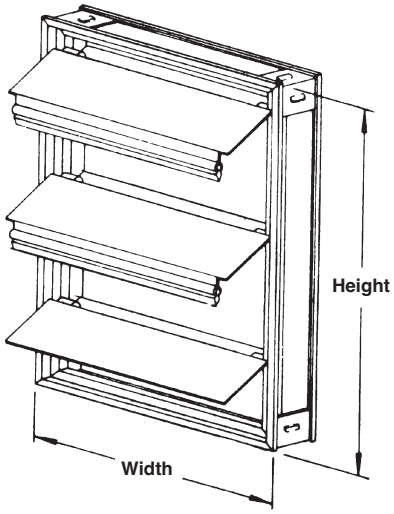
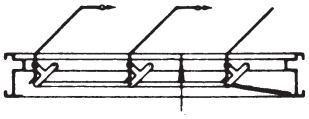
1300 ENTERPRISE ROAD GENEVA, ALABAMA 36340-0580 800-239-4621 FAX 1-800-508-1469 www.reliablelouvers.com

2BDE/2BDHD BACKDRAFT DAMPERS





HORIZONTAL MOUNT
(Upward air flow only)

STANDARD CONSTRUCTION

FRAME
6063T5 extruded aluminum, .090" (2.3) wall thickness, mitered corners.

BLADES
2BDE – .025 (.6) formed aluminum, extruded vinyl edge seals.
2BDHD – 6063T5 extruded aluminum, .050" (1.2) wall thickness, extruded vinyl edge seals.

BEARINGS
Synthetic.

LINKAGE
Concealed in frame.

FINISH
Mill.

TEMPERATURE LIMITS
-40°F to +200°F (-40°C to +93°C).

MAXIMUM SPOT VELOCITY
2BDE – 1500 fpm.
2BDHD – 2500 fpm.

MINIMUM SIZE
6"w x 6"h (152 x 152).

MAXIMUM SIZE
Single section – 40"w x 48"h (1016 x 1219).

Note:
When used in fan discharge applications, damper should be located at a minimum distance equal to half the fan diameter away from the fan discharge.

Dimensions in parentheses ( ) indicate millimeters.

FEATURES

The 2BD dampers offer backdraft protection in light to medium duty applications that demand less than 12 CFM per square foot of leakage at 1/2" w.g. Non-metallic blade-to-blade seal provides quiet operation during the highest spot velocities.

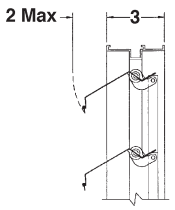
The damper's good looking appearance is maintained by sturdy, corrosion resistant aluminum construction. Contemporary styling features blades that overlap the frame for optimum resistance to weather.

VARIATIONS

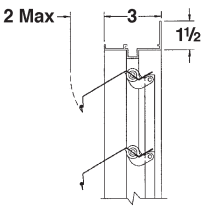
The following variations to the 2BD's are available at additional cost:

- Rear mounted screen
- Special finishes
- Electric actuators

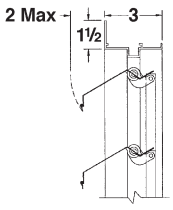
2BDE FRAME CONSTRUCTION



CHANNEL

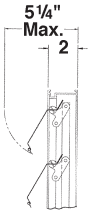


REAR FLANGE

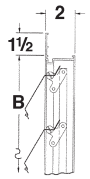


FRONT FLANGE

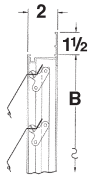
2BDHD FRAME CONSTRUCTION



CHANNEL



FRONT LANGE



REAR FLANGE

WebREPS
1-800-810-3280

RELIABLE

2BDE
2BDHD

SUGGESTED SPECIFICATION

Furnish and install at locations on plans or in accordance with schedules backdraft dampers that meet the following minimum construction standards: Frame shall be .090" (2.3) 6063T5 extruded aluminum wall thickness with mitered corners. Blades shall be (specify) .025" (.6) formed aluminum with extruded vinyl edge seals or .050" (1.3) 6063T5 extruded aluminum with extruded vinyl edge seals. Blade edge seals shall be mechanically locked into blade edge; adhesive type seals are unacceptable. Bearings shall be corrosion resistant synthetic and linkage shall be concealed in frame for low pressure drop and noise. Damper shall be, in all respects, equivalent to Reliable model (specify) 2BDE or 2BDHD.

