

Model DFD-150X Type B
High Free Area
1 1/2 Hour Fire Resistance Rating
Application

Model DFD-150X is approved for use in walls, floors and partitions with fire resistance ratings less than 3 hours. This model carries a 1 1/2 hour UL fire damper label. UL 555 classifies dynamic rated fire dampers for use in HVAC systems that are operational in the event of fire.

Construction

Damper is galvanized steel (in gauges required by UL listing R-13317). Sleeve is 20 ga. galvanized steel.

Installation

This model damper requires no additional sleeves but does require the use of angles and installation methods described in Greenheck Fire Damper Installation Instructions #453946, included with every damper shipment. SSC option replaces the angle requirement previously mentioned (installation instructions #455246).

Model DFD-150X meets the requirements for fire dampers established by:

National Fire Protection Association

(NFPA Standards 90A & 101)

BOCA National Building Codes

ICBO Uniform Building Codes (UBC Standard 43-7)

SBCCI Standard Building Codes

New York City (MEA listing #260-91-M)

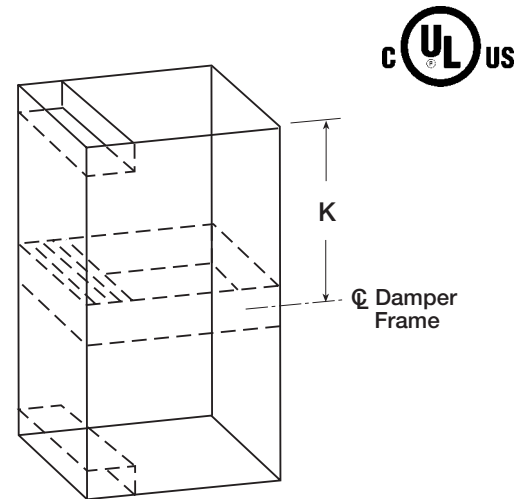
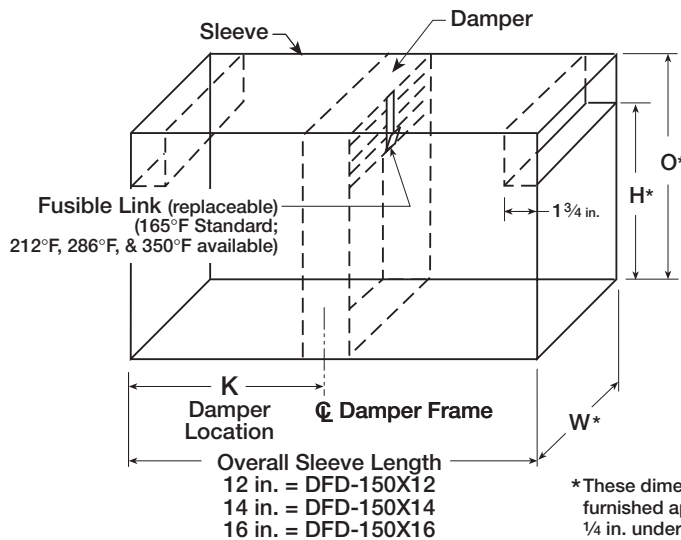
California State Fire Marshall

(Listing #3225-981:102)

“UL CLASSIFIED (see complete marking on product)”

“UL CLASSIFIED to Canadian safety standards (see complete marking on product)”

Standard 555 (Listing #R13317)



“K” dimension specifies location of damper within the sleeve. Standard “K” dimension is one half of sleeve length (damper centered in sleeve). Optional “K” dimensions for each model are shown below:
 FD-150X12- “K” can be specified as 4, 5, 6, 7 or 8 in.
 FD-150X14- “K” can be specified as 6, 7 or 8 in.
 FD-150X16- “K” is always 8 in.
 All dimensions and gauges are nominal.

Horizontal dampers must be installed with the “K” dimension on the top side as shown (per UL test: see label on damper).

Horizontal dampers must have the access door installed on the top side to facilitate reopening of the blades should the link melt.

