

# Installation and Operation Manual

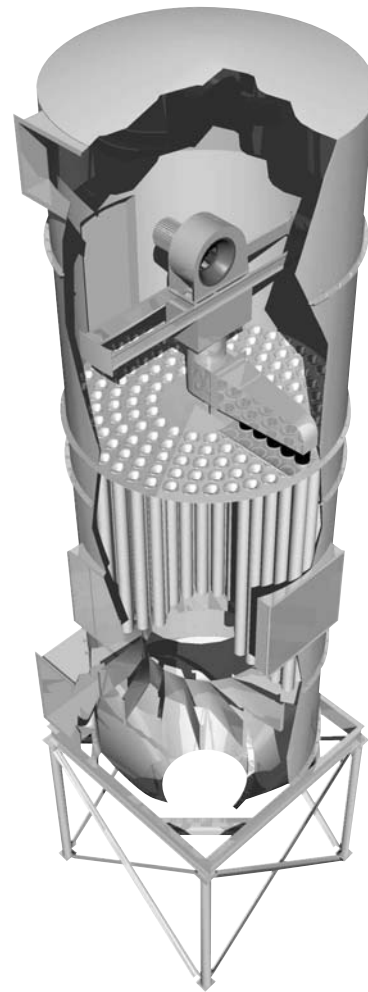
## Reverse Air Filters

### Model LP Series



Throughout this manual statements indicating precautions necessary to avoid equipment failure are referenced in a **Note**. Statements indicating potential hazards that could result in *personal injury* or *property damage* are referenced in a **CAUTION!** box.

*Illustrations are for reference only, as actual product may vary.*



This manual is property of the owner. Leave with the unit when set-up and start-up are complete. Donaldson Company reserves the right to change design and specifications without prior notice.



## **CAUTION!**

### **Application of Dust Control Equipment**

- Combustible materials such as buffing lint, paper, wood, aluminum or steel dust, weld fume, or flammable solvents represent fire or explosion hazards. Use special care when selecting and operating all dust or fume collection equipment when combustible materials are present to protect workers and property from damage due to fire and/or explosion. Consult and comply with National and Local Codes relating to fire or explosion and all other appropriate codes when determining the location and operation of dust or fume collection equipment.
- When combustible materials are present, consult with an installer of fire extinguishing systems familiar with these types of fire hazards and local fire codes for recommendations and installation of fire extinguishing and explosion protection systems. Donaldson Torit dust collection equipment is not equipped with fire extinguishing or explosion protection systems.
- DO NOT allow sparks, cigarettes or other burning objects to enter the hood or duct of any dust or fume control equipment as these may initiate a fire or explosion.
- For optimum collector performance, use only Donaldson Torit replacement parts.

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This manual contains specific precautionary statements relative to worker safety. Read thoroughly and comply as directed. Discuss the use and application of this equipment with a Donaldson Torit representative. Instruct all personnel on safe use and maintenance procedures.

## Data Sheet

Model Number _____	Serial Number _____
Ship Date _____	Installation Date _____
Customer Name _____	
Address _____	
_____	
Filter Type _____	
Accessories _____	
Other _____	

## INTRODUCTION

Thank you for purchasing a Donaldson Torit reverse air filter. Your new Donaldson Torit filter is built to the highest industry standards. Great care has been taken to design and manufacture a high quality, low maintenance product that is economical to use and maintain.

This manual is intended to assist in the installation, operation and maintenance of your filter. The instructions in this manual are general in nature and apply to a variety of models. Each situation dictates the need for any special precautions and it is the user's responsibility to ensure that adequate safety measures are employed in installation, operation and maintenance. As always, follow good safety practices around all equipment.

## SHIPPING AND RECEIVING

Donaldson Torit filters are shipped as completely assembled as transportation allows. Upon arrival inspect all components for damage that may have occurred during shipping. Check the bill of lading or packing list to verify the proper equipment and quantities. Should any discrepancies arise contact the carrier immediately.

All filters are equipped with lifting ears on the plenum (top) section. Nylon straps with clevises should be attached to all four lift ears and lifted using appropriate lifting equipment (i.e. crane). Units that are partially assembled should be off loaded using appropriate lifting equipment (i.e. crane, forklift) using nylon strapping and or wooden blocks to prevent damage to the filter.



### CAUTION!

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

## INSTALLATION

Filter units may require engineered footings and/or foundations. Prior to installation of filter consult local building codes for footing requirements.

