

Reference: Client:
 Project: Consultant:
 Location: Contractor:
 Date: Submitted by: **BM**



Model FDD
 Dynamic Curtain Fire Damper
 1-1/2 or 3 Hour, UL555 Classified

Application:

The BAS/CVS model FDD fire damper utilizes a curtain style blade to prevent the spread of fire through a penetration in a fire rated barrier made by an HVAC duct or transfer. The FDD can be installed vertically or horizontally and is meant for dynamic (fans remain on in a fire) or static (fans shut off in a fire) HVAC systems.

MAXIMUM VELOCITY: 2000 fpm (10.2 m/s) on all sizes.

MAXIMUM PRESSURE: 4" wg (1kPa) on all sizes.

Standard Construction:

	Standard	Optional
Frame Material	22 Gauge Galvanized Roll-formed Steel	With Sleeve - 20 Gauge Galvanized Roll-formed Steel
Blade Material and Type	22 Gauge Galvanized Roll-formed Steel	----
Frame Depth	3-11/16" (94)	2-3/16" (56) [see Model FDD-SL]
Dimensions	Actual - 1/4" (6)	Actual
Closure Spring	Stainless Steel	----
Fusible Link	165° (74°C)	212° (100°C)
Mounting	Vertical	Horizontal
UL Hour Rating	1-1/2 Hour	3 Hour

All dimensions shown in inches, parentheses () indicate millimeters.

Optional Construction:

3-Hour Rating

212° Fusible Link

Factory Installed External Sleeve:

Length: 12 (305) 16 (406) 24 (610) Other: _____

Gauge: 20 (1.0) 18 (1.2) 16 (1.5) 14 (2.0) 10 (3.5)

Location in Sleeve: Standard Offset: _____

Factory Installed Integral Sleeve:

Length: 12 (305) 14 (356) 16 (406)

Gauge: 20 (1.0) 18 (1.2)

Flanged Sleeve (requires factory installed external sleeve):

3/4" (19) 1" (25)

Framed Retaining Angles - 16 ga. x 1 1/2 x 1 1/2 (1.5x38x38)

Single Side Dual Side

Other Options:

- Static models (see Model FD)
- Integral Sleeve models (see Model FDD)
- Multi-Blade models (see Model FDD-MB)
- Slimline models (see Models FDD-SL)
- Out-of-Wall models (see Model FDD-OW)
- True Round models (see Model FDD-RD)



LISTINGS:

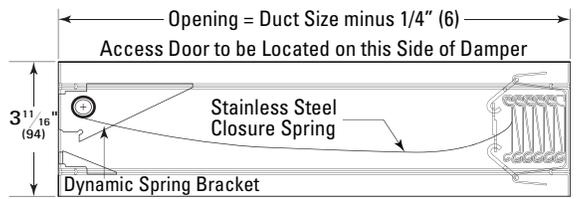
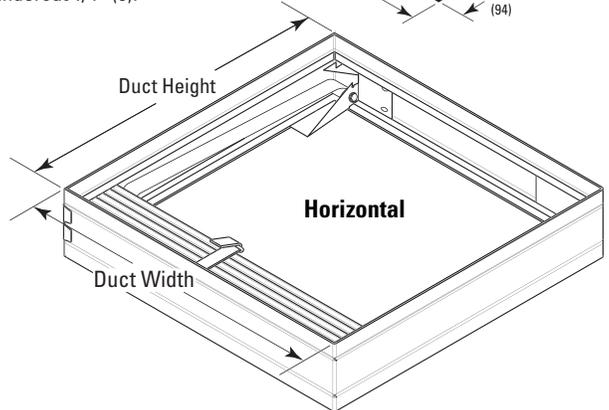
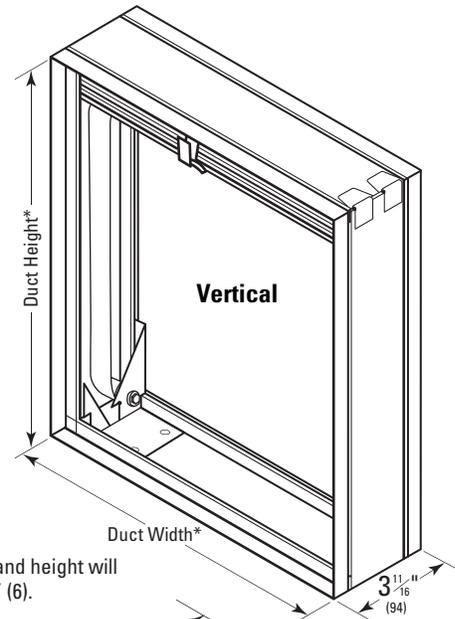
UL 555 Listing: R27700(UAE), R41135(KSA), R40068(Qatar), R41122(Egypt)

STANDARDS MET:

NFPA Standards: 80, 90A, 92A, 92B and 101

Building Code Standard:

ICC International Building Code



FDD-A Shown (FDD-A Similar)

As part of our continuous improvement program, we reserve the right to make further improvements without notice.

