ALUMAVENT

Volume 1 - March 2010

Control Dampers and Fire Dampers

Superior Air Leakage Performance

Job Photo:
University of Sherbrooke Hospital Center Emergency Standby Generator
Sherbrooke, Quebec.

Alumavent's 3900 Series

is a premium low leakage insulated control damper and features the lowest air leakage rating available. The damper's thermally broken blade was developed to reduce the thermal transfer of heat from one side of the damper to the other. It minimizes condensation on the cold side of the damper and helps prevent damper from freezing closed. The thermally broken blade and extremely low leakage performance of the 3900 greatly reduces the amount of thermal transfer, significantly increases system efficiencies, and offers increased energy savings. All of these factors are important to consider with today's Green building practices.

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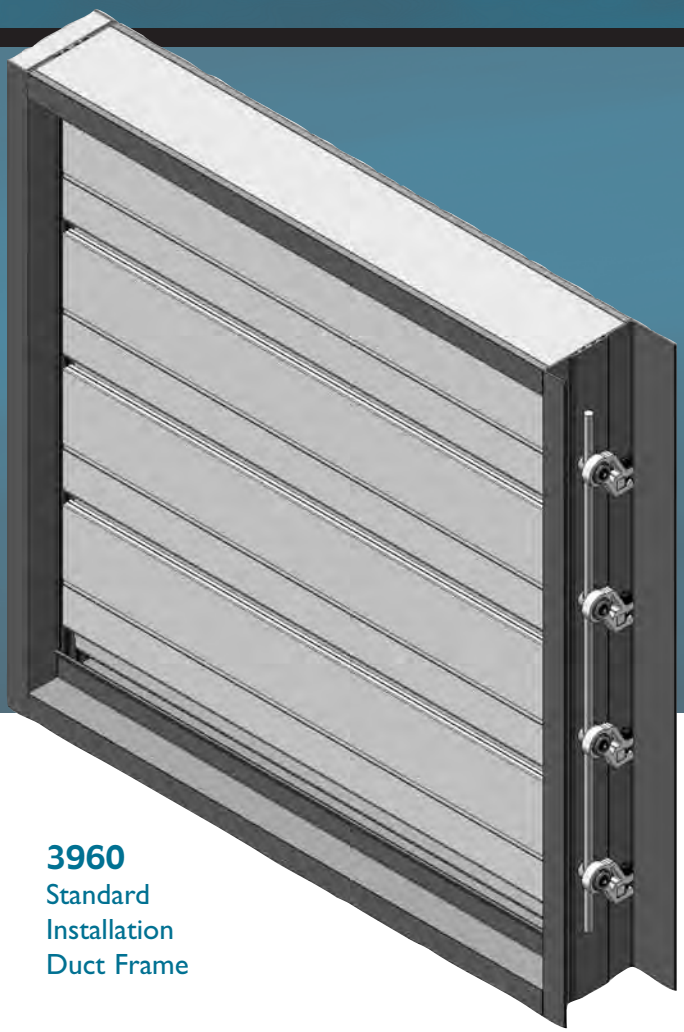
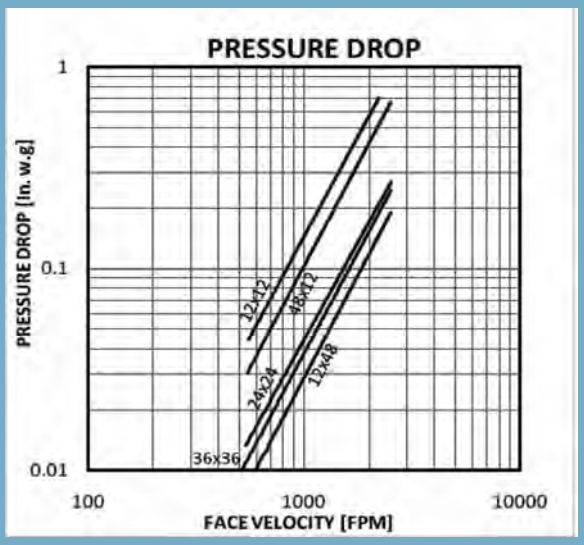


3960
Standard
Installation
Duct Frame

AMCA Certified Ratings

Alumavent Inc. certifies that the 3900 Series Insulated Parallel Blade Control Dampers shown here are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to air performance ratings and air leakage ratings.



