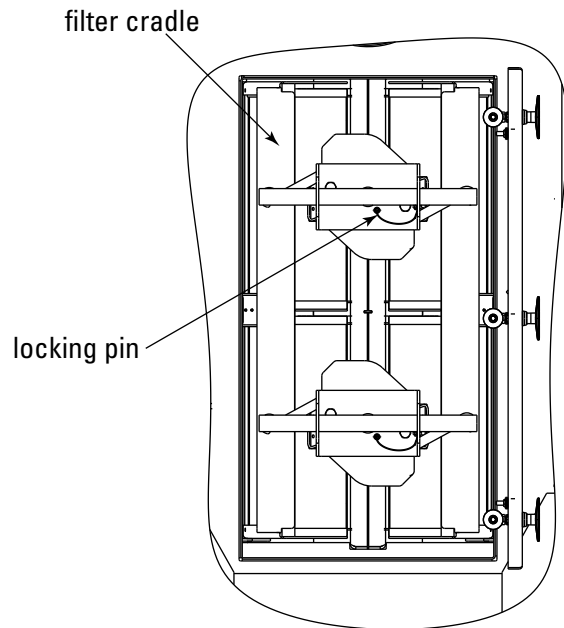
If filter retention mechanism is difficult to close, check that filter is seated properly in filter cradle (see Step 9).

Step 2

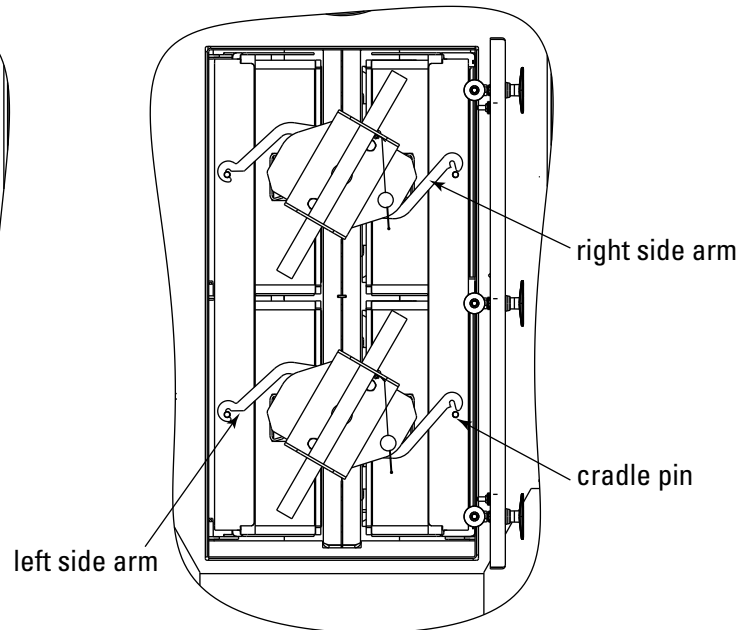


Filter Removal and Replacement

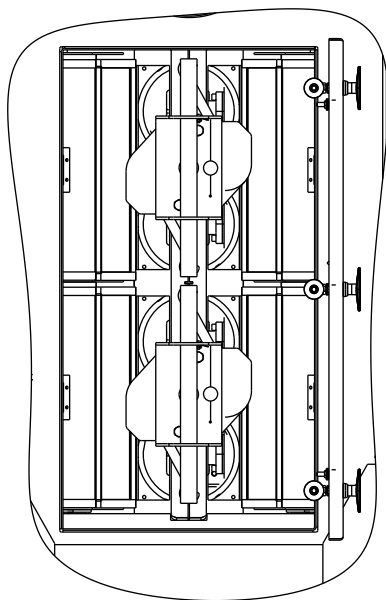
Step 3



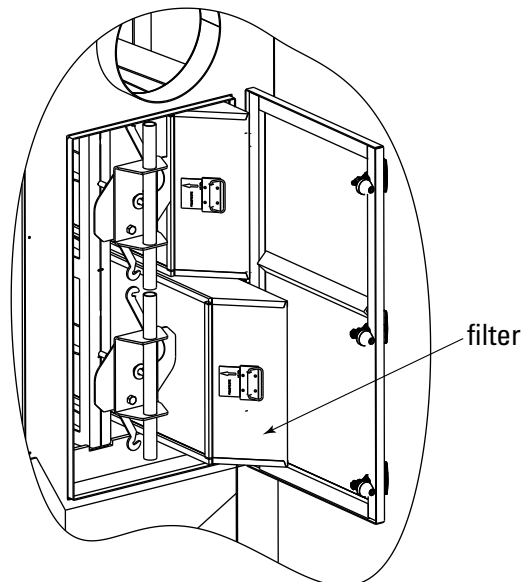
Step 4



Steps 5, 6, and 7



Steps 8 and 9



### Filter Removal and Replacement

## Dust Disposal

### NOTICE

To avoid possible damage to the fan motor, maintain a seal below the collector if servicing the dust storage device while the fan is running.