PERFORMANCE DATA

2BDE

DAMPER WIDTH	MAXIMUM BACK PRESSURE (EXTERNAL WIND VELOCITY)	MAXIMUM SYSTEM VELOCITY	LEAKAGE*	
			% OF MAX. FLOW	CFM/ SQ. FT.
40" (1016)	55 mph/1.5" w.g.	1000 fpm	1.5	15.0
36" (914)	70 mph/2.5" w.g.	1000 fpm	1.5	15.0
24" (610)	85 mph/3.5" w.g.	1000 fpm	2.0	20.0
12" (305)	95 mph/4.5" w.g.	1000 fpm	4.0	40.0

2BDHD

DAMPER WIDTH	MAXIMUM BACK PRESSURE (EXTERNAL WIND VELOCITY)	MAXIMUM SYSTEM VELOCITY	LEAKAGE*	
			% OF MAX. FLOW	CFM/ SQ. FT.
40" (1016)	75 mph/3" w.g.	1500 fpm	1.0	15.0
36" (914)	90 mph/4" w.g.	1500 fpm	1.0	15.0
24" (610)	100 mph/5" w.g.	1500 fpm	1.17	17.5
12" (305)	100 mph/6" w.g.	1500 fpm	2.67	40.0

***Leakage information based on pressure differential of 1" w.g.**

AMCA Standard 500 provides a reasonable basis for testing and rating dampers. Testing to AMCA 500 is performed under a certain set of laboratory conditions. This does not guarantee that other conditions will not occur in the actual environment where dampers must operate.

Designs should provide a reasonable safety factor for damper performance by selecting at some point below damper leakage or pressure drop system requirements.

OPERATIONAL PRESSURES INCHES W.G.		
DAMPER MODEL	BLADES START TO OPEN	BLADES FULLY OPEN
BD2A1	.03	.10
BD2A2	.10	.15

INSTALLATION INSTRUCTIONS

1. When used in fan discharge applications, damper should be located at least one-half the fan diameter away from the fan.
2. For proper operation, damper must be installed square and free from racking.
3. Bracing of multiple section assemblies: The 2BDE/2BDHD is intended to be self supporting only in the largest single section size. Multiple section damper assemblies may require bracing to support the weight of the assembly and to hold against system pressure. Reliable recommends appropriate bracing to support the weight of the assembly and to hold against system pressure. Reliable recommends appropriate bracing to support the damper horizontally at least once for every 8 feet of damper width. Vertical assemblies and higher system pressures may require more bracing.

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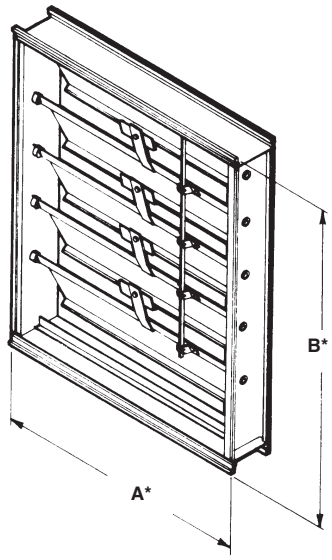
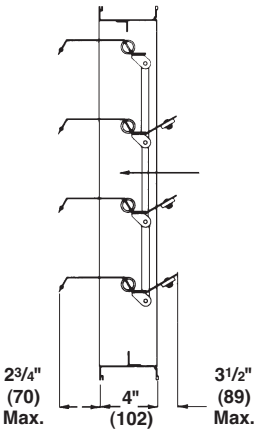
4CBD COUNTERBALANCED BACKDRAFT DAMPER





VERTICAL MOUNT HORIZONTAL AIR FLOW

STANDARD CONSTRUCTION

FRAME
4" x 1" x 6063T5 (102 x 25) extruded aluminum .081" (2.1) nominal wall thickness.

BLADES
6063T5 extruded aluminum .070" (1.8) nominal wall thickness.

AXLES
1/2 " (13) diameter synthetic.

BEARINGS
Dustproof, ball bearings pressed into frame.

LINKAGE
1/8 " x 1/2 " (3 x 13) aluminum tiebars with SS pivot pins.

SEALS
Extruded vinyl locked into blade edge.

