# Donaldson.

# Installation and Operation Manual with Replacement Parts List

#### TORIT DUST COLLECTOR MODEL PJD

Includes Installation, Operation, and Service Instructions; Replacement Parts List



### 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, and 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 recommended 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, except on special order.
- To ensure optimum collector performance, always use Torit-Built<sup>®</sup> replacement filters.

# ATTENTION

Portions of your Torit baghouse, including the clean and dirty chambers of the baghouse, may be considered "OSHA Permit Required Confined Spaces."

OSHA Regulations, found in the Code of Federal Regulations, 29 CFR Section 1910.146 control the entry of "confined spaces." Please refer to this regulation to determine if your use of the baghouse requires a permit program.

Methods of determining "acceptable entry conditions" will vary depending upon the application and the type of dust being collected. In some cases, a visual inspection of airborne dust in the baghouse may be sufficient. In other cases, chemical tests may be necessary to insure safe entry and occupancy.

Torit recommends that employers follow safe work practices during installation and use of all dust collection equipment. This includes following applicable OSHA regulations and any other applicable local, state, or federal laws.

Copies of OSHA Regulations can be obtained from your local OSHA office or:

Superintendent of Documents US Government Printing Office Washington D.C. 20402 Phone: (202) 783-3238

As always, if you have any questions about your Torit dust collector, do not hesitate to contact your local sales representative or the Torit headquarters office.

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Torit is the leading designer and manufacturer of dust collector systems for the control of industrial air pollution. Its systems are designed to help reduce occupational hazards, lengthen machine life, reduce in-plant maintenance requirements, and improve product quality.

#### **Data Sheet**

Customer Name			
Address			
Shipping Date	_ Installation Date		
Model Numbe <u>r</u>	Serial Number		
Filter Medium			
Accessories			
Other			

#### 1.0 Introduction

#### 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

During normal operation, dust laden air enters the PJD hopper inlet section (below the filter tubes), where a baffle plate directs the heavier particles directly into the pyramid hopper. The lighter (dust) particles pass upward into the tube section. The dust is collected on the outside surfaces of each filter tube, where it forms a cake that aids in filtering efficiency. Filtered (clean) air passes through each filter tube into the clean air plenum, then discharged through the clean air outlet.

During filter tube cleaning, compressed air is discharged from an air manifold into the cleaning blowpipes. The open and close time of



Figure 1 PJD Dust Collector Operational Schematic

each air valve is controlled by a solid-state timer that energizes each pilot solenoid valve and opens the air valve. When an air diaphragm valve is open, high pressure air is directed through the blowpipe and discharged into each filter tube, forcing the collected dust to fall from the exterior of the tubes into the hopper below.

#### 2.0 Installation

#### 2.1 Inspection

The PJD dust collector is shipped with the legs disassembled. Also, the hopper, filter tubes, frames, and miscellaneous gauges are shipped separate from the major dust collector components.

A packing list is enclosed with each dust collector. If there are any questions about completeness of a shipment, or if there is obvious damage to packaged parts, notify the carrier immediately. Also, any damage to any section of the shipment should be noted on the carrier's Bill of Lading.

A crane is recommended for unloading, assembly, and installation of the dust collector. Before unloading major components, such as clean air plenum and hopper, check inside for smaller items (gauges and boxes) that could be damaged if not removed first. Unload components in a location that allows for parts identification and assembly. The filter tubes should be stored in a dry, rodent-proof area until ready for installation.

#### 2.2 Preinstallation

The dust collector is usually mounted on a reinforced concrete foundation. Roof mounting is also possible. When calculating the load for foundation or roof mounting, the weight of the dust collector, material collected, and all auxiliary equipment must be considered, together with wind and seismic loads. See Specification Control Drawing for dust collector weight.

#### CAUTION

Location must be clear of all obstructions such as utility lines or roof overhang, as a crane is used to move the collector into position.

To avoid delay, install foundation in the proper location, with particular attention given to anchor bolt location. Anchor bolts must extend at least 1-3/4" above foundation. The collector should be located with consideration for emptying hopper, shortest run for location of duct work, electrical/air connections, explosion venting, and maintenance. In the case of hazardous dust, consult with local authorities for the location of the unit.