Qty.	Model	Damper Size		Fusible Link Temp (165°F std.)	Damper Location	SSC Option
	12 in. 14 in. 16 in.	W*	H*		K	

Project

Location

Contractor

Design Specifier

UNDUCTED VELOCITY RATINGS

DFD-150X TYPE B

Dynamic Rated Fire Damper Application

Airflow ratings for dynamic fire dampers vary depending on the type of installation. UL Standard 555 provides for testing and dynamic rating of fire dampers in the six installations illustrated. Use the following steps to verify that a fire damper is properly rated for the application intended:

1. Check the maximum pressure that can occur with damper fully closed. **Model DFD dampers are rated to close against 8 in. wg**
2. Select the Installation and Airflow Velocity Table that approximates the installation being considered.
For example: Ducted installation with vertical damper, horizontal airflow would use Table D.
3. Using the W x H damper dimensions (see page 1) determine the maximum velocity rating in fpm from the proper Airflow Velocity Table.
For example: Using Table D for a ducted vertical damper installation with horizontal airflow, the maximum velocity through a 30 in. x 12 in. damper is 3963 fpm.

Maximum Airflow Velocity Ratings (FPM) for *Unducted* Installations

Vertical Damper Installation Horizontal Airflow

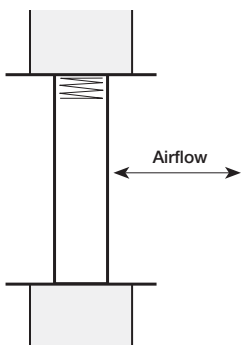


Table A

Damper Height (H) inches	Damper Width (W) inches								
	12	24	36	48	72	108	120		
10	8118 1 section								
21		6872 1 section		3436 2 sections			1800 3 sections	1350 4 sections	
32			5401 1 section		2700 2 sections				
45		3206 2 sections	2560 2 sections	1603 4 sections	1280 4 sections		865 6 sections	648 8 sections	
			24	36	48	72	96	108	120

Horizontal Damper Installation Airflow Down

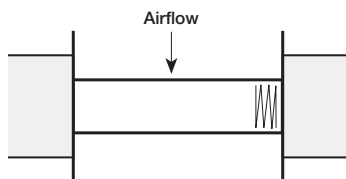


Table B

Damper Height (H) inches	Damper Width (W) inches								
	12	24	36	48	72	108	120		
10	8314 1 section								
21		4176 1 section		2088 2 sections			559 3 sections	419 4 sections	
32			1679 1 section		839 2 sections				
45		1949 2 sections	796 2 sections	974 4 sections	398 4 sections		269 6 sections	201 8 sections	
			24	36	48	72	96	108	120

Horizontal Damper Installation Airflow Up

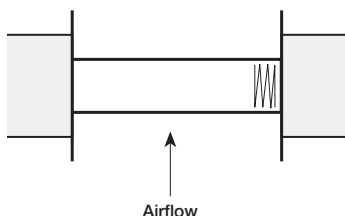


Table C

Damper Height (H) inches	Damper Width (W) inches								
	12	24	36	48	72	108	120		
10	8565 1 section								
21		5772 1 section		2886 2 sections			814 3 sections	611 4 sections	
32			2444 1 section		1222 2 sections				
45		2693 2 sections	1158 2 sections	1346 4 sections	579 4 sections		391 6 sections	293 8 sections	
			24	36	48	72	96	108	120

DUCTED VELOCITY RATINGS

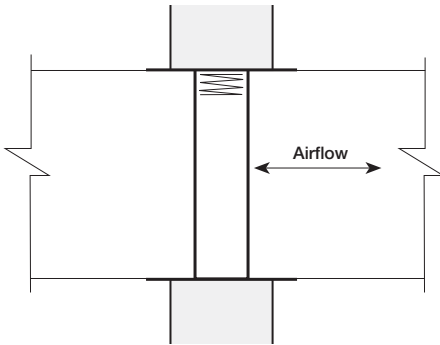
DFD-150X TYPE B

Dynamic Ratings for Multi-Section Damper Assemblies

Dampers larger than maximum single section size are supplied in 2 or more sections of equal size (see pg.4). In the event of fire it must be assumed that each damper section will close at a slightly different time and that the last damper section remaining open will be handling the entire airflow volume. Airflow ratings in Tables A-F for dampers larger than single section are based on this assumption. These tables also show the number of sections in a multi-section damper assembly.