MOUNTING
Vertical – Air flow horizontal.
Horizontal – Air flow up or down.

MINIMUM SIZE
6" w x 11"h (152 x 279)

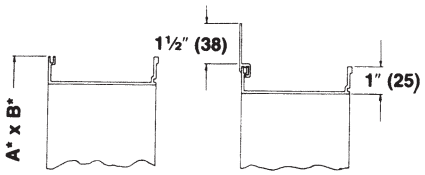
MAXIMUM SIZE
Single section – 48"w x 52"h (1219 x 1321).
Multiple section assembly – Unlimited size.

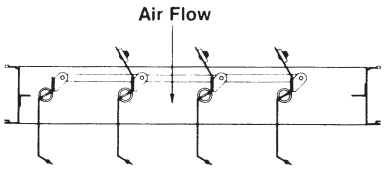
Dimensions in parentheses ( ) indicate millimeters.

FEATURES

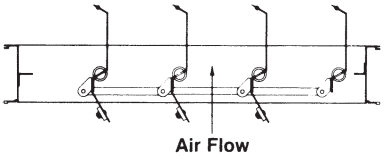
The 4CBD is designed for gravity relief at relatively low pressure differentials and low velocity airflows. Adjustable counterbalance weights enable the damper to operate in the range of .01 to .05 inches water gage.

FRAME CONSTRUCTION





HORIZONTAL MOUNT AIR FLOW DOWN



HORIZONTAL MOUNT AIR FLOW UP

WebREPS
1-800-810-3280

RELIABLE
4CBD

SUGGESTED SPECIFICATION

Furnish and install, at locations shown on plans or in accordance with schedules, counterbalance backdraft dampers that meet the following minimum construction standards: frame shall be (specify) .125" (3.2) wall thickness with 12 gage (2.8) galvanized steel structural brace at each corner or 4" x 1" x .081" (102 x 24 x 2.1) 6063-T5 extruded aluminum. Blades shall be .070" (1.8) wall thickness 6063-T5 extruded aluminum with extruded vinyl blade edge seals mechanically locked into blade edge. Adhesive or clip-on type seals are unacceptable. Bearings shall be dustproof ball type for quiet low pressure operation. Linkage shall be 1/2" (13) wide tiebar connected to stainless steel pivot pins. Dampers shall be designed for maximum 3500 fpm spot velocities and minimum 4" w.g. back-pressure, depending on damper size. Damper shall be in all respects equivalent to Reliable model 4CBD.

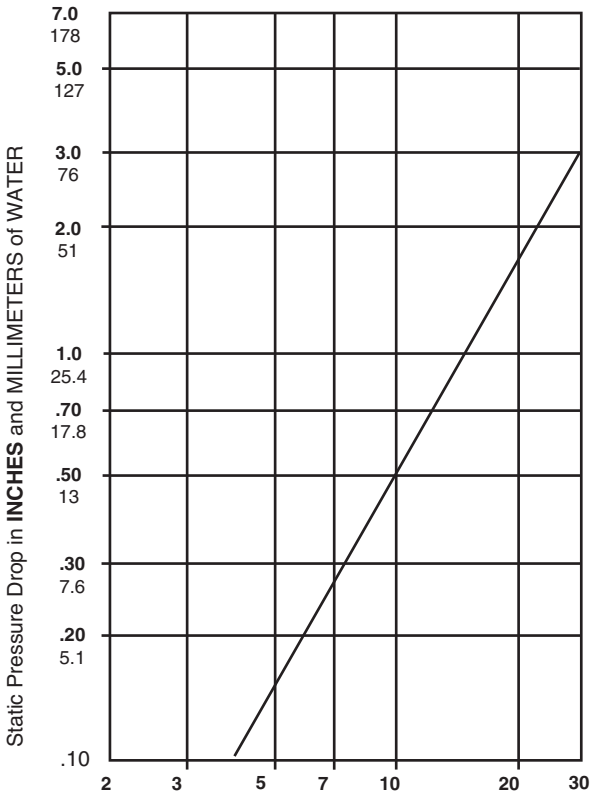
PERFORMANCE DATA

4CBD PERFORMANCE DATA

DAMPER WIDTH INCHES (MM)	MAXIMUM BACK PRESSURE	MAXIMUM SYSTEM VELOCITY	LEAKAGE*		BLADES START TO OPEN	BLADES FULLY OPEN
			Percent of Max. Flow	CFM/ Sq. Ft.		
48" (1219)	4.0" w.g.	2500 FPM	.7%	17.5	.02" w.g.	.05" w.g.
36" (914)	8.0" w.g.	2500 FPM	.8%	20		
24" (610)	12.0" w.g.	2500 FPM	.9%	23		
12" (305)	16.0" w.g.	2500 PFM	1.6%	40		

