



N.R. MURPHY LTD.
DUST COLLECTORS

ABORT DAMPER

OPERATING & MAINTENANCE MANUAL



REVISION 1 - ENGLISH



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MANUFACTURER'S WARRANTY

All equipment is guaranteed as per the original manufacturer's guarantee & warranty. All parts fabricated by N. R. Murphy Limited are guaranteed to be free from defects in material and workmanship under normal use and service for the period of one year from the date of delivery or 2,000 hours of operation, whichever occurs first, on the cost of parts only, NOT replacement labour. Cost of labour and/or transportation is by the customer. THIS WARRANTY IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, WRITTEN OR ORAL, WHETHER EXPRESSED BY AFFIRMATION, PROMISE, DESCRIPTION, DRAWING, MODEL OR SAMPLE. ANY AND ALL WARRANTIES OTHER THAN THIS ONE, WHETHER EXPRESS OR IMPLIED, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED.

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LIMITATION OF DAMAGES: THE SELLER WILL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS) ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS IT CONTEMPLATES. IN NO EVENT WILL THE SELLER'S LIABILITY EXCEED THE PRICE THE BUYER PAID TO THE SELLER FOR THE SPECIFIC GOODS PROVIDED BY THE SELLER GIVING RISE TO THE CLAIM OR CAUSE OF ACTION.

REGULATORY REQUIREMENTS

1. All equipment is subject to the approval of all governing bodies concerned (i.e. Dept. of Labour, Ministry of the Environment, Building Department, Fire Marshall or Fire Department, etc.), and is the responsibility of the customer or their agent.
2. Ontario's Occupational Health and Safety Act mandates that owners or lessees of processes where dusts are handled, obtain a Pre-Start Health and Safety Review bearing the seal and signature of a registered professional engineering stating that he/she is satisfied that the process, machine or equipment is in compliance with the regulations.
3. On wood dust applications, refer to NFPA 664 for the requirements re: spark detection and suppression systems.
4. In all cases when returning the clean filtered air from a dust collector to a building, an approved fire damper must be installed in the return air duct.

PLEASE READ THE ENTIRE MANUAL BEFORE HANDLING, ERECTING OR OPERATING EQUIPMENT

Record your abort damper serial number here: _____

This number will be required to obtain capacity, information and parts
in the future.

FORWARD

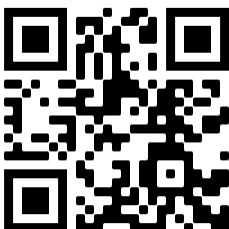
For over 80 years, N.R. Murphy Limited has been dedicated to manufacturing and distributing high quality products that meet the needs of a wide range of industrial applications.

As a leader in the industry, we understand the importance of maintaining a safe and healthy work environment. That's why our dust collection equipment is designed to effectively capture and remove airborne contaminants and pollutants, protecting the health and safety of your workers and improving the overall efficiency of your operations.

Our Operating and Maintenance Manuals have been carefully crafted to provide comprehensive instructions for the proper installation, operation, and maintenance of our equipment. They are user-friendly, with clear and concise language and detailed diagrams to help you understand the equipment and how it works.

At N.R. Murphy Limited, we believe that our commitment to quality doesn't end with the sale of our products. We are dedicated to providing our customers with the support they need to get the most out of their equipment. Our team of experts is available to answer any questions you may have and provide guidance on best practices for maintaining and optimizing your dust collection system.

Thank you for choosing N.R. Murphy Limited for your industrial dust collection needs. We are confident that our Operating and Maintenance Manuals will help you to get the most out of your equipment and ensure a safe and healthy work environment for years to come.