#### 2.3 Assembly of Standard Equipment

#### 2.3.1 General Safety Precautions

- 1. Be certain that crane has sufficient capacity to lift sections, subassemblies, and complete units (if that applies). Check weights and dimensions of dust collector components on specification drawings furnished by Torit. Spreader bars are recommended between lifting cables; shallow cable angles should be avoided.
- 2. No person shall operate crane or other erection equipment except those qualified by training and experience.
- 3. Do not install during gusty or heavy winds.
- 4. Note location of adjacent structures, power lines, traffic, unstable ground and ground obstacles in the erection area.
- 5. Never swing loads over personnel.
- 6. Use conventional hand signals for crane operators.
- 7. Always consider electrical lines to be live (hot).
- 8. Provide an observer to assist crane operator for periods of impaired visibility.
- 9. Refer to applicable OSHA regulations and local rules in using cranes, forklifts, and other erection equipment.
- 10. Make liberal use of drift pins to align holes in section flanges during assembly.
- 11. Wear appropriate safety gear, including hard hats and safety glasses.

2.3.2 Erection (Major Collector Components)

#### CAUTION

- Do not disconnect crane until the lifted component is securely fastened to its connection point.
- If lifting lugs are bent while erecting the unit to an upright position, they must be replaced prior to any further erection.
- Connect lifting slings to all the lifting lugs. Distribute loads equally. Use clevices, not hooks, on lifting sling. Use spreader bars on lifting sling.

The dust collector may be shipped disassembled. See the specification drawing for correct orientation and location of components.

#### NOTE

All flanged connections of components providing air seals (including clean air plenum and hopper) must be sealed before assembly with sealant as shown in Figure 2 Sealing Detail (unless factory assembled). Seal with 1/4" diameter sealant (8PP-05097-00).



Figure 2 Sealing Detail The following general procedure is recommended for assembly:

- 1. With pyramid hopper inverted and resting on 4 x 4's, install support leg brackets with fasteners provided (and as shown on drawings).
- 2. Referring to assembly drawing, install support legs to support leg brackets.

#### NOTE

Do not tighten fasteners until support structure is secured to foundation (if unit is factory assembled, legs must be attached to unit prior to erection).

- Assemble cross braces per assembly drawing. On factory assembled units, install the filter tubes now. See Figure 3 Filter Tube Installation and Step 5.
- 4. Hoist hopper support assembly and securely fasten it to support platform or foundation.

#### CAUTION

Securely tighten all support leg and cross brace fasteners before disconnecting crane.

- 5. Install filter tubes (see Figure 3 Filter Tube Installation).
  - a. The PJD filter tubes and frames are installed from the bottom side of the tubesheet. To install the assembly, slide the filter tube over the cage as far as it will go.
  - b. Fold the excess filter medium over the top edge of the frame.

- c. Slide the hose clamp approximately three (3) inches over the top of the filter tube, but do not tighten.
- d. Insert the filter tube and frame assembly over the venturi (on the bottom of the tubesheet) and push up until the knurled section of the frame top snaps into the matching groove on the venturi.
- e. Slide the hose clamp over the collar on top of the cage and tighten.

#### NOTE

- Installation of the filter tubes and cage (for all models) can be performed after the entire dust collector is assembled.
- Formed brackets are provided on the inside cabinet walls to create ledges to support planking for installation (and removal) of filter tubes.
- A service platform which hangs on the doorway frame is available to further aid in this procedure.



Figure 3 Filter Tube Installation

(Steps 6 and 7 below do not apply to factory assembled units.)

- 6. Apply sealant to hopper flange, and hoist clean air plenum/tube section assembly over hopper support assembly.
- 7. Using drift pins, assemble plenum to hopper flange with the fasteners provided.
- 8. Install ladders, platforms, and gauges.
- 9. Install blower and inlet/outlet ducting as required.
- 10. Install electrical and plant air supply components as discussed in next section.

#### 2.4 Electrical

#### 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.

#### 2.4.1 Solid-State Timer Installation

Install a proper-sized starter with low voltage control circuit, conduit, and wires for blower motor. See Figure 4 Dust Collector Timer Wiring and Figure 5 Suggested Optional Wiring.

Mount the solid-state control timer box near starter, or at a convenient location for accessibility and maintenance. Open up enclosure housing timer. Wiring between terminals 1 to 10 and the solenoid valves is random, except as noted on separate wiring diagram. Some or all of the positions may be active. The timer panel has a jumper wire with a snapon connector. This jumper must be fastened to the highest numbered position that is active. For example, if the first six (6) positions on the screw terminals are all active, the jumper must be connected to number 6.

