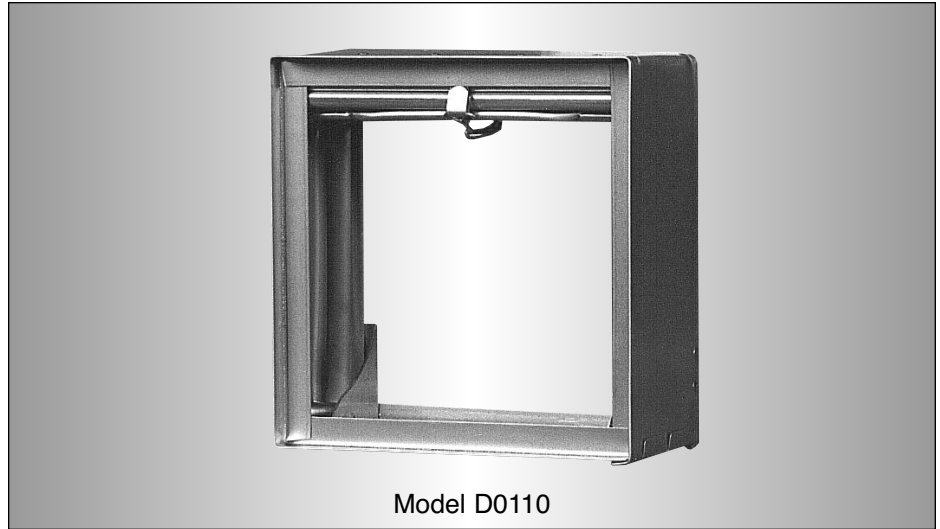


- STANDARD FRAME
- FOR USE IN DYNAMIC SYSTEMS
- 1 1/2 HOUR RATING
- UL 555 CLASSIFIED

MODELS:

- D0110/D0114 TYPE A
 D0120/D0124 TYPE B
 D0130/D0134 TYPE CR/CO
 D0140 TYPE CSR



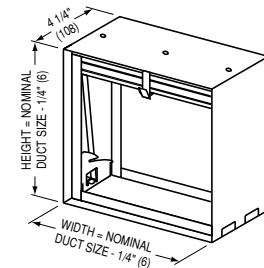
D

CURTAIN FIRE DAMPERS

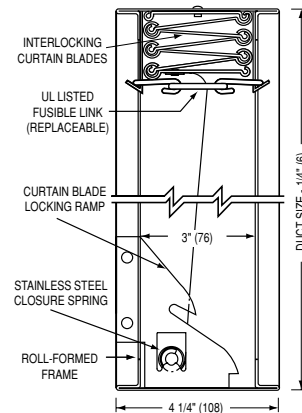
The Nailor D0100 Series dynamic curtain fire dampers are UL/ULC approved for use where building codes require protection of HVAC ductwork penetrations in walls, partitions or floors that have a fire resistance rating of 2 hours or less. Classified for use in dynamic systems (max. 2000 fpm @ 4" w.g.) where the HVAC system remains operative in the event of a fire, the D0100 Series features stainless steel closure springs for assured damper closure under airflow, corrosion resistant steel frame and blades for lasting performance, and choice of transition styles and factory installed sleeves to suit duct size, making installation fast and simple.

CONSTRUCTION DETAILS:

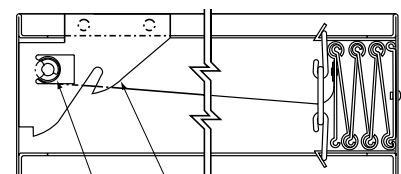
	D0110 (Type A)	D0120 (Type B)	D0130 (Type CR/CO)	D0140 (Type CSR)
FRAME:	4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel	4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel	4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel; out of airstream	4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel; out of airstream
BLADES:	Curtain type, interlocking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, interlocking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, interlocking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, interlocking blades, 22 ga. (0.85) roll-formed G60 galvanized steel
ENCLOSURE:	N/A	Type B 22 ga. (.085) galvanized steel	Type C Round or Oval 22 ga. (.085) galvanized steel	Type C Square or Rect. 22 ga. (.085) galvanized steel
FUSIBLE LINK: (UL Listed)	165°F (74°C) Std. 212°F (100°C) available	165°F (74°C) Std. 212°F (100°C) available	165°F (74°C) Std. 212°F (100°C) available	165°F (74°C) Std. 212°F (100°C) available
BLADE CLOSURE:	Stainless steel closure springs and galvanized steel locking ramps	Stainless steel closure springs and galvanized steel locking ramps	Stainless steel closure springs and galvanized steel locking ramps	Stainless steel closure springs and galvanized steel locking ramps
MOUNTING:	Vertical or Horizontal	Vertical or Horizontal	Vertical or Horizontal	Vertical or Horizontal
INTEGRAL SLEEVE:	See Model	See Model	See Model	Specify SL Option
	22 ga (.085) x12" (305) long D0114-12	D0124-12	D0134-12	
	22 ga (.085) x14" (356) long D0114-14	D0124-14	D0134-14	
	22 ga (.085) x16" (406) long D0114-16	D0124-16	D0134-16	