### Preassembled Units

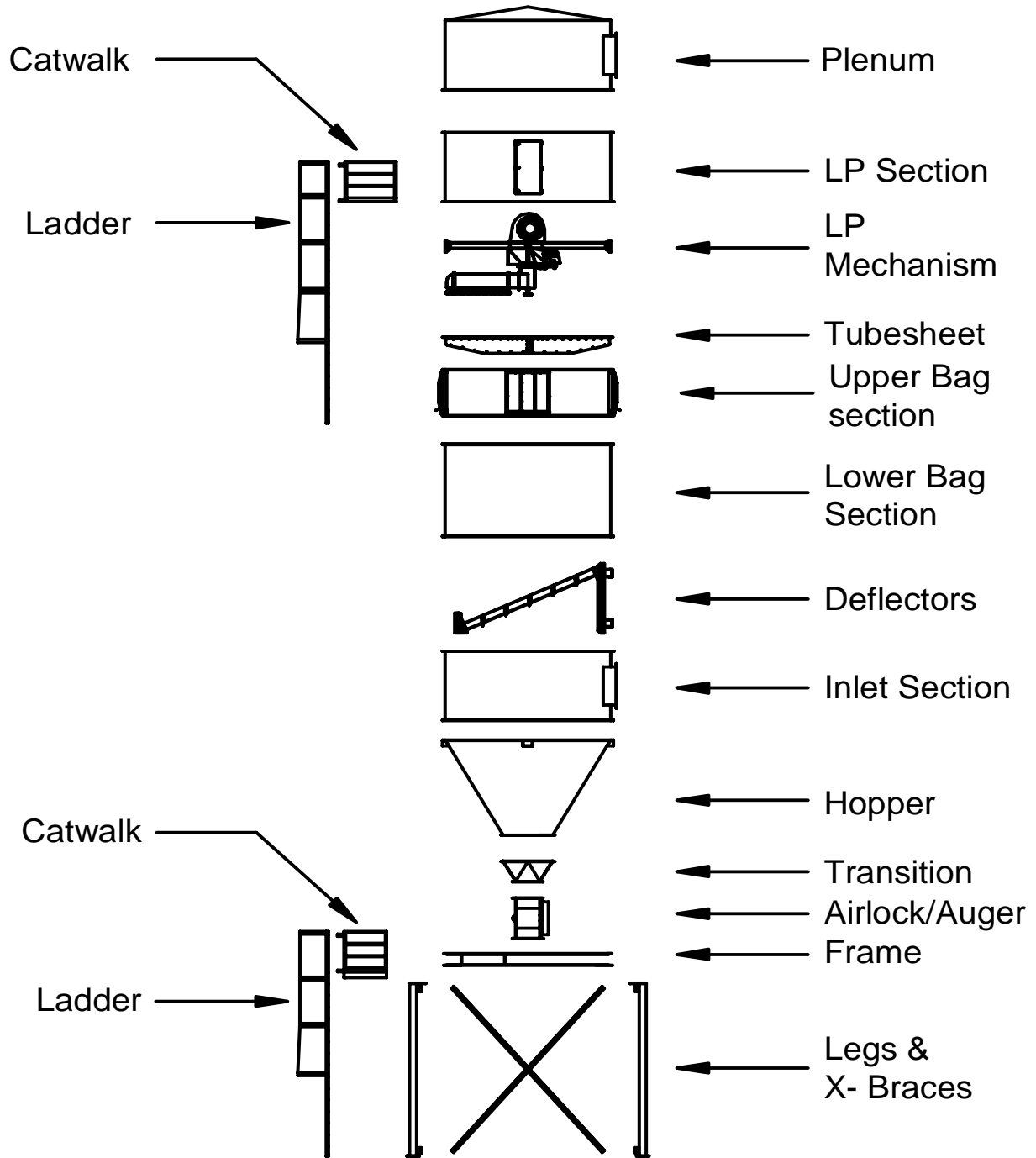
Filter units that arrive fully assembled can be lifted directly into final position. Anchor bolts should be installed and tightened before lifting equipment is disconnected from filter. All bolt connections should be checked and retightened if necessary.

Connect all ducting using RTV-silicone between all mating flanges. Make electrical connections. Connect magnehelic gauge per Figure 2. Install bags and cages per Figure 1.

