



Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.
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Date: 5/19/2026

Return Request: 5/29/2026

Project: Hot Springs National Park – Rehabilitate Bathhouses – Maurice Bathhouse

Supplier: Custom Metals

Manufacturer: Varies

Submittal: Ductwork Accessories (Re-Submittal #1)

Submittal Number: 233300.001

Spec Section: 233300

Drawing # and Installation Location: M1.0 through M1.4, and M4.0

ARCHITECT

Strata Architecture
1701 Oak Street, Suite 100
Kansas City, Missouri 64108
(816)474-0900

GENERAL CONTRACTOR

Tepa, LLC
2345 Grand Blvd, Suite 700
Kansas City, Missouri 64108
(816)708-1110

ENGINEER

IMEG Corp.
1600 Baltimore Street, Suite 300
Kansas City, Missouri 64108
(816)842-8437

MECHANICAL SUBCONTRACTOR

Comfort Systems USA (Arkansas), Inc.
9924 Landers Road
North Little Rock, Arkansas 72117
(501)834-3320

Comments:

CSUSA PROJECT NO.

25-7065

joe@comfortar.com

9924 Landers Road
No. LittleRock, AR 72117



Job: **Maurice Bathhouse Renovation**

Spec: **23 33 00 Ductwork Accessories**

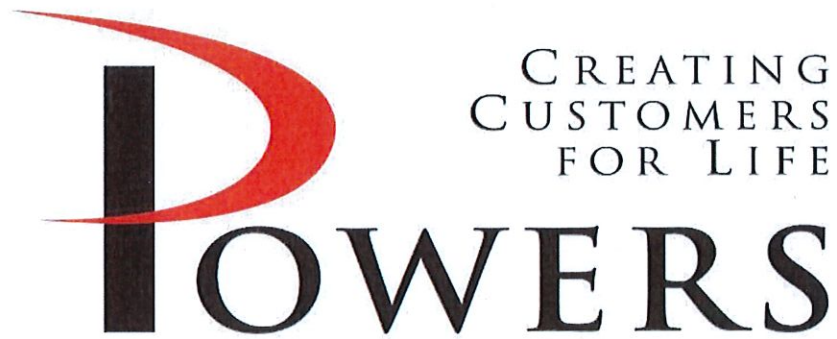
Item: **Fire Dampers & Access Doors**

Submitted by:

Joe Minton Jr.

Vice President HVAC

(501) 607-0043



SUBMITTAL

PRODUCT	Dynamic Fire Dampers
SPECIFICATION	233300
MANUFACTURER	Pottorff
JOB NAME	Maurice Bathhouse Renovation
LOCATION	Hot Springs, AR
ENGINEER	IMEG Consultants Corp
CONTRACTOR	Custom Sheet Metal
DATE	8/25/2025
SUBMITTED BY	Courtney Michael

5440 Northshore Drive - North Little Rock, Arkansas 72118 - Tel: 501.374.5420 Fax: 501.370.9298

Submittal

Model FD-350

Fire damper, 3 hour, airfoil blade

General construction

Dimensions: Nominal (approximately 1/4" (6) undersize, sleeve thickness not included)

Material: Galvanized steel

Mount: Vertical

Frame: 5" x 1" (127x25) hat channel, 13 gauge equivalent

Blade style: 6" x 14 gauge equivalent gauge, airfoil

Blade action: Parallel

Axles: 1/2" (13) diameter plated steel hex

Linkage: Concealed in frame

Seals: Blade: Silicone; Jamb: Flexible metal

Bearings: Stainless steel oilite, sleeve-type

Fire closure device: Fusible link

Fire closure temperature (°F): 165

Options

Sleeve: Type: Sleeve; Length (in): 12; Gauge: 16; Clearance (in): 3.5

Angles: Picture frame, 16 ga (2 sides)

Ratings

UL555FireResistanceRating: 3 hour (vertical and horizontal)

ULHNLN: Ventilation Duct Assemblies

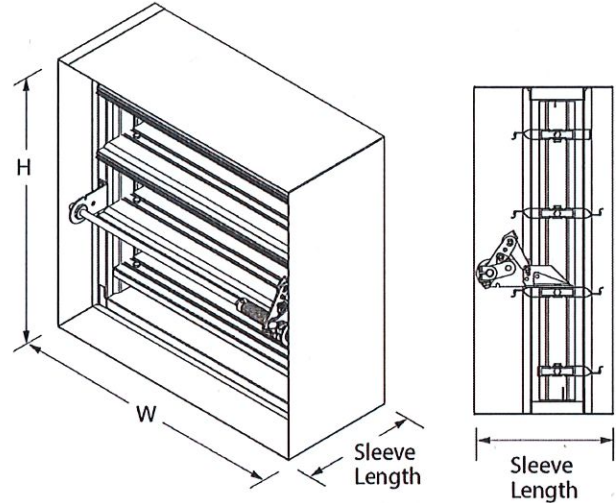
Maximum dynamic closure velocity (fpm): 2000

Maximum UL555S rated pressure (in.wg.): 4

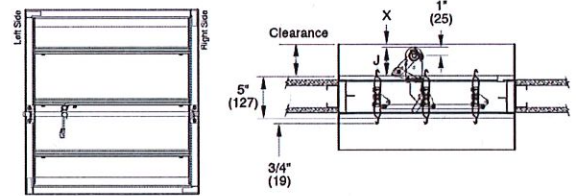
Listings

UL 555 listing: R11767

CSFM listing: 3225-0368:115



Model FD-350 with sleeve



Dimensional details

The drawings and corresponding table show the position of the damper when mounted in a factory sleeve. The standard mounting locations provide enough space for installation of retaining angles and duct connections. The entire damper frame is not required to be installed within the wall, partition or floor. However, the closed plane of the damper blades must be inside the wall, partition or floor.

Details

Line Item	Tag	Qty	Dimensions (in.xxxx)		Sections Wide x High	Dimensional data (in)	
			W x H	D		X	J
14		1	48 x 24		2 x 1	0.125	3.375
15		1	42 x 18		2 x 1	0.125	3.375
16		1	18 x 10		1 x 1	0.125	3.375

This submittal sheet reflects only the construction and options selected and is not indicative of all constructions and options that are available for the product. For more information, please contact your local representative or visit us at www.pottorff.com.

Information is subject to change without notice or obligation.

Note: Dimensions in parentheses () are millimeters.



Project: Maurice Bathhouse
Submittal Date: 8/23/2025
Submitted By: courtney michael

Submittal

Model FD-350
Fire damper, 3 hour, airfoil blade

Details

Line Item	Tag	Qty	Dimensions (in.xxxx)		Sections	Dimensional data (in)	
			W x H	D	Wide x High	X	J
17		1	20 x 18		1 x 1	0.125	3.375

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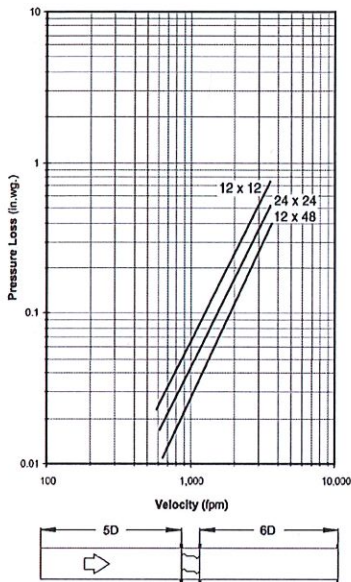
Note: Dimensions in parentheses () are millimeters.

POTTORFF

Submittal Model FD-350 Performance

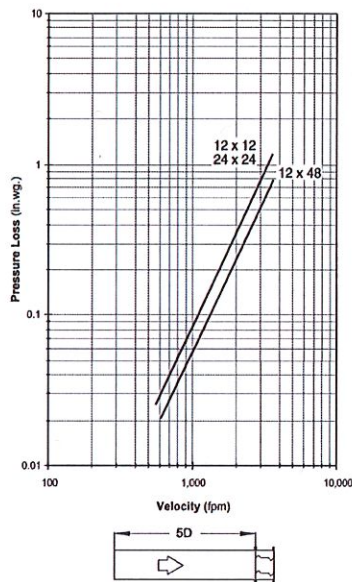
Pressure drop testing

Pressure drop testing was performed in accordance with AMCA Standard 500-D using the three configurations shown. All data has been corrected to represent air density of 0.075 lb/ft. Actual pressure drop in any ducted HVAC system is a combination of many elements. This information, along with analysis of other system influences, should be used to estimate actual pressure losses for a damper installed in a given HVAC system.



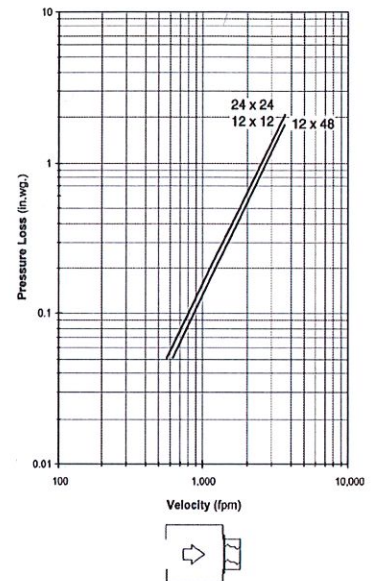
Ducted inlet and outlet

AMCA Figure 5.3 illustrates a fully ducted damper. This configuration represents the lowest pressure drop of the three test configurations because entrance and exit losses are minimized by straight duct runs upstream and downstream of the damper.



Ducted inlet

AMCA Figure 5.2 illustrates a ducted damper exhausting air into an open area. This configuration has a lower pressure drop than Figure 5.5 because entrance losses are minimized by a straight duct run upstream of the damper.



Plenum mount

AMCA Figure 5.5 illustrates a plenum mounted damper. This configuration has the highest pressure drop because of extremely high entrance and exit losses due to the sudden changes of area in the system.

