

# DIBD23

## Curtain Type Dynamic Fire Dampers

3 Hour UL555 Rated For Use In Dynamic And Static System



### APPLICATION

Ruskin Model DIBD23 3 hour UL classified dynamic (fans on) or static (fans off) curtain style fire damper for use in HVAC systems that remain in operation during a fire. Fire dampers used for the protection of openings in walls, partitions, or masonry floors with fire resistance ratings of 3 hours or more. The DIBD23 can be installed vertically in walls or horizontally in masonry floors and is rated for airflow in either direction.

### STANDARD CONSTRUCTION

<b>Frame and Blades Material</b>	Galvanized steel or stainless steel (in gauges required by UL listing R-5531).
<b>Closure Springs</b>	301 stainless steel constant force or spring clip type. Note: Vertical units 24" x 24" (610 x 610) and smaller utilize spring clips only and do not have constant force springs.
<b>Fusible Link</b>	165°F (74°C) is standard. 212°F (100°C) and 285°F (141°C) are available as options.

### DYNAMIC CLOSURE RATINGS

4000 fpm (20.3 m/s) vertical mount only, up to 24" x 24" (610 x 610).
3000 fpm (15.2 m/s) vertical and horizontal mount, up to 24" x 24" (610 x 610).
2000 fpm (10.2 m/s) vertical or horizontal mount on all sizes.
4 in. w.g. (1 kPa) maximum pressure on all sizes.

### DAMPER SIZES

See pages 2 - 5 for minimum and maximum UL sizes.
See pages 6 - 9 for construction details on multiple section assemblies.

### OPTIONS

<b>True Round Fire Damper</b> See model FDR25.
<b>Stainless Steel Construction</b> See model (D)IBD2SS.
<b>SP200</b> Switch Package to allow remote indication of damper blade position.
<b>FAST Angles</b> factory supplied one-side installation. Other angles of various sizes and gauges also available for one-side or twoside installation.
<b>Factory Sleeves</b> of various lengths and gauges to ensure field compliance with UL installation requirements.
<b>MCP</b> Control panels for monitoring purpose.



Models DIBD23 series meet the requirements for fire dampers established by:

- ▶ **National Fire Protection Association**  
NFPA Standards 80, 90A, 92A, 92B and 101
- ▶ **ICC International Building Codes**
- ▶ **CSFM California State Fire Marshal**  
DIBD23 #3225-0245:0005



SEE COMPLETE MARKING ON PRODUCT

**UL CLASSIFIED**

UL555 Listing R5531  
ULC S112

#### NOTE:

- Dimensions shown in parentheses ( ) indicate millimeters.
- Single section dampers ordered with either 12" (305), 14" (356) or 16" (406) long sleeve; the IBD230, 430 and 630 models may be substituted.

# DAMPER STYLES AND SIZES

## A STYLE

Frame and blades in air stream  
 Sleeve optional  
 75 - 85% free area

### Minimum Size 2000 fpm (10.2 m/s)

Vertical Installation - 4" w x 4" h (102 x 102)  
 Horizontal Installation - 6" w x 6" h (152 x 152)

### Maximum Size 2000 fpm (10.2 m/s)

#### Single Section

Vertical Installation - 33" w x 36" h (838 x 914)  
 Horizontal Installation - 24" w x 24" h (610 x 610)

#### Multiple Section Assembly

Vertical Installation - 72" w x 48" h (1829 x 1219) or 48" w x 72" h (1219 x 1829) or 90" w x 24" h (2286 x 610)  
 Horizontal Installation - 36" w x 48" h (914 x 1219) or 48" w x 36" h (1219 x 914).

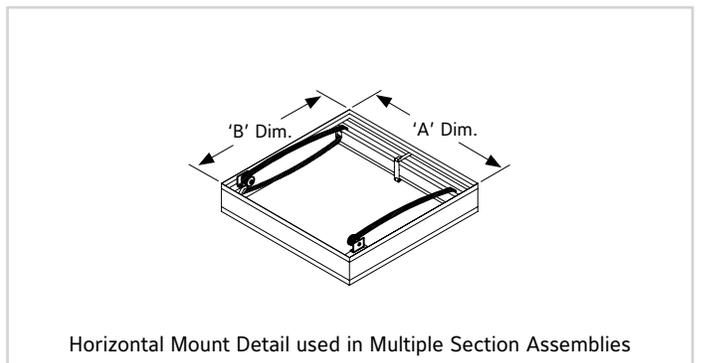
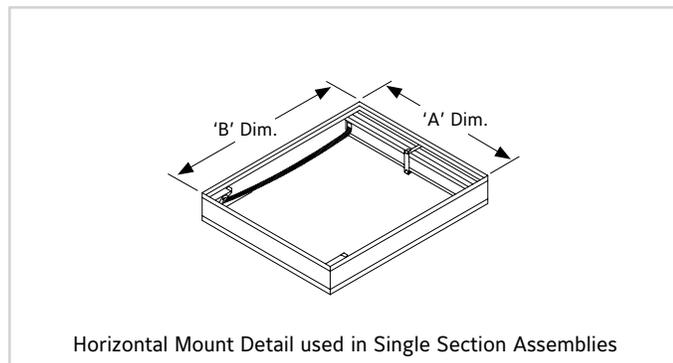
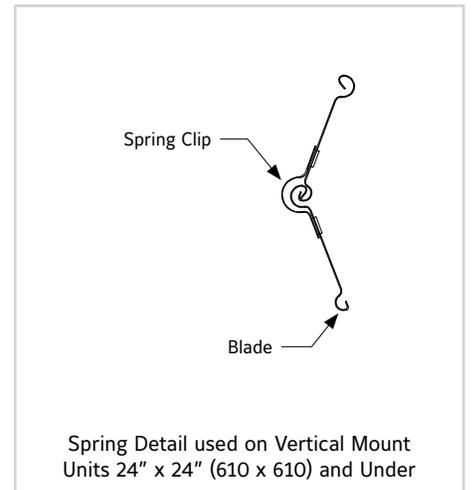
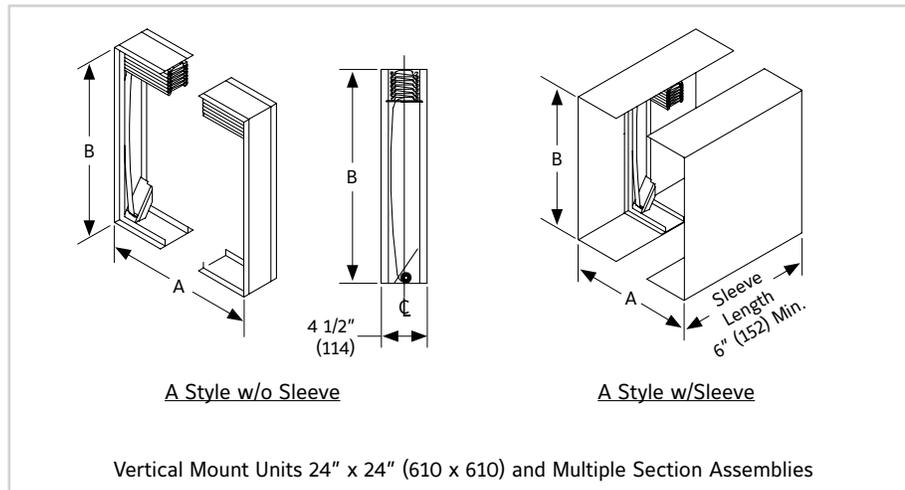
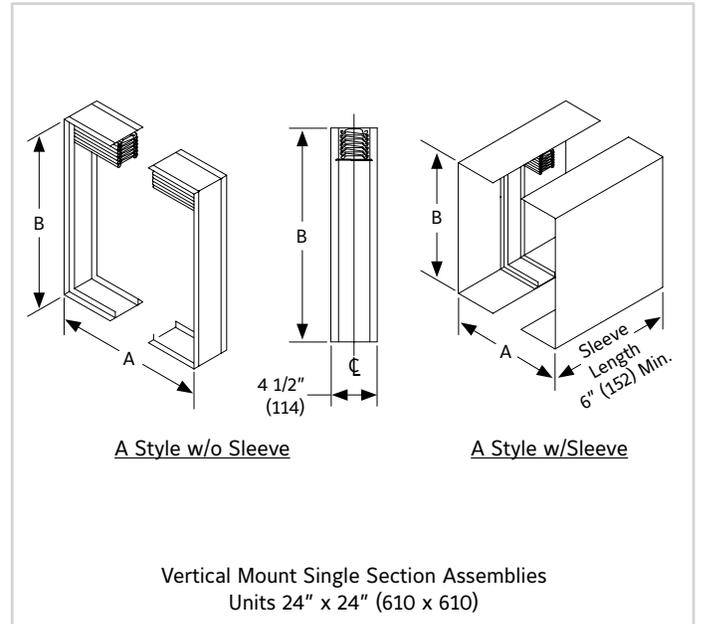
The minimum width or height becomes 9" x 9" (229 x 229) when dampers width or height is over 24" (610).

