DAMPER & SHUTTER ACCESSORIES | Product Guide



Benefits and Features

Benefits

Dampers and shutters are used to prevent undesirable backdrafts into a building or to control airflow through a system. When mounted in a wall application shutters can limit the amount of precipitation that enters a building.

Large Units

Large size units may require the use of multiple panels. These panels can be shipped either mechanically fastened together or shipped loose for field assembly.

Motorized

For motorized large single panel and multiple panel units may require the use of multiple motorpacks or actuators to operate.

Submittals

Consult submittal drawing for number of actuators and dimensional information.

Blade

The damper blades are the moving parts of a damper / shutter. Blades are attached to an axle. Axle are located at either the edge or center of the blades.

Frame

The frame is the structure of the damper and shutter. When installed, the frame must be square and true and not 'racked' for proper operation.

Jamb Seal

Low leakage dampers may have this additional construction feature. The jam seal reduces the gap between the end of the blade and the frame to limit leakage.

Filler Plate

This plate closes the gap, typically at the bottom, between the last blade and the frame.

Flange

fasteners.

The flange adds stiffness and

provides a location for installation

Actuators

Sometimes referred to as "motorpacks". They motorize the damper operation and typically power the damper open or shutter open. Used in low airflow applications or in installation where damper control is desired. The addition of a transformer may be required to meet the specified voltage. See page 23 for additional details.

Blade Seal

Attached to the edge of the blade and limits air leakage.

Linkage

(Not shown)

Links the blades together to operation in unison. Also connects the blades to the actuator. Linkage can be either exposed at the tip of the blades or concealed at the frame.



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PRV and Curb Mounted Products





Features and Benefits

- Exhaust application
- Extruded aluminum frame
- Aluminum blades
- Aluminum hinge pins with nylon bushings

Associated Products

ACE, ACRU, AQ, CVR, ETE, GR, HEE, HLC, HXE, LP, PR, REBE, SRSH, TLC, TR, TRE

BD- BACKDRAFT DAMPER





Features and Benefits

- Exhaust application
- Extruded aluminum frame
- Aluminum blades
- Aluminum hinge pins with nylon bushings
- Motor pack shipped loose for field installation
- Available voltages 110, 220, 440V

Associated Products

ACE, ACRU, AQ, CVR, ETE, GR, HEE, HLC, HXE, LP, PR, REBE, SRSH, TLC, TR, TRE

BDM - BACKDRAFT DAMPER MOTORIZED



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PRV and Curb Mounted Products



BDI- BACKDRAFT DAMPER INTAKE

Features and Benefits

- Supply application
- Extruded aluminum frame
- Aluminum blades
- Aluminum hinge pins with nylon bushings
- Aluminum wrapper

Associated Products

AQ, ASP, ASP-T, CVR-S, ETS, GI, HEF, HES, HXS, KSP, PR, REBS, TR, TRE





Conduit Wiring Connection

Features and Benefits

- Supply application
- Extruded aluminum frame
- Aluminum blades
- Aluminum hinge pins with nylon bushings
- Aluminum wrapper
- Available voltages 110, 220, 440V

Associated Products

AQ, ASP, ASP-T, AQ, CVR-S, ETS, GI, HEF, HES, HXS, KSP, PR, REBS, TR, TRE

BDMI - BACKDRAFT DAMPER MOTORIZED INTAKE



PRV and Curb Mounted Products



8" MAX

1-1/8" -

Air Flow

- 1-1/2"

Features and BenefitsSupply application

- Extruded aluminum frame
- Aluminum blades
- Aluminum hinge pins with nylon bushings

Associated Products

AQ, CFS, ETS, HEF, HES, HXS

Features and Benefits

- Rolled galvanized frame
- Galvanized blades
- Plated steel axle
- Synthetic bearings
- Available voltages 110, 220, 440V

Associated Products

AQ, CFS, CVR-S, ETS, GI, HEF, HER, HES, HXS, SEP

BDMIC - BACKDRAFT DAMPER MOTORIZED INTAKE CENTER PIVOT



PRV and Curb Mounted Products





Opposed Blade

- 1 1/2

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10 3/4

11 1/2 Max.