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SUBMITTAL

PRODUCT	Duct Access Doors
SPECIFICATION	233300
MANUFACTURER	Pottorff
JOB NAME	Maurice Bathhouse Renovation
LOCATION	Hot Springs, AR
ENGINEER	IMEG Consultants Corp
CONTRACTOR	Custom Sheet Metal
DATE	8/25/2025
SUBMITTED BY	Courtney Michael

5440 Northshore Drive - North Little Rock, Arkansas 72118 - Tel: 501.374.5420 Fax: 501.370.9298

Submittal

Model HAD

Duct access door, insulated panel

General construction

Material: Galvanized steel

Door panel: 24 gauge - double wall, insulated

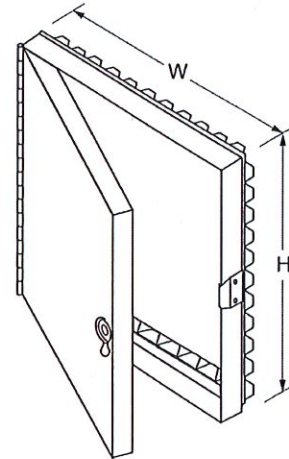
Insulation: 1" thick fiberglass

Gasket: Compressible closed cell neoprene - door to frame and frame to duct

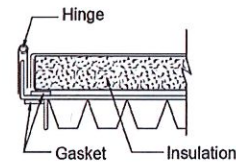
Latches: Cam

Ratings

Operating temperature range: -20°F to 200°F



Model HAD



Side view

Details

Line Item	Tag	Qty	Frame gauge	Door Size (In.xxxx)	Duct Opening Size	Qty Latches	Ratings
				W x H	W x H (In)	W x H	Press (In.w.g.)
24		6	22	16 x 16	15 x 15	0 x 2	2
25		1	24	12 x 12	11 x 11	0 x 1	3
26		1	24	8 x 8	7 x 7	0 x 1	3
27		1	24	10 x 10	9 x 9	0 x 1	3

Provided for Fire Dampers and Louver plenum access doors (4 - 16x16 for louver plenum access doors)

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Note: Dimensions in parentheses () are millimeters.



Job: **Maurice Bathhouse Renovation**

Spec: **23 33 00 Ductwork Accessories**

Item: **Gravity Ventilators**

Submitted by:

Joe Minton Jr.

Vice President HVAC

(501) 607-0043



SUBMITTAL

PRODUCT	Tiered Gravity Ventilators
MANUFACTURER	Loren Cook
JOB NAME	Maurice Bathhouse Renovation
LOCATION	Hot Springs, AR
ENGINEER	IMEG Consultants Corp
CONTRACTOR	Custom Sheet Metal
DATE	8/25/2025
SUBMITTED BY	Courtney Michael

5440 Northshore Drive - North Little Rock, Arkansas 72118 - Tel: 501.374.5420 Fax: 501.370.9298



COOK

MARK: TRE

PROJECT: REHABILITATE BATHHOUSES - MAURICE

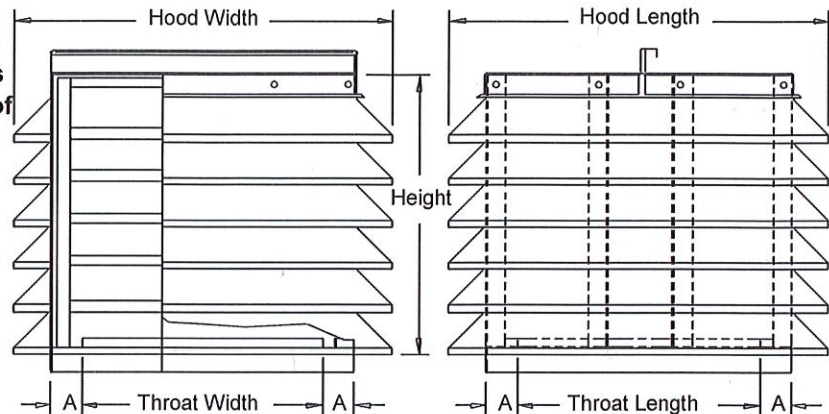
DATE: 8/23/2025

TRE

Extruded Relief or Intake Ventilator

STANDARD CONSTRUCTION FEATURES:

- Heavy gauge all aluminum construction -
- Birdscreen - Solid welded and mitered tier corners with a built in rain catch on each tier -
- Built in water trough - Welded curb cap corners
- Anti-condensate coating on underneath side of topcap - Five year warranty.



Performance (Intake)

Qty	Catalog Number	Flow (CFM)	SP (inwc)	Face Velocity (fpm)	Installation
1	12X12X2TRE	123	.004	53	Non-Ducted

Altitude (ft): 1270 Temperature (F): 70

Accessories:

ROOF CURB RCG 16X 16-13.5H W/TRAY

Dimensions (inches)

Throat Width	12
Throat Length	12
Hood Width	23.75
Hood Length	23.75
Height	9
A	2.75
Free Area(Sq.ft)	2.29

NOTE: Accessories may affect dimensions shown.

Weight(lbs)***	Shipping	71	Unit	C/F
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***Includes accessories.



COOK

PROJECT: REHABILITATE BATHHOUSES - MAURICE

DATE: 8/23/2025

RCG

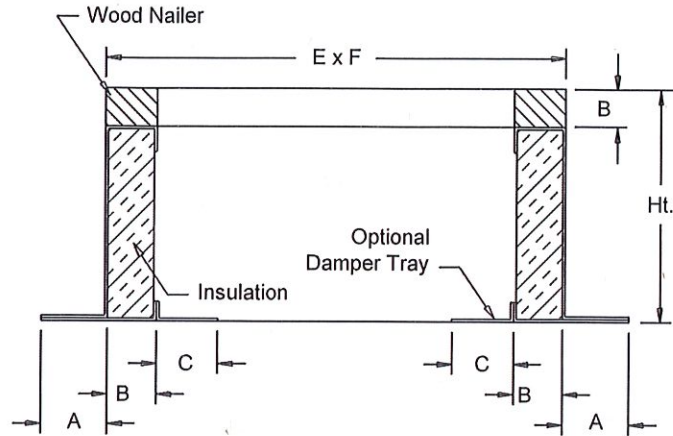
Galvanized Steel

STANDARD CONSTRUCTION FEATURES:

18 ga. galvanized steel - 1-1/2"(3.81 cm),
3 lbs./cu.ft.(1.36 kg/cu. meter) density
thermal and accoustical insulation -
Continuously welded corners - Wood nailer.

Options:(As noted below*)

- 1) No wood nailer (deduct 1-1/2" for actual height)
- 2) Damper tray.
- 3) Liner.
- 4) Gasket on wood nailer.
- 5) Lorenized coating.
- 6) Enamel coating.
- 7) Burglar bars.



Note:

Roof Opening is (E - 3) X (F - 3)
Dimensions (inches)

Mark	Qty	Description	Ht	Options*	A	B	C	E	F	Roof Opening
TRE	1	RCG 16X 16	13.5	2;	2	1.5	1.875	16	16	13 X 13



Job: **Maurice Bathhouse Renovation**

Spec: **23 33 00 Ductwork Accessories**

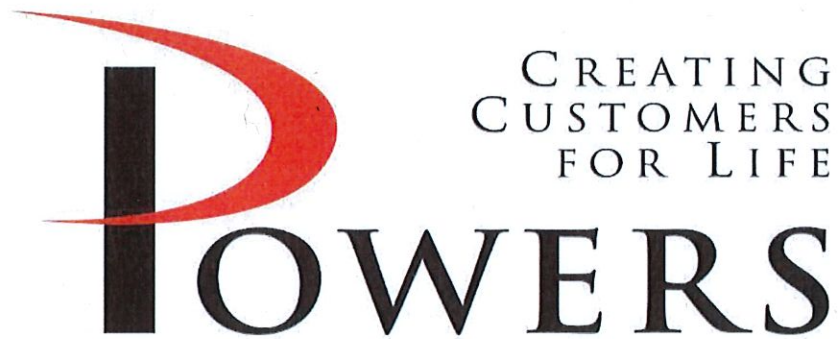
Item: **Louvers**

Submitted by:

Joe Minton Jr.

Vice President HVAC

(501) 607-0043



SUBMITTAL

PRODUCT	Louvers
MANUFACTURER	Pottorff
JOB NAME	Maurice Bathhouse Renovation
LOCATION	Hot Springs, AR
ENGINEER	IMEG Consultants Corp
CONTRACTOR	Custom Sheet Metal
DATE	8/25/2025
SUBMITTED BY	Courtney Michael

5440 Northshore Drive - North Little Rock, Arkansas 72118 - Tel: 501.374.5420 Fax: 501.370.9298

Submittal

Model EFD-435

Extruded aluminum louver, 4" deep, 35 degree drainable blade

General construction

Dimensions: Nominal (approximately 1/2" (12) undersized)

Material: 6063-T5 extruded aluminum

Material thickness (in): 0.081

Frame and blade attachment: Mechanically fastened

Frame: 4" deep channel

Flange type: Flange frame

Blade: 35° drainable

Screen 1 configuration: Material: Aluminum; Type: Bird screen;
 Pattern: 1/2" x 0.063"

Options

Material: 6063-T5 extruded aluminum

Screen 1 finish: Match louver

Flange: Type: Flange frame, Width (in): 1.5

Finish: Baked enamel, Standard color name: TBD

Finish warranty: 5 years

Ratings

Free area: [48" x 48" (1219 x 1219) unit]: 9.3 ft² (0.86 m²) 58.1% (1 side)

Velocity @ 0.15 in.wg. Pressure Loss: 990 fpm (5.03 m/s)

Std. Design Load: 30 psf

Listings

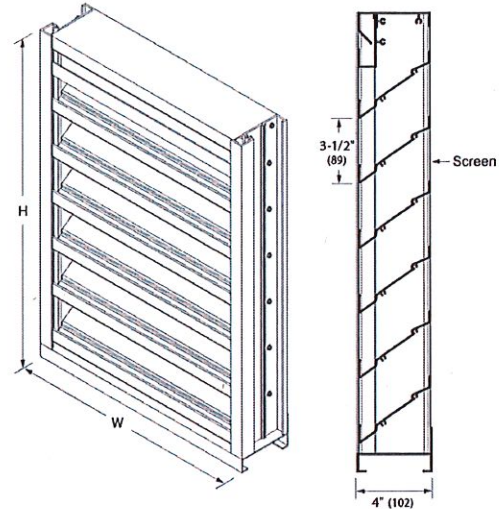
AMCA CRP Listing: Air, Water

Performance at beginning point of water penetration

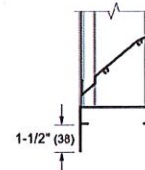
Free area velocity: 966 fpm (4.91 m/s)

Air volume delivered: 8984 cfm (4.24 m³/s)

Pressure loss: 0.13 in.wg. (32 Pa)



Model EFD-435



EFD-435 with flange frame

Details

Line Item	Tag	Qty	Louver size (in.xxxx)	Sections	Ratings			Free area		Approx. weight (lbs)
			W x H	Wide x High	CFM	FPM	PD (in.w.g.)	ft²	%	
28	L-OA-1M	1	31 x 39	1 x 1	1500	335	0.02	4.48	54	28
29	L-RLF-1M	1	31 x 39	1 x 1	1500	335	0.02	4.48	54	28

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Note that performance data in the details section of this submittal are calculated values, and are not AMCA certified.

Information is subject to change without notice or obligation.