### Minimum Size Units Above 2000 fpm (10.2 m/s)

Vertical or Horizontal Installation - 9" w x 9" h (229 x 229)

### Maximum Size Units Above 2000 fpm (10.2 m/s)

Vertical or Horizontal Installation - 24" w x 24" h (610 x 610)



NOTE: See page 7 and 8 of this document for overall damper dimensional information.

## DAMPER STYLES AND SIZES

### B STYLE

- Blades out of air stream
- Sleeve optional
- 80 - 90% free area

#### Minimum Size 2000 fpm (10.2 m/s)

- Vertical Installation - 4"w x 4"h (102 x 102)
- Horizontal Installation - 6"w x 4"h (152 x 102)

#### Maximum Size 2000 fpm (10.2 m/s)

##### Single Section

- Vertical Installation - 33"w x 32"h (838 x 813)
- Horizontal Installation - 24"w x 21"h (610 x 533)

##### Multiple Section Assembly

- Vertical Installation - 72"w x 45"h (1829 x 1143) or 48"w x 69"h (1219 x 1753) or 120"w x 21"h (3048 x 533)
- Horizontal Installation - 36"w x 42"h (914 x 1067) or 48"w x 30"h (1219 x 813).

The minimum width or height becomes 9"w x 8"h (229 x 203) when damper's width or height is over 21" (533).

#### Minimum Size Units Above 2000 fpm (10.2 m/s)

- Vertical or Horizontal Installation - 9"w x 7"h (229 x 178)

#### Maximum Size Units Above 2000 fpm (10.2 m/s)

##### Single Section only

- Vertical or Horizontal Installation - 24"w x 21"h (610 x 533)

A = Duct Width  
B = Duct Height  
H = Overall Damper Height

NOTE: See pages 8, 9 and 13 for "X" dimension and overall dimensional information.

### BC & WB STYLE

- Blades out of air stream
- BC style: Fully sealed sleeve
- WB style: Fully welded sleeve
- 80 - 90% free area

#### Minimum Size 2000 fpm (10.2 m/s)

- Vertical Installation - 4"w x 4"h (102 x 102)
- Horizontal Installation - 6"w x 4"h (152 x 102)

#### Maximum Size 2000 fpm (10.2 m/s)

##### Single Section

- Vertical Installation - 33"w x 32"h (838 x 813)
- Horizontal Installation - 24"w x 21"h (610 x 533)

##### Multiple Section Assembly

- Vertical Installation - 72"w x 45"h (1829 x 1143) or 48"w x 69"h (1219 x 1753) or 120"w x 21"h (3048 x 533)
- Horizontal Installation - 36"w x 42"h (914 x 1067) or 48"w x 30"h (1219 x 813).

The minimum width or height becomes 9"w x 8"h (229 x 203) when damper's width or height is over 21" (533).

#### Minimum Size Units Above 2000 fpm (10.2 m/s)

- Vertical or Horizontal Installation - 9"w x 7"h (229 x 178)

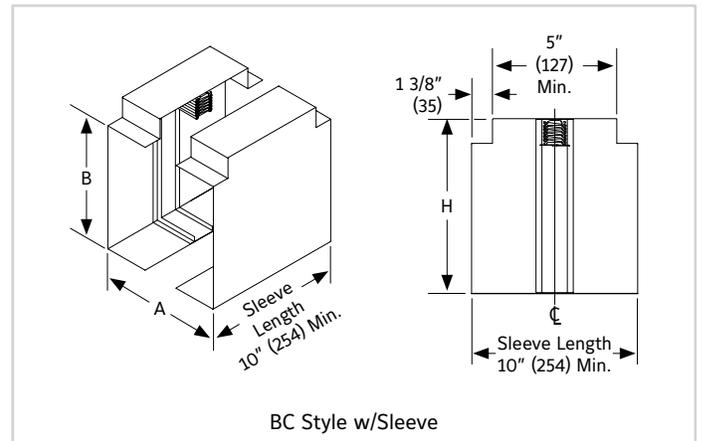
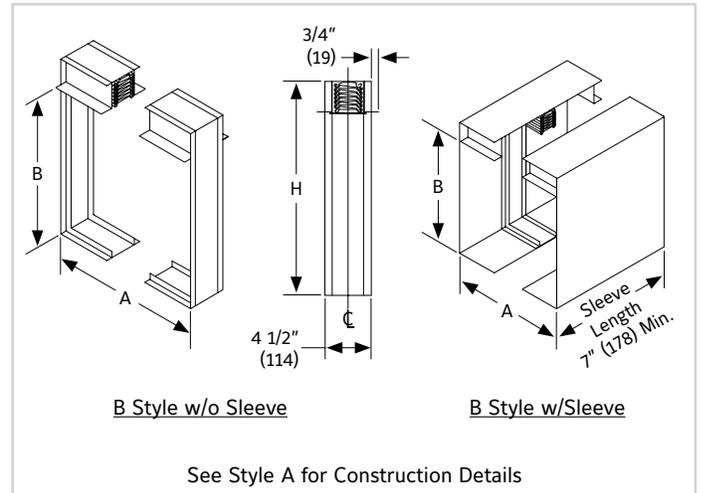
#### Maximum Size Units Above 2000 fpm (10.2 m/s)

##### Single Section only

- Vertical or Horizontal Installation - 24"w x 21"h (610 x 533)

A = Duct Width  
B = Duct Height  
H = Overall Damper Height

NOTE: See pages 8, 9 and 13 for overall dimensional information.