Submittal

Type A Dynamic Curtain Fire Damper

- For use in dynamic HVAC systems (fans on)
- Frame and blade stack in air stream
- Approximately 75-85% Free Area
- Sleeve optional (Factory installed external or Integral)
- 1-1/2 or 3 Hour Fire Rated

FDD-A Minimum & Maximum Sizes:

Type A Model	Minimum Size		Max. Single Section		Max. Multi-Section	
	1.5 Hour	3 Hour	1.5 Hour	3 Hour	1.5 Hour	3 Hour
FDD-A (Vertical)	6x6 (152x152)		36x36 (914x914)	36x36 (914x914)	72x36 (1829x914) 36x72 (914x1829)	72x36 (1829x914) 36x72 (914x1829)
FDD-A (Horizontal)			24x24 (610x610)	24x24 (610x610)	36x36 (914x914)	36x36 (914x914)

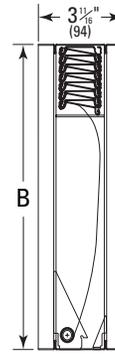
All dimensions shown in inches, parentheses () indicate millimeters.

A Dimension = Duct Width

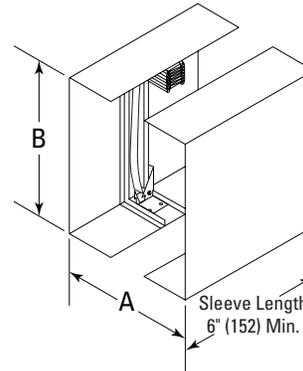
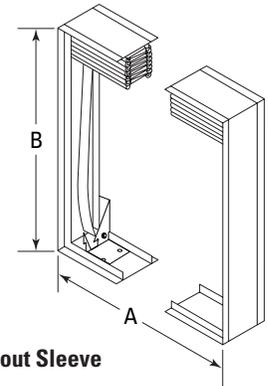
B Dimension = Duct Height

Notes:

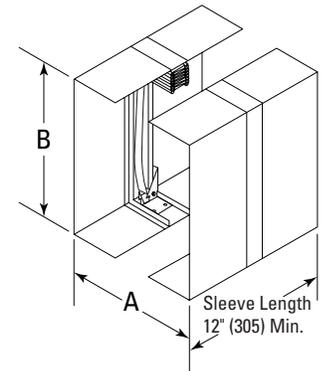
1. Integral sleeves are only offered in 20 gauge and in 12" (305), 14" (356) and 16" (406) lengths.



Type A without Sleeve



Type A with External Sleeve



Type A with Integral Sleeve¹

Type B Dynamic Curtain Fire Damper

- For use in dynamic HVAC systems (fans on)
- Blade stack out of airstream
- Approximately 80-90% Free Area
- Sleeve optional (Factory installed external or Integral)
- 1-1/2 or 3 Hour Fire Rated

FDD-B Minimum & Maximum Sizes:

Type B Model	Minimum Size		Max. Single Section		Max. Multi-Section²	
	1.5 Hour	3 Hour	1.5 Hour	3 Hour	1.5 Hour	3 Hour
FDD-B (Vertical)	6x4 (152x102)		36x32 (914x813)	36x32 (914x813)	72x32 (1829x813) 36x68 (914x1727)	72x32 (1829x813) 36x68 (914x1727)
FDD-B (Horizontal)			24x21 (610x533)	24x21 (610x533)	36x32³ (914x813)	36x32³ (914x813)

All dimensions shown in inches, parentheses () indicate millimeters.