AIR LEAKAGE

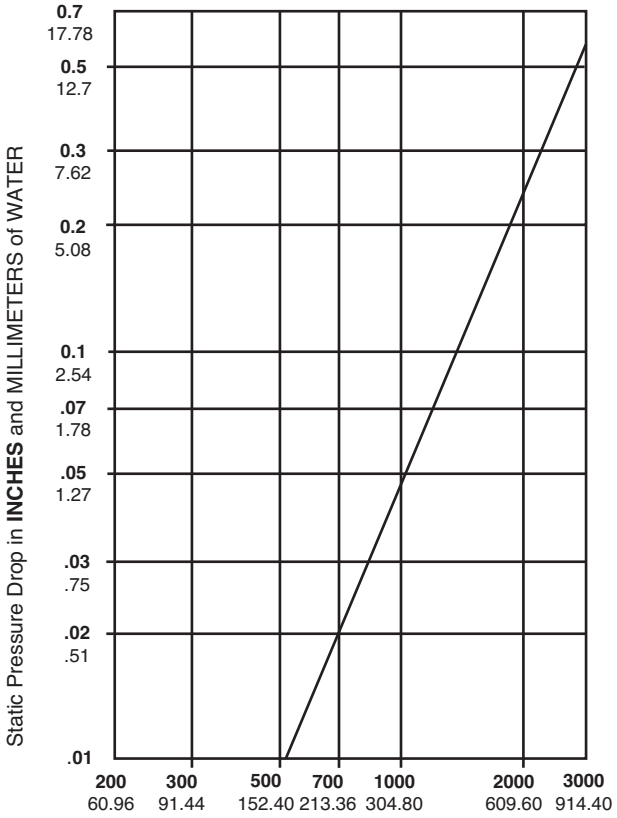
Damper Closed (Max. width)



Air Leakage in **CFM/Sq. Ft.** through FACE AREA.
Tested per AMCA Std. 500, Fig. 5.5, plenum mounted.

PRESSURE DROP

Damper Open (24" x 24" [610 x 610] size)



Air Velocity in **FEET** and METERS per minute through FACE AREA.
Tested per AMCA Std. 500, Fig. 5.3, ductwork upstream and downstream.

BACKDRAFT DAMPER
WITH FLANGE

LBDF–1
BACKDRAFT
DAMPER
WITH FLANGE

STANDARD CONSTRUCTION

FRAME
6063T5 EXTRUDED ALUMINUM
MINIMUM WALL THICKNESS 16GA.

BLADES
6063T5 EXTRUDED ALUMINUM16GA.
COUNTER BALANCE ROD HOLDER
BUILT INTO REAR OF BLADES

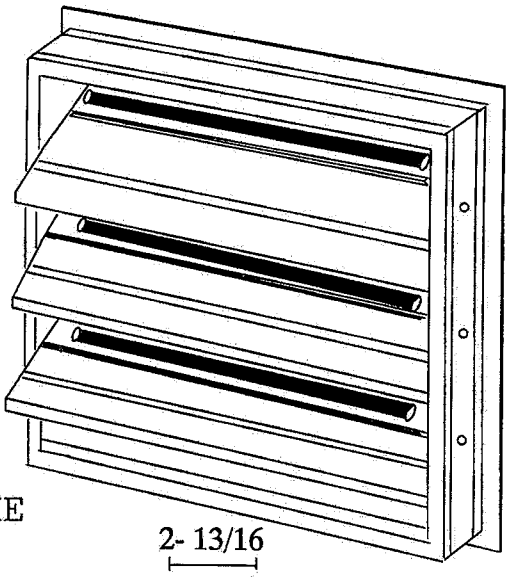
VINYL BLADE CUSIONING SEALS

BEARINGS SUPER TOUGH NYLON

AXLES CAST ALUMINUM

LINKAGE
16GA X 5/8"WIDE ALUMINUM
CONCEALED IN THE CHANNEL FRAME

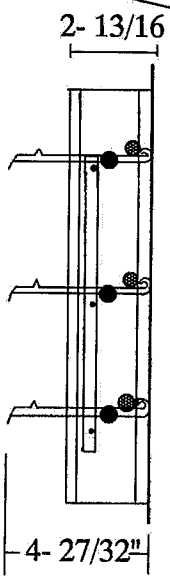
MILL FINISH



MAXIMUM SIZE
SINGLE SECTION36" W X60" H
MULTIPLE SECTION **UNLIMITED**

MINIMUM SIZE 6" X 6"