## DAMPER STYLES AND SIZES

### CR & WR STYLE – ROUND TRANSITION

- Frame and blades out of air stream
- Sleeve required
- 95 - 100% free area
- CR Style – sealed assembly
- WR Style – fully welded

#### Minimum Size 2000 fpm (10.2 m/s)

- Vertical Installation – 3" diameter (76)
- Horizontal Installation – 4" diameter (102)

#### Maximum Size 2000 fpm (10.2 m/s)

##### Single Section

- Vertical Installation – 31" diameter (787)
- Horizontal Installation – 20" diameter (508)

##### Multiple Section Assembly

- Vertical Installation – 46" diameter (1118)
- Horizontal Installation – 34" diameter (864)

#### Minimum Size Units Above 2000 fpm (10.2 m/s)

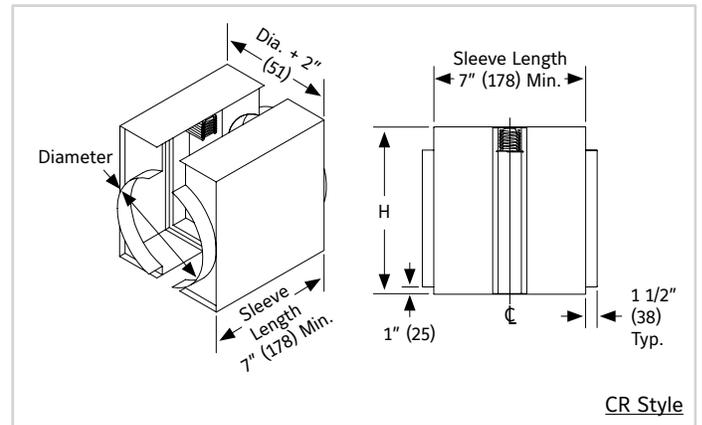
- Vertical or Horizontal Installation – 7" diameter (178)

#### Maximum Size Units Above 2000 fpm (10.2 m/s)

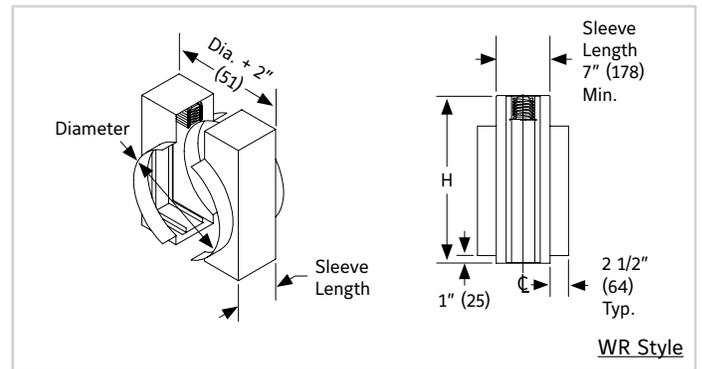
- Vertical or Horizontal Installation – 20" diameter (508)

D = Diameter  
H = Overall Damper Height  
X = Blade Package Height

NOTE: See pages 12 and 13 for "X" dimension and overall dimensional information.



CR Style



WR Style

### C & WC STYLE – SQUARE or RECTANGLE TRANSITION

- Frame and blades out of air stream
- Sleeve required
- 95 - 100% free area
- C Style – sealed assembly
- WC Style – fully welded

#### Minimum Size 2000 fpm (10.2 m/s)

- Vertical or Horizontal Installation – 4" w x 3" h (102 x 76)

#### Maximum Size 2000 fpm (10.2 m/s)

##### Single Section

- Vertical Installation – 31" w x 31" h (787 x 787)
- Horizontal Installation – 22" w x 20" h (559 x 508)

##### Multiple Section Assembly

- Vertical Installation – 70" w x 44" h (1778 x 1118) or 46" w x 68" h (1168 x 1727) or 88" w x 20" h (2235 x 508)
- Horizontal Installation – 34" w x 42" h (864 x 1067) or 46" w x 32" h (1168 x 813).

The minimum width or height becomes 7" w x 7" h (178 x 178) when damper's width or height is over 21" (533)

#### Minimum Size Units Above 2000 fpm (10.2 m/s)

- Vertical or Horizontal Installation – 7" w x 7" h (178 x 178)

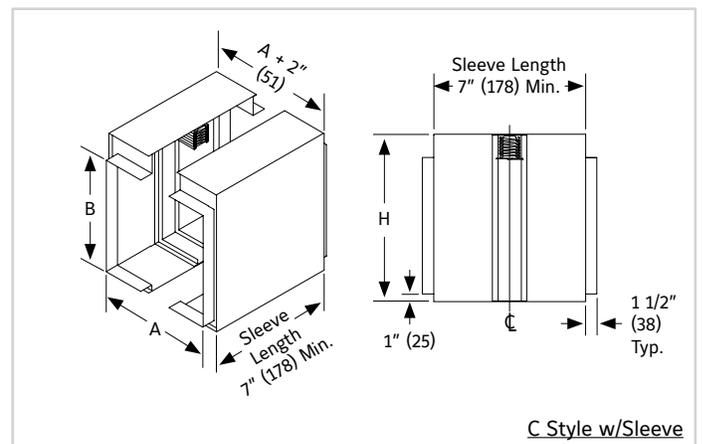
#### Maximum Size Units Above 2000 fpm (10.2 m/s)

##### Single Section Only

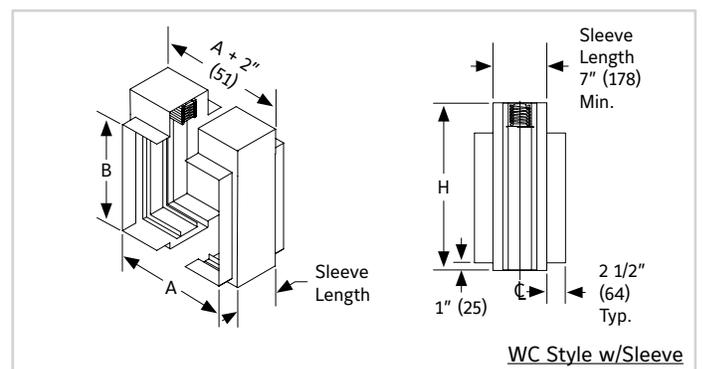
- Vertical or Horizontal Installation – 22" w x 20" h (559 x 508)

A = Duct Width  
B = Duct Height  
H = Overall Damper Height

NOTE: See pages 10, 11 and 13 for overall dimensional information.



C Style w/Sleeve



WC Style w/Sleeve



# DAMPER STYLES AND SIZES

## LO STYLE - OVAL TRANSITION

Frame and blades out of air stream  
 Sleeve optional non-sealed assembly  
 95 - 100% free area

### Minimum Size 2000 fpm (10.2 m/s)

Vertical or Horizontal Installation - 4" w x 3" h (102 x 76)

### Maximum Size 2000 fpm (10.2 m/s)

#### Single Section

Vertical Installation - 31" w x 31" h (787 x 787)  
 Horizontal Installation - 21" w x 21" h (533 x 533)

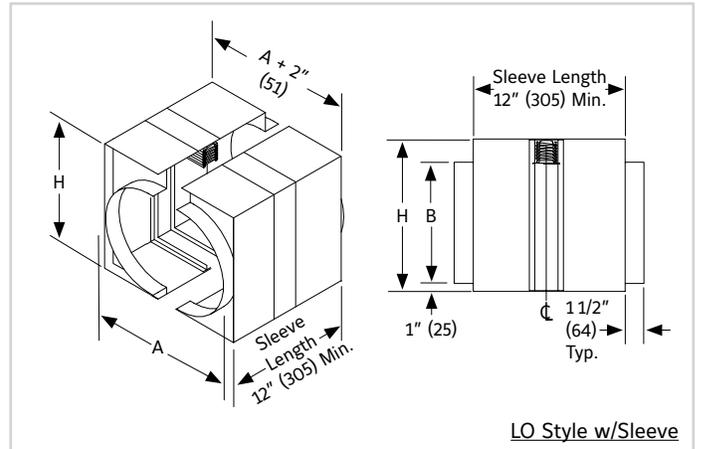
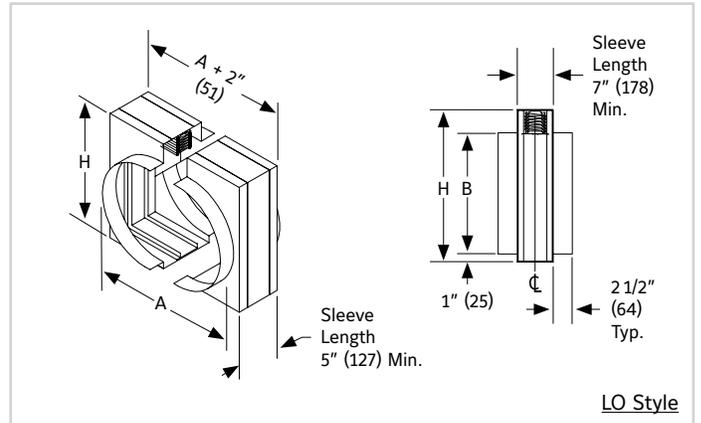
#### Multiple Section Assemblies

Not available in Style LO. See Style CO for larger assemblies.