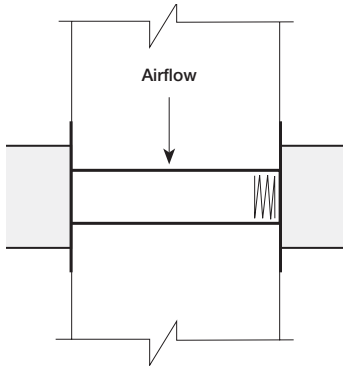
Maximum Airflow Velocity Ratings (FPM) for *Ducted* Installations

**Vertical Damper Installation
Horizontal Airflow** Table D



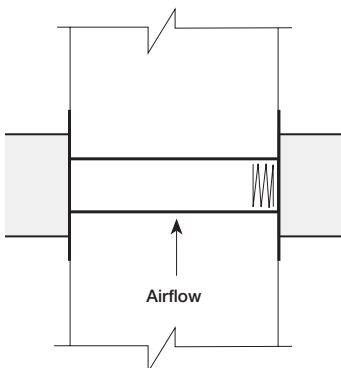
Damper Height (H) inches	Damper Width (W) inches								
	12	24	36	48	72	108	120		
10	6044 1 section								
21		4576 1 section		2288 2 sections		1321 3 sections	990 4 sections		
32			3963 1 section		1981 2 sections				36
45		2135 2 sections	1879 2 sections	1067 4 sections	939 4 sections	634 6 sections	476 8 sections		40
		24	36	48	72	96	108	120	

**Horizontal Damper Installation
Airflow Down** Table E



Damper Height (H) inches	Damper Width (W) inches								
	12	24	36	48	72	108	120		
10	6994 1 section								
21		2909 1 section		1454 2 sections		376 3 sections	282 4 sections		
32			1129 1 section		564 2 sections				36
45		1357 2 sections	535 2 sections	678 4 sections	267 4 sections	180 6 sections	135 8 sections		40
		24	36	48	72	96	108	120	

**Horizontal Damper Installation
Airflow Up** Table F



Damper Height (H) inches	Damper Width (W) inches								
	12	24	36	48	72	108	120		
10	5186 1 section								
21		3473 1 section		1736 2 sections		469 3 sections	352 4 sections		
32			1409 1 section		704 2 sections				36
45		1620 2 sections	668 2 sections	810 4 sections	334 4 sections	225 6 sections	169 8 sections		40
		24	36	48	72	96	108	120	

SIZING DATA

Dampers larger than maximum single section size are supplied in 2 or more sections of equal size.

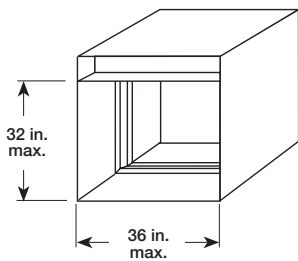
The following chart and illustrations show minimum and maximum damper single and multiple section sizes and assemblies.

Size Limitations

	Vertical or Horizontal	
	Single Section	Multi-Section
Minimum	5 in. x 3 in.	NA
Maximum	① 36 in. x 32 in.	② 96 in. x 45 in. or ③ 120 in. x 37 in.