BDMICL - BACKDRAFT DAMPER MOTORIZED CENTER PIVOT LOW LEAKAGE (GALVANIZED)

1 1/2 -

Air

Flow

Features and Benefits

- AMCA Low Leakage Class 1A Rated
- Galvanized steel frame
- Galvanized airfoil shape blades
- Blade and jamb seals
- Available voltages 24, 110, (220 & 440 with transformer)

Associated Products

ACE, ACRU, AQ, CVR, ETE, GR, HEE, HLC, HXE, LP, PR, REBE, SRSH, TLC, TR, TRE

Features and Benefits

- AMCA Low Leakage Class 1A Rated
- Extruded aluminum frame
- Extruded aluminum airfoil shape blades
- Blade and jamb seals
- Available voltages 24, 110, (220 & 440 with transformer)

Associated Products

ACE, ACRU, AQ, CVR, ETE, GR, HEE, HLC, HXE, LP, PR, REBE, SRSH, TLC, TR, TRE

BDMICLA - BACKDRAFT DAMPER MOTORIZED CENTER PIVOT LOW LEAKAGE ALUMINUM





Features and Benefits

- Aluminum frame
- Aluminum blades (Std 0.025" / Hvy 0.052")
- Vinyl blade edge gasket
- Standard Duty used for velocity between 400 2000 FPM
- Heavy Duty used for velocity up to 3000 FRPM

Asociated Products

AW, EW, PAC Fans, X.Stream, XW



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6-3/8" - Max.
1-3/4"

Features and Benefits

- Aluminum frame
- Aluminum blades (Std 0.025" / Hvy 0.052")
- Vinyl blade edge gasket
- Standard Duty used for velocity between 0 – 2000 FPM
- Heavy Duty used for velocity up to 3000 FPM
- Available voltages 24, 110, 220, 440V Transformers may be required

Associated Products

AW, EW, PAC Fans, X.Stream, XW

MSS & MSH – MOTORIZED DISCHARGE SHUTTER ALUMINUM STANDARD & HEAVY DUTY





GSG – GRAVITY DISCHARGE SHUTTER GALVANIZED



Features and Benefits

- Rolled galvanized frame
- Galvanized blades with stainless steel pivots
- Vinyl blade edge gasket
- For velocity between 600 3000 FPM

Associated Products

AW, EW, PAC Fans, X.Stream, XW



MSG – MOTORIZED DISCHARGE SHUTTER GALVANIZED



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Features and Benefits

- Rolled galvanized frame
- Galvanized blades with stainless steel pivots
- Vinyl blade edge gasket
- For velocity between 0 3000 FPM
- Available voltages 24, 110, 220, 440V Transformers may be required

Associated Products

AW, EW, PAC Fans, X.Stream, XW





MIC - MOTORIZED CENTER PIVOT INTAKE SHUTTER



Features and Benefits

- Rolled galvanized frame
- Galvanized blades with plated steel pivots
- Use in supply or reversible flow units
- Available voltages 24, 110, 220, 440V Transformers may be required

Associated Products

AW, EW, PAC Fans, X.Stream, XW



Features and Benefits

- Lorenized coated steel
- Protects shutter from damage
- OSHA safety guard



Features and Benefits

- Standard galvanized steel
- Optional aluminum construction
- Standard 45° design as shown
- Available in 90° design for supply application
- Provides a degree of protection against weather.

SHUTTER GUARD

WEATHERHOOD





MICL - MOTORIZED CENTER PIVOT LOW LEAKAGE (GALVANIZED)



Features and Benefits

- AMCA Low Leakage Class 1A Rated
- Galvanized steel frame
- Galvanized airfoil shape blades
- Blade and jamb seals
- Available voltages 24, 110, (220 & 440 with transformer)

Associated Products

AW, EW, PAC Fans, X.Stream, XW



MICLA – MOTORIZED CENTER PIVOT LOW LEAKAGE ALUMINUM



Features and Benefits

- AMCA Low Leakage Class 1A Rated
- Extruded aluminum frame
- Extruded aluminum airfoil shape blades
- Blade and jamb seals
- Available voltages 24, 110, (220 & 440 with transformer)