A Dimension = Duct Width

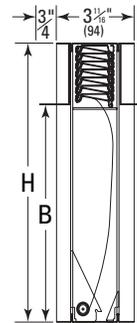
B Dimension = Duct Height

X Dimension = Height of Blade Stack

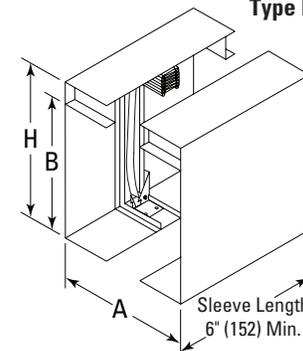
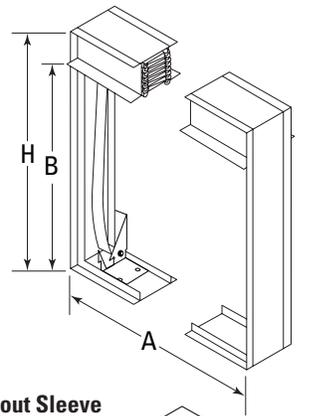
H Dimension = Overall Damper Height (B+X)

Notes:

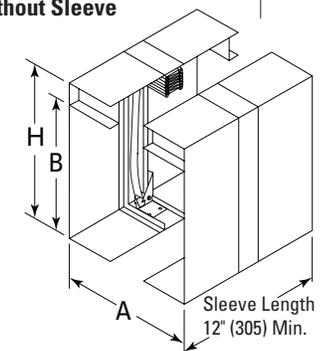
1. Integral sleeves are only offered in 20 gauge and in 12" (305), 14" (356) and 16" (406) lengths.
2. Multi-section dampers will have frame in the airstream, and blades for vertical models more than one damper high.
3. Note special construction on Multiple Section page in this submittal.



Type B without Sleeve



Type B with External Sleeve



Type B with Integral Sleeve¹

Type C-S/R Dynamic Curtain Fire Damper
Square or Rectangular Transition - FDD-C-S/R

- For use in dynamic HVAC systems (fans on)
- Frame and blade stack out of airstream
- Approximately 95-100% Free Area
- Sleeve optional (Factory installed external or Integral)
- 1-1/2 or 3 Hour Fire Rated

FDD-C-S/R Minimum & Maximum Sizes:

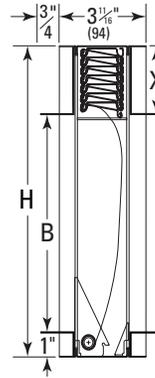
Type C-S/R Model	Minimum Size		Max. Single Section		Max. Multi-Section ²	
	1.5 Hour	3 Hour	1.5 Hour	3 Hour	1.5 Hour	3 Hour
FDD-C-S/R (Vertical)	5x3 (127x76)		35x31 (889x787)	35x31 (889x787)	71x31 (1803x787) 35x67 (889x1702)	71x31 (1803x787) 35x67 (889x1702)
FDD-C-S/R (Horizontal)			23x20 (584x508)	23x20 (584x508)	35x32 (889x813)	35x32 (889x813)

All dimensions shown in inches, parentheses () indicate millimeters.

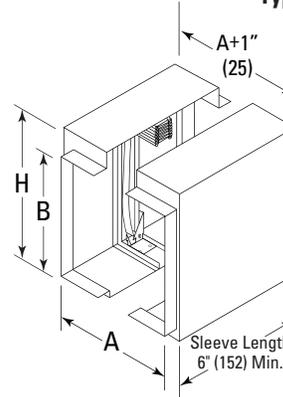
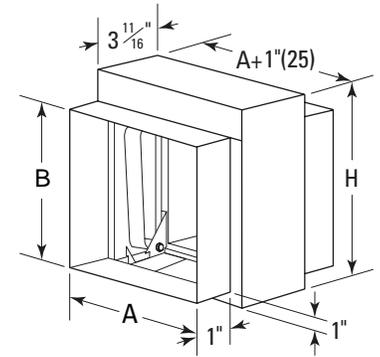
- A Dimension = Duct Width
- B Dimension = Duct Height
- X Dimension = Height of Blade Stack
- H Dimension = Overall Damper Height (B+X+1")

Notes:

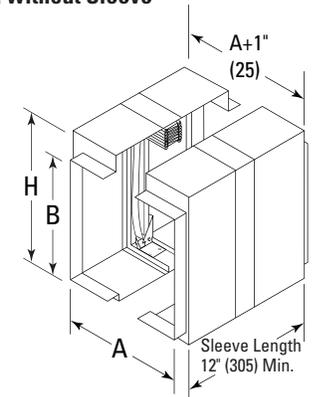
1. Integral sleeves are only offered in 20 gauge and in 12" (305), 14" (356) and 16" (406) lengths.
2. Multi-section dampers will have frame in the airstream, and blades for vertical models more than one damper high.