The timer is factory set. One is ON time, which sets the duration (width) of the pulse. This is set between 0.100 and 0.125 seconds.

The OFF time setting adjusts the time between pulses. This is set at 10 seconds.

#### NOTE

Do not attempt to adjust the ON time or OFF time. These values are factory-set for optimum performance of pulsing system and minimum compressed air usage.



Figure 4 Dust Collector Timer Wiring



#### Figure 5 Suggested Optional Wiring

2.4.2 Solid-State Timer Specifications

#### NOTE

The solid-state timer control requires a low voltage (120V) control circuit in fan starter to be supplied by others.

**OPERATING LOGIC:** Input power is applied to L1 and L2 of the timer control circuit board. which is in parallel with the low voltage (120/60/1) coil of the fan magnetic starter. Upon fan start up, power is supplied to the control board, and the preset OFF time is initiated. At the end of the OFF time, the control energizes a solenoid that provides the cleaning pulse for one row of filter tubes, and then steps to the next segment (see Figure 6 Operating Logic Diagram). This cycle is continuous unless an auxiliary control, such as a pressure switch, is used to control the timer. When all of the available outputs are not required, programming the control for fewer outputs is accomplished by relocating the program selection jumper.

**INPUT:** 105-135 VAC, 50-60 Hz.

**OUTPUT:** Type - solid-state switch. Rating - 200 watts maximum load per output.

**PULSE WIDTH:** Factory set at 100 milliseconds.

**OFF TIME:** Adjustable - 1 to 1.5 seconds minimum; 30 to 33 seconds maximum.

**OPERATING TEMPERATURE RANGE:** -40 to +150° F.

**TRANSIENT VOLTAGE PROTECTION:** 1000 volts for 8ms, 1% duty cycle.

#### 2.5 Air Supply

Clean, dry air of sufficient volume and pressure is vital for proper operation of the dust collector cleaning system. Air lubricators should NOT be used on the plant air supply to the dust collector. If the dust collector is located outdoors in below freezing temperatures, a desiccant air dryer may be required to assure an air supply that is dry enough to prevent the diaphragm and solenoid valves from freezing open or closed.

#### 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 filters will result in poor cleaning, cleaning valve failure, and/or poor collector performance.
- Purge compressed air lines to remove debris before connecting to the compressed air manifold on the PJD collector.

The air volume and pressure required for filter tube cleaning appears on the specification drawings. Unless otherwise stated, the air manifold pressure must be 90-95 psig.

#### NOTE

The air manifold pressure is not necessarily the same as the air compressor discharge pressure.

#### CAUTION

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

Before connecting air supply line to dust collector air manifold, turn on compressor and open air valve for short time to clean line of debris.

#### 3.0 Operation

- 1. Turn on air supply to air manifold and adjust pressure to 90-95 psig. Experience indicates 90 psig to be the most typical setting for satisfactory cleaning performance. See Section 2.5 Air Supply.
- Turn on hopper discharge system (where so equipped and if on separate control). Hopper discharge system must always be operating while dust collector is in operation.

#### CAUTION

Check to be sure air exhaust plenum is free of tools, debris, etc. while checking fan rotation. Stand clear of exhaust.

- 3. Turn on blower. At initial start-up, visually check fan rotation to be sure it is correct. Never look into blower discharge while blower is running. Proper fan rotation is extremely important. Even if the fan is running the wrong direction, it will deliver approximately 40% of its rated air volume, but it will require more than its rated horsepower. Reverse any two leads (3 phase only) on the load side of the blower motor starter to reverse fan rotation.
- 4. Adjust for proper airflow with volume control damper (if so equipped).



**Operating Logic Diagram** 

5. Check operation of the solenoid valves. These valves should open and close continuously, with factory preset dwell between each pulse. Make sure the solenoid exhaust vents are open (with plastic caps removed, if applicable).

#### NOTE

If a Photohelic or similar remote control device is used as an internal control, valves will pulse only when pressure reaches setpoint.

6. Measure initial pressure drop and start process creating dust. Pressure drop should start to rise. Monitor pressure drop. Equilibrium  $\Delta P^*$  is usually 3-to-4 inches on Magnehelic gage for seasoned filters, while 1-to-6 inches is considered normal. Contact your Torit representative before making any adjustments.