Ratings Based on: AMCA Standard 500-D Intake Ducted Test Figure 5.3 Setup

DEFINITION OF LEAKAGE CLASSIFICATION

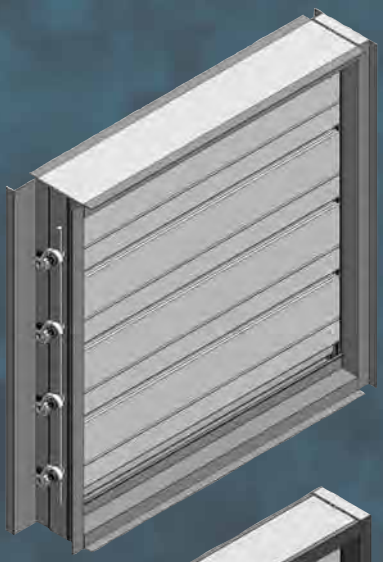
CLASS	LEAKAGE $ft^3/min/ft^2$ *(L/s/m²)*			
	1" *(0.25 kPa)*	4" *(1.0 kPa)*	8" *(2.0 kPa)*	12" *(3.0 kPa)*
1A	3 *(15.2)*	N/A	N/A	N/A
1	4 *(20.3)*	8 *(40.6)*	11 *(55.9)*	14 *(71.1)*
2	10 *(50.8)*	20 *(102)*	28 *(142)*	35 *(178)*
3	40 *(203)*	80 *(406)*	112 *(569)*	140 *(711)*

3900 SERIES CONTROL DAMPER LEAKAGE RATING

DAMPER SIZE Width x Height	PRESSURE in w.g (kPa)		
	1" *(0.25 kPa)*	4" *(1.0 kPa)*	8" *(2.0 kPa)*
12"x12" *(305x305 mm)*	1A	1	1
24"x24" *(610x610 mm)*	1A	1	1
36"x36" *(914x914 mm)*	1A	1	1
12"x48" *(305x1219 mm)*	1A	1	1
48"x12" *(1219x305 mm)*	1A	1	1
48"x36" *(1219x914 mm)*	1A	1	1

LEAKAGE

Leakage test was conducted in accordance with AMCA Standard 500-D-98. Holding torque applied was 6 in.-lbs./sq.ft on parallel blade dampers. AMCA Standard 500-D-98 states that air leakage is based on operation between 50°F (10°C) and 104°F (40°C).



3961

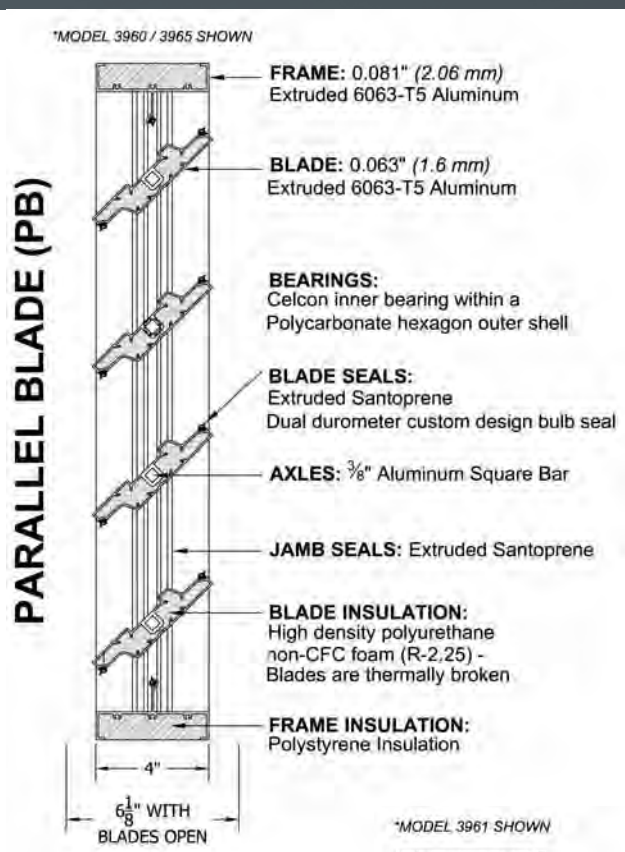
Quick Install Frame – The extruded aluminum hat shape frame simplifies the installation of single section and multiple section dampers significantly reducing labour costs.

3965BF

Thermally Broken Frame – Allows the damper to act as a complete thermal barrier stopping the transfer of heat or cold along the ductwork.