DAMPER IS 1/4" LESS THAN ORDERED DIMENSIONS
UNLESS REQUESTED OTHERWISE



NOTE
WHEN USED IN FAN DISCHARGE
APPLICATIONS,DAMPER SHOULD
BE AT LEAST HALF THE FAN DIAMETER
DISTANCE FROM FAN DISCHARGE

LLOYD INDUSTRIES INC.

231 Commerce Dr.
Montgomeryville, PA 18936
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fax: 215-412-4409
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Jacksonville, FL 32254
Tel: 904-378-8440
Fax: 904-378-8441
Email: lloydind1@bellsouth.net

Web Site: firedamper.com

10330

BACKDRAFT DAMPER

STANDARD CONSTRUCTION

FRAME
6063T5 EXTRUDED ALUMINUM
MINIMUM WALL THICKNESS 16GA.

BLADES
6063T5 EXTRUDED ALUMINUM16GA.
COUNTER BALANCE ROD HOLDER
BUILT INTO REAR OF BLADES

VINYL BLADE CUSIONING SEALS

BEARINGS SUPER TOUGH NYLON

AXLES CAST ALUMINUM

LINKAGE
16GA X 5/8"WIDE ALUMINUM
CONCEALED IN THE CHANNEL FRAME

MILL FINISH

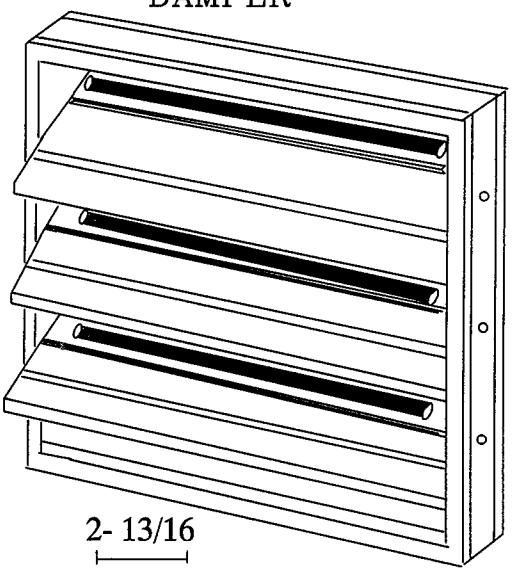
MAXIMUM SIZE
SINGLE SECTION36" W X60" H
MULTIPLE SECTION **UNLIMITED**

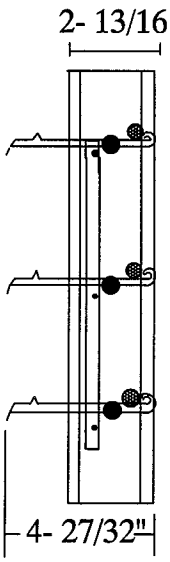
MINIMUM SIZE 6" X 6"

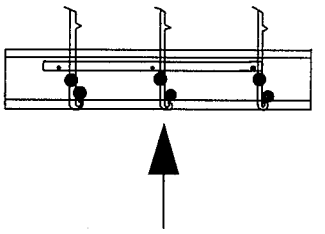
DAMPER IS 1/4" LESS THAN ORDERED DIMENSIONS
UNLESS REQUESTED OTHERWISE

NOTE
WHEN USED IN FAN DISCHARGE
APPLICATIONS,DAMPER SHOULD
BE AT LEAST HALF THE FAN DIAMETER
DISTANCE FROM FAN DISCHARGE

LBD-1
BACKDRAFT
DAMPER







HORIZONTAL MOUNT
UPWARD AIRFLOW ONLY

10330-REV-A

LLOYD INDUSTRIES INC.