For the most up to date manuals, or manuals for our other product lines,
please visit www.nrmurphy.com/manuals

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SAFETY PRECAUTIONS

Precautions

1. **Installation or Maintenance crews must comply with all requirements of the Occupational Health and Safety Act and Regulations and the Company Safety Rules at the Dust Collector location. All workers must have formal fall protection training if working at elevation. Depending on local codes, personnel may require confined space training.**
2. Read entire manual before assembly or operation.
3. Personnel involved with Abort Dampers must be thoroughly familiar with the equipment operation and should be alerted to any unsafe conditions.
4. Only trained, authorized personnel should have access to the equipment.
5. Maintenance crews should consist of at least two people. Prior to start-up, account for all personnel.
6. All areas beneath the abort damper should be restricted to authorized personnel only, when overhead work is being performed. All personnel in the area must wear safety gear complying with accepted safety standards.
7. Before accessing the abort damper, the additional precautions mentioned below should be observed:
 - a. Turn OFF all electrical circuits. **WARNING: FOR MAGNETIC LATCHING MODELS, THIS WILL AUTOMATICALLY DROP THE DAMPER. PLEASE KEEP CLEAR OF DAMPER.**
 - b. Wear adequate protective gear, including a respirator if needed.
 - c. Make certain that all air flow has ceased.
 - d. Check the internal temperature for safe levels.
8. The responsibility for providing safety accessories for equipment supplied by N.R. Murphy Limited is that of the user of the equipment. N.R. Murphy Limited sells equipment, abort dampers with or without safety accessories, and accordingly, it can supply standard safety accessories and components if ordered. It is the customer's responsibility to ensure that all necessary safety accessories have been installed prior to operation of the equipment.
9. The user should also consider the following: location of the abort damper, accessibility of personnel to the damper, adjacent equipment, and applicable building codes.



EQUIPMENT WITH ROTATING PARTS CAN BECOME A SOURCE OF INJURY AND DEATH IF NOT PROPERLY INSTALLED, OPERATED OR MAINTAINED. Do not exceed the maximum operating temperature or speed limits for which the equipment was designed. Limits for abort dampers are available from N.R. Murphy Limited and must not be determined otherwise. Do not rely on limits obtained in any other manner. The user must make all personnel in contact with the equipment aware of all possible hazards.

SAFETY PRECAUTIONS (cont).

THE WARNING NOTICE, AS ILLUSTRATED BELOW SHOULD BE ATTACHED TO MAGNETIC LATCH STYLE ABORT DAMPERS AT ALL TIMES.



**RESET ABORT
DAMPER AFTER
POWER LOSS**

INSTALLATION & OPERATION

Introduction

The purpose of this section is to aid in the proper installation, operation and maintenance of your abort damper. These instructions are not intended to supplement good general practices and are not intended to cover detailed installation procedures.

The receipt, handling, installation, operation and maintenance of N. R. Murphy Limited equipment is the responsibility of the user. It is important that the installation and start-up of the equipment be supervised or inspected by personnel experienced in such work and equipment.

Shipment and Receiving

N. R. Murphy Limited has thoroughly inspected the equipment at the factory and has prepared your abort damper for shipment. The equipment should be in new condition when received unless damaged in transit. Upon acceptance by the carrier, as evidenced by a signed bill of lading, the carrier accepts responsibility for all shortages or damage, whether concealed or evident. Claims covering shortages or damage must be made to the carrier by the purchaser. Any shortages or damage should be noted by the user on the delivery receipt.

Handling and Storage

Your new abort damper should be handled with care. The damper has a top mounted lifting lug that can be used for lifting. If the abort damper cannot be installed immediately it should be stored in a dry area which is free of vibration and be protected from extreme and rapid changes in humidity and temperature using the following guidelines:

1. Temperatures: between 10°C (50°F) and 49°C (120°F)
2. Maximum relative humidity: 60%
3. Shock or vibration: 2 mils displacement maximum to prevent bearings from Brinelling