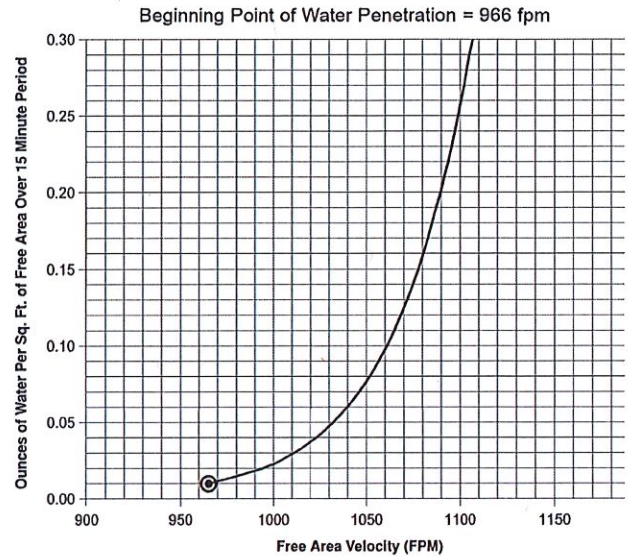
Note: Dimensions in parentheses () are millimeters.

Submittal Model EFD-435 Performance



Certified Ratings:

Pottorff certifies that the model EFD-435 shown herein is licensed to bear the AMCA seal. The ratings shown are based on test 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 and water penetration ratings.



Water penetration

AMCA defines the beginning point of water penetration as the free area velocity at the intersection of a simple linear regression of test data and the line of 0.01 ounces of water per square foot of free area and is measured through a 48" x 48" louver during a 15 minute period. The AMCA water penetration test provides a method for comparing louver models and designs as to their efficiency in resisting the penetration of rainfall under specific lab conditions. Pottorff recommends that intake louvers are selected with a reasonable margin of safety below the beginning point of water penetration in order to avoid unwanted penetration during severe storm conditions.

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Note: Dimensions in parentheses () are millimeters.

Application and Design

Minimum 1/2" (13), maximum 3" (76) width (height) variable flange. Optional no bottom flange for use typically when a bottom sill pan is required. For use with extruded aluminum and formed steel louver models. On extruded aluminum louvers, flanges greater than the standard 1-1/2" (38) are welded onto the louver.*

Standard Construction

Material: 0.081" (2) thick 6063-T5 extruded aluminum for aluminum louvers or 20 ga. (1.0) thick galvanized steel for formed steel louvers.

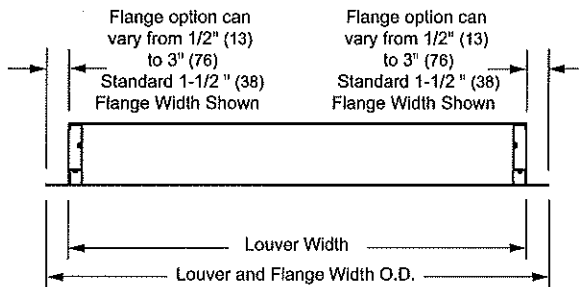
Finish: To match louver finish.

Minimum Size: See appropriate louver minimum.

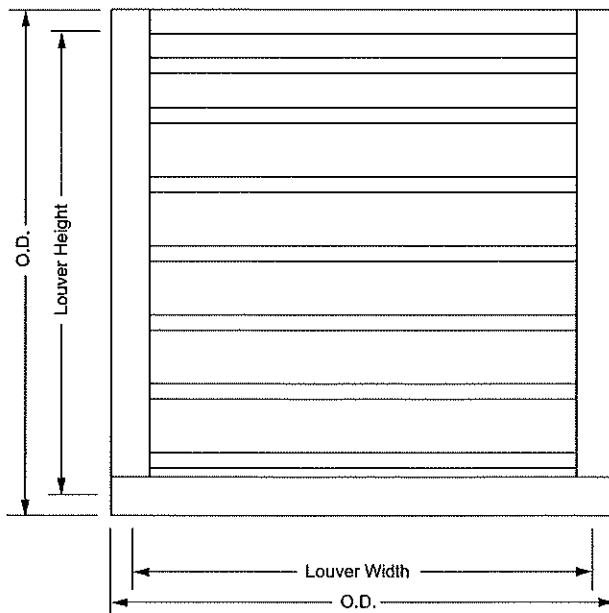
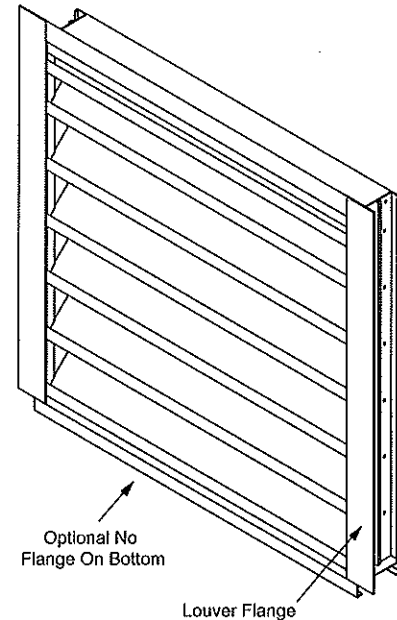
Maximum Size: See appropriate louver maximum.

Typical Details

Top, Front, and Side view shown with standard flange on extruded aluminum louvers - formed steel louvers similar.

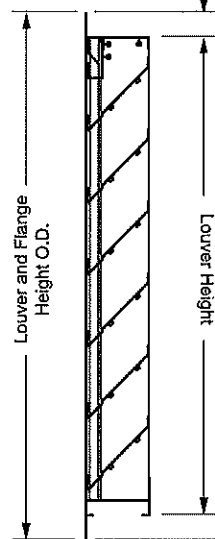


Top View

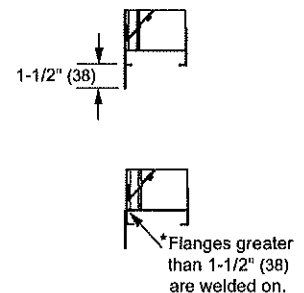


Front View

Flange option can vary from 1/2" (13) to 3" (76)
Standard 1-1/2" (38) Flange Height Shown



Side View

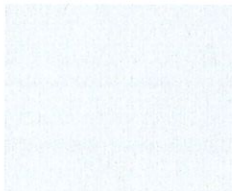
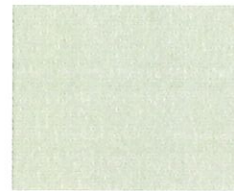
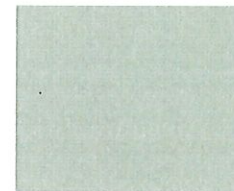
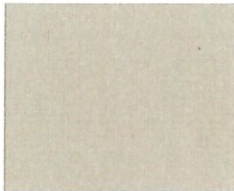
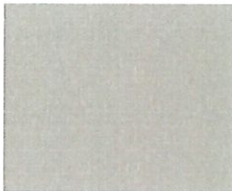
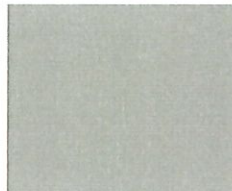
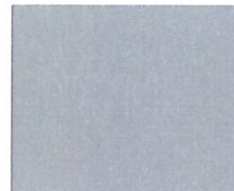
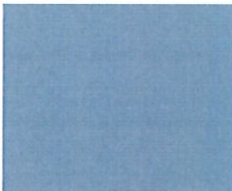
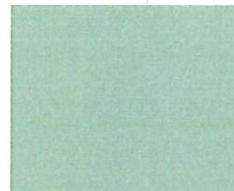
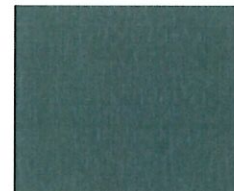
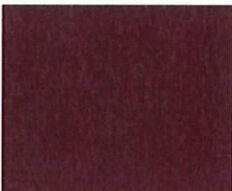
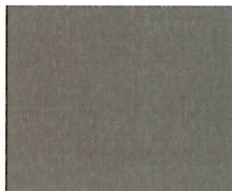
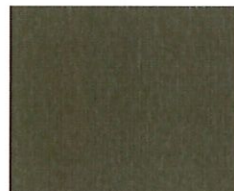


Flange View

POTTORFF®

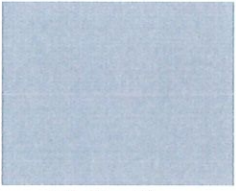
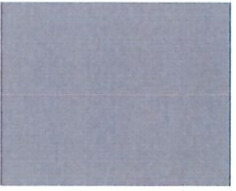
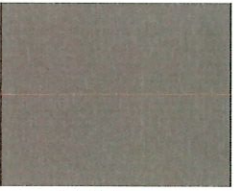
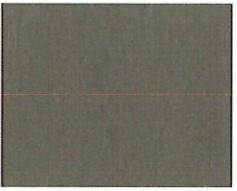
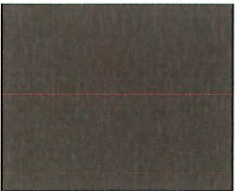
(FROM DRYWALL)

Standard Finish colors for aluminum products and acoustical louvers

				
Apollo White M-18136 M-19136	Bone White M-18137 M-19137	Colonial White M-18138 M-19138	Ivory M-18162 M-19162	Sandstone M-18139 M-19139
				
Nantucket Dune M-18140 M-19140	Beige M-18141 M-19141	Seawolf M-18142 M-19142	Fashion Gray M-18143 M-19143	Colonial Gray M-18144 M-19144
				
Charcoal Gray M-18145 M-19145	Light Blue M-18146 M-19146	Interstate Blue M-18147 M-19147	Aged Copper M-18148 M-19148	Hartford Green M-18149 M-19149
				
Brick Red M-18150 M-19150	Burgundy M-18151 M-19151	Sage Brown M-18152 M-19152	Statuary Bronze M-18153 M-19153	Black M-18154 M-19154

The first M number is for the standard Fluoropolymer finish and the second number is for the same color in Polyester.

Premium Pearl finish colors for aluminum products and acoustical louvers

				
El Cajon Silver M-18155 M-19155	Champagne M-18156 M-19156	Light Bronze M-18157 M-19157	Medium Bronze M-18158 M-19158	Dark Bronze M-18159 M-19159

Premium Pearl colors use mica pigments to simulate the appearance of anodized finishes. The first M number is for the standard Fluoropolymer finish and the second number is for the same color in Polyester.

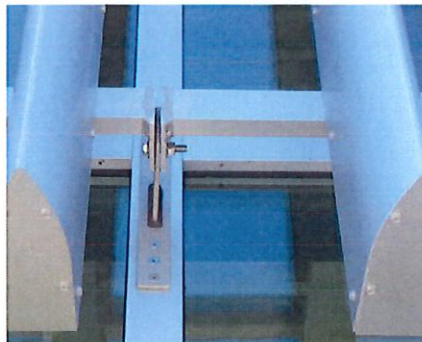
The color samples shown are not the actual paint. The samples are as close as possible to actual colors offered. Actual color samples are available upon request.