#### NOTE

- DO NOT increase the air pressure above 100 psig. Filter damage may result.
- Less than 3 seconds between pulses will cause lack of compressed air supply to manifold and a loss of cleaning pressure.
- DO NOT increase or decrease the ontime length of pulses. Longer pulses do not aid cleaning, they simply waste compressed air and shorten filter life. Shorter pulses will not deliver enough energy to clean the filters.

#### 4.0 Maintenance

The PJD dust collector is relatively maintenance-free.

Check the following items weekly:

- 1. Pressure drop (ranging from 1 to 6 "wg)
- 2. Air Pressure (90-95 psig at air manifold)

#### CAUTION

- Compressed air can be dangerous. Before attempting service or internal inspection, shut off plant air supply to dust collector, and depressurize air manifold.
- Disconnect and lock out electric power to dust collector, fan and rotary valve.
- Do not operate dust collector with inspection or access doors removed.

Check the following items every 3-to-4 months:

3. Condition of the clean air section for dust

There should be no dust accumulation on the tubesheet. If dust is present, check the surrounding filter tubes for damage.

- 4. Proper operation of solenoid and diaphragm valves
- 5. Seals on door

Adjust or replace the seals as necessary.

#### 4.1 Special Cold Weather Provisions

In very cold weather, especially with wind, small amounts of moisture can freeze a diaphragm valve open or shut off the compressed air supply.

The PJD design allows easy enclosure of the valves and manifold, or installation of a solenoid heater. The PJD solenoid valves are located outside of the unit. This design allows easy enclosure of the valves and manifold, or installation of a heater to avoid freezing. Under cold weather conditions, it is even more vital that the air supply be kept as dry as possible.

\*  $\Delta P$  = Pressure drop across filter elements in inches water gage.

### **5.0 Troubleshooting Guide**

PROBLEM	CAUSE	COMMENTS	REMEDY
High pressure drop (or rising pressure drop)	1. Moisture in airstream.	1. Rust is visible.	1. Raise temperature of air above dew point, or install dryer.
	2. One or more rows of tubes not cleaning.	2. Feel exhaust port of corresponding solenoid valve.	2. Check timer and solenoid valve operation.
	3. Low compressed air pressure.	3. Valve may be stuck open or compressor too small.	3. Look for leak in valve system; enlarge air supply capacity.
Dusting at air outlet	1. Torn tube.	1. Inspect tubes with flashlight.	1. Replace torn tube.
	2. Improper filter installation.	2. Same as above.	2. Install tube correctly.
Erratic timing	1. SCR transistors damaged.	1. Look for voltage spikes on control line.	1. Replace timer and install filter to protect timer board.
	2. Temperature below rating.	2. Minimum operation -40° F.	2. Place heater in control enclosure.
Hopper not emptying	1. Airlock overload	1. May be obstructed.	1. Remove obstruction.
		2. Ice in airlock.	2. Heat trace airlock especially if it occurs after down time in winter months.
Poor (low) suction		1. Fan running backward.	1. Change any two hot leads.
		2. Obstructed or plugged inlet.	2. Clear inlet.
		3. Dirty (fouled) bags.	3. Replace bags.