1. Empty dust container(s) (drum or bin) as necessary to minimize dust in the hopper.
2. If the optional 55-gallon drum attachment is used, empty when dust container is 2/3 full.
3. If optional slide gate is used, close gate before servicing dust container.

### CAUTION

Sharp edge of slide gate may result in personal injury while closing the slide gate. Keep hands clear when operating the slide gate.

4. Check integrity of gasket under drum cover.
5. Replace or reinstall dust container and open gate (if applicable).

## 17-Gallon Dust Bin

A 17-gallon pail pack is standard with all models. Four rigid clamps secure the bin to the hopper flange.

For dust removal:

1. Unlatch the four clamps to lower the dust bin.
2. Roll dust bin out from the collector.
3. Dispose of dust.
4. Reinstall the dust bin and reclamp to the collector.

## Exhaust Damper

An exhaust damper can be adjusted to regulate or limit airflow when collector is in operation. Before start-up, set the exhaust damper to the fully-closed position as shown below. Adjustments to airflow can be made by loosening the wing nut and sliding the handle to open or close the damper. When replacing filters, reset the damper to the fully-closed position and then open to reestablish desired airflow.

## Compressed Air Components

1. Periodically check the compressed air components and replace damaged or worn components as necessary.
2. Drain moisture following the manufacturer's instructions.
3. With the compressed-air supply ON, check the cleaning valves, solenoid valves, and tubing for leaks. Repair or replace as necessary.

## Optional Equipment

### HEPA Afterfilter Installation

The optional HEPA afterfilter is designed to capture small particulate and is attached to the collector's clean-air outlet.

1. Turn supply power OFF.
2. Remove the bolts from the top back roof panel.
3. Position the HEPA mounting frame on top of the clean-air outlet aligning existing hole pattern.
4. Mark and match-drill the front flange holes in the roof panel using a 0.266-in diameter drill bit.
5. Apply 1/4-in diameter rope-type sealant toward the inside of bolt pattern.
6. Position the HEPA mounting frame on the top panel aligning the bolt patterns.
7. Bolt in place using the hardware supplied and the hardware removed in Step 2.
8. Position HEPA filter on mounting frame and secure with latches.
9. Reset exhaust damper to fully closed position.
10. Turn collector ON.
11. Adjust airflow using the airflow control damper.

### Explosion Vent



Personal injury, death, and/or property damage can result from material discharge during venting.

The material discharged during the venting of an explosion must be safely directed outdoors away from areas occupied by personnel to reduce risk of personal injury and/or property damage.

The risk of personal injury and/or property damage can be minimized or avoided by locating vented equipment outside buildings and away from normally occupied areas.

Explosion vents should be inspected regularly to confirm physical and operational condition. Replace any damaged parts immediately.

Standard explosion vents are intended for outdoor installations only.

Unless otherwise noted, the explosion venting calculations are based on formulas from NFPA-68 for outdoor applications only, with no duct or obstructions on the explosion vent panel.

Contact Donaldson Torit for assistance in calculating specific venting requirements for equipment.

NFPA 68 can provide guidance on both the frequency of and appropriate details for inspections.

## Sprinkler

### **CAUTION**

Sprinklers can place a large quantity of water in the dust collector when activated. Provide adequate drainage to remove water. Excess water weight can cause the leg structure to collapse.

### **NOTICE**

Consult with local authorities when installing fire control systems on dust collection equipment.

Sprinkler couplings are provided for the convenience of fire control system installers. The fire control system installer shall make their own decisions on the appropriate location of fire control system components.

