

Installation and Operation Manual

Rotary Airlocks

Models L-10-FT, L-10x20-FT, L-12-FT, L-12x24-FT, L-16-FT,
L-24-FT, L-36-FT



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 flexible tip airlock. Your new Donaldson Torit airlock 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 airlock. 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 airlocks are shipped completely assembled and ready for immediate installation. 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 airlocks should be lifted by the mounting flange using appropriate lifting equipment (i.e. crane, forklift) using nylon strapping and or wooden blocks to prevent damage to the airlock. Never lift airlock by motor or shaft.






CAUTION!

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

Safety First!

Read this before installing airlock.

The Donaldson Torit Airlock like all commercial equipment must be used correctly and with common sense. All installations must include guards, chutes or other devices on both the infeed and discharge sides of the airlock that will prevent anyone from reaching into the rotor. Failure to provide these devices will endanger personnel. Before servicing or inspecting turn off **and** lock out power to the airlock. Refer to **your** facilities's "LOCK OUT - TAG OUT" procedure. Many systems employ sequencing that may allow an airlock to start without warning. It is imperative that all service and inspection be performed with the power turned off **and** locked out. Failure to do so may cause serious injury or death.

 DANGER		 PELIGRO	
	<u>LOCK OUT POWER</u> BEFORE REMOVING ANY FLANGE COVER, GUARD OR INSPECTION PORT AND PRIOR TO ANY MAINTENANCE OR CLEANING		<u>DESCONECTE LE ELECTRICIDAD</u> ANTES DE REMOVER CUALQUIERA CUBIERTA DE FLANCHE, GUARDIA O CUBIERTAS DE INSPECCION, Y PARA HACER MANTENIMIENTO O LIMPIEZA

INSTALLATION

Donaldson Torit airlocks arrive fully assembled and can be installed immediately. Mating flanges must be able to support the load of the airlock and any material above the airlock. Place a bead of RTV silicon on flange mating surfaces prior to bolting into place. All holes in the flange must be used to ensure proper sealing and strength.

Airlock discharges that are not attached to spout, bins, or hoods, etc. must have a hand guard in place. Optional hand guards are available from Donaldson Torit.

Make electrical connections as required by local codes and the system into which the airlock is installed. Refer to motor nameplate for wiring schematic and electrical specifications.

Prior to shipping all Donaldson Torit airlocks are filled with the proper amount of oil in the reducer. Many are filled with synthetic lube and have internal expansion bladders and do not require service. Units w/ vent caps may experience some loss of oil during transit or may need to have the vent plug installed prior to start up. Check oil level in reducer and top off with the appropriate oil for your conditions. See table below.

AIR TEMP. °F	AGMA NO.
15-60	7C
50-125	8C

Gearbox Mfg.	Boston	Grove	US
Gearbox Type	700 Series	BMQ-Biscc	IRA or GWBP
Oil Type	Synthetic	Synthetic	Mineral
Brand Name	Kluber	Mobil	Mobil
Brand Number	Synth 6-460	SHC634	Extra Hecla Super Cly. Oil

Units not equipped with synthetic oil change twice a year.

Bearings are filled with grease at the factory and require only normal periodic relubrication with a good quality No. 2 grease. The drive chain is prelubricated at the factory and requires periodic relubrication with a good grade of non-detergent petroleum based oil. See table below.

AIR TEMP. °F	SAE WT
20 to 40	20
40 to 100	30
100 to 120	40
120 to 140	50

OPERATION

Pre-Start-Up Checklist

- All bolt connections tightened.
- All electrical connections made.
- Reducer oil level topped off and vent in place and operational.
- All guards in place.
- All obstructions in airlock in-feed and discharge removed (i.e. tools, lifting straps, etc.).
- Airlock rotation is not critical unless the airlock is equipped with a slave driven screw conveyor. On slave drive units screw rotation will dictate airlock rotation.



CAUTION!

- Keep hands clear from all inlet/outlet flanges and drive sprockets.
- Make sure drive guard is installed **prior** to operating valve.

Start up Sequence - Typical

- 1) Start rotary airlock
- 2) Start filter timer/sequencer (if applicable).
- 3) Start blower (if applicable).
- 4) Start process equipment.