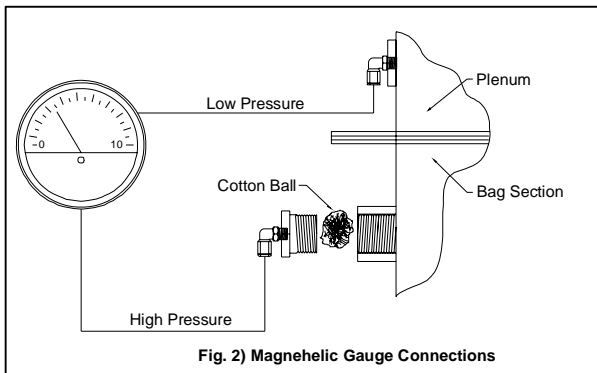
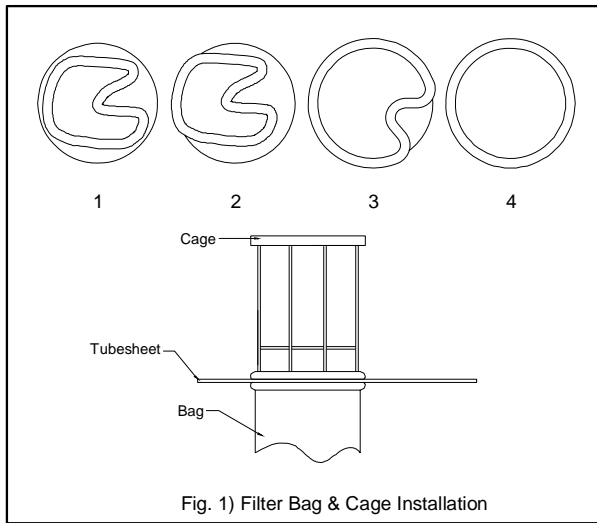
### Partially assembled Units

The degree of assembly upon arrival may vary on some units. The following steps are typical for assembling a filter.

- 1) Place hopper on level surface with product discharge flange up ( i.e. upside down)
- 2) Attach legs and cross braces with supplied hardware.
- 3) Using appropriate lifting equipment (i.e. crane) right the hopper and leg assembly and lift into final position. Secure to foundation. Check all connections, retighten if necessary.
- 4) Right inlet section if not already in righted position. Place a bead of RTV silicone on hopper top flange. Lift inlet onto hopper and secure with provided hardware.
- 5) Locate top bag section on level surface. Place a bead of RTV silicone on top flange. Lift tubesheet into position. Place a bead of RTV silicone on the top of the tubesheet.
- 6) Lift LP section onto tubesheet. Use provided bolts to secure flanges. Place a bead of RTV silicone on top flange.
- 7) Lift LP mechanism into LP section if not already installed. Secure with provided hardware.
- 8) Lift plenum onto LP section. Use provided bolts to secure flanges.
- 9) Locate bag section on level surface. Place a bead of RTV silicone on top flange. Lift plenum and LP section assembly onto bag section. Secure to bag section using supplied hardware. All bolts should be in place and tightened before attempting to lift plenum and bag section assembly.
- 10) Bags and cages can be installed at this time if so desired. Refer to illustration on page 4. Insert bag into tubesheet hole, fold snap band as shown. Place bag collar groove against hole edge and allow snap band to expand. Push the snap band until it pops into place. Insert cage.
- 11) Attach catwalk to LP section.
- 12) Place a bead of RTV silicone on inlet body flange. Lift Plenum and bag section assembly on to inlet. Install and tighten all hardware. Do not disconnect lifting equipment until all bolts are in place and tightened.
- 13) Lift ladder into place and secure with provided hardware.
- 14) Place a bead of RTV silicone on transition top flange. Lift transition under hopper and secure with provided hardware.
- 15) Place a bead of RTV silicone on airlock or airlock/auger top flange. Lift airlock or airlock/auger under transition and secure with provided hardware.
- 16) Make all electrical connections. Consult local building codes. All electrical connections inside the filter must be explosion proof.
- 17) Install bags and cages, if not done so in step 10.