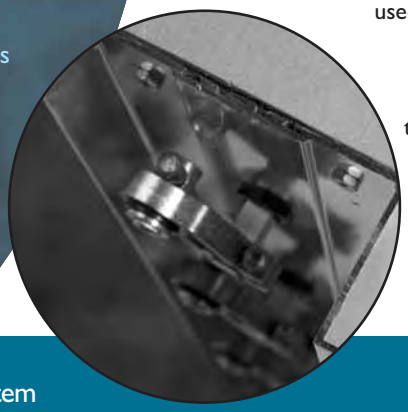
3967BF

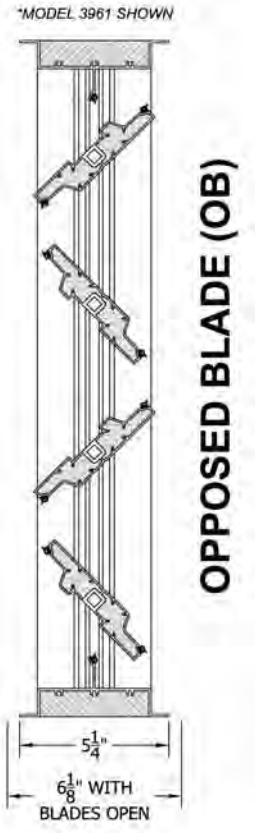
Single Sided flange – The 1" flange around the perimeter of this damper allows for easier installation on a wall or on air handling units.



Parallel blade dampers are used when the damper is either open or closed.

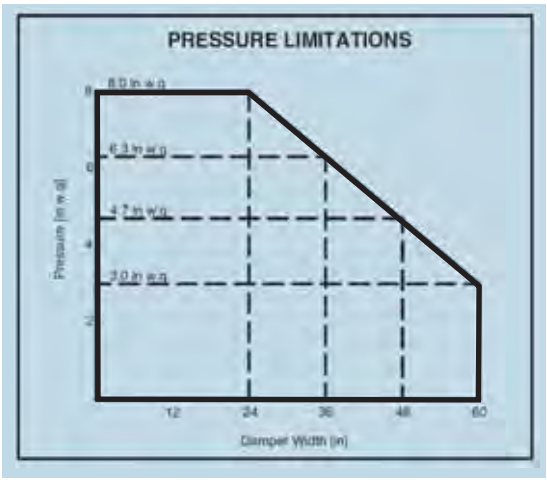
Opposed blade dampers are used to accurately control the volume of air going through the damper. To be used with modulating actuators.





Linkage

Slip proof linkage system requires no maintenance for the lifetime of the damper. Cast nickel crank arms and 5/16" (8mm) nickel plated steel connection rods that offer superior strength and ensures the actuator torque is spread evenly across the damper.



The Alumavent 3900 Series

damper is the smart choice when selecting a control damper. You can rely on its certified performance, rugged aluminum construction, no maintenance linkage system, and unique frame designs to save money from the time it is installed.

3900 Series * STANDARD CONSTRUCTION

Depth:
4" (101 mm) – 3960/3965
5.25" (133 mm) – 3961

Depth with Blades Open:
6.125" (156 mm)

Minimum Height:
6" (150 mm) - Single Blade
15" (381 mm) - Multiple Blade

Maximum Panel Width:
48" (1219 mm)

Maximum Panel Height:
60" (1524 mm)

Maximum Panel Size: 20 Sq.Ft.

Maximum System Pressure:
4" w.g. (1 kPa)

Operating Temperature Range: -40° to +180° F

Frame: 0.081" (2 mm) Extruded Aluminum

Blade: 0.063" (1.6 mm) Extruded Aluminum filled with 2 part polyurethane foam.

Bearings: 2 piece acetal bearing. Hexagon outer shell and round inner sleeve do not allow any metal to metal contact.

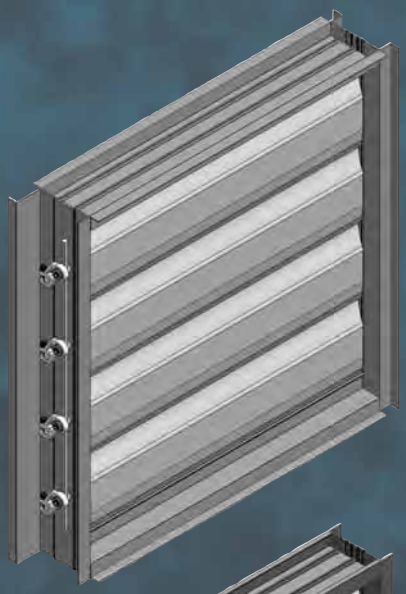
Blade Seals: Dual durometer custom design bulb seal