## Troubleshooting

Problem	Probable Cause	Remedy
<b>Fan blower and motor do not start</b>	Improper motor wire size	Rewire using the correct wire gauge as specified by national and local codes.
	Not wired correctly	Check and correct motor wiring for supply voltage. See motor manufacturer's wiring diagram. Follow wiring diagram and the National Electric Code.
	Collector not wired for available voltage	Correct wiring for proper supply voltage.
	Input circuit down	Check power supply to motor circuit on all leads.
	Electrical supply circuit down	Check power supply circuit for proper voltage. Check for fuse or circuit breaker fault. Replace as necessary.
	Damaged motor	Replace damaged motor.
<b>Fan blower and motor start, but do not stay running</b>	Incorrect motor starter installed	Check for proper motor starter and replace if necessary.
	Access doors are open or not closed tight	Close and tighten access doors. See Filter Installation.
	Hopper discharge open	Check that dust container is installed and properly sealed.
	Damper control not adjusted properly	Check airflow in duct. Adjust damper control until proper airflow is achieved and the blower motor's amp draw is within the manufacturer's rated amps.
	Electrical circuit overload	Check that the power supply circuit has sufficient power to run all equipment.
<b>Clean-air outlet discharging dust</b>	Filters not installed correctly	See Filter Installation.
	Filter damage, dents in the end caps, gasket damage, or holes in media	Replace filters as necessary. Use only genuine Donaldson replacement parts. See Filter Installation.
	Access cover(s) loose	Tighten access doors securely. See Filter Installation.
<b>Insufficient airflow</b>	Fan rotation backwards	Proper fan rotation is clockwise when viewed from the motor side or counterclockwise when viewed through the inlet cone. See Preliminary Start-Up Check.
	Access doors open or not closed tight	Check that all access doors are in place and secured. Check that the hopper discharge opening is sealed and that dust container is installed correctly.
	Fan exhaust area restricted	Check fan exhaust area for obstructions. Remove material or debris. Adjust damper flow control.
	Filters need replacement	Remove and replace using genuine Donaldson replacement filters. See Filter Removal and Installation.

## Troubleshooting

Problem	Probable Cause	Remedy
<b>Insufficient airflow continued</b>	Lack of compressed air	See Rating and Specification Information for compressed air supply requirements.
	Pulse cleaning not energized	Use a voltmeter to check the solenoid valves in the control panel. Check pneumatic lines for kinks or obstructions.
	Pulse valves leaking compressed air	Lock out all electrical power to the collector and bleed the compressed air supply. Check for debris, valve wear, pneumatic tubing fault, or diaphragm failure by removing the diaphragm cover on the pulse valves. Check for solenoid leaks or damage. If pulse valves or solenoid valves and tubing are damaged, replace.
<b>No display on the Delta P Controller</b>	No power to the controller	Use a voltmeter to check for supply voltage.
	Fuse blown	Check the fuse in the control panel. See wiring diagram inside the control panel. Replace if necessary.
<b>Display on Delta P Controller does not read zero when at rest</b>	Out of calibration	Recalibrate as described in Delta P Maintenance Manual.
<b>Delta P Controller ON, but cleaning system does not start</b>	Pressure tubing disconnected, ruptured, or plugged	Check tubing for kinks, breaks, contamination, or loose connections.
	High Pressure On or Low Pressure Off setpoint not adjusted for system conditions	Adjust setpoints to current conditions.
<b>Delta P Controller arrow keys do not work</b>	Improper operation	Press and hold one of the three setpoint keys to use arrow keys.
<b>Pulse cleaning never stops</b>	Pressure switch not operating correctly	Check pressure switch inside the control panel.
	High Pressure On or Low Pressure Off setpoint not adjusted for system conditions	Adjust setpoints to current conditions.
	Pressure tubing disconnected, ruptured, plugged, or kinked	Check tubing for kinks, breaks, contamination, or loose connections.
<b>Alarm light is ON</b>	Alarm setpoint too low	Adjust to a higher value.
	Excess pressure drop	Check cleaning system and compressed air supply. Replace filter packs if filter packs do not clean down.
	Pressure tubing disconnected, ruptured, plugged, or kinked	Check tubing for kinks, breaks, contamination, or loose connections.



**Product Information** (Process Owner to complete and retain for your records)

Model Number _____	Serial Number _____
Ship Date _____	Installation Date _____
Filter Type _____	
Collected Dust _____	
Dust Properties: Kst _____	Pmax _____ MIE _____ MEC _____
Accessories _____	
Other _____	
_____	

### Service Notes

[illegible]

## Donaldson Industrial Air Filtration Warranty

Donaldson warrants to the original purchaser only that the Goods will be free from defects in material and manufacture for the applicable time periods stated below: (1) Major structural components for a period of ten (10) years from the date of shipment; (2) Non-Structural, Donaldson-built components and accessories including Donaldson Airlocks, TBI Fans, TRB Fans, Fume Collector products, Donaldson built electrical control components, and Donaldson-built Afterfilter housings for a period of twelve (12) months from date of shipment; and (3) Donaldson-built filter elements for a period of eighteen (18) months from date of shipment.