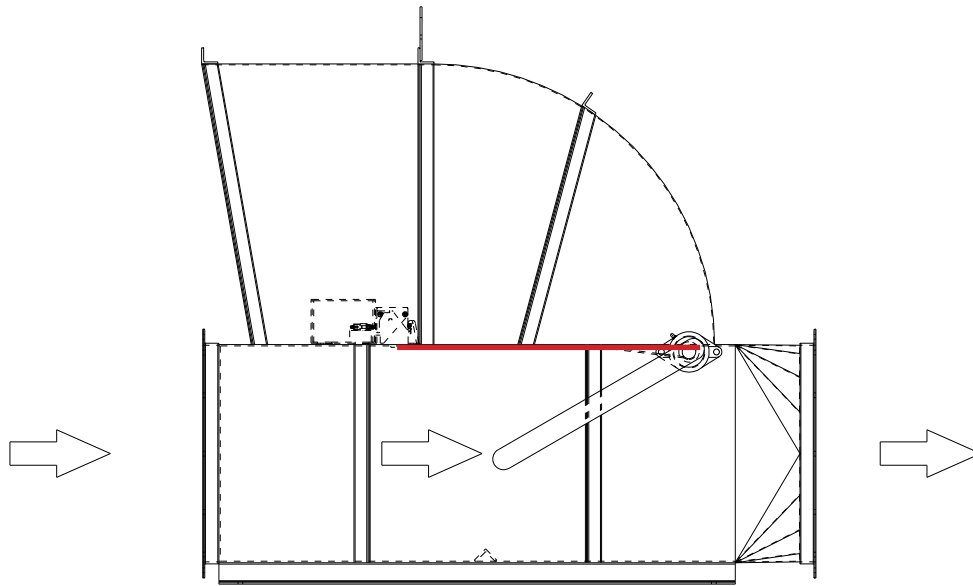
Installation

It is recommended that access be available for ease of inspection and internal maintenance (Disconnect and lock out all electrical power to the air lock before performing any maintenance). The abort damper should be installed with adequate structural support as they can get heavy. For weight estimates please contact the factory.

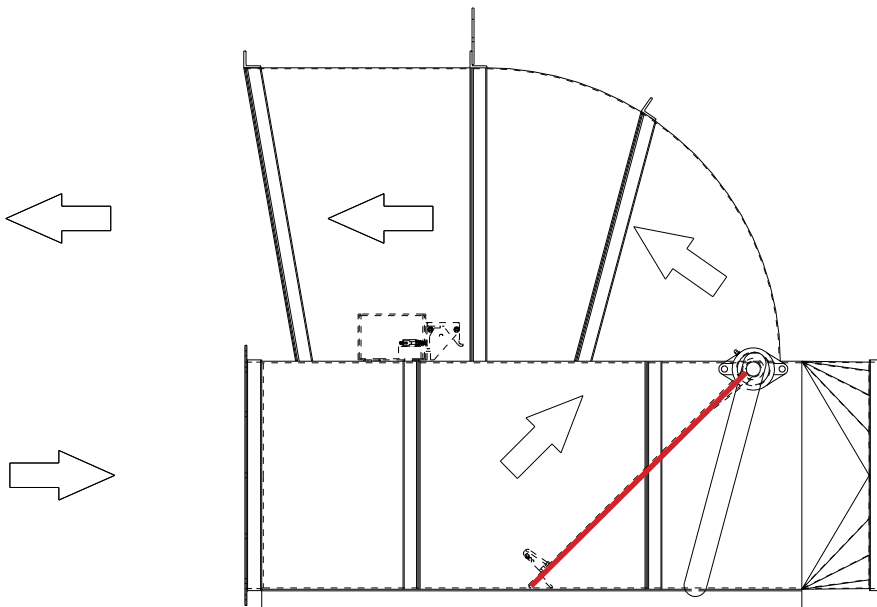
INSTALLATION & OPERATION (cont.)

Operation

The Abort Damper is used in conjunction with a spark detection and suppression system to automatically abort the return air line into atmosphere in the event there is a spark detected. During normal operations, the damper remains up and parallel to the ground while airflow passes through it.



If the Abort Damper receives a signal from the spark detection system, the latching mechanism activates and the damper drops, aborting the airflow to atmosphere. Following the activation event, the damper will have to be reset using the push arm.



MAINTENANCE



CAUTION: DISCONNECT AND LOCK OUT ALL ELECTRICAL POWER TO THE AIR LOCK BEFORE PERFORMING ANY MAINTENANCE.