Type C-S/R without Sleeve



Type C-S/R with External Sleeve



Type C-S/R with Integral Sleeve¹

Type C-OV Dynamic Curtain Fire Damper
Oval Transition - FDD-C-OV

- For use in dynamic HVAC systems (fans on)
- Frame and blade stack out of airstream
- Approximately 95-100% Free Area
- Sleeve optional (Factory installed external or Integral)
- 1-1/2 or 3 Hour Fire Rated

FDD-C-OV Minimum & Maximum Sizes:

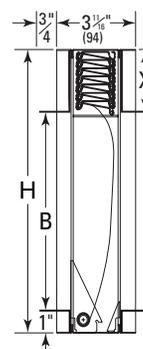
Oval Type C-OV Model	Minimum Size		Max. Single Section		Max. Multi-Section ²	
	1.5 Hour	3 Hour	1.5 Hour	3 Hour	1.5 Hour	3 Hour
FDD-C-OV (Vertical)	5x3 (127x76)		35x31 (889x787)	35x31 (889x787)	71x31 (1803x787) 35x67 (889x1702)	71x31 (1803x787) 35x67 (889x1702)
FDD-C-OV (Horizontal)			23x20 (584x508)	23x20 (584x508)	35x32 (889x813)	35x32 (889x813)

All dimensions shown in inches, parentheses () indicate millimeters.

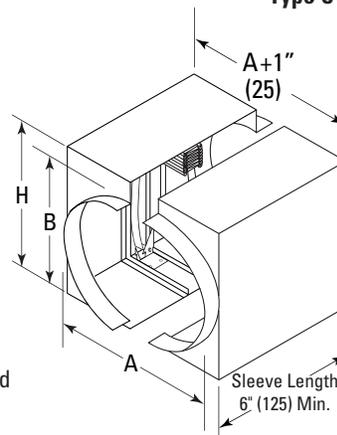
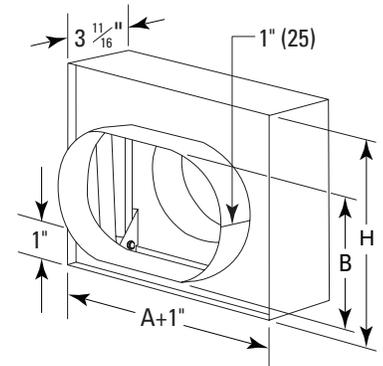
- A Dimension = Duct Width
- B Dimension = Duct Height
- X Dimension = Height of Blade Stack
- H Dimension = Overall Damper Height (B+X+1")

Notes:

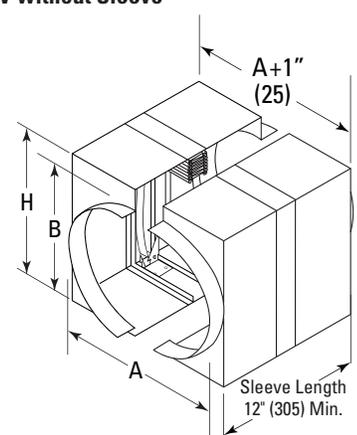
1. Integral sleeves are only offered in 20 gauge and in 12" (305), 14" (356) and 16" (406) lengths.
2. Multi-section dampers will have frame in the airstream, and blades for vertical models more than one damper high.



Type C-OV without Sleeve



Type C-OV with External Sleeve



Type C-OV with Integral Sleeve

Type C-R Dynamic Curtain Fire Damper
Round Transition - FDD-C-R

- For use in dynamic HVAC systems (fans on)
- Frame and blade stack out of airstream
- Approximately 95-100% Free Area
- Sleeve optional (Factory installed external or Integral)
- 1-1/2 or 3 Hour Fire Rated

FDD-C-R Minimum & Maximum Sizes:

Round C-R Model	Minimum Size		Max. Single Section		Max. Multi-Section ²	
	1.5 Hour	3 Hour	1.5 Hour	3 Hour	1.5 Hour	3 Hour
FDD-C-R (Vertical)	4" Dia. (102)		32" Dia. (813)	32" Dia. (813)	32" Dia. (813)	32" Dia. (813)
FDD-C-R (Horizontal)			20" Dia. (508)	20" Dia. (508)	32" Dia. (813)	32" Dia. (813)

All dimensions shown in inches, parentheses () indicate millimeters.