NOTE: Transition collars to be sealed (by others).

A = Duct Width  
 B = Duct Height  
 H = Overall Damper Height

NOTE: See page 10 and 11 for overall dimensional information.



## R STYLE - ROUND TRANSITION

Round enclosure - Blades partially in the air stream  
 Sleeve optional non-sealed assembly  
 85 - 95% free area

### Minimum Size 2000 fpm (10.2 m/s)

Vertical Installation - 3" diameter (76)  
 Horizontal Installation - 4" diameter (102)

### Maximum Size 2000 fpm (10.2 m/s)

#### Single Section

Vertical Installation - 31" w x 31" h (787 x 787)  
 Horizontal Installation - 21" w x 21" h (533 x 533)

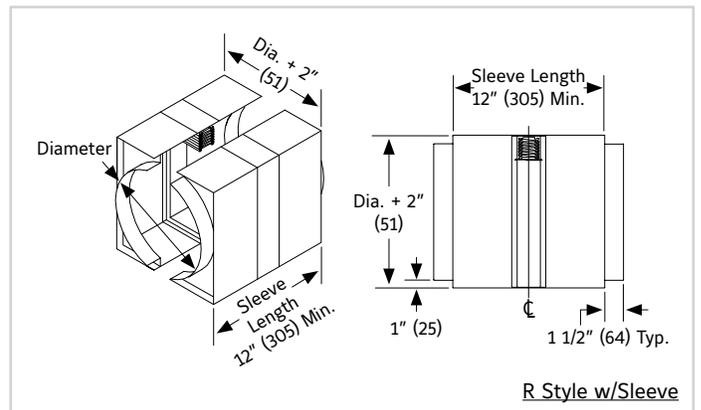
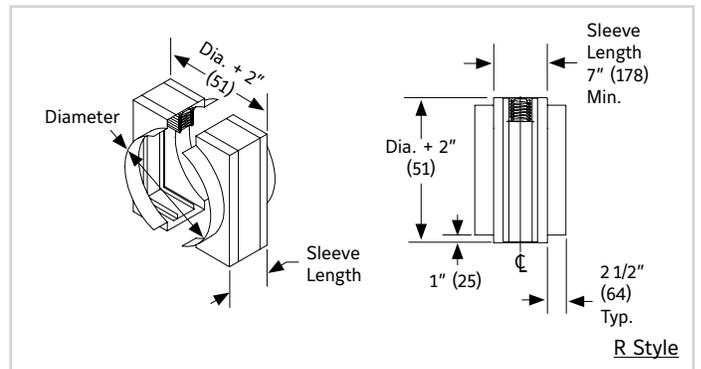
#### Multiple Section Assemblies

Not available in Style R. See Style CR for larger assemblies.

D = Diameter  
 H = Overall Damper Height

NOTE:

1. Transition collars to be sealed (by others).
2. See page 12 for overall dimensional information.



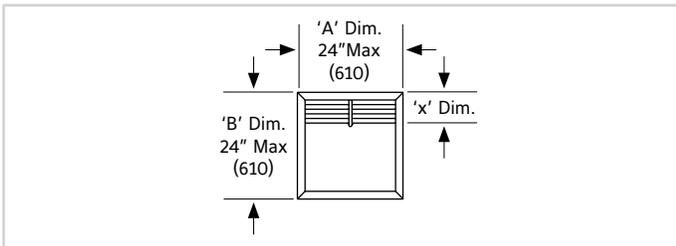
## ASSAMBLY AND DIMENSIONAL INFORMATION For 2000 fpm (10.2 m/s) and 4 in. wg. (1 kPa) MAX.

Dampers normally fabricated approximately 1/4" (6) less than given duct dimensions. A (width) and B (height) dimensions shown describe maximum UL Classified sizes. Multiple section damper assemblies ordered without sleeves are shipped in individual sections, for field assembly. Multiple section dampers ordered with factory furnished sleeves are normally shipped in complete assemblies.

### A STYLE DAMPERS VERTICAL INSTALLATION

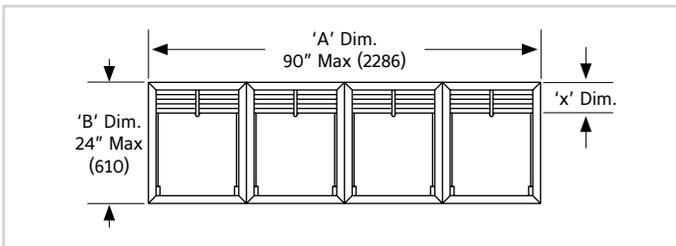
#### Single Section Units 24" (610) wide and 24" (610) high and under

'B' Damper Height	'X' Dim.
4" (102) thru 7" (178)	1 1/2" (39)
7.01" (179) thru 12" (305)	2" (51)
12.01" (306) thru 17" (432)	2 1/2" (64)
17.01" (433) thru 21" (533)	3" (76)
21.01" (534) thru 24" (610)	3 1/2" (90)



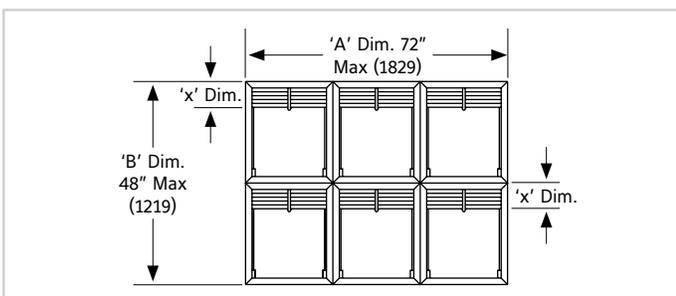
#### Multiple Section Wide and Single Section 24" (610) high and under

'B' Damper Height	'X' Dim.
6" (152) thru 10" (254)	1 1/2" (39)
10.01" (254) thru 17" (432)	2" (51)
17.01" (433) thru 21" (533)	2 1/2" (64)
21.01" (534) thru 24" (610)	3" (76)



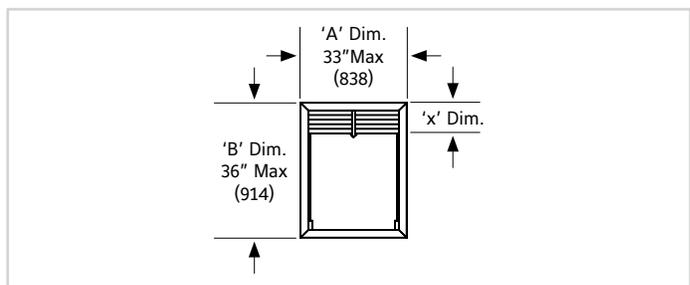
#### 2 Section High Units

'B' Damper Height	'X' Dim.
24.01" (611) thru 34" (864)	2" (51)
34.01" (865) thru 42" (1067)	2 1/2" (64)
42.01" (1068) thru 48" (1219)	3" (76)