Shut down Sequence - Typical

- 1) Stop process equipment. Allow filter to continue operating for 10-15 minutes (if applicable).
- 2) Stop blower (if applicable). Allow airlock and timer to continue running for 10-15 minutes.
- 3) Stop timer (if applicable) and air lock.

MAINTENANCE

Donaldson Torit airlocks require little maintenance in most applications. Periodic lubrication is required as outlined under "Installation". The severity of the application will dictate the time interval for relubrication and type of lubricant.

The airlock should be visually inspected for air leaks, obstructions and product flow daily or more frequently depending on product flow rate.

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.

Rotor Removal Procedure

Lock out and tag out electrical power!

Insure that there is no product above the airlock rotor that may spill if rotor is removed.

- 1) Loosen setscrews on flange bearing on side opposite chain guard.
- 2) Remove chain guard cover.
- 3) Remove master link and chain.
- 4) Remove setscrews in bushing on large sprocket. Note that the threads in these holes are on the sprocket only.
- 5) Insert setscrew(s) into removal hole(s). These holes have threads only on the bushing. Tighten the setscrew(s) to separate the bushing from the sprocket. Slide bushing off of shaft and remove sprocket.
- 6) Remove chain guard back plate bolts and swing backplate down pivoting on gearbox drive shaft.
- 7) Loosen setscrews on flange bearing on same side as chain guard.
- 8) Remove perimeter nuts and washers holding end plate to airlock housing.
- 9) There is silicone between the end plate and the housing along the perimeter. Using a putty knife or similar tool, work around the endplate to loosen it from the body.

- 10) Slide endplate and bearing off of shaft and set aside.
- 11) Slide rotor assembly out of airlock. The rotor is very heavy and should be secured with appropriate lifting straps and/or devices.
- 12) Rotor service should only be done on the ground or suitable work bench.
- 13) Re-install in reverse order.

See figures on next page to identify rotor assemblies.

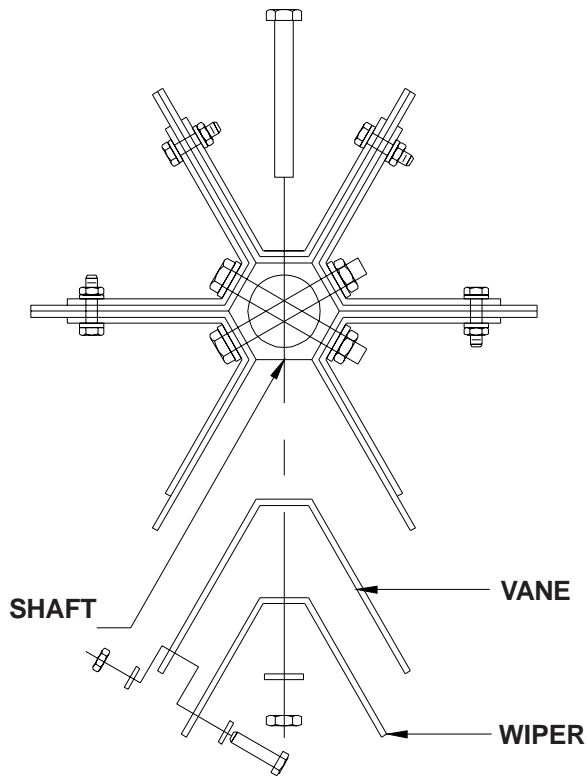
TROUBLESHOOTING

Occasionally problems arise in airlocks that require attention. Following are some tips for troubleshooting typical airlock problems. **Before** attempting to service the airlock follow all safety practices regarding "**Lock out and tag out**" of electrical equipment. Failure to do so may result in great bodily harm.