Buyer is solely responsible for determining if goods fit Buyer's particular purpose and are suitable for Buyer's process and application. Seller's statements, engineering and technical information, and recommendations are provided for the Buyer's convenience and the accuracy or completeness thereof is not warranted. If, after Seller receives written notice, within the warranty period, that any goods allegedly do not meet Seller's warranty, and Seller, in its sole discretion, determines that such claim is valid, Seller's sole obligation and Buyer's exclusive remedy for breach of the foregoing warranty or any Seller published warranty, will be, at Seller's option, either: (i) repair or replacement of such goods or (ii) credit or refund to Buyer for the purchase price from Seller. In the case of repair or replacement, Seller will be responsible for the cost of shipping the parts but not for labor to remove, repair, replace or reinstall the allegedly defective goods. Refurbished goods may be used to repair or replace the goods and the warranty on such repaired or replaced goods shall be the balance of the warranty remaining on the goods which were repaired or replaced. Any repair or rework made by anyone other than Seller is not permitted without prior written authorization by Seller, and voids the warranty set forth herein. Seller warrants to Buyer that it will perform services in accordance with the Sales Documents using personnel of required skill, experience and qualifications and in a professional and workmanlike manner in accordance with generally recognized industry standards for similar services. With respect to any services subject to a claim under the warranty set forth above, Seller shall, in its sole discretion, (i) repair or re-perform the applicable services or (ii) credit or refund the price of such services at the pro rata contract rate and such shall be Seller's sole obligation and the exclusive remedy for breach of the foregoing warranty on services. Products manufactured by a third party ("Third Party Product") may constitute, contain, be contained in, incorporated into, attached to or packaged together with, the goods. Buyer agrees that: (a) Third Party Products are excluded from Seller's warranty in this Section 7 and carry only the warranty extended by the original manufacturer, and (b) Seller's liability in all cases is limited to goods of Seller's design and manufacture only. EXCEPT FOR SELLER'S WARRANTY OF TITLE TO THE GOODS, SELLER EXPRESSLY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES WHATSOEVER, WHETHER, EXPRESSED OR IMPLIED, ORAL, STATUTORY, OR OTHERWISE, INCLUDING BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY AND ANY WARRANTIES ARISING FROM TECHNICAL ADVICE OR RECOMMENDATIONS, COURSE OF DEALING OR OF PERFORMANCE, CUSTOM OR USAGE OF TRADE. Seller's obligations do not cover normal wear and tear or deterioration, defects in or damage to any goods resulting from improper installation, accident or any utilization, maintenance, repair or modification of the goods, or any use that is inconsistent with Seller's instructions as to the storage, installation, commissioning or use of the goods or the designed capabilities of the goods or that, in its sole judgment, the performance or reliability thereof is adversely affected thereby, or which is subjected to abuse, mishandling, misuse or neglect or any damage caused by connections, interfacing or use in unforeseen or unintended environments or any other cause not the sole fault of Seller, and shall be at Buyer's expense. Seller's warranty is contingent upon the accuracy of all information provided by Buyer. Any changes to or inaccuracies in any information or data provided by Buyer voids this warranty. Seller does not warrant that the operation of the goods will be uninterrupted or error-free, that the functions of the goods will meet Buyer's or its customer's requirements unless specifically agreed to, or that the goods will operate in combination with other products selected by Buyer or Buyer's customer for its use.

The terms of this warranty may only be modified by a special warranty document signed by a Director, General Manager or Vice President of Donaldson. To ensure proper operational performance of your equipment, use only genuine Donaldson replacement parts.

**This Product is provided subject to and conditioned upon Donaldson's Terms of Sale ("Terms"), a current copy of which is located at [termsofsale.donaldson.com](http://termsofsale.donaldson.com). These Terms are incorporated herein by reference. By purchasing or using this Product, the user accepts these Terms. The Terms are available on our website or by calling our customer service line at 1-800-365-1331.**

Significantly improve the performance of your collector with genuine Donaldson Torit replacement filters and parts. **Call Donaldson Torit at 800-365-1331.**

**Important Notice**

Many factors beyond the control of Donaldson can affect the use and performance of Donaldson products in a particular application, including the conditions under which the product is used. Since these factors are uniquely within the user's knowledge and control, it is essential the user evaluate the products to determine whether the product is fit for the particular purpose and suitable for the user's application. All products, product specifications, availability and data are subject to change without notice, and may vary by region or country.



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