Jamb Seals:
Extruded Santoprene

Standard Motor Installation: Field Adjustable Side Shaft Direct Drive

Linkage:
Concealed in Frame (3960/3961)
Outside of Frame (3965)

* See Page 9 for Available Accessories

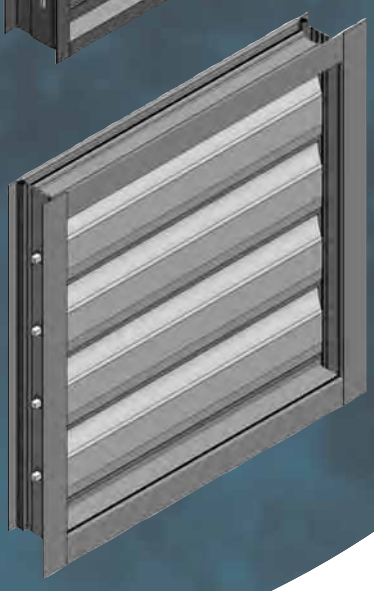


3161

Quick Install Frame – The extruded aluminum hat shape frame simplifies the installation of single section and multiple section dampers significantly reducing labour costs.

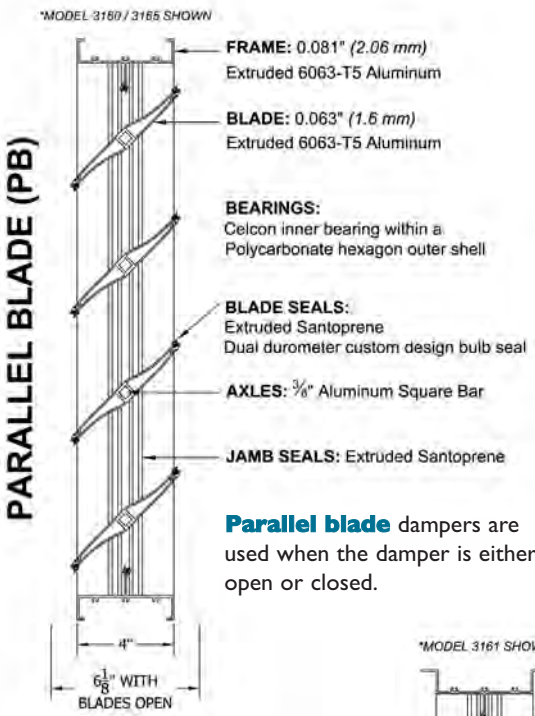
3165

Flanged to Duct Frame – The frame is fastened directly to the flange on the duct. The open area is equal to the duct size. This maximizes the free area and is recommended for dampers less than 30" (762 mm) high.

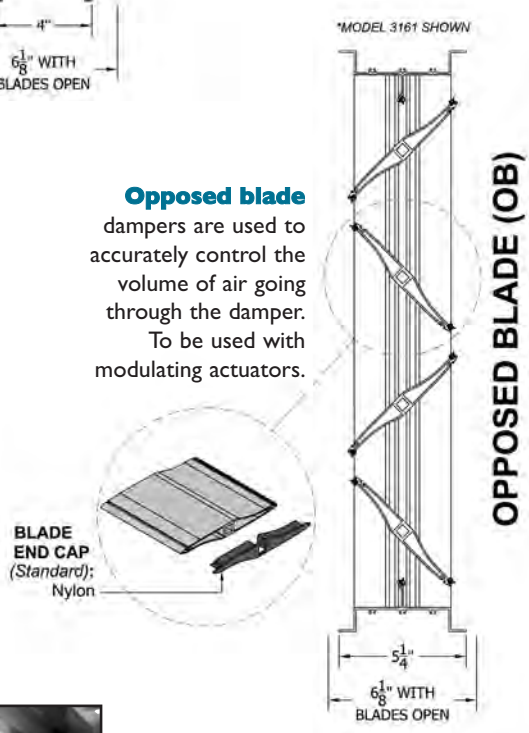


3167

Single Sided flange – The 1" flange around the perimeter of this damper allows for easier installation on a wall or on air handling units.