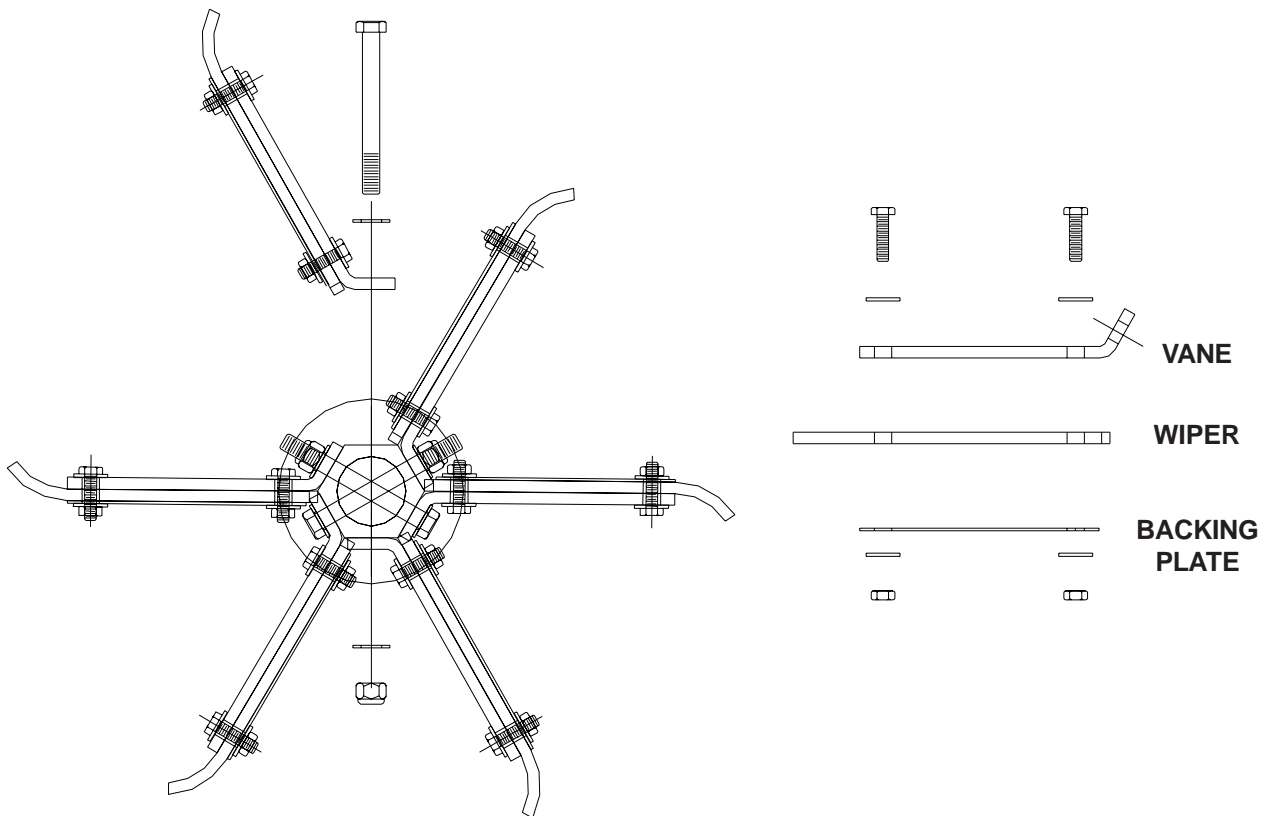
- 1) Monitor product flow at air lock discharge.
- P) If product flow is suddenly lower than expected or stops then:
 - S) Check for changes in product flow up stream.

Check for air leaks through airlock rotor. If air is pulled in through airlock then the rotor wipers are worn or damaged. Replace wipers.

Check for product bridging upstream. If bridging occurs check for changes in product consistency and or obstructions in hopper.
- 2) Monitor mechanical operation of airlock.
 - P) Motor is running and drive chain is not moving then:
 - S) Check reducer output shaft for smooth rotation. If no rotation or erratic rotation replace reducer assembly. If reducer output shaft rotation is smooth and sprockets do not rotate then check shaft keys. If rotor shaft rotates but vanes do not then rotor vane bolt failure is indicated. Replace bolts. Any time drive component failure is suspect, check rotor for obstructions and if found eliminate prior to restarting airlock.