POTTORFF®

Our superior performance paint systems are available in a wide range of colors and we can also custom color match to any of your specifications. Our expertise in applying architectural coatings assures you of a high quality finish. With our color options, you get the color you need when you need it!

PRODUCT FACTS

Finish Type	Description/Application	Color Selection	Warranty
Fluoropolymer Decafon and Newlar meet AAMA 2605. Dry film thickness 2 mil. equivalent to Kynar 500®/Hylar 5000®, Duranar®, Fluoropon®	Our premier finish for extruded aluminum. Tough, long lasting, environmentally friendly powder coating has superior color retention and abrasive properties. Resists chalking, fading, chemical abrasion and weathering.	Standard Colors: 20 standard colors plus Premium Pearl finishes. Custom colors are available. Consult factory.	10 Years (consult factory for availability of extended warranty up to 20 years).
Polyester Powder Coat meets AAMA 2604 dry film thickness 2 mil. equivalent to Baked Enamel.	Environmentally friendly powder coating has good color retention and abrasive properties. Resists chalking, fading, chemical abrasion and weathering.	20 standard colors for aluminum products and acoustical louvers, 18 colors for steel. Custom colors are available. Consult factory.	5 Years
Integral Color Anodize AA-M10C22A42 (>0.7 mil)	Electrochemically deposited inorganic color pigment which is sealed to convert an aluminum oxidation into a corrosion resistant finish. Some shade variation will occur.	Champagne; Light, Medium or Dark Bronze; Black	5 Years
Clear Anodize 215 R-1 AA-M10C22A41 (>0.7 mil)	Electrochemically oxidized aluminum surface for uniform clear finish. More resistant to natural oxidizing. Improved luster and less glossy than mill finish.	Clear	5 Years
Alkyd Prime Coat	Preparation for field applied epoxy, vinyl, urethane, or other heavy-duty coatings. Must be finished within 6 months of application. Contamination can occur in transit and in the field; requires field cleaning prior to painting.	N/A	N/A
Mill	Aluminum or Galvanized Steel. Normal weathering will occur.	N/A	N/A



Finishes enhance louver appearance by matching or contrasting with adjacent surfaces and extending weather resistance. Color matching is available upon request.



Job: **Maurice Bathhouse Renovation**

Spec: **23 33 00 Ductwork Accessories**

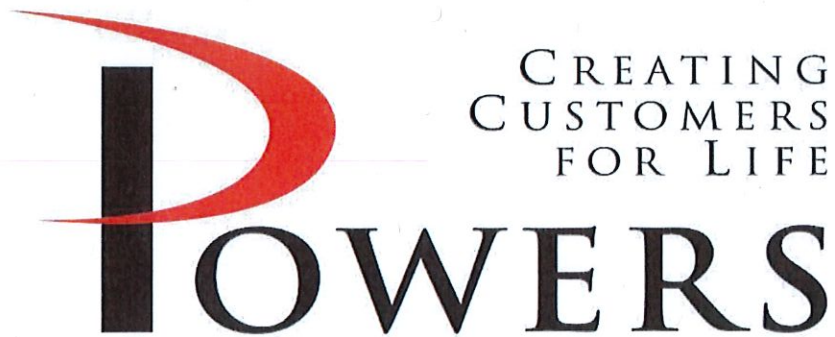
Item: **Volume & Control Dampers**

Submitted by:

Joe Minton Jr.

Vice President HVAC

(501) 607-0043



SUBMITTAL

PRODUCT	Manual Dampers
SPECIFICATION	233300
MANUFACTURER	Pottorff
JOB NAME	Maurice Bathhouse Renovation
LOCATION	Hot Springs, AR
ENGINEER	IMEG Consultants Corp
CONTRACTOR	Custom Sheet Metal
DATE	8/25/2025
SUBMITTED BY	Courtney Michael

5440 Northshore Drive - North Little Rock, Arkansas 72118 - Tel: 501.374.5420 Fax: 501.370.9298

Submittal

Model CD-10

Manual balancing damper, single blade

General construction

Dimensions: Nominal (approximately 1/4" (6) undersize)

Material: Galvanized steel

Frame: 2" x 22 gauge

Blades: 22 gauge - single square/rectangular

Axles: 3/8" (10) square plated steel

Bearings: Synthetic

Control shaft: 3/8" x 3" (10 X 76) square drive axle with manual locking quadrant

Options

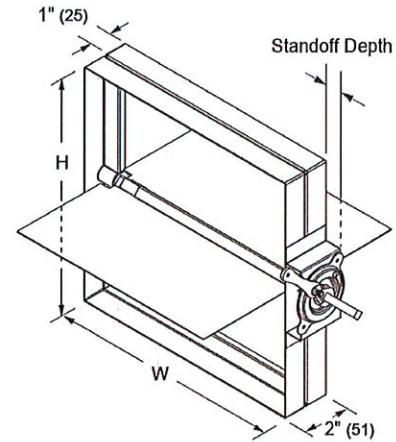
Standoff: 2" quadrant standoff bracket - for insulated duct

Ratings

Maximum system velocity (fpm): 1500

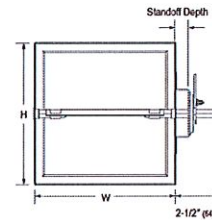
Maximum system pressure (in.wg.): 1

Operating temperature range: -25°F to 180°F



Model CD-10 with standoff

Manual locking quadrant supplied loose for field installation.



Front view with standoff bracket

Details

Line Item	Tag	Qty	Dimensions (In.xxxx)	Sections
			W x H	Wide x High
1		1	8 x 6	1 x 1
2		2	6 x 6	1 x 1
3		2	8 x 8	1 x 1
4		1	10 x 10	1 x 1
5		5	18 x 8	1 x 1
6		2	36 x 8	1 x 1
7		3	9 x 9	1 x 1
8		1	18 x 10	1 x 1

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Information is subject to change without notice or obligation.

Note: Dimensions in parentheses () are millimeters.

Submittal

Model MD-42

Manual balancing damper, triple-V opposed blade

General construction

Dimensions: Nominal (approximately 1/4" (6) undersize)

Material: Galvanized steel

Frame: 5" x 1" (127 x 25) hat channel

Blade style: 6" x 16 gauge, triple-v

BladeAction: Opposed

Axles: 1/2" (13) diameter plated steel hex

Linkage: Concealed in frame

Control shaft: 1/2" x 6" (13 x 152) round drive axle

Bearings: Synthetic

Top and bottom stops: Yes

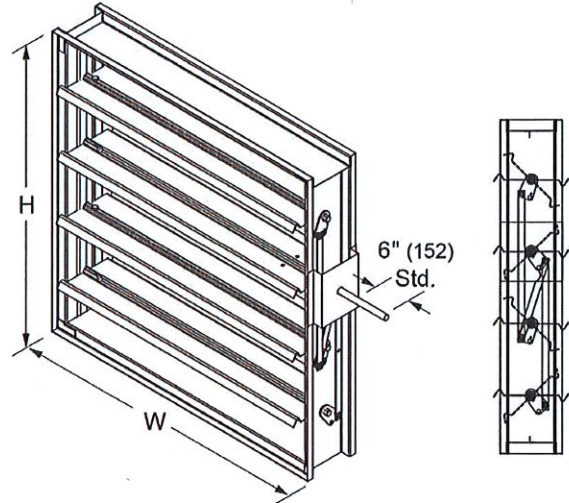
Options

Locking quadrant: Manual locking quadrant, loose

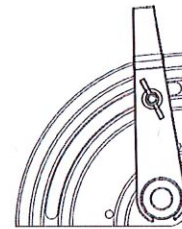
Standoff: Actuator/quadrant standoff bracket

Ratings

Operating temperature range: -25°F to 180°F



Model MD-42



Manual locking quadrant

Details

Line Item	Tag	Qty	Dimensions (in.xxxx)	Sections	Ratings		J (in)
			W x H	Wide x High	Vel (fpm)	Press (in.w.g.)	
9		2	42 x 24	1 x 1	1500	2.5	
11		2	20 x 20	1 x 1	2000	4	
12		1	44 x 18	1 x 1	1500	2.5	
13		1	16 x 16	1 x 1	2000	4	

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Submittal

Model MD-42

Manual balancing damper, triple-V opposed blade

General construction

Dimensions: Nominal (approximately 1/4" (6) undersize)

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BladeAction: Opposed

Axles: 1/2" (13) diameter plated steel hex

Linkage: Concealed in frame

Control shaft: 1/2" x 6" (13 x 152) round drive axle

Bearings: Synthetic

Top and bottom stops: Yes

Options

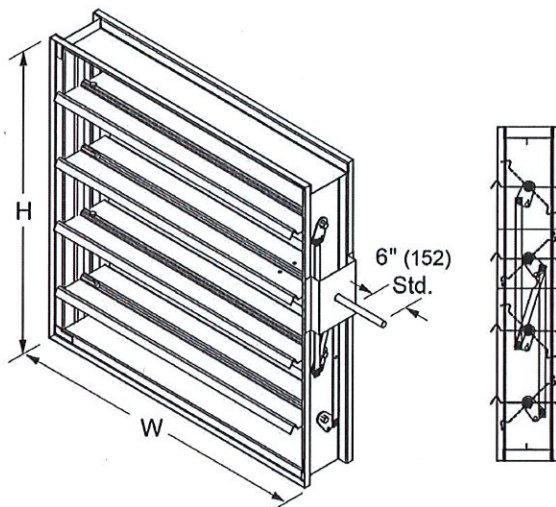
Locking quadrant: Manual locking quadrant, loose

Standoff: Actuator/quadrant standoff bracket

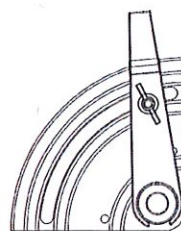
Jackshaft: Yes

Ratings

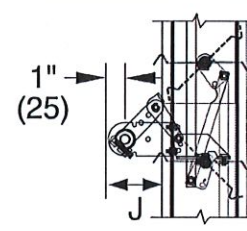
Operating temperature range: -25°F to 180°F



Model MD-42



Manual locking quadrant



Dimensional details

Details

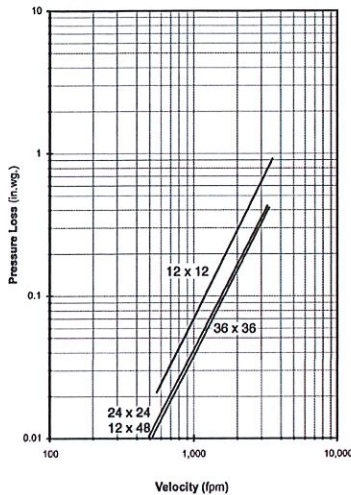
Line Item	Tag	Qty	Dimensions (in.xxxx)	Sections	Ratings		J (in)
			W x H	Wide x High	Vel (fpm)	Press (in.w.g.)	
10		1	66 x 20	2 x 1	2000	3	3.375

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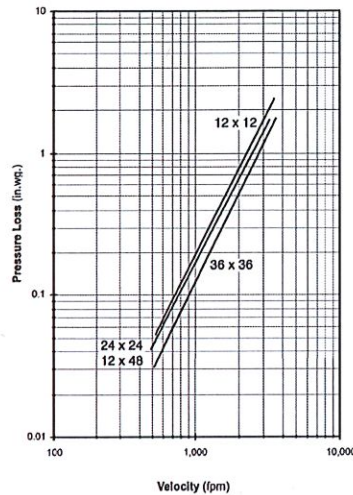
Note: Dimensions in parentheses () are millimeters.