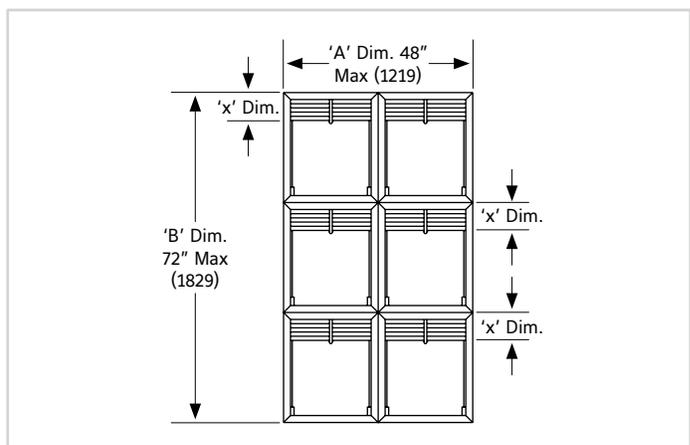
#### Single Section Units above 24" (610) wide or high thru 33" (838) wide by 36" (914) high

'B' Damper Height	'X' Dim.
6" (152) thru 10" (254)	1 1/2" (39)
10.01" (255) thru 17" (432)	2" (51)
17.01" (433) thru 21" (533)	2 1/2" (64)
21.01" (534) thru 26" (660)	3" (76)
26.01" (661) thru 31" (787)	3 1/2" (90)
31.01" (788) thru 36" (914)	4" (102)



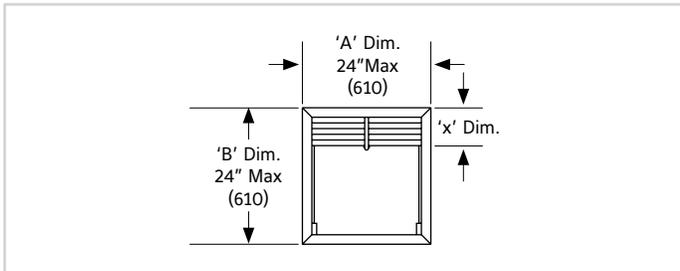
#### 3 Section High Units

'B' Damper Height	'X' Dim.
48.01" (1220) thru 51" (1295)	2" (51)
51.01" (1296) thru 63" (1600)	2 1/2" (64)
63.01" (1601) thru 72" (1829)	2 3/4" (70)

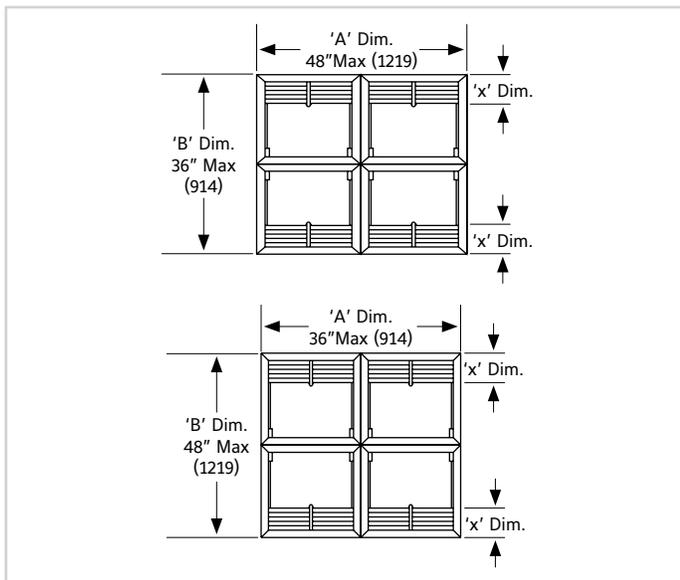


**A STYLE DAMPERS HORIZONTAL INSTALLATION**

Single Section Units 24" (610) wide or high and under	
'B' Damper Height	'X' Dim.
6" (152) thru 10" (254)	1 1/2" (39)
10.01" (255) thru 17" (431)	2" (51)
17.01" (432) thru 21" (533)	2 1/2" (64)
21.01" (534) thru 24" (610)	3" (76)



Two Section High Units	
'B' Damper Height	'X' Dim.
18.01" (458) thru 28" (711)	2" (51)
28.01" (712) thru 42" (1067)	2 1/2" (64)
42.01" (1068) thru 48" (1219)	2 3/4" (70)

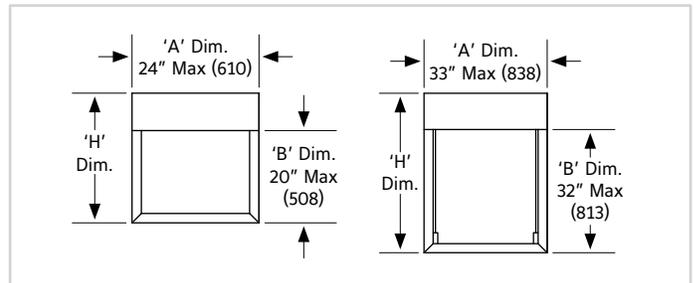


**B, BC & WB STYLE DAMPERS VERTICAL INSTALLATION**

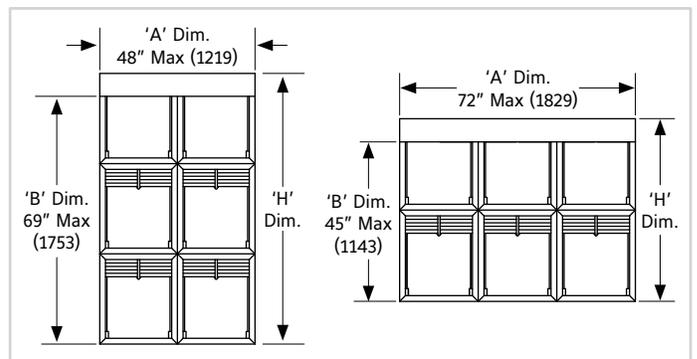
'X' dim. + 'B' dim. = 'H' dim.

Single Section Units 24" (610) wide and 20" (508) high and under	
'B' Damper Height	'X' Dim.
4" (102) thru 8" (203)	1 3/4" (44)
8.01" (204) thru 16" (406)	2 3/4" (70)
16.01" (407) thru 20" (508)	3 3/4" (95)

Single Section Units Above 24" (610) wide or 20" (508) high through 33" (838) wide by 32" (813) high	
'B' Damper Height	'X' Dim.
4" (102) thru 12" (305)	1 3/4" (44)
12.01" (306) thru 23" (584)	2 3/4" (70)
23.01" (585) thru 32" (813)	3 3/4" (95)



Multiple Section Wide and High Above 21" (533) thru 69" (1153) high	
'B' Damper Height	'X' Dim.
22" (559) thru 26" (660)	1 3/4" (44)
26.01" (661) thru 69" (1753)	2 3/4" (70)

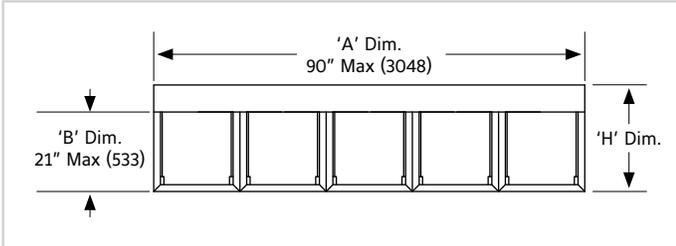


# ASSAMBLY AND DIMENSIONAL INFORMATION For 2000 fpm (10.2 m/s) and 4 in. wg. (1 kPa) MAX.

## B, BC & WB STYLE DAMPERS VERTICAL INSTALLATION

'X' dim. + 'B' dim. = 'H' dim.