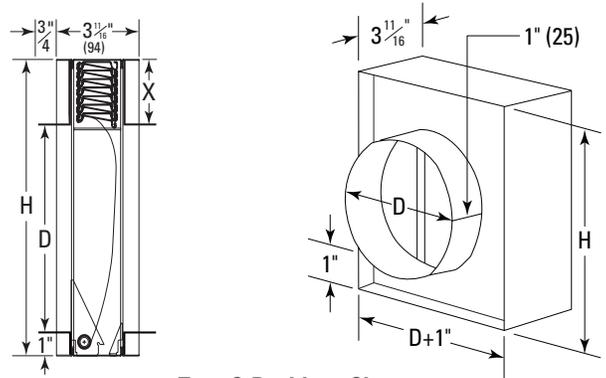
X Dimension = Height of Blade Stack

H Dimension = Overall Damper Height (D+X+1")

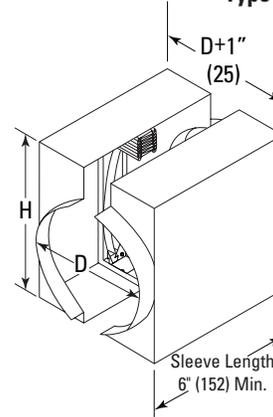
D Dimension = Diameter

Notes:

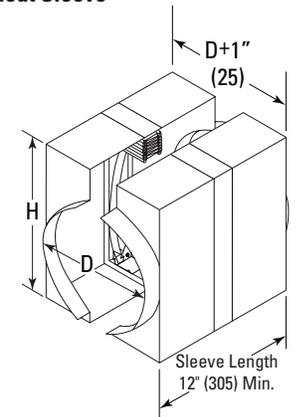
1. Integral sleeves are only offered in 20 gauge and in 12" (305), 14" (356) and 16" (406) lengths.
2. Multi-section dampers will have frame in the airstream, and blades for vertical models more than one damper high.



Type C-R without Sleeve



Type C-R with External Sleeve



Type C-R with Integral Sleeve¹

Type A-R Dynamic Curtain Fire Damper
Round Transition - FDD-A-R

- For use in dynamic HVAC systems (fans on)
- Blade stack in the airstream
- Approximately 75-85% Free Area
- Sleeve optional (Factory installed external or Integral)
- 1-1/2 or 3 Hour Fire Rated

FDD-A-R Minimum & Maximum Sizes:

Round A Model	Minimum Size		Max. Single Section		Max. Multi-Section ²	
	1.5 Hour	3 Hour	1.5 Hour	3 Hour	1.5 Hour	3 Hour
FDD-A-R (Vertical)	4" Dia. (102)		34" Dia. (864)	34" Dia. (864)	34" Dia. (864)	34" Dia. (864)
FDD-A-R (Horizontal)			22" Dia. (559)	22" Dia. (559)	34" Dia. (864)	34" Dia. (864)

All dimensions shown in inches, parentheses () indicate millimeters.

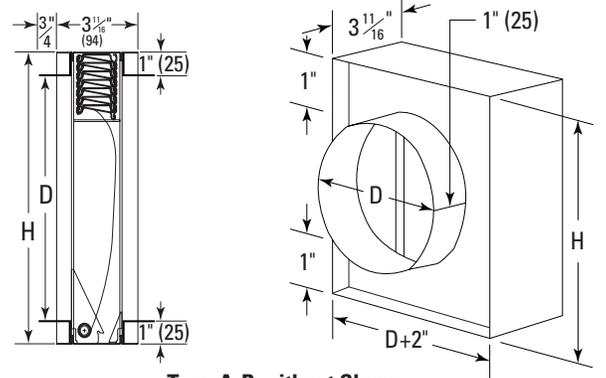
X Dimension = Height of Blade Stack

H Dimension = Overall Damper Height (D+2")

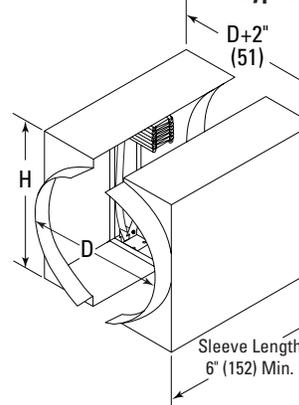
D Dimension = Diameter

Notes:

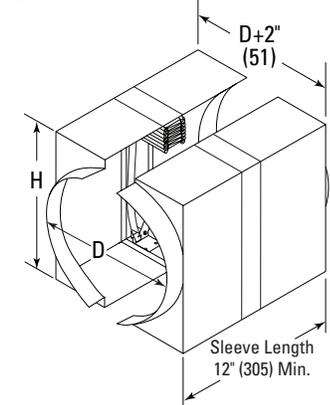
1. Integral sleeves are only offered in 20 gauge and in 12" (305), 14" (356) and 16" (406) lengths.
2. Multi-section dampers will have frame in the airstream, and blades for vertical models more than one damper high.