Submittal Model MD-42 Performance



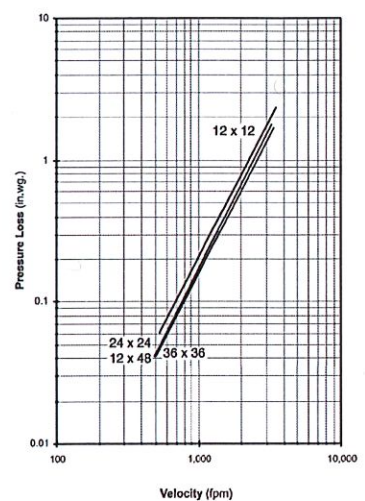
Ducted inlet and outlet

AMCA Figure 5.3 illustrates a fully ducted damper. This configuration represents the lowest pressure drop of the three test configurations because entrance and exit losses are minimized by straight duct runs upstream and downstream of the damper.



Ducted inlet

AMCA Figure 5.2 illustrates a ducted damper exhausting air into an open area. This configuration has a lower pressure drop than Figure 5.5 because entrance losses are minimized by a straight duct run upstream of the damper.



Plenum mount

AMCA Figure 5.5 illustrates a plenum mounted damper. This configuration has the highest pressure drop because of extremely high entrance and exit losses due to the sudden changes of area in the system.

Pressure drop testing

in accordance with AMCA Standard 500-D using the three configurations shown. All data has been corrected to represent air density of 0.075 lb/ft. Actual pressure drop in any ducted HVAC system is a combination of many elements. This information, along with analysis of other system influences, should be used to estimate actual pressure losses for a damper installed in a given HVAC system.

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SUBMITTAL

PRODUCT	Control Dampers
SPECIFICATION	230800
MANUFACTURER	Pottorff
JOB NAME	Maurice Bathhouse Renovation
LOCATION	Hot Springs, AR
ENGINEER	IMEG Consultants Corp
CONTRACTOR	Custom Sheet Metal
DATE	8/25/2025
SUBMITTED BY	Courtney Michael

5440 Northshore Drive - North Little Rock, Arkansas 72118 - Tel: 501.374.5420 Fax: 501.370.9298

Submittal

Model CD-42

Control damper, triple-V opposed blade

General construction

Dimensions: Nominal (approximately 1/4" (6) undersize)

Material: Galvanized steel

Frame: 5" x 1" (127 x 25) hat channel

Blade style: 6" x 16 gauge, triple-v

Blade action: Opposed

Linkage: Concealed in frame

Control shaft: 1/2" x 6" (13 x 152) round drive axle

Bearings: Synthetic

Options

Actuator: 2-position spring return

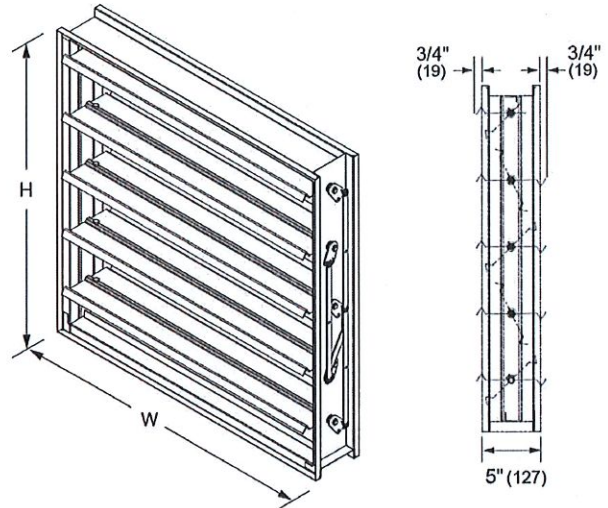
Standoff: Actuator/quadrant standoff bracket - accommodates up to 3" (76) thick insulated duct

Low leakage seals: Blade: PVC; Jamb: Flexible stainless steel

Ratings

Leakage (with seals): 8.0 cfm/ft²@ 4 in. wg (0.04m³/s/ m²@ 1.00 kPa), 4.0 cfm/ft²@ 1 in. wg (0.02m³/s/ m²@ 0.25 kPa)

Operating temperature range: -25°F to 180°F



Model CD-42



Air Performance

Pottorff certifies that the model CD-42 shown herein is 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 only.

Details

Line Item	Tag	Qty	Dimensions (In.xxxx)		Sections	Ratings		Actuator								J (In)	K (In)
			W x H	D		Wide x High	Vel (fpm)	Press (In.w.g.)	Qty	Model	Volt	Pos	Orien	Loc	Power consumption		
21	MOD-EF-1M	1	12 x 12		1 x 1	3000	5	1	TFB120-S	120V	PO		Loo	2.5W	5		
22	MOD-RF-1M	1	20 x 20		1 x 1	3000	4	1	TFB120-S	120V	PO		Loo	2.5W	5		
23	MOD-RF-2M	1	16 x 16		1 x 1	3000	4	1	TFB120-S	120V	PO		Loo	2.5W	5		

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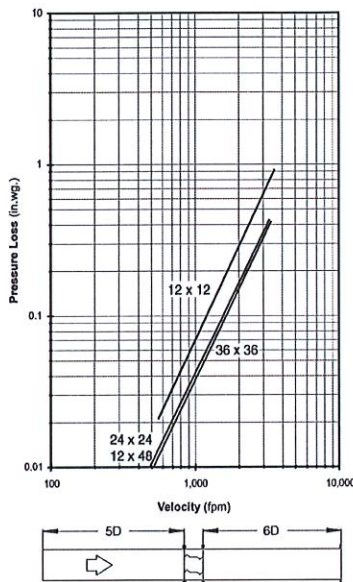
Information is subject to change without notice or obligation.

Note: Dimensions in parentheses () are millimeters.

Submittal Model CD-42 Performance

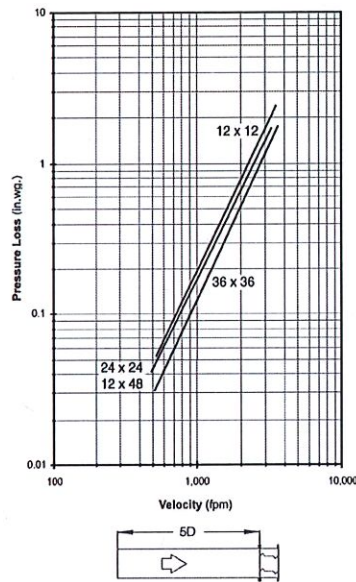
Pressure drop testing

Pressure drop testing was performed in accordance with AMCA Standard 500-D using the three configurations shown. All data has been corrected to represent air density of 0.075 lb/ft. Actual pressure drop in any ducted HVAC system is a combination of many elements. This information, along with analysis of other system influences, should be used to estimate actual pressure losses for a damper installed in a given HVAC system.



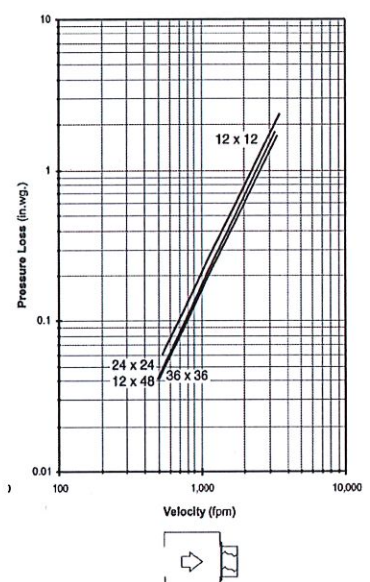
Ducted inlet and outlet

AMCA Figure 5.3 Illustrates a fully ducted damper. This configuration represents the lowest pressure drop of the three test configurations because entrance and exit losses are minimized by straight duct runs upstream and downstream of the damper.



Ducted inlet

AMCA Figure 5.2 Illustrates a ducted damper exhausting air into an open area. This configuration has a lower pressure drop than Figure 5.5 because entrance losses are minimized by a straight duct run upstream of the damper.



Plenum mount

AMCA Figure 5.5 Illustrates a plenum mounted damper. This configuration has the highest pressure drop because of extremely high entrance and exit losses due to the sudden changes of area in the system.



Air Performance

Pottorff certifies that the model CD-42 shown herein is 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.

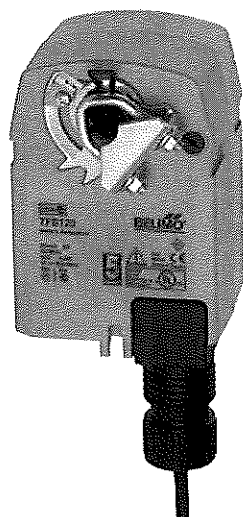
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Information is subject to change without notice or obligation.

Note: Dimensions in parentheses () are millimeters.