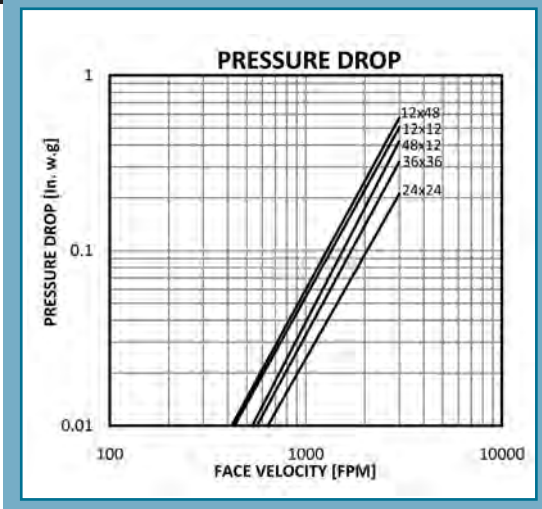


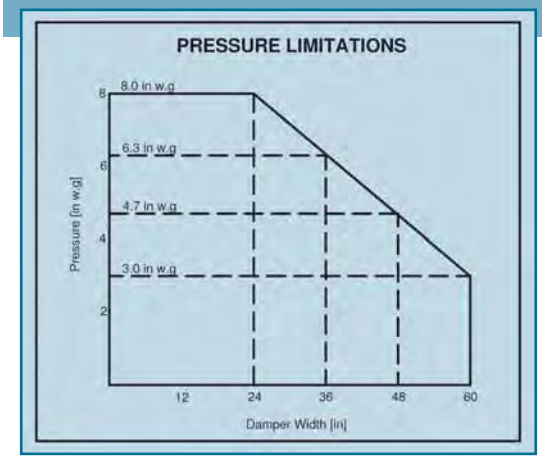
Parallel blade dampers are used when the damper is either open or closed.



Opposed blade dampers are used to accurately control the volume of air going through the damper. To be used with modulating actuators.

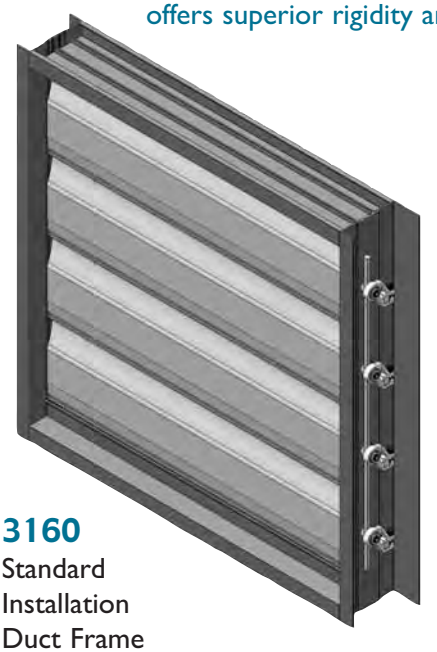
The Standard Nylon Blade End Cap maximizes the contact area of the blade and jamb seals, creating a better seal than the blade and jamb seal alone. The smooth nylon surface of the end cap also ensures smooth operation of the damper and prevents the jamb seal from being damaged by the blade.





3100 Series

The Alumavent 3100 is a premium, low leakage, extruded aluminum, air foil damper. The thin airfoil profile minimizes the pressure drop and noise through the damper. This makes the 3100 series an excellent choice for air handlers. The hollow extruded aluminum blade offers superior rigidity and minimizes deflection at higher velocities.



3160
Standard Installation Duct Frame

3100 Series * STANDARD CONSTRUCTION

Depth:
4" (101 mm) – 3160/3165
5.25" (133 mm) – 3161

Depth with Blades Open: 6.125" (156 mm)

Minimum Height:
8" (203 mm) - Single Blade
15" (381 mm) - Multiple Blade

Maximum Panel Width: 48" (1219 mm)

Maximum Panel Height: 60" (1524 mm)

Maximum Panel Size: 20 Sq.Ft.

Maximum System Pressure: 4" w.g. (1 kPa)

Operating Temperature Range: -40° to +180° F

Standard Finish: Mill

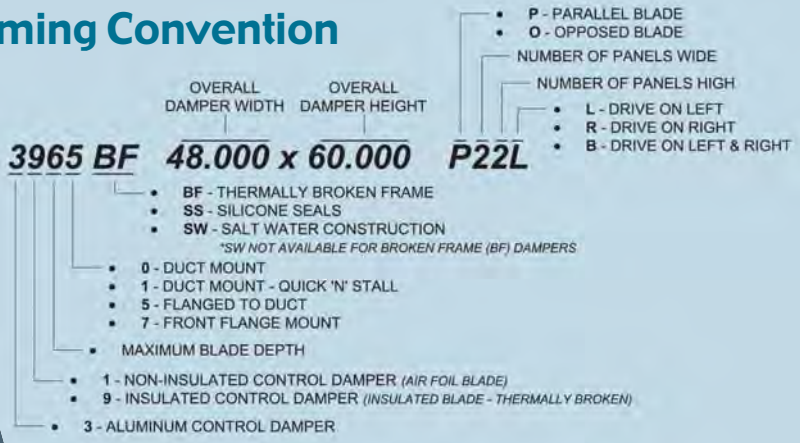
Standard Motor Installation: 6" Side Shaft Direct Drive