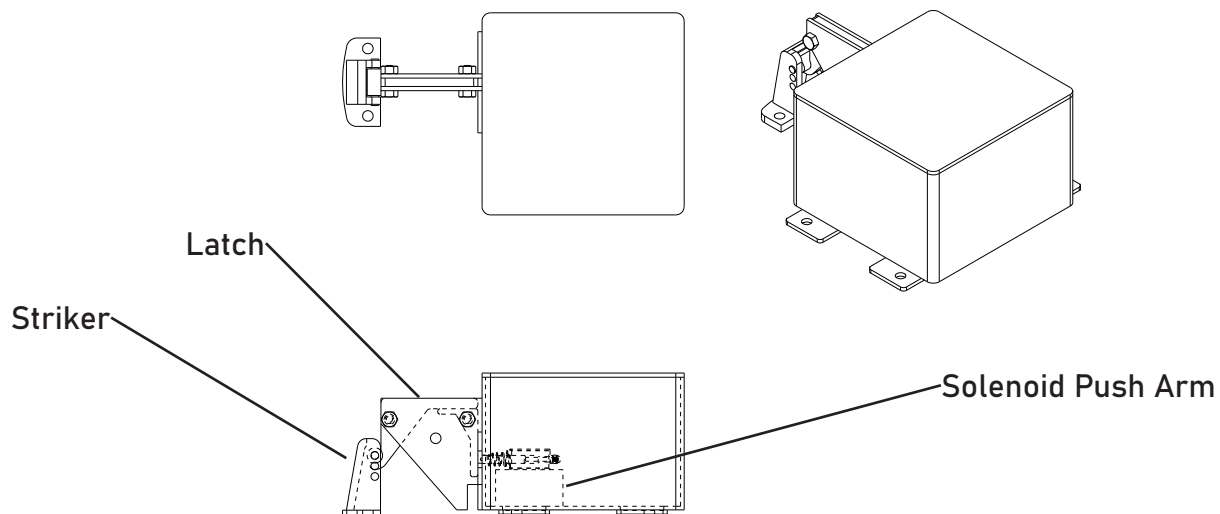
Bearings

Ensure that bearings are properly locked to the shaft and bearing housings are bolted securely to the abort damper. Re-lubricate bearings every four to six months. As a rule of thumb, one shot of grease from a standard grease gun is sufficient.

Mechanical Latching Mechanism

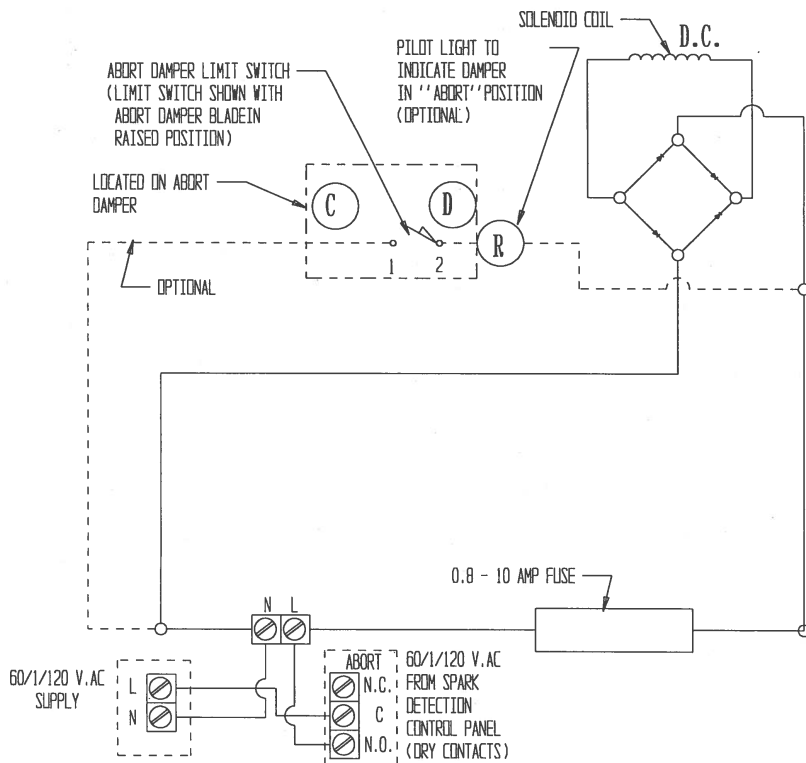
The mechanical latching mechanism features a steel hook and latch assembly that is activated through a solenoid push arm. When the solenoid is activated by the spark detection system, it pushes the solenoid push arm out, forcing the latch to pivot down and away from the striker. This forces the gravity damper to drop, and the airflow to be aborted to atmosphere.