Figure 7 Basic Collector Exploded View





Figure 11 Leg Assembly

Figure 12 Legs to Hopper Detail

## **Replacement Parts List**

Ref No	Part No	Description	Model
1	8PP-19045-00	Clamp, Hose 5"	
2	8PP-28318-01	Cage, Tube, 4.50 Dia x 6 Ft	All
2	8PP-28318-02	Cage, Tube, 4.50 Dia x 8 Ft	
2	8PP-28318-03	Cage, Tube, 4.50 Dia x 10 Ft	
3	P030673	Filter Bag, 6 Ft. Dura-Life Felt 10.5 oz	
3	P030674	Filter Bag, 6 Ft. Dura-Life Felt 10.5 oz w/Gnd Wi	ire 9, 16, 25, 36
3	4MA-28338-01	Filter Bag, 6 Ft. Poly Felt Untrtd	
3	4MA-28338-02	Filter Bag, 6 Ft. Poly Felt Untrtd w/Gnd	
3	4MA-28338-03	Filter Bag, 6 Ft. Poly Felt Silicone Trtd	
3	4MA-28338-04	Filter Bag, 6 Ft. Poly Felt Glazed	
3	4MA-28338-05	Filter Bag, 6 Ft. Polypropylene Felt	
3	4MA-28338-06	Filter Bag, 6 Ft. Acrylic Felt Untrtd	
3	4MA-28338-07	Filter Bag, 6 Ft. Poly Felt Silicone Trtd	
3	4MA-28338-08	Filter Bag, 6 Ft. Nomex Felt	
3	4MA-28338-09	Filter Bag, 6 Ft. Poly Felt Untrtd Singed	
3	P030675	Filter Bag, 8 Ft. Dura-Life Felt 10.5 oz	All
3	P030676	Filter Bag, 8 Ft. Dura-Life Felt 10.5 oz w/Gnd W	ire All
3	4MA-28338-10	Filter Bag, 8 Ft. Poly Felt Untrtd	All
3	4MA-28338-11	Filter Bag, 8 Ft. Poly Felt Untrtd w/Gnd	All
3	4MA-28338-12	Filter Bag, 8 Ft. Poly Felt Silicone Trtd	All
3	4MA-28338-13	Filter Bag, 8 Ft. Poly Felt Glazed	All
3	4MA-28338-14	Filter Bag, 8 Ft. Polypropylene Felt	All
3	4MA-28338-15	Filter Bag, 8 Ft. Acrylic Felt Untrtd	All
3	4MA-28338-16	Filter Bag, 8 Ft. Poly Felt Silicone Trtd	All
3	4MA-28338-17	Filter Bag, 8 Ft. Nomex Flet	All
3	4MA-28338-18	Filter Bag, 8 Ft. Poly Felt Untrtd Singed	All
3	P030677	Filter Bag, 10 Ft. Dura-Life Felt 10.5 oz	
3	P030678	Filter Bag, 10 Ft. Dura-Life Felt 10.5 oz w/Gnd V	Vire 16, 49-100
3	4MA-28338-19	Filter Bag, 10 Ft. Poly Felt Untrtd	
3	4MA-28338-20	Filter Bag, 10 Ft. Poly Felt Untrtd w/Gnd	
3	4MA-28338-21	Filter Bag, 10 Ft. Poly Felt Silicone Trtd	
3	4MA-28338-22	Filter Bag, 10 Ft. Poly Felt Glazed	
3	4MA-28338-23	Filter Bag, 10 Ft. Polypropylene Flet	
3	4MA-28338-24	Filter Bag, 10 Ft. Acrylic Felt Untrtd	
3	4MA-28338-25	Filter Bag, 10 Ft.Poly Felt Silicone 1rtd	
3	4MA-28338-26	Filter Bag, 10 Ft. Nomex Felt	
3	4MA-28338-2/	Filter Bag, 10 Ft. Poly Felt Untrtd Singed	

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800-365-1331

## **Replacement Parts List**

Ref	Part	Description	Model
	NU		
4	8PP-25371-00	Valve 3/4" RCA 20 DD	
4	8PP-24277-00	Valve, 1" RCA 25 DD	
4	8PP-AD31930-01	Valve, 1" RCAC25DD3000	
	8PP-23536-00	Valve Repair Kit, Goven RCA25 1"	49-100
	8PP-AD31931-01	Valve Repair Kit, Asco RCAC25DD	
	3EA-28859-01	Valve Seal and Retainer Kit RCA25 1"	49-100
	8PP-28857-01	Valve Seal RCAC25DD	
	8PP-AD31392-01	Valve Seal Nut RCAC25DD	49-100
5	8PP-48948-02	Enclosure NEMA 43-3D2 Valve	9
5	8PP-48948-03	Enclosure, NEMA 44-3D2 Valve	16
5	8PP-48948-04	Enclosure, NEMA 4 5-3D2 Valve	
5	8PP-49384-05	Enclosure, NEMA 46-3D2 Valve	
5	8PP-49384-07	Enclosure, NEMA 43-5D2 Valve	
5	8PP-49384-09	Enclosure, NEMA 44-5D2 Valve	
5	8PP-49385-04	Enclosure, NEMA 45-5D2 Valve	
5	8PP-49385-05	Enclosure, NEMA 4	
5	8PP-47505-04	Enclosure, NEMA 94-5D2 Valve	16, 49, 64, 81
5	8PP-47505-05	Enclosure, NEMA 95-5D2 Valve	
5	8PP-47505-06	Enclosure, NEMA 93-5D2 Valve	
6	8PP-28356-00	Gasket, Neoprene, 1/2 x 1 PSA (13 Ft)	
7	8PP-28238-00	Handle. Ball 1/2	All
8	8PP-28245-00	Bolt, Eye 1/2	All

NOTE: For NEMA 7 enclosures, contact Donaldson Company, Inc. for applications support.