TFB120(-S), TFX120(-S)

On/Off, Spring Return, 100 to 240 VAC



Technical Data		TFB120(-S), TFX120(-S)
Power supply	nominal	100 to 240 VAC, 50/60 Hz
	tolerance	85 to 265 VAC, 50/60 Hz
Power consumption	running	2.5 W
	holding	1.3 W
Transformer sizing		5 VA (class 2 power source)
Electrical connection	TFB120...	3 ft, 18 GA appliance cable, 1/2" conduit connector -S models: two 3 ft, 18 gauge appliance cables with 1/2" conduit connectors
	TFX120...	3 ft [1m], 10 ft [3m], or 16 ft [5m], 18 GA appliance cable, with or without 1/2" conduit connector -S models: two 3 ft [1m], 10 ft [3m] or 16 ft [5m] appliance cables with or without 1/2" conduit connectors
Overload protection		electronic throughout 0 to 95° rotation
Electrical protection		actuators are double insulated
Angle of rotation		max 95°, adjust. with mechanical stop
Torque		22 in-lbs [2.5 Nm] minimum
Direction of rotation		reversible with cw/ccw mounting
Position indication		visual indicator, 0° to 95° (0° spring return position)
Running time	motor	< 75 sec
	spring	< 25 sec @ -4°F to 122°F [-20°C to 50°C] < 60 sec @ -22°F [-30°C]
Humidity		5 to 95% RH non-condensing
Ambient temperature		-22°F to 122°F [-30°C to 50°C]
Storage temperature		-40°F to 176°F [-40°C to 80°C]
Housing		NEMA type 2 / IP42, UL enclosure type 2
Housing material		UL94-5VA
Agency listings†		cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC (and 2006/95/EC for -S versions)
Noise level (max)	running	< 50 db (A)
	spring return	62 db (A)
Servicing		maintenance free
Quality standard		ISO 9001
Weight		1.4 lbs (0.6 kg), 1.5 lbs (0.7 kg) with switch
† Rated Impulse Voltage 4kV, Type of action 1.AA (1.AA.B for -S version), Control Pollution Degree 3.		
TFB120-S, TFX120-S		
Auxiliary switch		1 x SPDT 3A (0.5A) @ 250 VAC, UL approved adjustable 0° to 95°

Torque min. 22 in-lbs, for control of air dampers

Application

For on/off, fail-safe control of dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications. Control is on/off from an auxiliary contact, or a manual switch.

The actuator is mounted directly to a damper shaft from 1/4" up to 1/2" in diameter by means of its universal clamp, 1/2" shaft centered at delivery. A crank arm and several mounting brackets are available for applications where the actuator cannot be direct coupled to the damper shaft.

Operation

The TF series actuators provide true spring return operation for reliable fail-safe application and positive close off on air tight dampers. The spring return system provides consistent torque to the damper with, and without, power applied to the actuator.

The TF series provides 95° of rotation and is provided with a graduated position indicator showing 0° to 90°.

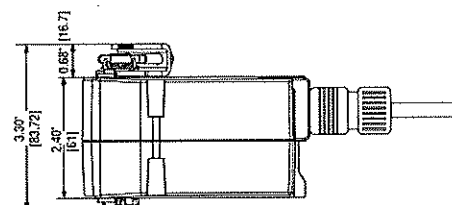
The actuator may be stalled anywhere in its normal rotation without the need of mechanical end switches. Power consumption is reduced in holding mode. The actuator is double insulated so an electrical ground connection is not necessary.

The TF-S versions are provided with one built-in auxiliary switch. This SPDT switch is provided for safety interfacing or signaling, for example, for fan start-up. The switching function is adjustable between 0° and 95°.

SAFETY NOTE

Screw a conduit fitting into the actuator's bushing. Jacket the actuator's input and output wiring with suitable flexible conduit. Properly terminate the conduit in a suitable junction box.

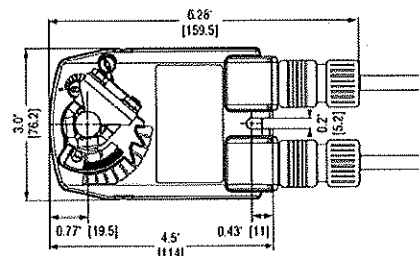
Dimensions (Inches [mm])



Standard:

⊗ 1/4" to 1/2"

□ 1/4" to 5/16"



D096

Accessories	
Tool-06	8mm and 10 mm wrench
KH-TF	Crank arm for up to 1/2" round shaft
ZG-TF2	Crank arm adaptor kit for TF
ZG-TF112	Mounting bracket, kit for TF
ZS-100	Weather shield (metal)
ZS-150	Weather shield (polycarbonate)

NOTE: When using TFB120(-S) and TFX120(-S) actuators, only use accessories listed on this page.
For actuator wiring information and diagrams, refer to Belimo wiring guide.

Typical Specification

On/Off spring return damper actuators shall be direct coupled type which require no crank arm and linkage and be capable of direct mounting to a shaft up to a 1/2" diameter and center a 1/2" shaft. The actuators must be designed so that they may be used for either clockwise or counterclockwise fail-safe operation. Actuators shall be protected from overload at all angles of rotation. If required, one SPDT auxiliary switch shall be provided having the capability of being adjustable. Actuators must be constructed to meet the requirements for Double Insulation so an electrical ground is not required to meet agency listings. Actuators shall be cULus listed and have a 5 year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

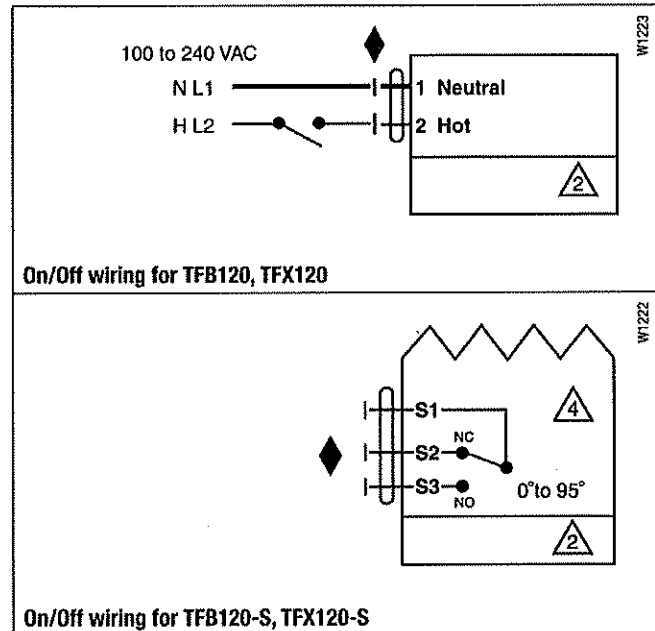
INSTALLATION NOTES

- 1 Provide overload protection and disconnect as required.
- 2 **CAUTION Equipment Damage!**
Actuators may be connected in parallel.
Power consumption must be observed.
- 4 For end position indication, interlock control, fan startup, etc., TFB120-S, TFX120-S incorporate one built-in auxiliary switch: 1 x SPDT, 3A (0.5A) @250 VAC, UL Approved, adjustable 0° to 95°.

APPLICATION NOTES

- Meets cULus requirements without the need of an electrical ground connection.

WARNING Live Electrical Components!
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.





SUBMITTAL

PRODUCT	Remote Operated Dampers
SPECIFICATION	233300
MANUFACTURER	Metropolitan Air Technology
JOB NAME	Maurice Bathhouse Renovation
LOCATION	Hot Springs, AR
ENGINEER	IMEG Consultants Corp
CONTRACTOR	Custom Sheet Metal
DATE	8/25/2025
SUBMITTED BY	Courtney Michael

5440 Northshore Drive - North Little Rock, Arkansas 72118 - Tel: 501.374.5420 Fax: 501.370.9298

The RT-200 Rectangular Damper Submittal Data

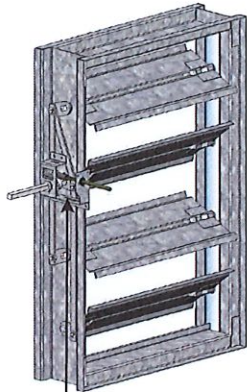
Project:

Date:

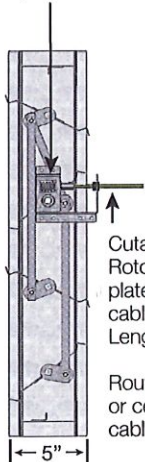
Architect:

Engineer:

Contractor:



Universal Damper Drive (RT-WGA)*
Mount to damper shaft & field
secure to duct. Allow 1.5"
slip-over clearance off end of shaft



Cutaway Duct Detail
Roto-Twist® Cable 1/4" dia.
plated steel rotary actuation
cable, 4" min. turn radius.
Length as required.

Route to access point in wall
or ceiling and secure using
cable termination fixture.*

← 5" →

Standard Construction

- 16 gage galvanized steel channel frame with braced corners
- 16 gage galvanized steel blades. 8" max width
- Opposed blade design (parallel blades optional)
- Self-lubricated synthetic bearings
- 3/8 square shaft assures non slip connection
- Maximum temperature = -40° to 240° F
Max velocity = 1500 FPM
- Width & height 1/4" undersized
- Max static pressure
 - 12" damper width - 5" w.g.
 - 24" damper width - 4" w.g.
 - 36" damper width - 3" w.g.
 - 48" damper width - 2.5" w.g.

Aluminum Construction

- 5" x 1" extruded aluminum hat channel frame, .125" min. wall thickness. Low profile 1/2" top and bottom frames on dampers 12" high and less. Mounting flanges on both sides of frame.
- 6" wide extruded aluminum blades, .125" thick.
- Removable, 1/2" dia. shaft (extends 6" beyond frame)

* Cable Termination

- RT-CCS Rectangular Ceiling/Wall Cup
- RT-CCM Round Miniature Ceiling Cup
- RT-MB Mounting Bracket
- RT-CCE Environmental Control Box
- RT-CCD Surface Mount Box
- MAT-1003 Angle bracket

Available Damper Sizes

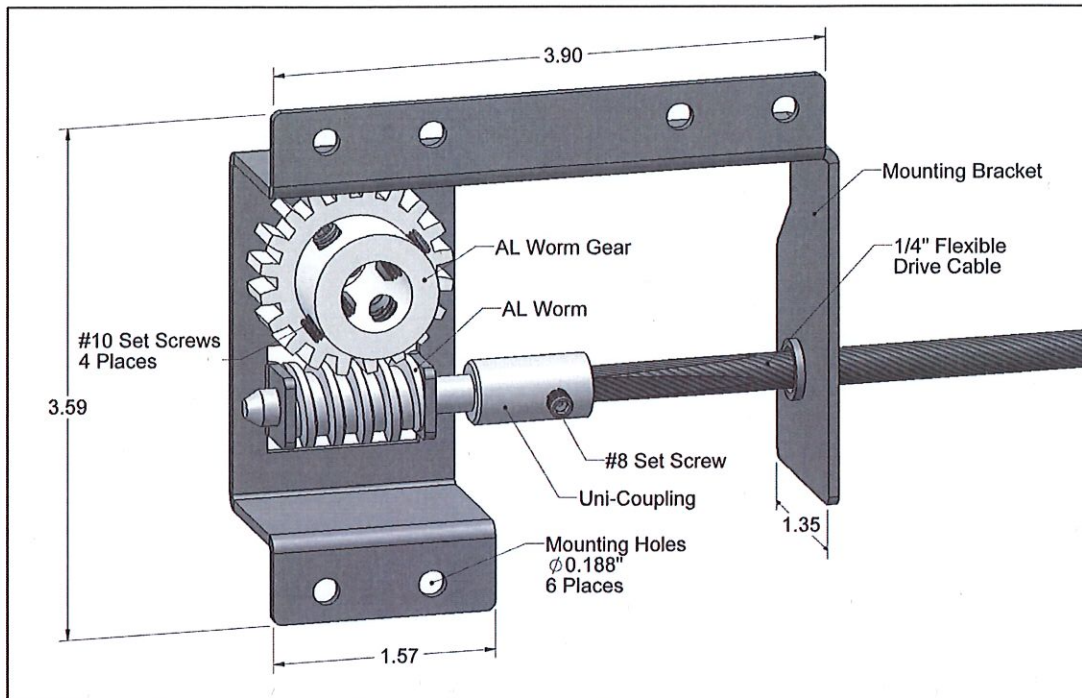
- 6" x 5" to 48" x 48"
- Sectional Dampers available up to 96"x 96"