Regular maintenance on the latch should be done at a minimum annually, but depending on the location conditions, may require if more frequently. During the spark detection system maintenance and testing, the abort damper should be activated, and the gravity damper should drop. In the event that it does not, lubricating/penetrating oil should be used on the mechanical latch assembly to ensure the components have not become stuck. When safe to do so, the damper must always be manually reset after it has dropped.



MAINTENANCE (cont.)

Mechanical Latching System Electrical Drawing



NOTE: DRAWING SUITABLE FOR USE WITH HANSENTEK SPARK DETECTION SYSTEM. IF OTHER THAN HANSENTEK SPARK DETECTION SYSTEM, CONTACT N.R. MURPHY LIMITED FOR DIRECTION.

Abort Damper latch release to be activated when energized from spark detecting from control panel.

Abort Damper to be manually reset after spark detection panel contacts are open.

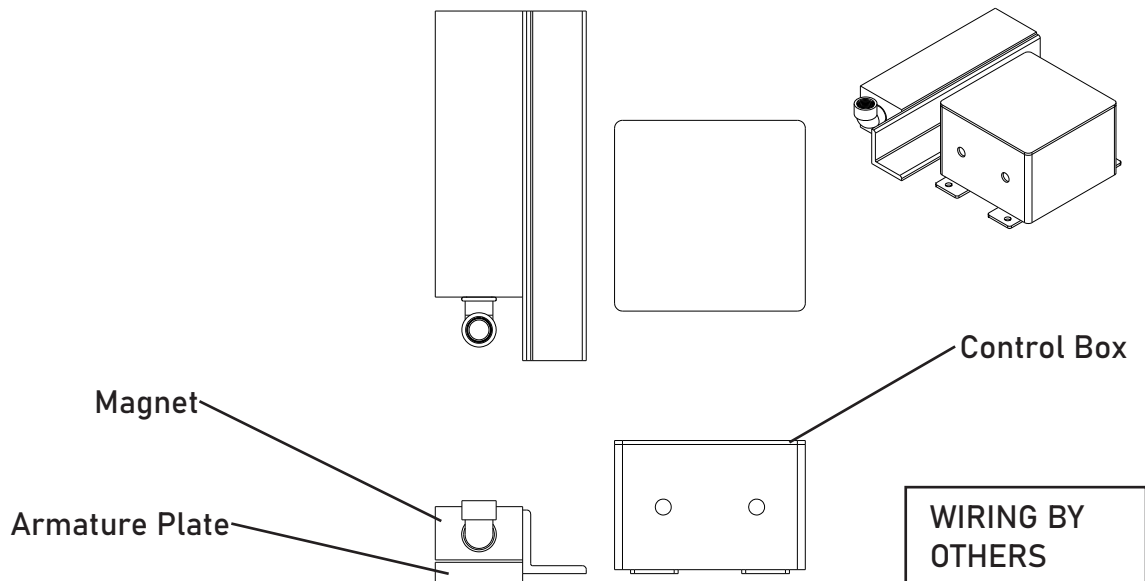
All wiring by others.