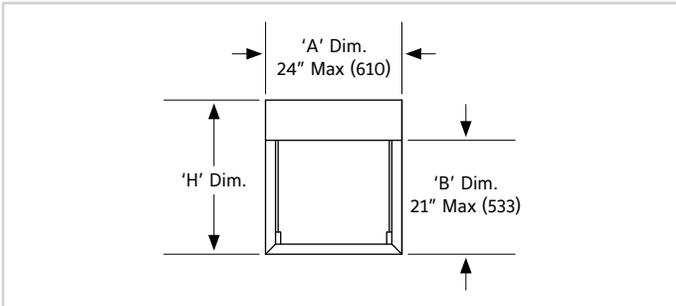
Multiple Section Wide and Single Section High 21" (533) and under	
'B' Damper Height	'X' Dim.
4" (102) thru 12" (305)	1 3/4" (44)
12.01" (306) thru 21" (533)	2 3/4" (70)



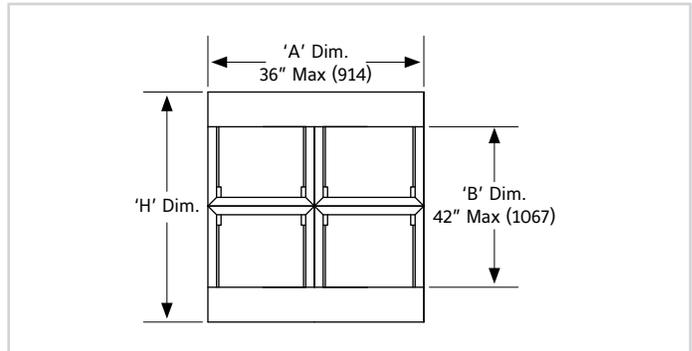
## B, BC & WB STYLE DAMPERS HORIZONTAL INSTALLATION

'X' dim. + 'B' dim. = 'H' dim.

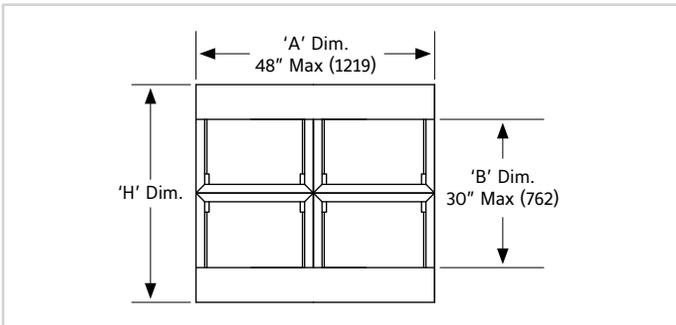
Single Section Units 24" (610) wide and 20" (508) high and under	
'B' Damper Height	'X' Dim.
4" (102) thru 10" (254)	1 3/4" (44)
10.01" (255) thru 21" (533)	2 3/4" (70)



Multiple Section High and 36" (914) wide and under	
'B' Damper Height	'X' Dim.
8" (203) thru 12" (305)	1 3/4" (44)
12.01" (306) thru 21" (533)	2 3/4" (70)
21.01" (534) thru 24" (610)	3 1/2" (89)
24.01" (611) thru 42" (1067)	5 1/2" (140)



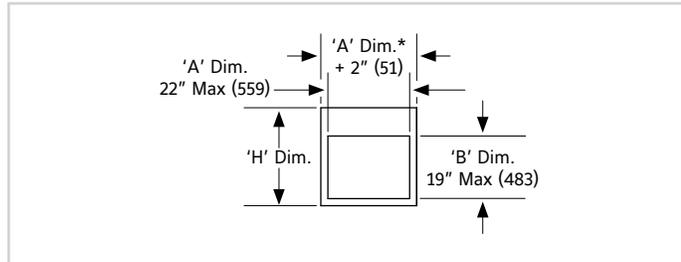
Multiple Section High and Over 36" (914) wide	
'B' Damper Height	'X' Dim.
8" (203) thru 12" (305)	1 3/4" (44)
12.01" (306) thru 15" (381)	2 3/4" (70)
15.01" (382) thru 22" (559)	3 1/2" (89)
22.01" (560) thru 30" (762)	5 1/2" (140)



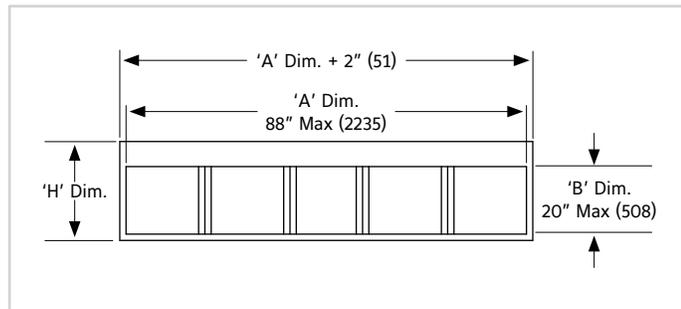
**C, WC, CO, WO & LO STYLE DAMPERS VERTICAL INSTALLATION**

'X' dim. + 'B' dim. = 'H' dim.

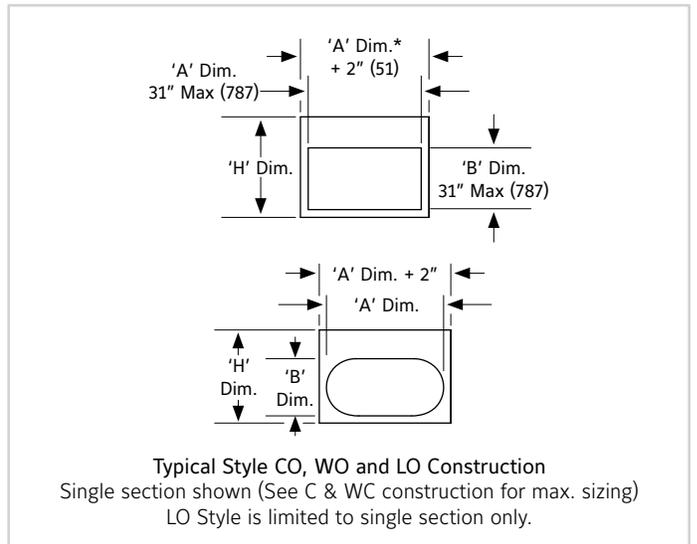
Single Section Units 24" (610) wide and 19" (483) high and under	
'B' Damper Height	'X' Dim.
3" (76) thru 7" (178)	2 3/4" (70)
7.01" (179) thru 15" (381)	3 3/4" (95)
15.01" (382) thru 19" (483)	4 3/4" (121)



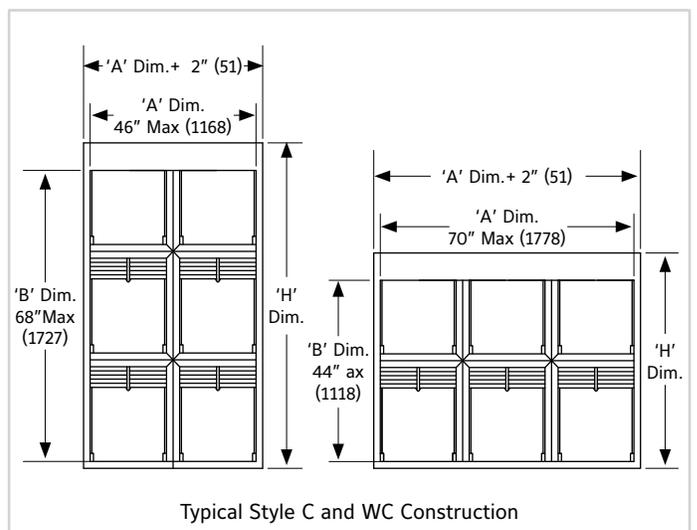
Multiple Section Wide and Single Section High 20" (508) and under	
'B' Damper Height	'X' Dim.
4" (102) thru 11" (280)	2 3/4" (70)
11.01" (280) thru 20" (508)	3 3/4" (95)