231 COMMERCE DRIVE
MONTGOMERYVILLE, PA. 18936
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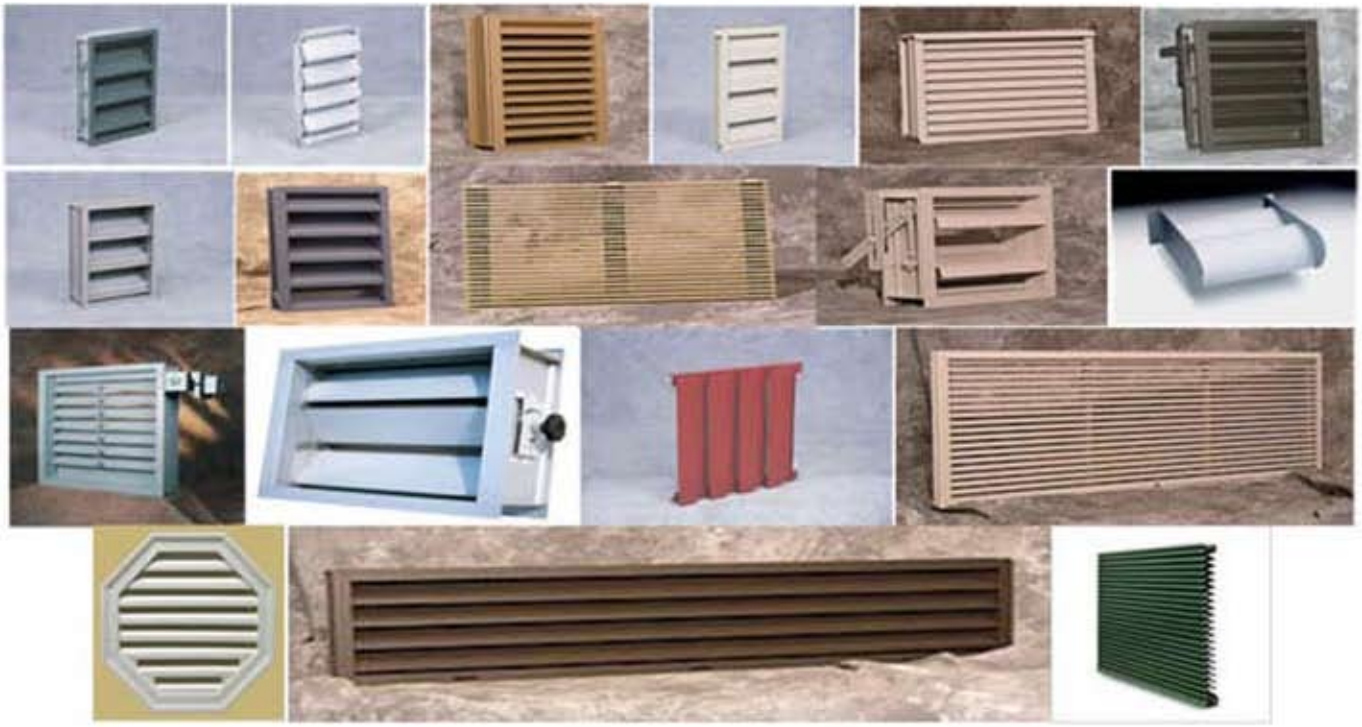
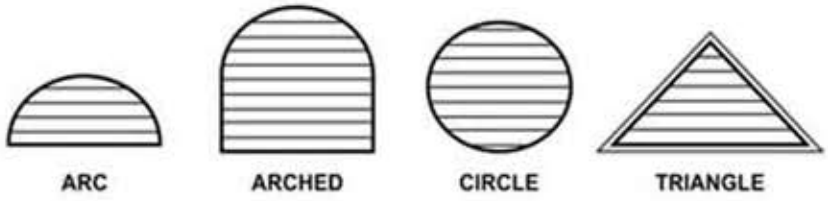
FAX: 215-412-4409
EMAIL: LLOYDIND@FIREDAMPER.COM

5858 BROADWAY AVE.
JACKSONVILLE, FL. 32254
TEL: 904-378-8440
FAX: 904-378-8441
EMAIL: LLOYDIND1@BELLSOUTH.NET

WEB SITE: FIREDAMPER.COM

WebREPS
1-800-810-3280





LOUVERS

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WebREPS