Magnetic Latching Mechanism

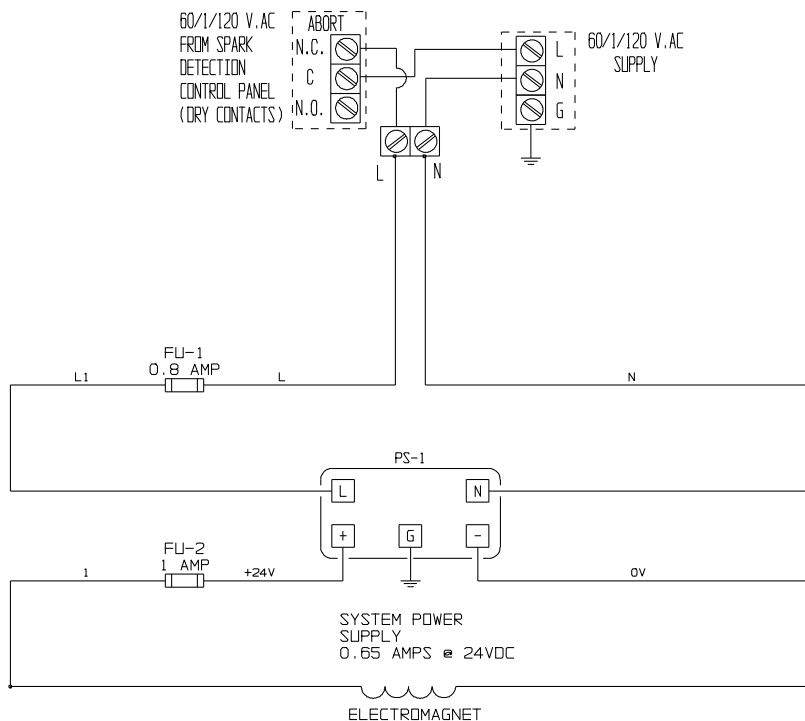
The magnetic latching mechanism features a matching magnet and armature plate, which when powered maintains the damper in an open position. When the spark detection system is activated, it shuts off the power to the magnet, and hence the gravity damper drops- forcing the airflow to be aborted to atmosphere.

Regular maintenance on the latch should be done at a minimum annually, but depending on the location conditions, may require it more frequently. During the spark detection system maintenance and testing, the abort damper should be activated and the gravity damper should drop. In the event it does not, you should inspect to ensure the magnet and armature plate are aligned. If it is still not working, an electrician should be called in to ensure wiring is in tact and according to the electrical drawings provided. When safe to do so, the damper must always be manually reset after it has dropped.

MAINTENANCE (cont.)



Magnetic Latching System Electrical Drawing



NOTE: DRAWING SUITABLE FOR USE WITH HANSENTEK SPARK DETECTION SYSTEM. IF OTHER THAN HANSENTEK SPARK DETECTION SYSTEM, CONTACT N.R. MURPHY LIMITED FOR DIRECTION.

Abort Damper latch to release upon 120VAC power interruption by Hansentek Spark Detection Control Panel.

Abort Damper to be manually reset after spark detection panel registers an event or general power failure.

All wiring by others.

TROUBLE SHOOTING

PROBLEM	PROBABLE CAUSE
Mechanical Latch Stuck, Damper not dropping	<ul style="list-style-type: none">• Over time, the mechanical latch can generate rust build up, which can create resistance to the solenoid push arm, causing the damper to not drop.• Use penetrating oil to lubricate the latch assembly, while also utilizing different tools to lodge the assembly back to a movable state.• If that doesn't work, you can remove the hardware from the latch assembly and sand down the individual pieces of any rust, and then reassemble.
Magnetic Latch Not Holding Upright	<ul style="list-style-type: none">• Inspect the armature plate to ensure it has not twisted itself so that the gravity damper can not close (the plate and the magnet should align).
Magnetic Latch Drops without Spark System Event	<ul style="list-style-type: none">• The most likely scenario is that there has been a general power outage that caused the magnet to lose power, and the damper to drop. To avoid this in the future, you may tie the abort damper into your building's backup power system.

Abort Damper Exploded View



K: Control Box
L: Magnetic Latch
M: Support Angle
N: Control Wire
O: Magnetic Plate
P: Hinge

MAINTENANCE LOG

Motor Data

HP: Voltage: / / RPM: FLA: Service Factor:

Drive Sheave: Driven Sheave: Sheave Alignment:

[illegible]

MAINTENANCE LOG

Motor Data

HP: Voltage: / / RPM: FLA: Service Factor:

Drive Sheave: Driven Sheave: Sheave Alignment:

[illegible]



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