Type A-R without Sleeve

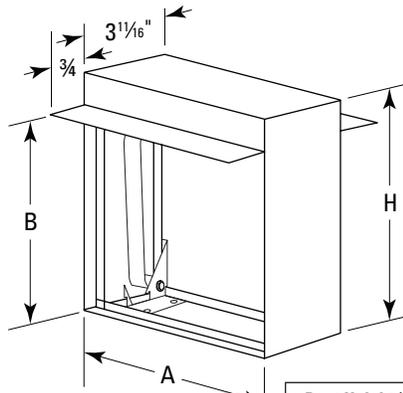


Type A-R with External Sleeve

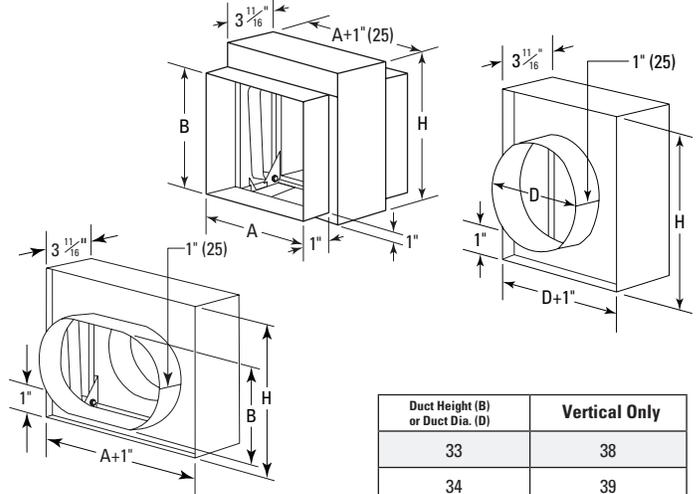


Type A-R with Integral Sleeve¹

Type B Fire Damper



Type C Fire Damper



Duct Height (B)	Type B Damper Height	
	Vertical	
Inches	Inches	
4	6	
5	7	
6	8	
7	9	
8	10	
9	11	
10	12	
11	13	
12	14	
13	15	
14	16	
15	17	
16	18	
17	19	
18	20	
19	21	
20	22	
21	24	
22	25	
23	26	
24	27	
25	28	
26	29	
27	30	
28	31	
29	32	
30	33	
31	34	
32	35	
33	37	

Duct Height (B)	Vertical Only
34	38
35	39
36	40
37	41
38	42
39	43
40	44
41	45
42	46
43	48
44	49
45	50
46	51
47	52
48	53
49	54
50	55
51	56
52	57
53	58
54	59
55	60
56	59
57	60
58	61
59	62
60	63
61	64
62	65
63	66
64	67
65	69
66	70
67	71
68	72

Duct Height (B) or Duct Dia. (D)	Type C-R, C, C-OV Damper Height (H)
Inches	Inches
3	6
4	7
5	8
6	9
7	10
8	11
9	12
10	13
11	14
12	15
13	16
14	17
15	18
16	19
17	20
18	21
19	22
20	23
21	25
22	26
23	27
24	28
25	29
26	30
27	31
28	32
29	33
30	34
31	35
32	36

Duct Height (B) or Duct Dia. (D)	Vertical Only
33	38
34	39
35	40
36	41
37	42
38	43
39	44
40	45
41	46
42	47
43	49
44	50
45	51
46	52
47	53
48	54
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50	56
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64	68
65	70
66	71
67	72