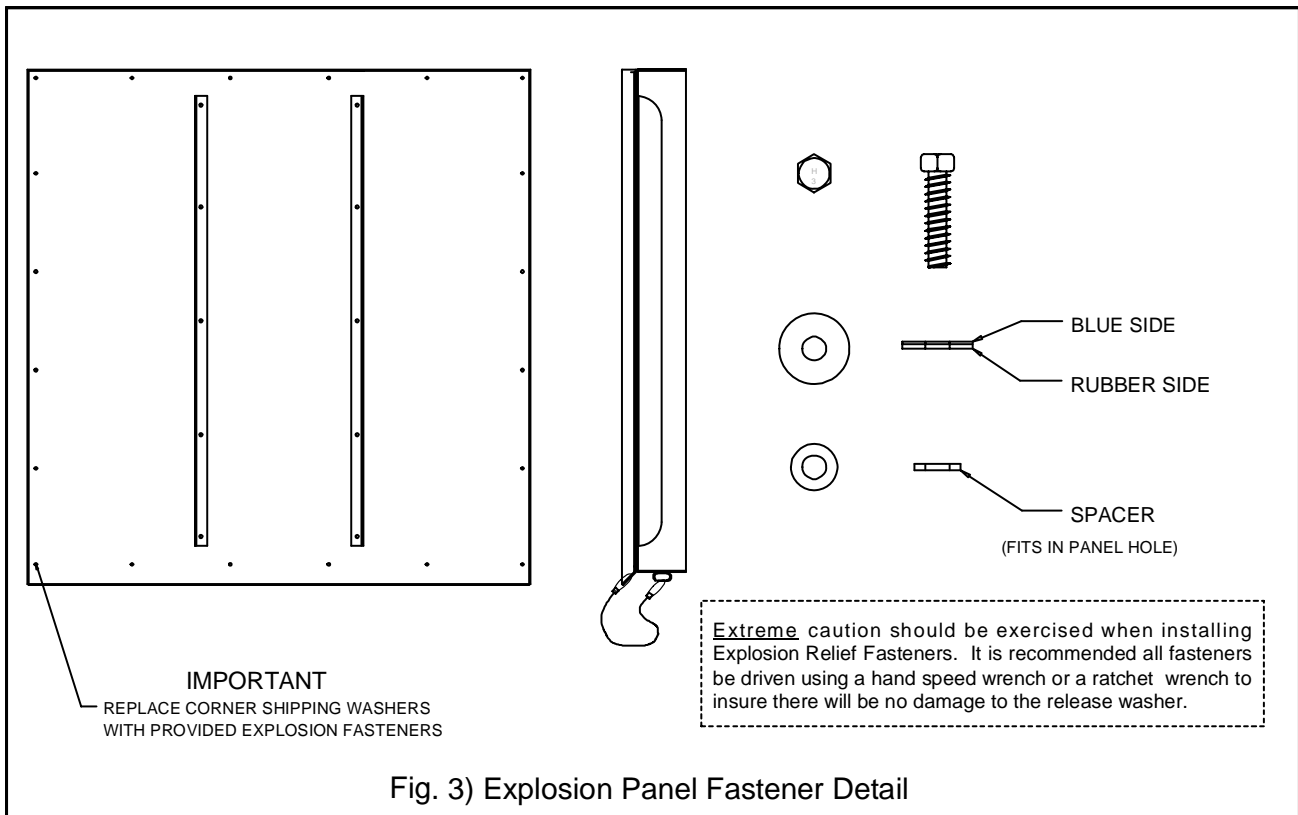
Typical LP Filter Assembly



## OPERATION

### Pre-Start-Up Checklist

- All bolt connections tightened.
- All electrical connections made.
- Magnehelic gauge connected.
- LP mechanism unobstructed. (i.e. no tools , lifting equip etc.)
- Bags and cages installed.
- Ducting slide gates set/ No obstructions in ducting.
- Filter access door(s) sealed.
- Product discharge gate or rotary air lock operational.
- Blower unobstructed and operational.



### Start up Sequence - Typical

- 1) Start rotary airlock (if applicable)
- 2) Start LP gear box motor.
- 3) Start LP fan.
- 4) Start main system fan
- 5) Start process equipment.

### Shut down Sequence - Typical

- 1) Stop process equipment. Allow filter to continue operating for 15-30 minutes.
- 2) Stop main system fan. Allow LP fan and gear box to continue running for 10-15 minutes.
- 3) Stop LP fan and gear box . Allow airlock to run for 15 min.
- 4) Stop airlock.

## MAINTENANCE

Donaldson Torit filters require little maintenance in most applications. Bags require cleaning or replacement on a periodic basis. The severity of the application will dictate the time interval for bag replacement.

The LP mechanism should be checked weekly to ensure proper operational status. Drive chain tension and lubrication should be monitored. Check LP gear box oil level every 3 months. Top off gear box with AGMA 8C or equivalent.