Single Section Units Above 22" (559) wide or 19" (483) high through 31" (787) wide by 31" (787) high	
'B' Damper Height	'X' Dim.
4" (102) thru 11" (280)	2 3/4" (70)
11.01" (281) thru 22" (559)	3 3/4" (95)
22.01" (560) thru 31" (787)	4 3/4" (121)



Multiple Section Wide and High Above 20" (533) thru 68" (1727) high	
'B' Damper Height	'X' Dim.
20.01" (534) thru 25" (635)	2 3/4" (70)
25.01" (636) thru 68" (1727)	3 3/4" (95)

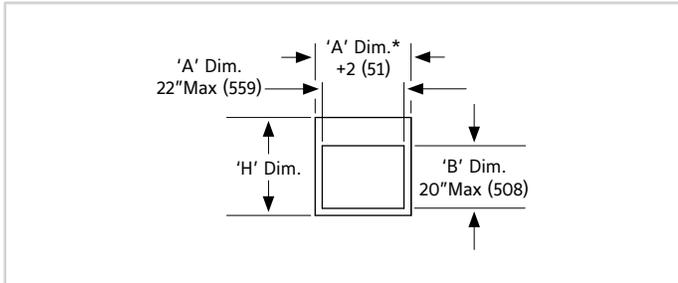


# ASSAMBLY AND DIMENSIONAL INFORMATION For 2000 fpm (10.2 m/s) and 4 in. wg. (1 kPa) MAX.

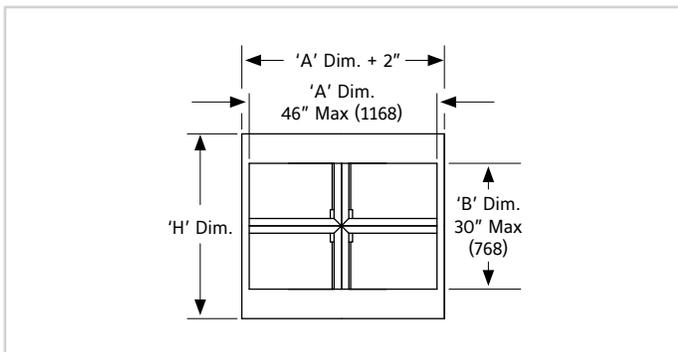
## C, WC, CO, WO & LO STYLE DAMPERS HORIZONTAL INSTALLATION

'X' dim. + 'B' dim. = 'H' dim.

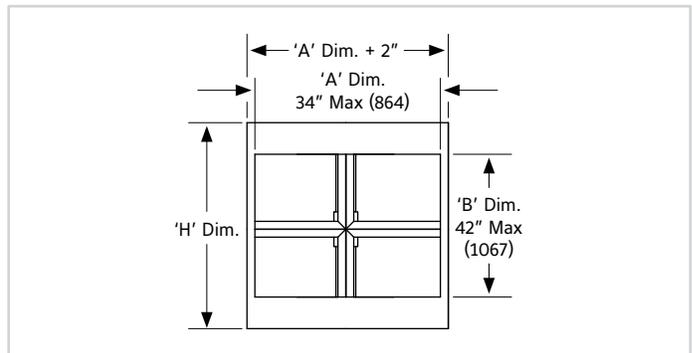
Single Section Units 22" (559) wide and 20" (508) high and under	
'B' Damper Height	'X' Dim.
4" (102) thru 9" (229)	2 3/4" (70)
9.01" (230) thru 20" (508)	3 3/4" (95)



Multiple Section High or Over 34" (864) wide	
'B' Damper Height	'X' Dim.
7" (178) thru 11" (280)	2 3/4" (70)
11.01" (281) thru 14" (356)	3 3/4" (95)
14.01" (357) thru 24" (610)	3 1/2" (89)
24.01" (611) thru 30" (762)	5 1/2" (140)



Multiple Section High or Wide 34" (864) wide and under	
'B' Damper Height	'X' Dim.
7" (178) thru 11" (280)	2 3/4" (70)
12.01" (306) thru 20" (508)	3 3/4" (95)
20.01" (509) thru 24" (610)	3 1/2" (89)
24.01" (611) thru 42" (1067)	5 1/2" (140)

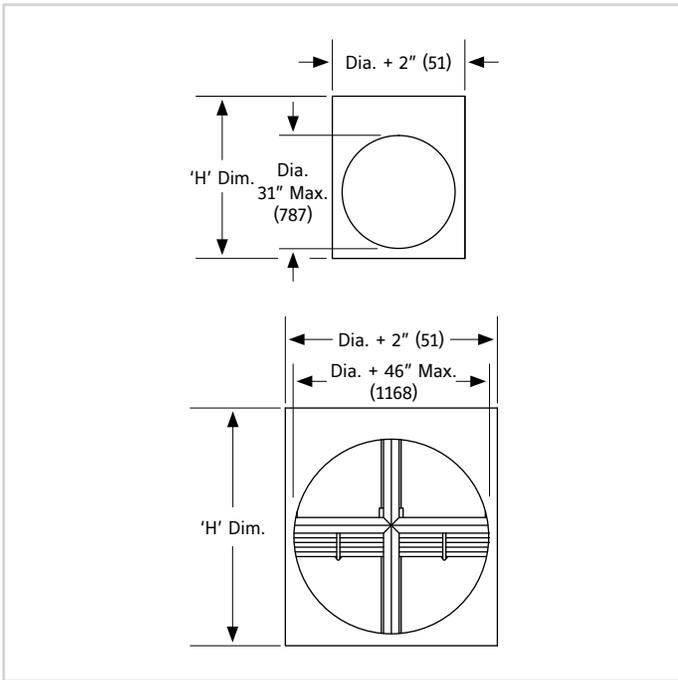


**CR, WR & LR STYLE DAMPERS VERTICAL INSTALLATION**

'X' dim. + 'Dia' dim. = 'H' dim.

Single Section High 'H' Dimension	
'Dia' Damper Height	'X' Dim.
3" (76) thru 7" (178)	2 3/4" (70)
7.01" (179) thru 15" (533)	3 3/4" (95)
15.01" (534) thru 19" (483)	4 3/4" (121)
19.01" (484) thru 22" (559)	3 3/4" (95)
22.01" (560) thru 31" (787)	4 3/4" (121)

Multi Section High 'H' Dimension	
'Dia' Damper Height	'X' Dim.
32.01" (788) thru 46" (1168)	3 3/4" (95)



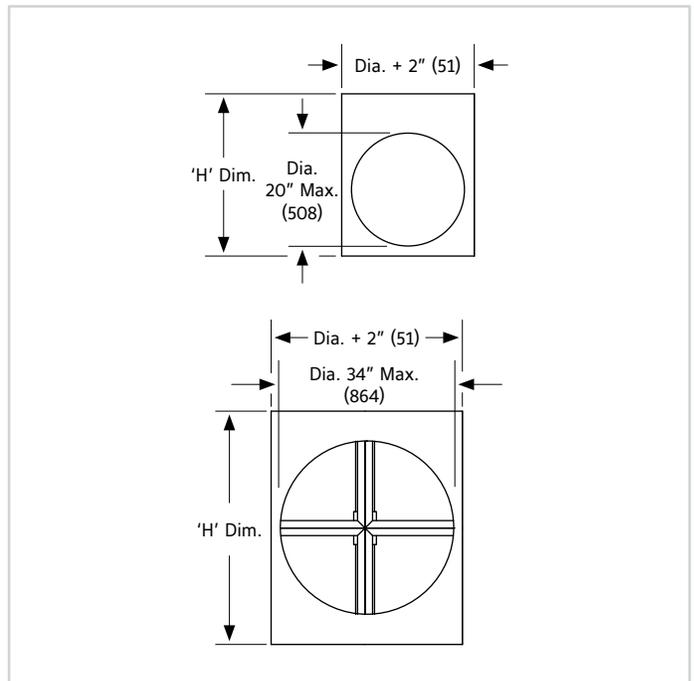
**CR, WR & LR STYLE DAMPERS HORIZONTAL INSTALLATION**

'X' dim. + 'Dia' dim. = 'H' dim.