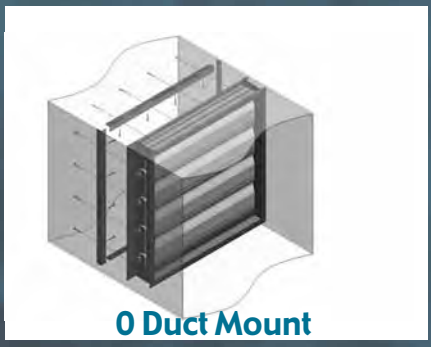
Linkage: Concealed in Frame (3160/3161) Outside of Frame (3165)

Blade End Cap: Nylon

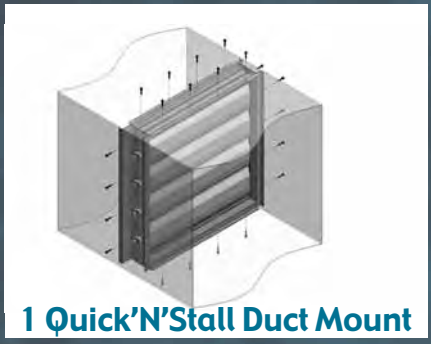
* See Page 9 for Available Accessories

Naming Convention

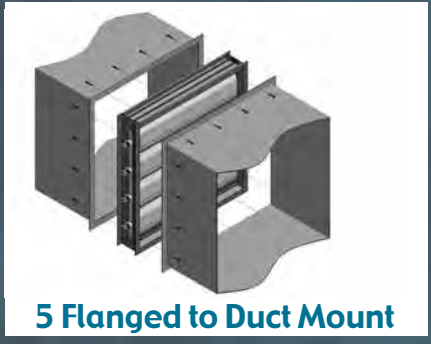




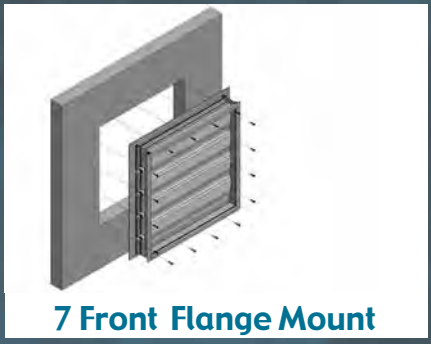
0 Duct Mount



1 Quick'N'Stall Duct Mount



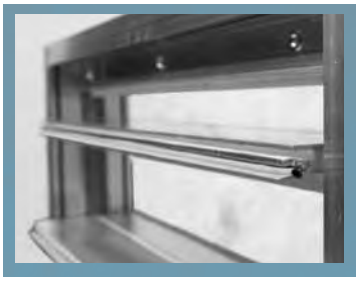
5 Flanged to Duct Mount



7 Front Flange Mount

Silicone Blade and Jamb Seals

For extremely cold environments silicone seals stay flexible to a temperature of -40F (-40C).



Broken Frame

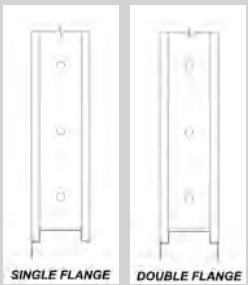
A thermally broken frame reduces the amount of thermal transfer from one side of the damper to the other. The temperature can vary as much as 176F (80C) from one side to the other.

Salt Water Construction

To be used in corrosive environments. The steel components of the linkage are replaced with stainless steel hardware. The blades and frames are anodized. (Note BF frame construction is not available with SW construction. Parallel blade operation only available).

Flange Frames available for 4000 Series

Single Rear Flange:
Flange on actuator side of damper
Single Front Flange:
Flange on opposite side of actuator
Double Flange:
Flange on both sides of the damper.