Check LP fan wheel for noise and or vibration. Check fan wheel set screw and tighten if necessary.

Models equipped with slave drive airlock refer to airlock manual for maintenance instructions.

Bolt connections should be checked for integrity on a bimonthly basis. Also check the structural support for any signs of rust or fatigue and take appropriate steps to correct any problems.

## TROUBLESHOOTING

Occasionally problems arise in dust control systems that require attention. Following are some tips for troubleshooting typical reverse air filter problems.

- 1) Monitor magnehelic gauge readings - in most applications the gauge will indicate 2" - 4" of static pressure drop.
- P) If pressure drop is consistently higher than 6" then the filter is either plugged or the LP mechanism is not functioning (i.e. LP fan or gear reducer are off or have failed)
- S) Check for excessive or unusual dust loading at the dust source. Check for proper flow at product discharge flange on filter hopper. Check operation of LP fan. Check operation of LP gear box and drive
- P) If the pressure drop is consistently below 2" then the cleaning interval can be lengthened or there is a broken bag. Usually a broken bag will be accompanied by excess particulates in the exhaust air stream.
- S) Check exhaust air stream for excess particulates. If found, shut filter system down and check for broken bag(s). Follow confined space procedures whenever servicing filter.

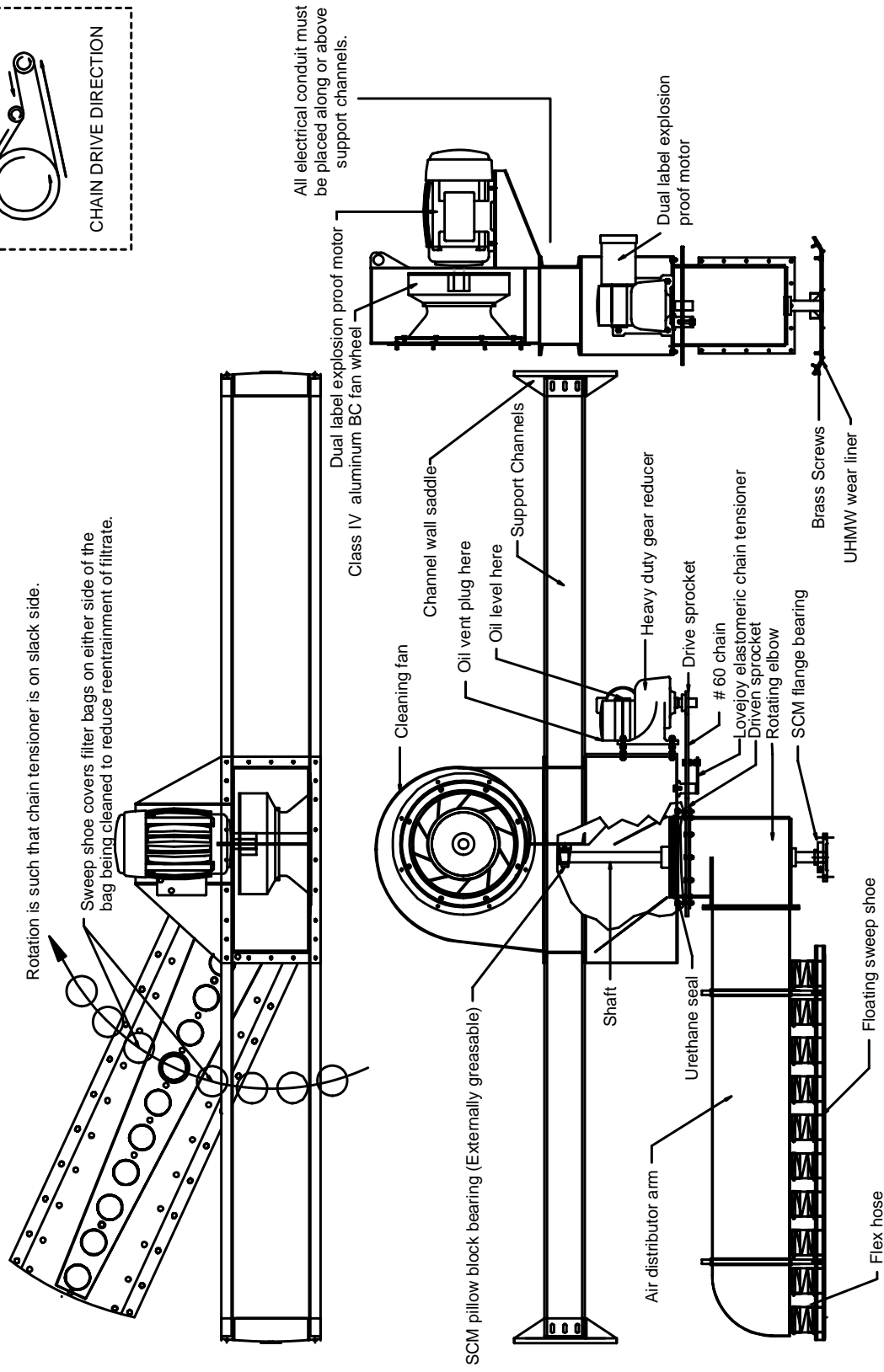


Check dust source for unusually low dust loading.

Some filter applications have third party timer sequencer panels that allow the LP mechanism to be turned on only when the static pressure reaches a preset level. If this is the case, then the interval between cleaning can be increased.



### LP Cleaning Mechanism



PHOTOCOPY THIS FORM

# PARTS ORDER FORM

**MAIL TO:** Donaldson Torit  
 Customer Service  
 5300 Claus Road  
 Riverbank, CA 95367

**OR**

**FAX TO:** (209)-869-0258

CUSTOMER NAME: \_\_\_\_\_

SHIPPING ADDRESS \_\_\_\_\_ BILLING ADDRESS: \_\_\_\_\_

MODEL NO. \_\_\_\_\_

SERIAL NO. \_\_\_\_\_

DESCRIPTION	QTY	DESCRIPTION	QTY
<input type="checkbox"/> BAG, TOP REMOVAL, 8 FT	<input type="checkbox"/>	<input type="checkbox"/> CAGE, TOP REMOVAL, 8 FT	<input type="checkbox"/>