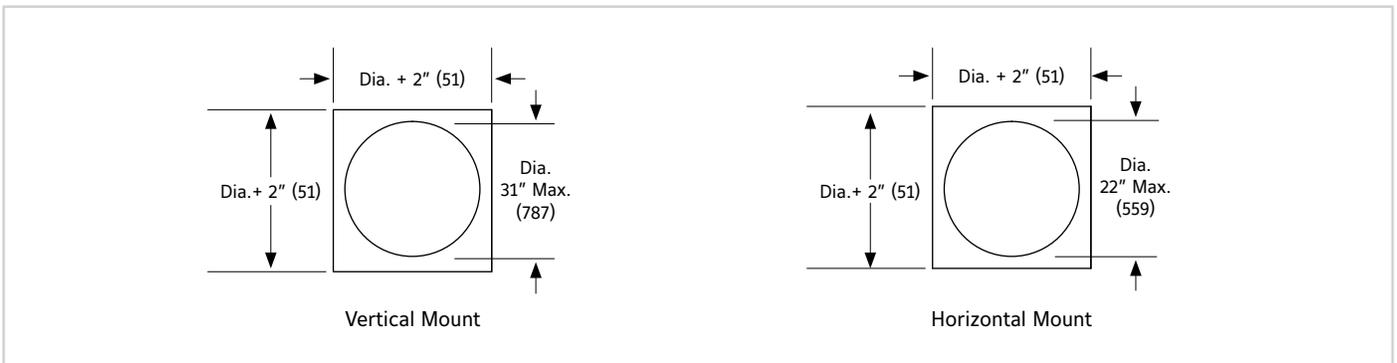
Single Section High 'H' Dimension	
'Dia' Damper Height	'X' Dim.
4" (102) thru 9" (228)	2 3/4" (70)
9.01" (229) thru 20" (508)	3 3/4" (95)

Two Section High 'H' Dimension	
'Dia' Damper Height	'X' Dim.
20.01" (509) thru 24" (588)	3 1/2" (89)
24.01" (589) thru 34" (863)	5 1/2" (140)

LR Style is limited to single section only.



**R STYLE DAMPERS VERTICAL AND HORIZONTAL INSTALLATION**



## ASSAMBLY AND DIMENSIONAL INFORMATION

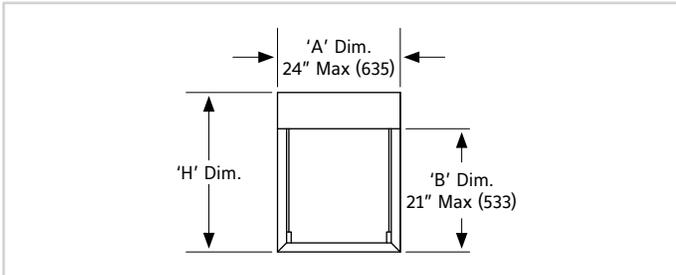
For 4000 fpm (20.3 m/s) and 4 in. wg. (1 kPa) MAX. Vertical Mount Only

For 3000 fpm (15.2 m/s) and 4 in. wg. (1 kPa) MAX. Vertical or Horizontal Mount

### B, BC & WB DAMPERS

'X' dim. + 'B' dim. = 'H' dim.

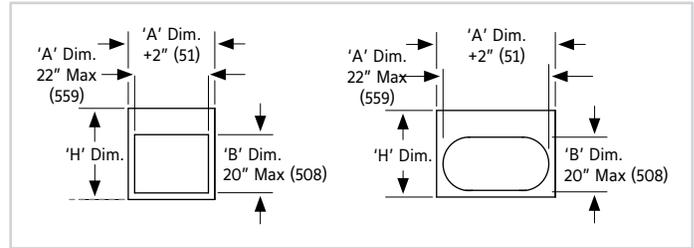
Single Section Units	
'B' Damper Height	'X' Dim.
8" (203) thru 12" (305)	1 3/4" (44)
12.01" (306) thru 21" (533)	2 3/4" (70)



### C & CO DAMPERS / WC & WO DAMPERS

'X' dim. + 'B' dim. = 'H' dim.

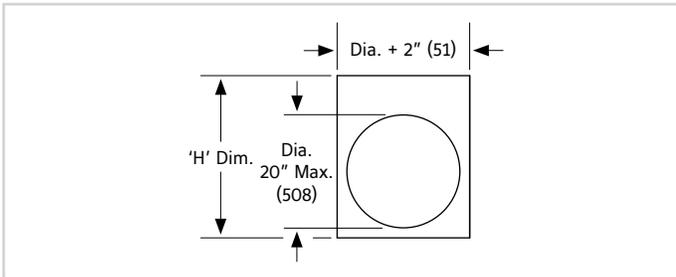
Single Section Units	
'B' Damper Height	'X' Dim.
7" (178) thru 11" (280)	2 3/4" (44)
11.01" (281) thru 20" (508)	3 3/4" (95)



### CR & WR DAMPERS

'X' dim. + 'Dia' dim. = 'H' dim.

Single Section Units	
'Dia' Damper Height	'X' Dim.
7" (178) thru 11" (280)	2 3/4" (44)
11.01" (281) thru 20" (508)	3 3/4" (95)



## DIBD23 SUGGESTED SPECIFICATION

Furnish and install at locations shown on the plans or as described in schedules for curtain type fire dampers suitable for vertical wall or horizontal masonry floor or ceiling. Dynamic fire dampers tested, constructed and labeled in accordance with the latest edition of UL Standard 555. Dampers shall have a fire rating of 3 hour and shall meet the requirements of the latest edition of NFPA90A. Fire dampers shall be produced in an ISO 9001 certified factory.

Damper frame and blades shall be galvanized steel in gauges required by UL listing R5531 installed in a factory mounted sleeve and shipped loose mounting angle. Damper blades shall be steel interlock to provide fire shield in gauges required by UL listing R5531. Closure springs dampers shall be of 301 stainless steel and shall be constant force type.

Each dynamic fire damper shall include a steel sleeve and mounting angles furnished by the damper manufacturer to ensure appropriate installation. Submittal information shall include the fire protection rating, maximum velocity/pressure ratings and the manufacturer's UL installation instructions. The dampers shall be installed in accordance with the manufacturer's UL installation instructions. Dynamic fire dampers shall be in all respects equivalent to Ruskin model DIBD23.

Each damper shall include a 165°F (74°C), 212°F (100°C) or 285°F (141°C) fusible link and shall be labeled for use in dynamic systems. Dampers labeled for use in static systems only are not permitted. The damper shall be rated for dynamic closure at 2000 fpm (10.16 m/s) and 4 inches w.g. (1 kPa) static pressure and shall be rated to close with airflow in either direction.

### Optional FM Approvals Specification

Each fire damper shall be listed in Factory Mutual (FM) Approvals Specification Tested Product and labeled accordingly.

Dynamic fire dampers shall be Ruskin model DIBD23.

(Consult [www.ruskin.com](http://www.ruskin.com) for electronic version of this "Quick" spec as well as for complete 3-part CSI MasterFormat Specifications)

### LINKS TO IMPORTANT DOCUMENTS

Document Title
Limited Warranty Document



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Grandview, MO 64030  
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Phone: (816) 761-7476