Horizontal Jackshafts

TYPE	SHAFTING	BEARINGS	PUSHROD	CRANK ARMS	FOR USE ON
A	3/4" Plated Steel	3/4" Pillow Blocks	5/16" Plated Steel	16 GA. Laser Cut Steel Bolted to Shaft	3000 Series Max. 42 Sq.Ft.
B	3/4" Plated Steel	3/4" Pressfit	5/16" Plated Steel	16 GA. Laser Cut Steel Bolted to Shaft	3000 Series Max. 32 Sq.Ft.
C	1/2" Plated Steel	1/2" Pressfit	5/16" Plated Steel	16 GA. Stamped	4000 Series Only
STS	1" Stainless Steel	1" Metalized Carbon	1/2" Stainless Steel Threaded Rod	2 x 1/4" Plated Steel Pinned to Shaft	3000 Series Max. 60 Sq.Ft. Extreme Environments

Type A

Type STS "Sure Turn System" Is made for industrial applications where maintenance on dampers is not possible.

The STS features 1" stainless steel precision shafting. The crank arms are fabricated from 2" x 1/4" steel bar, welded to a 2" collar, and fastened to the shaft using a spring pin. The push rods are 1/2" diameter, stainless steel, threaded rod, capped with spherical rod ends to drive the damper. The metalized carbon bearings inhibit dirt or debris from getting inside therefore, no maintenance is required.

Type STS
"Sure Turn System"

Jumpers Field installed jumpers are available to drive a 2 panel damper. Laser cut from 10 Ga galvanized steel it is available to use on dampers under 18 sq.ft.

Vertical Jackshaft Connects two sections of dampers together using 1/2" stainless steel threaded rod and spherical ends.

Operators

Electric:
- Actuators: Honeywell and Belimo electric actuators
- 24Vdc, 24Vac, 120V and 240V all available with auxiliary switches
- Internal and external mounting.
- 2 position (on / off) or modulating control with feedback signal

Manual:
- Manual Hand Quadrants
- Chain Operator

The 4000 Series

is Alumavent's most economical control damper can be used as a manual damper as well as standard control damper in most low to medium velocity and pressure HVAC systems. The standard HD frame is roll formed from a single piece of16 ga. gal. steel to increase the structural integrity and reduce racking. The corners are fastened together using toggle locks that won't shake loose.

The 16 ga. steel blade features 3 V grooves that run the length of the damper to increase the strength of the blade. They are then installed in the damper using custom designed "W" bolts and nylon lock washers that can't come loose.

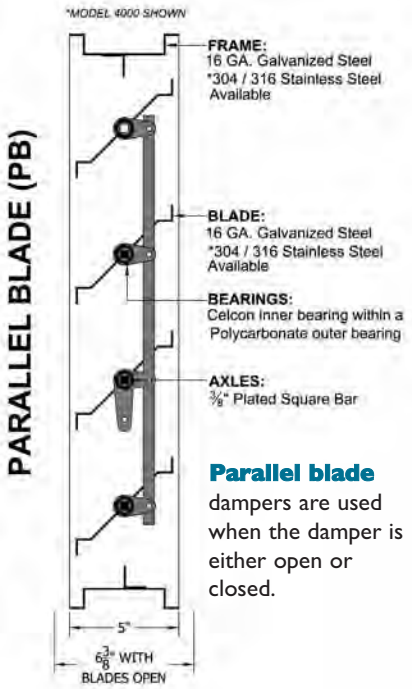
4000

4100

The 4100

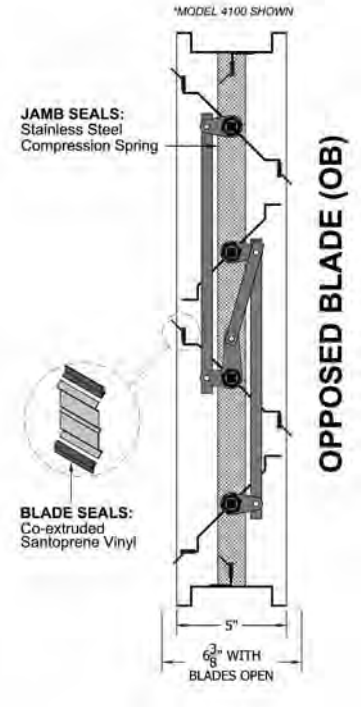
is ideal for low leakage applications due to its dual durometer blade seals which do not require adhesives or mechanical fasteners. The compressible concave stainless steel jamb seals ensure a tight seal along the jambs. The concealed linkage in the frame removes the linkage from the air stream, and reduces pressure drop.