<input type="checkbox"/> BAG, TOP REMOVAL, 10 FT	<input type="checkbox"/>	<input type="checkbox"/> CAGE, TOP REMOVAL, 10 FT	<input type="checkbox"/>
<input type="checkbox"/> BAG, TOP REMOVAL, 12 FT	<input type="checkbox"/>	<input type="checkbox"/> CAGE, TOP REMOVAL, 12 FT	<input type="checkbox"/>
<input type="checkbox"/> LP SEAL (1 SET)	<input type="checkbox"/>	<input type="checkbox"/> SLAVE DRIVE SHAFT	<input type="checkbox"/>
<input type="checkbox"/> LP DRIVE SPROCKET	<input type="checkbox"/>	<input type="checkbox"/> SLAVE DRIVE SPROCKET	<input type="checkbox"/>
<input type="checkbox"/> LP DRIVEN SPROCKET	<input type="checkbox"/>	<input type="checkbox"/> IDLER SPROCKET	<input type="checkbox"/>
<input type="checkbox"/> LP IDLER SPROCKET	<input type="checkbox"/>	<input type="checkbox"/> LP CHAIN W/ MASTER LINK	<input type="checkbox"/>
<input type="checkbox"/> LP GEAR BOX	<input type="checkbox"/>	<input type="checkbox"/> SLAVE DRIVE CHAIN W/ MASTER	<input type="checkbox"/>
<input type="checkbox"/> LP GEARBOX MOTOR	<input type="checkbox"/>	<input type="checkbox"/> EXPLOSION PANEL ONLY	<input type="checkbox"/>
<input type="checkbox"/> LP FAN WHEEL	<input type="checkbox"/>	<input type="checkbox"/> EXPLOSION PANEL FASTENERS	<input type="checkbox"/>
<input type="checkbox"/> LP FAN MOTOR	<input type="checkbox"/>	<input type="checkbox"/> PHOTOHELIC GAUGE	<input type="checkbox"/>
<input type="checkbox"/> LP UPPER BEARING	<input type="checkbox"/>	<input type="checkbox"/> MAGNEHELIC GAUGE 0-10"	<input type="checkbox"/>
<input type="checkbox"/> LP SHAFT	<input type="checkbox"/>	<input type="checkbox"/> HI-LEVEL INDICATOR	<input type="checkbox"/>



## The Donaldson Torit Warranty

Donaldson warrants to the original purchaser that the products will be free from defects in materials and workmanship for one (1) years from the date of shipment, if properly installed, maintained and operated under normal conditions. 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

**800-562-0072**

**[www.donaldsontorit.com/lmcwest](http://www.donaldsontorit.com/lmcwest)**

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



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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.