****Provided for RG-1 Floor Grilles. The will most likely need to be mounted in the ceiling of the 2nd floor for the ceiling cup operator****

US Patent #5,702,298 Canadian Patent #2,185,311

Location/System	Qty	Damper Type & Size	Damper Material	Cable Length	Termination

RT-WGA Universal Damper Drive Specifications



Standard Construction

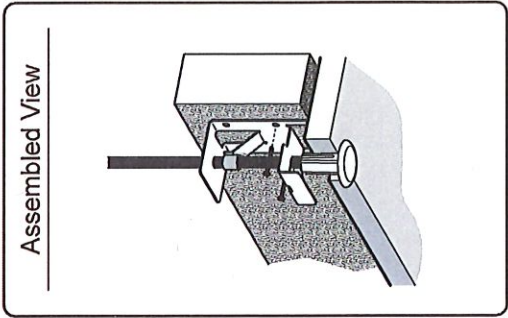
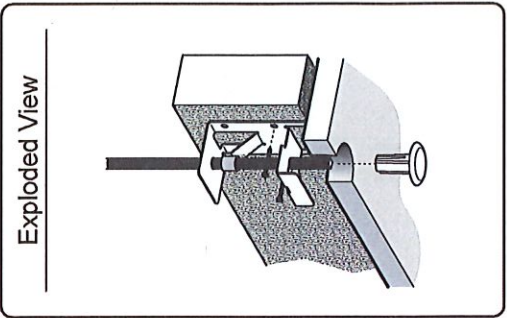
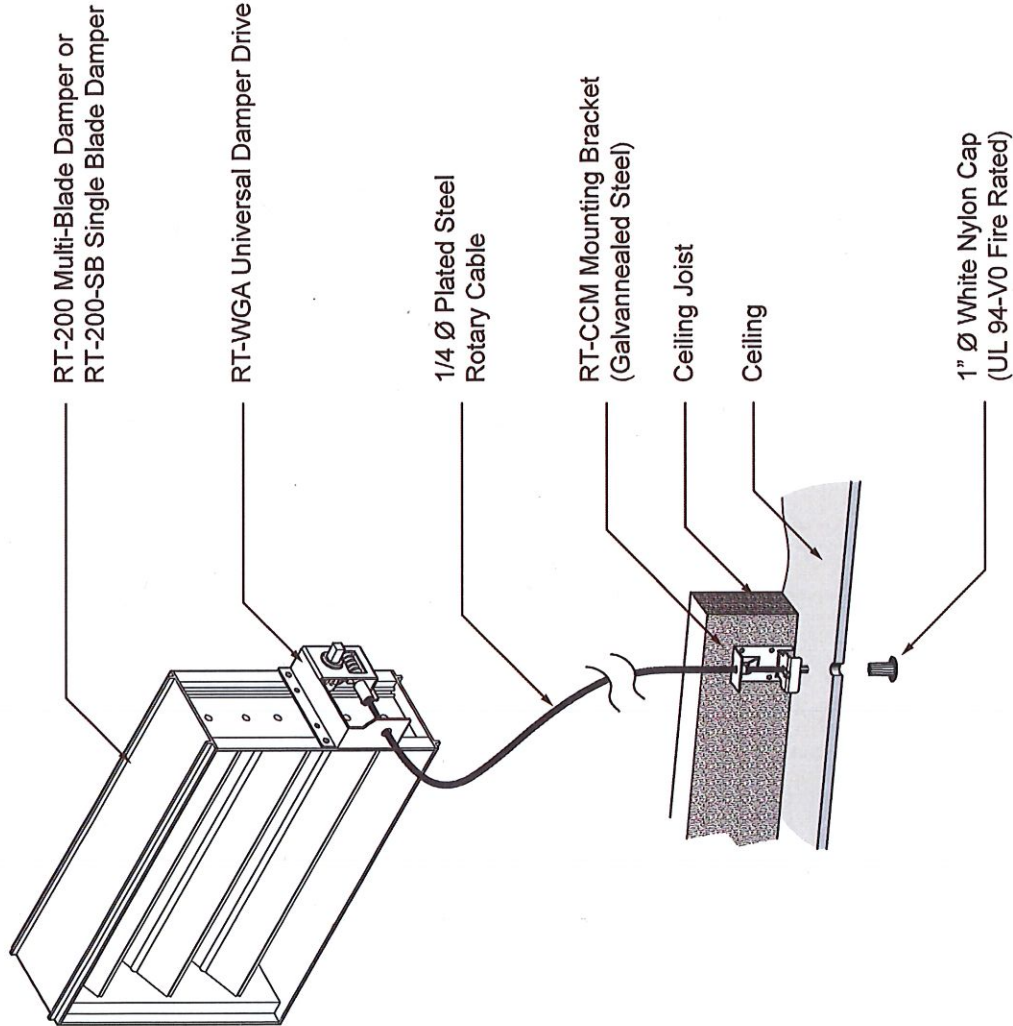
Furnish a worm gear damper drive unit to manually control dampers from a remote location. The damper drive shall be furnished as one-piece construction with universal mounting capabilities to accommodate damper shaft sizes from 1/4"-3/8" square, or 1/4"-1/2" round. The drive unit construction shall consist of a 14 gauge galvanized mounting bracket, an aluminum worm and worm gear, and a one piece steel drive shaft/cable coupling. The drive shaft/coupling shall provide access and support for a 1/4" Ø plated steel rotary actuation cable. The rotary cable shall be operated with a standard hex nut driver (by others) or the MAT square nut driver. The worm and worm gear shall have a 20:1 gear ratio and provide a 2:1 mechanical advantage. The damper drive unit shall be able to control models RT-200 and RT-250 dampers provided by Metropolitan Air Technology (MAT), or approved equals. The rotary actuation cable shall be terminated with a MAT Ceiling Cup (RT-CCM or RT-CCS), an angle bracket, or a retaining clip (when used inside the plenum). The damper drive unit shall be Metropolitan Air Technology model RT-WGA Universal Damper Drive, model RT-WGA (for 1/4" shafts), or approved equal.

US Patent #5,702,298 Canadian Patent #2,185,311

6235 South Oak Park Avenue Chicago, IL 60638 USA
Toll free: 800.585.7686 +1.708.552.4040
Fax: +1.708.594.0396 www.metairtech.com

Represented by:

RT - 200 Damper System - With RT-CCM Miniature Ceiling Cap





SUBMITTAL

PRODUCT	Stainless Steel Manual Dampers
SPECIFICATION	233300
MANUFACTURER	Pottorff
JOB NAME	Maurice Bathhouse Renovation
LOCATION	Hot Springs, AR
ENGINEER	IMEG Consultants Corp
CONTRACTOR	Custom Sheet Metal
DATE	8/25/2025
SUBMITTED BY	Courtney Michael

5440 Northshore Drive - North Little Rock, Arkansas 72118 - Tel: 501.374.5420 Fax: 501.370.9298

Submittal

Model CD-42

Control damper, triple-V opposed blade

General construction

Dimensions: Nominal (approximately 1/4" (6) undersize)

Frame: 5" x 1" (127 x 25) hat channel

Blade style: 6" x 16 gauge, triple-v

Blade action: Opposed

Linkage: Concealed in frame

Control shaft: 1/2" x 6" (13 x 152) round drive axle

Bearings: Synthetic

Options

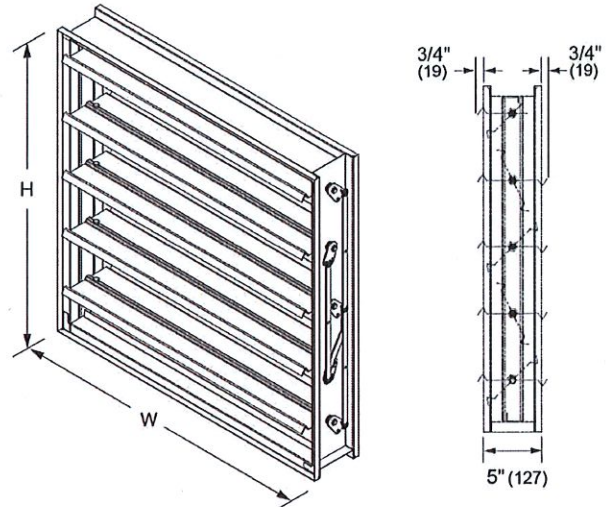
Material: 304 stainless steel

Actuator: Locking quadrant

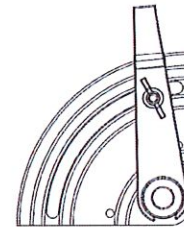
Standoff: Actuator/quadrant standoff bracket - accommodates up to 3" (76) thick insulated duct

Ratings

Operating temperature range: -25°F to 180°F



Model CD-42



Manual locking quadrant



Air Performance

Pottorff certifies that the model CD-42 shown herein is 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 only.

Details

Line Item	Tag	Qty	Dimensions (in.xxxx)		Sections Wide x High	Ratings		J (In)	K (In)
			W x H	D		Vel (fpm)	Press (in.w.g.)		
18		1	14 x 14		1 x 1	3000	4		
19		1	12 x 12		1 x 1	3000	5		

This submittal sheet reflects only the construction and options selected and is not indicative of all constructions and options that are available for the product. For more information, please contact your local representative or visit us at www.pottorff.com.

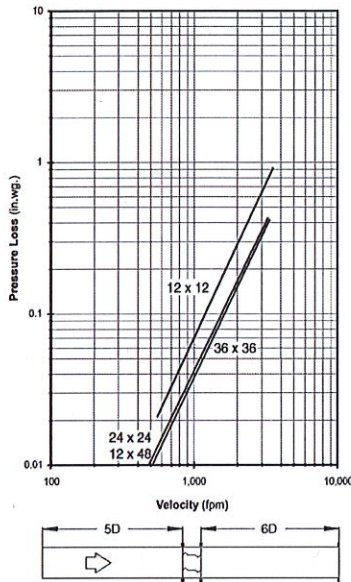
Information is subject to change without notice or obligation.