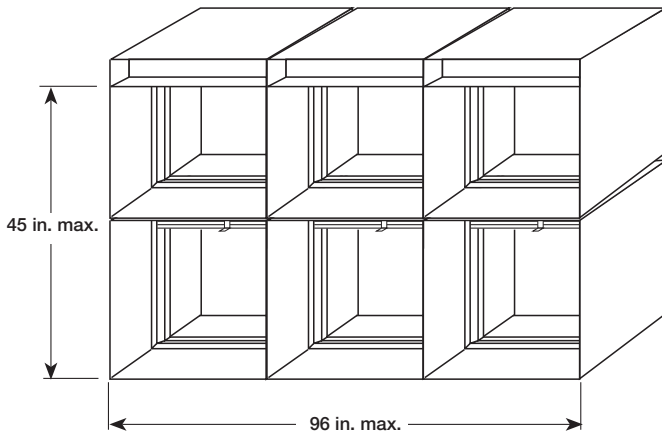
Installation of sizes larger than the maximums shown requires approval of the authority having jurisdiction.

① Maximum Single Section Dimensions



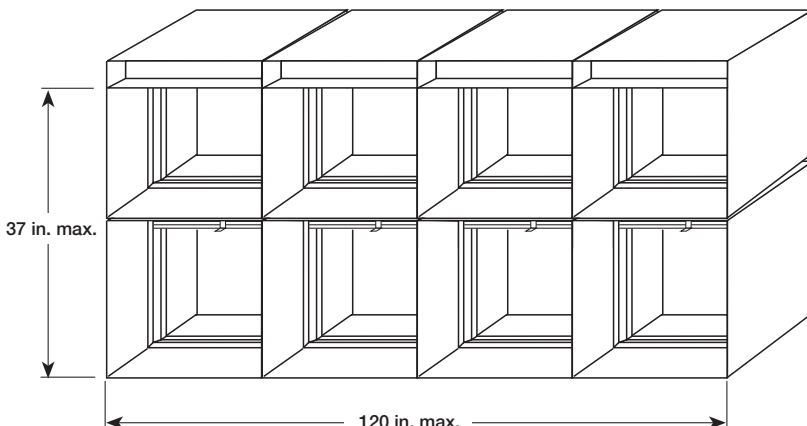
② Multi-Section Limitations

Maximum height is 45 in. when width is 96 in. or less.



③ Multi-Section Limitations

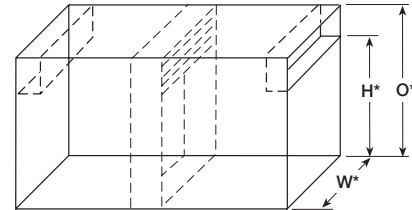
Maximum height is 37 in. when width is greater than 96 in. and less than or equal to 120 in.



DFD-150X TYPE B

Overall Damper Dimensions

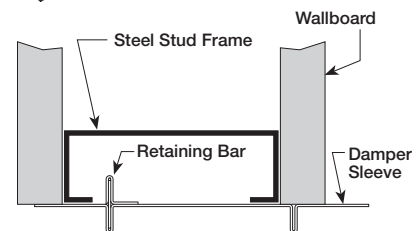
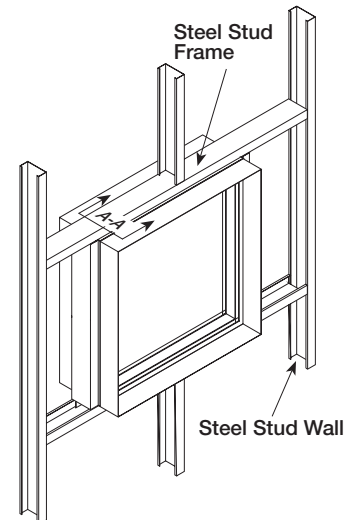
H*	O*	H*	O*
3 in.	5 in.	18	21
4	6	19	22
5	7	20	23
6	8	21	24
7	9	22	26
8	10	23	27
9	11	24	28
10	12	25	29
11	13	26	30
12	14	27	31
13	15	28	32
14	16	29	33
15	18	30	34
16	19	31	35
17	20	32	36



* These dimensions are furnished approximately 1/4 in. undersize

Steel Stud Connection (SSC) Option

The Steel Stud Connection (SSC) Option allows fastening of the damper sleeve (up to 36 in. W x 32 in. H) directly to the wall's steel stud framing. This option replaces the angles that were previously required for wall installations.



Cross-Section A-A