STANDARD DUTY ROTOR ASSEMBLY



HEAVY DUTY ROTOR ASSEMBLY

PHOTOCOPY THIS FORM

PARTS ORDER FORM

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

OR

FAX TO: (209)-869-0258

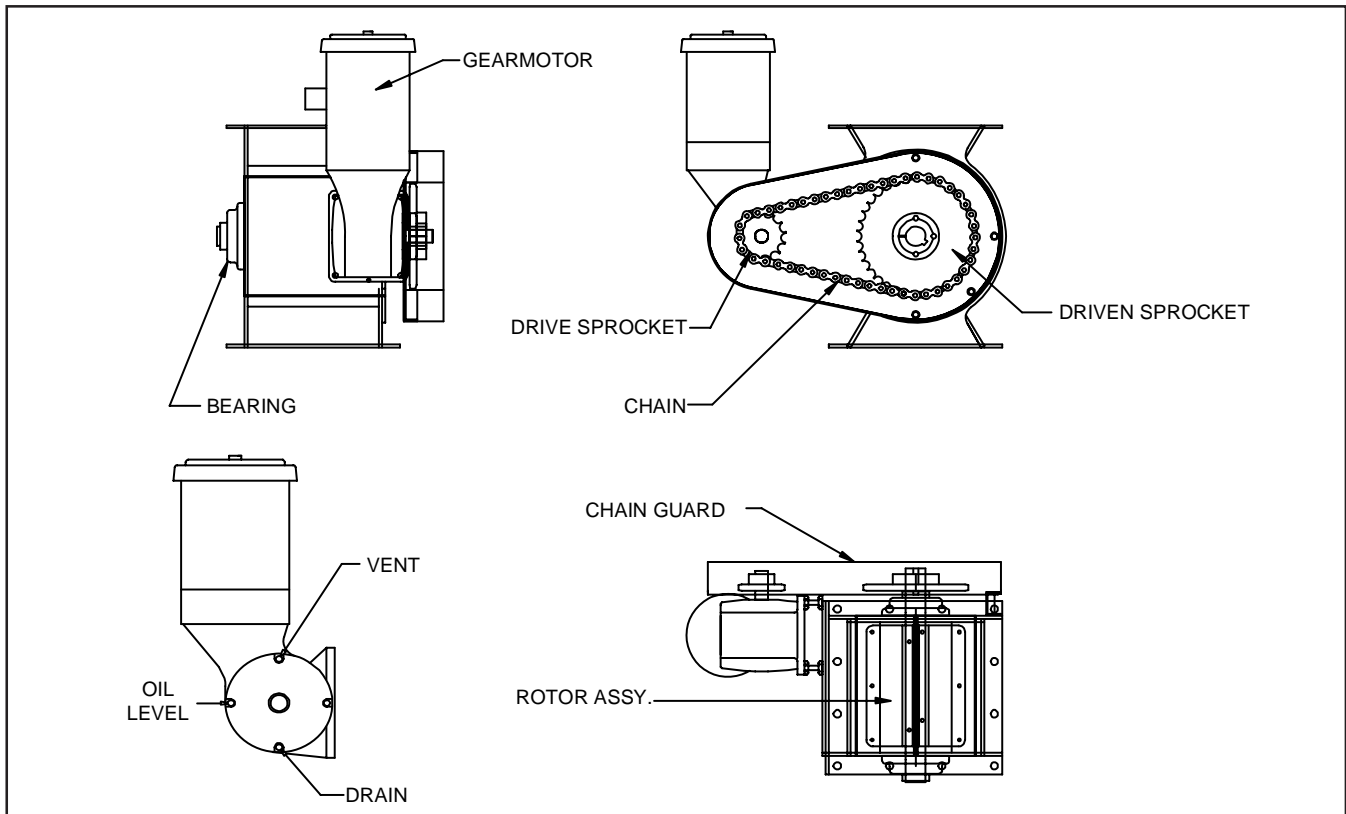
CUSTOMER NAME: _____

SHIPPING ADDRESS _____ BILLING ADDRESS: _____

MODEL NO. _____

SERIAL NO. _____

DESCRIPTION	QTY	DESCRIPTION	QTY
<input type="checkbox"/> ROTOR ASSY., COMPLETE	<input type="checkbox"/>	<input type="checkbox"/> SHAFT BEARINGS	<input type="checkbox"/>
<input type="checkbox"/> WIPERS, 1-SET	<input type="checkbox"/>	<input type="checkbox"/> MOTOR/REDUCER	<input type="checkbox"/>
<input type="checkbox"/> DRIVE SPROCKET	<input type="checkbox"/>	<input type="checkbox"/> CHAIN W/ MASTER LINK	<input type="checkbox"/>
<input type="checkbox"/> DRIVEN SPROCKET	<input type="checkbox"/>	<input type="checkbox"/> CHAIN GUARD	<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.donaldsonorit.com/lmcwest

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



Donaldson
Filtration Solutions

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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.