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Parts Drawing 3, Delta P Control Assembly

ltem	Part Number	Description	Model
3	3EA-75368-02	Delta P Control Assembly	All
3-1	8PP-49992-02	Delta P Control in NEMA 4 Weatherproof Enclosure	All
3-2	5PM-23342-00	Plastic Tubing	All
3-3	8PP-16477-00	1/8-in NPT x 90° Plastic Male Elbow	All
3-4	8PP-21574-00	1/8-in NPT x 1/8-in FPT Adapter	All
3-5	8PP-18463-00	1/8-in NPT Female Coupling	All
3-6	8PP-23245-01	Static Pressure Tee, Brass	All
3-7	8PP-23260-00	1/8-in NPT x 90° Brass Female Elbow	All



Parts Drawing 4, Delta P Control with Timer Assembly

ltem	Part Number	Description	Model
4	3EA-75369-02	Delta P Control Assembly with 3-Pin Timer	PJD 9
	3EA-75369-04	Delta P Control Assembly with 6-Pin Timer	PJD 16, 25, and 36
	3EA-75369-06	Delta P Control Assembly with 10-Pin Timer	PJD 49, 64, 81, and 100
4-1	8PP-70446-01	Delta P Control with 3-Pin Timer	PJD 9
	8PP-70447-01	Delta P Control with 6-Pin Timer	PJD 16, 25, and 36
	8PP-70448-01	Delta P Control with 10-Pin Timer	PJD 49, 64, 81, and 100
4-2	5PM-23342-00	Plastic Tubing	All
4-3	8PP-16477-00	1/8-in NPT x 90° Plastic Male Elbow	All
4-4	8PP-21574-00	1/8-in NPT x 1/8-in FPT Adapter	All
4-5	8PP-18463-00	1/8-in NPT Female Coupling	All
4-6	8PP-23245-01	Static Pressure Tee, Brass	All
4-7	8PP-23260-00	1/8-in NPT x 90° Brass Female Elbow	All

#### **Limited Warranty**

Donaldson<sup>®</sup> warrants to the original purchaser that the major structural components of the goods will be free from defects in materials and workmanship for ten (10) years from the date of shipment, if properly installed, maintained and operated under normal conditions. Donaldson warrants all other Donaldson built components and accessories including Donaldson Airlocks, TBI Fans, TRB Fans, Fume Collector products and Donaldson built Afterfilter housings for twelve (12) months from date of shipment. Donaldson warrants Donaldson built filter elements to be free from defects in materials and workmanship for eighteen (18) months from date of shipment. Donaldson does not warrant against damages due to corrosion, abrasion, normal wear and tear, product modification, or product misapplication. Donaldson also makes no warranty whatsoever as to any goods manufactured or supplied by others including electric motors, fans and control components. After Donaldson has been given adequate opportunity to remedy any defects in material or workmanship, Donaldson retains the sole option to accept return of the goods, with freight paid by the purchaser, and to refund the purchase price for the goods after confirming the goods are returned undamaged and in usable condition. Such a refund will be in the full extent of Donaldson's liability. Donaldson shall not be liable for any other costs, expenses or damages whether direct, indirect, special, incidental, consequential or otherwise. The terms of this warranty may be modified only by a special warranty document signed by a Director, General Manager or Vice President of Donaldson. Failure to use genuine Donaldson replacement parts may void this warranty. THERE EXIST NO OTHER REPRESENTATIONS, WARRANTIES OR GUARANTEES EXCEPT AS STATED IN THIS PARAGRAPH AND ALL OTHER WARRANTIES INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHETHER EXPRESS OR IMPLIED ARE HEREBY EXPRESSLY EXCLUDED AND DISCLAIMED.

#### **Parts and Service**

For genuine Donaldson Torit replacement filters and parts, call the Parts Express Line

#### 800-365-1331 USA 800-343-3639 within Mexico

#### www.donaldsontorit.com

For faster service, have unit's model and serial number, part number, description, and quantity available.





Donaldson Company, Inc. Industrial Air Filtration P.O. Box 1299 Minneapolis, MN 55440-1299 dustmktg@mail.donaldson.com Donaldson Company, Inc. is the leading designer and manufacturer of dust, mist, and fume collection equipment used to control industrial-air pollutants. Our equipment is designed to help reduce occupational hazards, lengthen machine life, reduce in-plant maintenance requirements, and improve product quality.