Associated Products AW, EW, PAC Fans, X.Stream, XW

Page 10



Inline Products



Air Flow

BD- BACKDRAFT DAMPER

BDM - BACKDRAFT DAMPER MOTORIZED



Features and Benefits

- Extruded aluminum frame
- Aluminum blades
- Aluminum hinge pins with nylon bushings

Associated Products

DB, DBX, SDB, SQI, SQN, TDB

Features and Benefits

- Extruded aluminum frame
- Aluminum blades
- Aluminum hinge pins with nylon bushings
- Motor pack shipped loose for field installation
- Available voltages 110, 220, 440V

Associated Products

DB, DBX, SDB, SQI, SQN, TDB



DAMPER & SHUTTER ACCESSORIES

Inline Products



LOW LEAKAGE (GALVANIZED)



Features and Benefits

- AMCA Low Leakage Class 1A Rated
- Galvanized steel frame
- Galvanized airfoil shape blades
- Blade and jamb seals
- Available voltages 24, 110, (220 & 440 with transformer)

Associated Products



BDMCLA – MOTORIZED CENTER PIVOT LOW LEAKAGE ALUMINUM



Features and Benefits

- AMCA Low Leakage Class 1A Rated
- Extruded aluminum frame
- Extruded aluminum airfoil shape blades
- Blade and jamb seals
- Available voltages 24, 110, (220 & 440 with transformer)

Associated Products SQN



DAMPER & SHUTTER ACCESSORIES

Inline Products



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Features and Benefits

- Rolled aluminum frame
- Aluminum blades
- Aluminum hinge pins with bronze bushings
- Locking quadrant handle operation.

Associated Products

CV

VCD - VOLUME CONTROL DAMPER



Energy Recovery Products



Features and Benefits

- Rolled galvanized frame
- Galvanized blades with stainless steel pivots
- Vinyl blade edge gasket
- Motorized are wired to product's 24-volt internal power supply

Associated Products ERV, ERVX





Features and Benefits

- Rolled galvanized frame
- Galvanized blades with stainless steel pivots
- Vinyl blade edge gasket
- Motorized are wired to product's 24-volt internal power supply

Associated Products

ERV, ERVX

BDI/BDMI & BDI-H/BDMI-H & BDI-VC/BDMI-VC AUTOMATIC / MOTORIZED BACKDRAFT INTAKE DAMPER



Energy Recovery Products



MOTORIZED INTAKE CENTER PIVOT DAMPER



Features and Benefits

- Rolled galvanized frame
- Galvanized blades with plated steel pivots
- Wired to product's 24-volt internal power supply

Associated Products ERV, ERVX





Features and Benefits

- Rolled galvanized frame
- Galvanized blades with stainless steel pivots and encapsulated Styrofoam insulation
- Jamb seals and vinyl blade edge gasket
- Wired to product's 24-volt internal power supply

Associated Products

ERV, ERVX

BDMICI, BDMIC-H & BDMIC-VC INSULATED MOTORIZED CENTER PIVOT DAMPER



Energy Recovery Products





Features and Benefits

- AMCA Low Leakage Class 1A Rated
- Galvanized steel frame
- Galvanized airfoil shape blades
- Blade and jam seals
- Wired to product's 24-volt internal power supply
- Associated Products

BDMICL, BDMICL-H, & BDMICL-VC MOTORIZED INTAKE CENTER PIVOT LOW LEAKAGE DAMPER



Compute-A-Fan is a fast, accurate and easy-to-use fan-selection program. This tool gives point-and-click access to COOK's entire line of fans, blowers, gravity ventilators, energy recovery ventilators, and laboratory exhaust systems. A comprehensive, cross-reference interface allows the user to select fans based upon the product specifications of any major manufacturer.

Visit the Design Tools section to download.

Application Notes:

8-1/4" Max AIr Flow

Traditional outdoor air intake 'rule-of-thumb' has beend, intake velocity shall not exceed 500 feet per minute to prevent rainwater entrainment into the building or system. This leads to increasing the size of fresh air intakes to reduce intake velocity. However, large openings allow more <u>wind</u> <u>driven rain</u> to enter the building.

While shutters and dampers, when shut, can prevent wind driven rain from entering a building, it may not be practical to shut every fresh air intake when it rains.