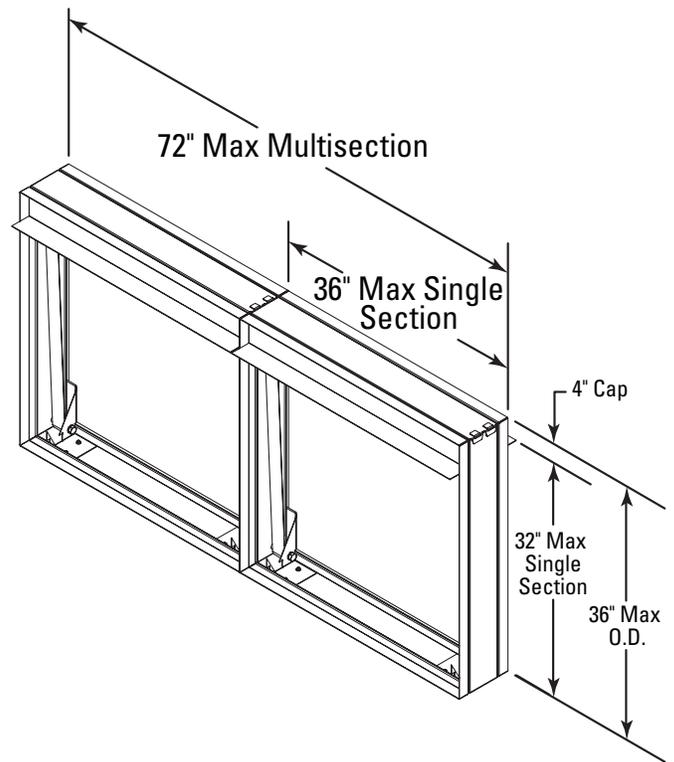
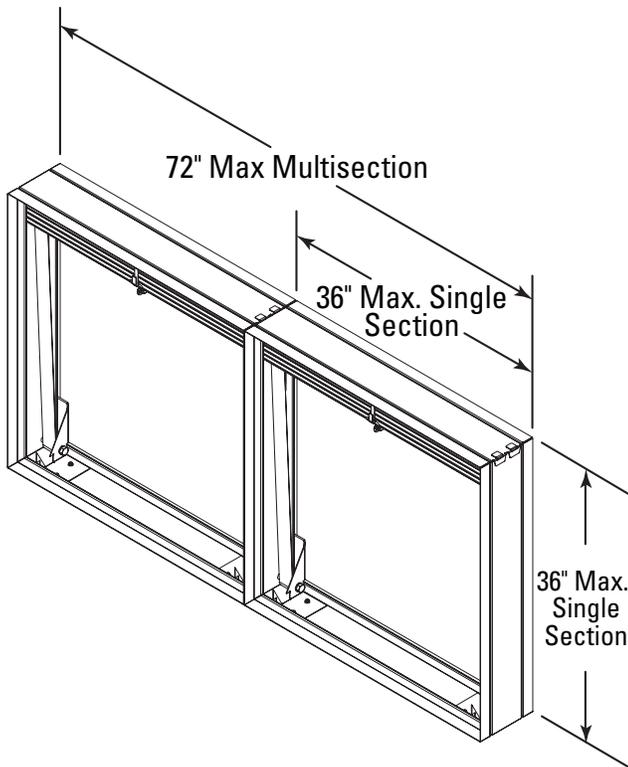
Multiple section damper assemblies are shipped in individual sections from the factory unless a factory supplied and installed sleeve is required. When a multiple section damper is ordered with a sleeve, it is usually shipped as a complete assembly. The following drawings are of different maximum size multiple section FDD models and are for reference purposes (not all options are shown).

Type A Multi-Section Assembly

**FDD-A Model Shown (max size):
1-1/2 Hour Vertical**

Type B Multi-Section Assembly

**FDD-A Model Shown (max size):
1-1/2 and 3 Hour Vertical**



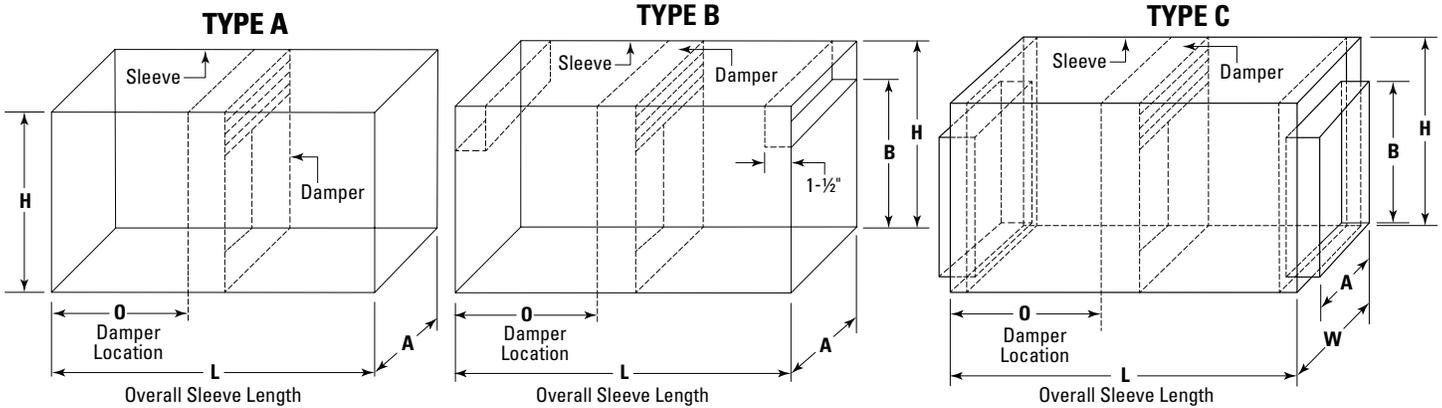
Notes:

1. These diagrams are for reference purposes
2. Not all FDD Model options are shown

Below are diagrams showing the location of the Type A, B and C fire dampers in factory installed external sleeve. Integral sleeves (where the sleeve acts as the frame of the damper) are also available.

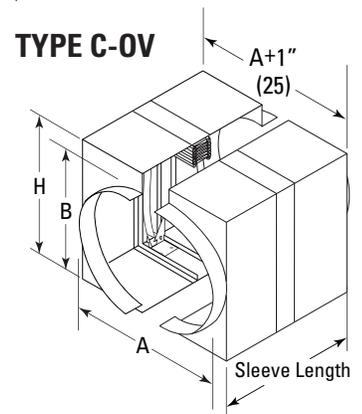
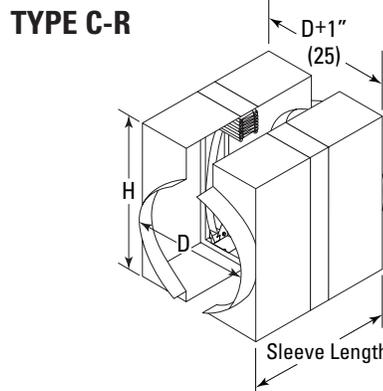
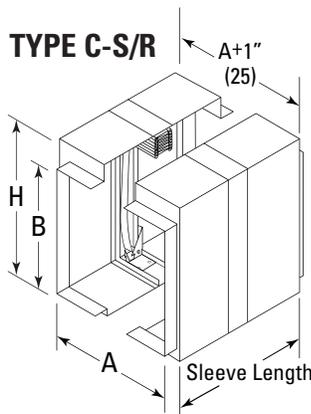
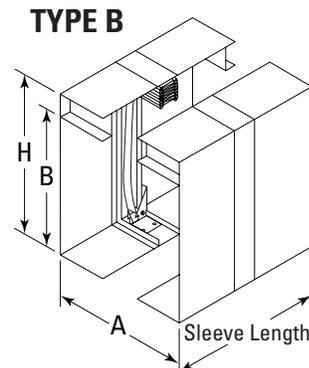
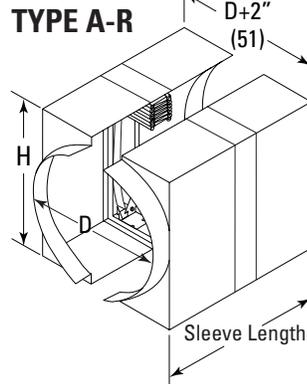
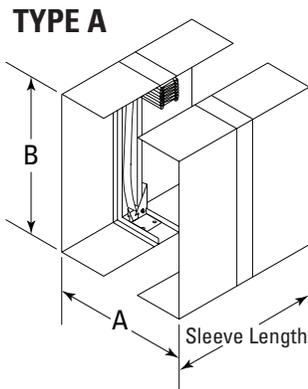
Sleeve Dimensions:

- H** = Overall damper height
- W** = Overall damper width (always the length of the blades)
- A** = Duct width
- B** = Duct height
- O** = The offset from one end of the sleeve to the middle of the damper frame (can be altered as a construction option)
- L** = Overall length of sleeve



OPTIONAL INTEGRAL SLEEVE INFORMATION

CVS offers the cost and time saving option of having the sleeve be integral to the fire damper. It is offered on any of the fire damper types mentioned in the submittal (A, A-R, B, C, C-S/R, C-OV and C-R). On an integral sleeve fire damper, the sleeve acts as both the sleeve and the frame. Integral sleeve fire dampers are available in 20 gauge galvanized steel only and in lengths of 12" (305), 14" (356) or 16" (406). Integral sleeved Fire Dampers are less expensive than factory installed external sleeves.



Notes:

Integral sleeve dampers are restricted to single sections.

Refer to the max single section sizes within this submittal for those specific sizes.

As part of our continuous improvement program, we reserve the right to make further improvements without notice.

Submittal