Note: Dimensions in parentheses () are millimeters.

Submittal Model CD-42 Performance

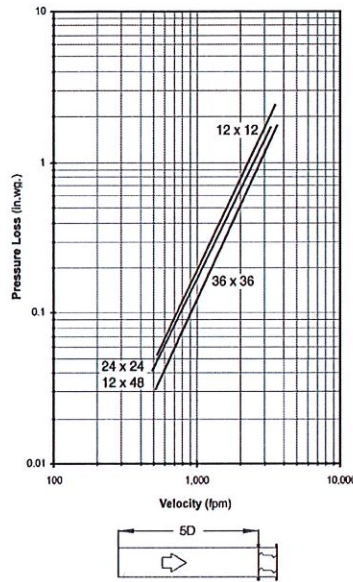
Pressure drop testing

Pressure drop testing was performed in accordance with AMCA Standard 500-D using the three configurations shown. All data has been corrected to represent air density of 0.075 lb/ft. Actual pressure drop in any ducted HVAC system is a combination of many elements. This information, along with analysis of other system influences, should be used to estimate actual pressure losses for a damper installed in a given HVAC system.



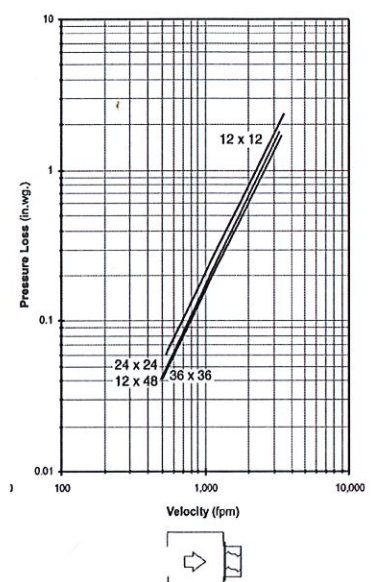
Ducted inlet and outlet

AMCA Figure 5.3 Illustrates a fully ducted damper. This configuration represents the lowest pressure drop of the three test configurations because entrance and exit losses are minimized by straight duct runs upstream and downstream of the damper.



Ducted inlet

AMCA Figure 5.2 Illustrates a ducted damper exhausting air into an open area. This configuration has a lower pressure drop than Figure 5.5 because entrance losses are minimized by a straight duct run upstream of the damper.



Plenum mount

AMCA Figure 5.5 Illustrates a plenum mounted damper. This configuration has the highest pressure drop because of extremely high entrance and exit losses due to the sudden changes of area in the system.



Air Performance

Pottorff certifies that the model CD-42 shown herein is 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.

This submittal sheet reflects only the construction and options selected and is not indicative of all constructions and options that are available for the product. For more information, please contact your local representative or visit us at www.pottorff.com.

Information is subject to change without notice or obligation.

Note: Dimensions in parentheses () are millimeters.



RESUBMITTAL

PRODUCT	Stainless Steel Backdraft Dampers
SPECIFICATION	233300
MANUFACTURER	Louvers & Dampers
JOB NAME	Maurice Bathhouse Renovation
LOCATION	Hot Springs, AR
ENGINEER	IMEG Consultants Corp
CONTRACTOR	Custom Sheet Metal
DATE	5/19/2026
SUBMITTED BY	Courtney Michael

LOUVERS & DAMPERS

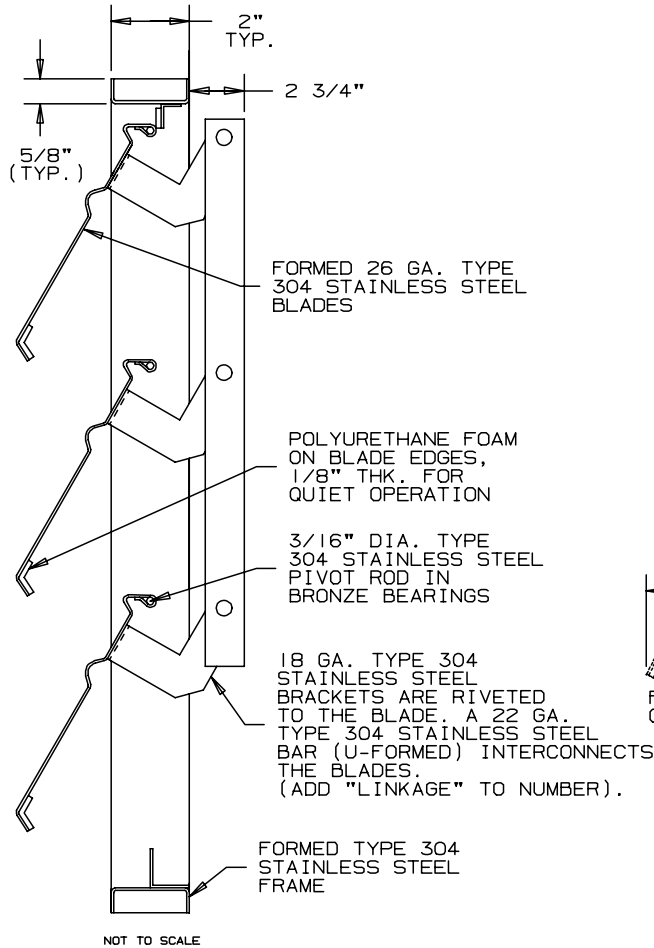
BACKDRAFT DAMPERS

STAINLESS STEEL

TYPE

D503

LIGHT DUTY - PRESSURE RELIEF SHUTTERS



- MORE EFFICIENT
- CLOSES MORE POSITIVELY

SPECIFICATIONS

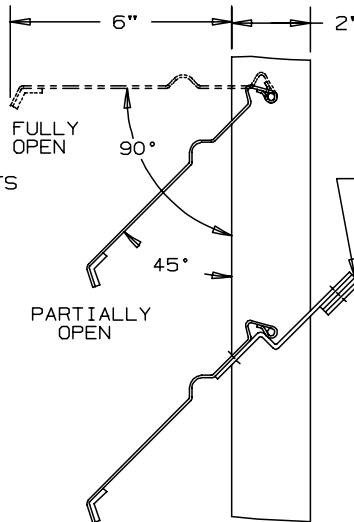
FRAME: STANDARD 5/8"x2"x5/8" FORMED TYPE 304, 16 GA. STAINLESS STEEL CHANNEL.
 BLADE: 26 GA. TYPE 304 STAINLESS STEEL, FORMED OVER A 3/16" DIA. STAINLESS STEEL ROD.
 SEALS: POLYURETHANE FOAM AT BLADE EDGES, NONE AT JAMBS.
 BEARINGS: BRONZE OILITE.
 LINKAGE: 18 GA. TYPE 304 STAINLESS STEEL CHEVRON BRACKET WITH 22 GA. TYPE 304 STAINLESS STEEL LINKAGE BAR.

OPTIONAL FEATURES:

- NO BLADE TO BLADE LINKAGE
- ADJUSTABLE COUNTERBALANCE (CB) - SPECIFY TO ASSIST OR RESIST OPENING, LINKAGE MUST BE USED.
- SCREEN - BIRD OR INSECT.

MAXIMUM PANEL SIZE: 36" W x 60" H.

SPECIFY AIR FLOW (AF) AS "HORIZONTAL", "VERTICAL UP" OR "VERTICAL DOWN"



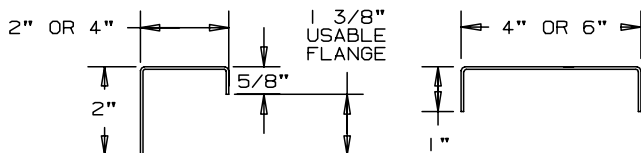
OPTIONAL: ADJUSTABLE COUNTERBALANCE WITH VARIABLE COUNTERWEIGHTS FOR CALIBRATION. (ADD "CB" TO TYPE NUMBER). BLADE LINKAGE REQUIRED.

CLEARANCE DIMENSIONS

OPTIONAL FRAMES

FLANGED FRAME
2" OR 4" DEEP, 16 GA.

CHANNEL FRAME
4" OR 6" DEEP, 16 GA.



FOR PERFORMANCE DATA
SEE REVERSE SIDE

NOMINAL DEDUCTIONS WILL BE MADE TO THE OPENING SIZE GIVEN.

	1	12	x	12						
ITEM	QTY.	WIDTH	HEIGHT	WIDTH	HEIGHT	MULL	COUNTER BALANCE	AIR FLOW (DIRECTION)		
		OPENING SIZE		DAMPER SIZE						



LOUVERS & DAMPERS

A Mestek Company

450 Riverside Drive
Wyalusing, PA 18853

AGENT: _____

ARCH./ENG.:

CONTR.:

PROJECT:

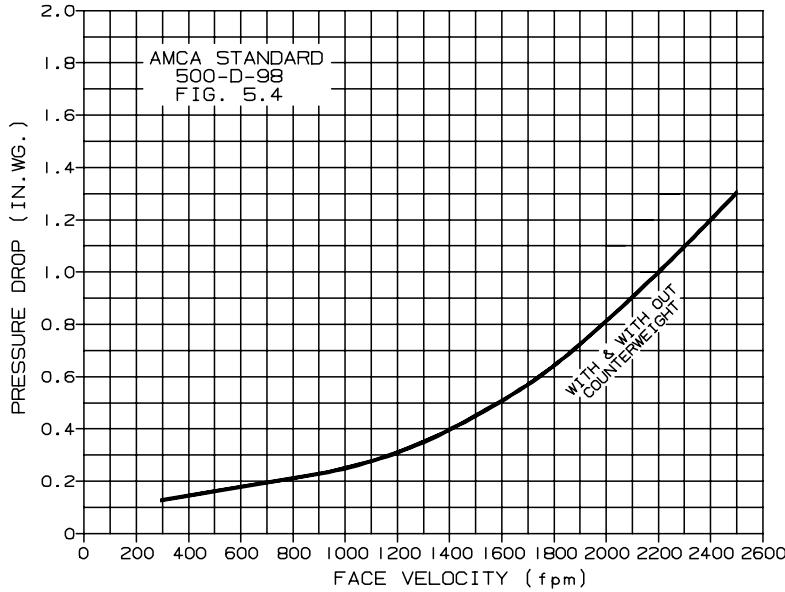
EDR: ECN: JOB:

DATE: DWN.: DWG.:

1221-MAY-2013-1

L&D MODEL D503 BACKDRAFT DAMPER PERFORMANCE DATA

PRESSURE DROP CURVE
(SIZE TESTED 36"x39")



BLADE ANGLE CURVE
(SIZE TESTED 36"x39")