Weatherhoods or AMCA licensed Wind Drive Rain louvers are a better solution in keeping wind-driven rain from entering air intake openings.

DAMPER & SHUTTER ACCESSORIES



Vent/Utility Sets & Blower Products



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		Sq.	
			- 6-3/8' Max

Features and Benefits

- Aluminum frame
- Aluminum blades (Std 0.025" / Hvy 0.052")
- Vinyl blade edge gasket
- Standard Duty used for velocity between 0 2000 FPM
- Heavy Duty used for velocity up to 3000 FRPM
- Available voltages 24, 110, 220, 440V Transformers may be required

Associated Products

CA DWDI, CA SWSI, CA-4 DWDI, CA-4 SWSI, CAF-DW, CF SWSI, CF-4 SWSI, CPA, CPA-A, CPS, CPS-A, CPV

MDSS & MDSH - MOTORIZED DISCHARGE SHUTTER ALUMINUM STANDARD & HEAVY DUTY

DAMPER & SHUTTER ACCESSORIES

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Vent/Utility Sets & Blower Products





MDSG – MOTORIZED DISCHARGE SHUTTER GALVANIZED



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Features and Benefits

- Rolled galvanized frame
- Galvanized blades with stainless steel pivots
- Vinyl blade edge gasket
- For velocity between 600 3000 FPM

Associated Products

CA DWDI, CA SWSI, CA-4 DWDI, CA-4 SWSI, CAF-DW, CF SWSI, CF-4 SWSI, CPA, CPA-A, CPS, CPS-A, CPV, Material Handler

Features and Benefits

- Rolled galvanized frame
- Galvanized blades with stainless steel pivots
- Vinyl blade edge gasket
- For velocity between 0 3000 FPM
- Available voltages 24, 110, 220, 440V Transformers may be required

Associated Products

CA DWDI, CA SWSI, CA-4 DWDI, CA-4 SWSI, CAF-DW, CF SWSI, CF-4 SWSI, CPA, CPA-A, CPS, CPS-A, CPV, Material Handler





Vent/Utility Sets & Blower Products



IVD - INLET VANE DAMPER NESTED

Features and Benefits

- Rolled structure frame
- Aluminum blades
- Aluminum hinge pins with nylon bushings
- Bronze bearings
- Standard with locking handle and provisions for field install actuator.

Associated Products

CA SWSI, CA-4 SWSI, CAF-DW, CF SWSI, CF-4 SWSI, CPA, CPA-A, CPS, CPS-A, CPV

Features and Benefits

- Rolled structure frame
- Aluminum blades
- Aluminum hinge pins with nylon bushings
- Bronze bearings
- Standard with locking handle and provisions for field install actuator
- Design to replace product's inlet cone

Associated Products

CA DWDI, CA SWSI, CA-4 DWDI, CA-4 SWSI, CAF-DW, CF SWSI, CF-4 SWSI, CPA, CPA-A, CPS, CPS-A, CPV



Laboratory Exhaust Products

ISOLATION DAMPER ·

Features and Benefits

- Prevents backflow through nonenergized units. Required in laboratory N+1 designed system.
- Either gravity or motorized.
- Available voltages 24, 110, 220 or 440. Some sizes and voltages may require transformer.*
- Standard in aluminum construction Optional galvanized or stainlesssteel
- Isolation damper is coated to match unit.
- Isolation damper are installed in either the mixing box (as shown) or isolation box for accessible. Isolation damper can be mount in the LEC (Laboratory Exhauster Curb) but this is not recommended due to the lack of accessibility.
 *Consult submittal drawings for details



Associated Products Power Plume, QMXLE, QMXVP, TCNHBLE

MIXING BOX DAMPER

Features and Benefits

- Selected to control the amount of additional air mixed in with the laboratory exhaust air.
 - With Laboratory Exhauster controlled by a VFD additional air is needed to maintain plume height.
 - Increase volume through unit for higher discharge velocity and plume rise.
- Either manual or modulating control style center pivot damper.
- Standard in aluminum construction Optional galvanized or stainless-steel
- Mounted in a mixing box
- Mixing box damper is coated to match the unit. Page 20