Standard adjustable drive shaft. The integral drive shaft can be extended up to 12" it cannot come loose or be lost.



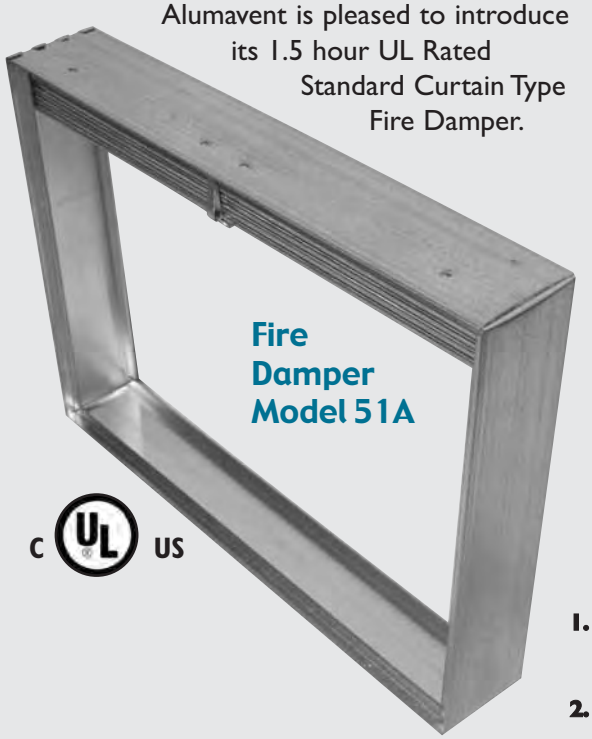
Parallel blade dampers are used when the damper is either open or closed.

Opposed blade dampers are used to accurately control the volume of air going through the damper. To be used with modulating actuators.



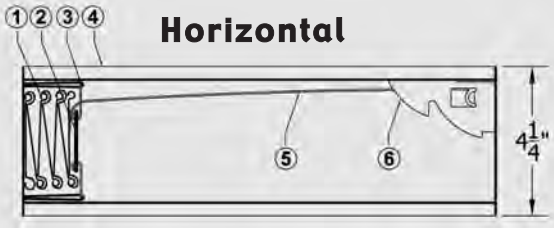
Fire Dampers

Alumavent is pleased to introduce its 1.5 hour UL Rated Standard Curtain Type Fire Damper.



Vertical

Horizontal



1. **Blade**: Roll formed 22GA. Galvanized Steel - Interlocking curtain type blade
2. **Fusible Link:** 165°F (73.9°C) Standard 212°F (100°C) Optional
3. **Link Strap**
4. **Frame:** Roll formed 20 GA. Galvanized Steel with hemmed edge
5. **Constant Force Spring**
6. **Lock Ramp**

* 4000 Series STANDARD CONSTRUCTION

Depth:
5" (127 mm)

Depth with Blades Open:
6.375" (162 mm)

Minimum Height:
8" (203 mm) - Single Blade
14" (356 mm) - Multiple Blade

Maximum Panel Width:
48" (1219 mm)

Maximum Panel Height:
72" (1829 mm)

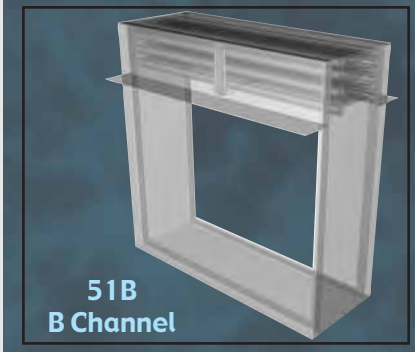
Maximum System Pressure:
4" w.g. (1 kPa)

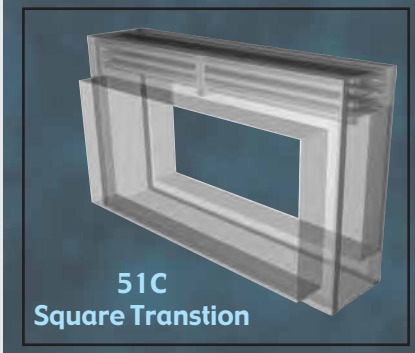
Standard Finish:
Mill Galvanized

Standard Motor Installation:
Side Shaft Direct Drive - extendable up to 12"

Linkage:
Concealed in Frame

* See Page 9 for Available Accessories





Laval Subway Extension,
Laval, Quebec

University of Sherbrooke Hospital Center
Emergency Standby Generator
Sherbrooke, Quebec.

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