Laboratory Exhaust Products

ISOLATION DAMPER

Features and Benefits

- Prevents backflow through non-energized units. Required in laboratory N+1 designed system.
- Either gravity or motorized.
- Available voltages 24, 110, 220 or 440. Some sizes and voltages may require transformer.*
- Standard in aluminum construction optional galvanized or stainless-steel
- Isolation damper is coated to match unit.
- Isolation damper are installed at the inlet either the mixing box (as shown) or in the ductwork.
 *Consult submittal drawings for details



- Standard in aluminum construction Optional galvanized or stainless-steel
- Mounted in a mixing box
- Mixing box damper is coated to match the unit.



Specialized & Miscellaneous



Features and Benefits

- MIC mounted in the intake or intake extension
- Available voltages 110, 220, 440V Transformers may be required

Associated Products

KSP



STACK DAMPER ASSEMBLY



Features and Benefits

- Also known as "Butterfly dampers"
- Design to be either a stand-alone product or as an add-on accessory.
- Aluminum or galvanized blades
- Lorenized steel housing with option for aluminum construction.
- Automatic spring opener available for heat release.

Associated Products*

AI, AVA, VA

*Standard feature on products: AU, EU, LEU, LEUMO, LTU, LTUMO, LUG, QMXU, TCNU, TU, UCV



ROUND DAMPER



- Aluminum Blades
- Aluminum hinge pins with nylon bearings
- Backdraft damper for round duct

Associated Products

ACW



Specialized & Miscellaneous



FIBERGLASS CONTROL DAMPER



Features and Benefits

- Frame and blades are fiber reinforced plastic
- Blades are available in either parallel or opposed blade action.
- Joints are bonded with industrial grade epoxy adhesive.
- All resin has Class I flame spread rate of 25 or less and includes ultra-violet protection.

Associated Products FCP

FIBERGLASS BACKDRAFT DAMPER



Features and Benefits

- Frame and blades are fiber reinforced plastic
- Available with counterbalance option.
- Joints are bonded with industrial grade epoxy adhesive.
- All resin has Class I flame spread rate of 25 or less and includes ultra-violet protection.

Associated Products FCE, FCRU



Motorpack / Actuator Information

Motorpack or Actuator

Motorpacks / actuators are a type of geared motor used to motorize damper operation. This section covers the additional terms associated with these components.



Modulating

Refers to a type of actuator designed to move to a specific position based on a control signal. These type of actuators require both power to operate the actuator and control wiring. Control wiring can be either 0-10 VDC or 4-20mA.

End Switch / Auxiliary Contacts

Used to indicate the position of the damper blade. Also used as a proving switch prior to energizing primary HVAC equipment. Can be used with either Modulating or 2-postion actuators. End switches can be either integral to the actuator or separate external device.

2-position

Refers to an actuator that is designed to move, under power, from a starting position to a physical or electro-mechanical stop position. Typical arrangement is <u>Normally Closed / Power Open</u>. Another option is <u>Power Close / Normally Open</u>. This type of 2postion actuator can be used in conjunction with gravity or other non-powered ventilation equipment. With either type, when deenergized the motorpack will return to the original position by means of a spring return.

Spring Return

Spring return is a spring that can be either internal to the actuator or a separate external spring.



Motorpack / Actuator Information



Transformer

Step-down transformer may be required to change the incoming power from the available line voltage to match the actuator voltage.

Holding Amps

The current required to keep a two-position actuator at its powered stop location.

Running Amps

The current rating of the actuator in operation. This is resistance load versus a traditional inductive motor load.

Mounting

Actuator and motorpacks require a method of mounting to the damper. The location may be either in the airstream or out-of-the-airstream, sometimes called frame mounting. Depending on the application, installation and content of the airstream will determine the appropriate location.

Direct Couple vs. Linkage

Actuators must be connected to the blades in order to operate. One method is direct coupled. In this method a blade axle is extended through the damper frame. Direct coupled actuators are used when the actuator is frame mounted. Linkage connection are used with the actuator in the airstream. Depending on the design of the actuator a jack shaft maybe required to connect to linkage.



Actuator mounted in airstream with jackshaft and linkage



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