TYPE A: MODEL D0110



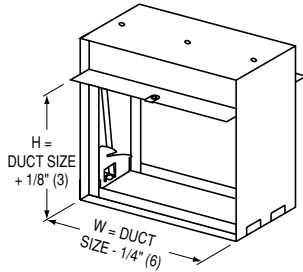
VERTICAL MOUNT



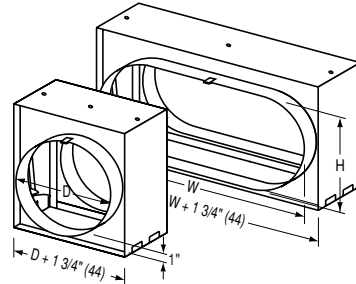
STAINLESS STEEL CLOSURE SPRING CURTAIN BLADE LOCKING RAMP

HORIZONTAL MOUNT

For MIN./MAX. UL SIZES see chart on page D9.

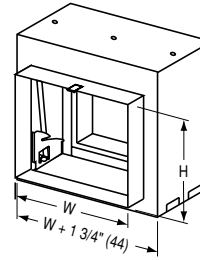


**TYPE B:
MODEL D0120**

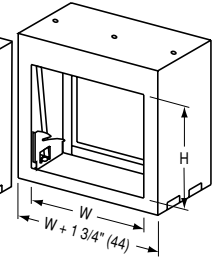


**TYPE CR:
MODEL D0130**

**TYPE CO:
MODEL D0130**



**TYPE CSR
WITH COLLAR
(STANDARD):
MODEL D0140**



**TYPE CSR
WITHOUT COLLAR:
MODEL D0140**

For overall damper dimensions see sizing chart on page D46.

PERFORMANCE DATA:

Curtain type fire dampers impose minimal resistance to air flow in the system. The following charts indicate both free area for the different damper types and static pressure losses for various velocities.

TYPE A DAMPER FREE AREA – sq. ft.

DUCT HEIGHT in inches (mm)	DUCT WIDTH in inches (mm)									
	6 (152)	12 (305)	18 (457)	24 (610)	30 (762)	36 (914)	42 (1067)	48 (1219)	54 (1372)	60 (1524)
6 (152)	.14	.33	.52	.70	.89	1.1	1.3	1.5	1.7	1.8
12 (305)	.31	.72	1.1	1.5	1.9	2.4	2.8	3.2	3.6	4.0
18 (457)	.48	1.1	1.7	2.4	3.0	3.7	4.3	4.9	5.6	6.2
24 (610)	.65	1.5	2.4	3.2	4.1	5.0	5.8	6.7	7.5	8.4
30 (762)	.82	1.9	3.0	4.1	5.2	6.3	7.3	8.4	9.5	10.6
36 (914)	.99	2.3	3.6	4.9	6.3	7.6	8.9	10.2	11.5	12.8
42 (1067)	1.2	2.7	4.2	5.8	7.3	8.8	10.4	11.9	13.4	15.0
48 (1219)	1.3	3.1	4.9	6.6	8.4	10.2	11.9	13.7	15.5	17.2
54 (1372)	1.5	3.5	5.5	7.5	9.5	11.5	13.5	15.5	17.5	19.4
60 (1524)	1.7	3.9	6.1	8.3	10.6	12.8	15.0	17.2	19.4	21.7

TYPE B DAMPER FREE AREA – sq. ft.

DUCT HEIGHT in inches (mm)	DUCT WIDTH in inches (mm)									
	6 (152)	12 (305)	18 (457)	24 (610)	30 (762)	36 (914)	42 (1067)	48 (1219)	54 (1372)	60 (1524)
6 (152)	.17	.39	.62	.84	1.1	1.3	1.5	1.7	2.0	2.2
12 (305)	.36	.83	1.3	1.8	2.3	2.7	3.2	3.7	4.1	4.6
18 (457)	.54	1.3	2.0	2.7	3.4	4.2	4.9	5.6	6.3	7.1
24 (610)	.73	1.7	2.7	3.4	4.6	5.6	6.6	7.5	8.5	9.5
30 (762)	.92	2.1	3.4	4.6	5.8	7.0	8.3	9.5	10.7	11.9
36 (914)	1.1	2.6	4.1	5.5	7.0	8.5	9.9	11.4	12.9	14.4
42 (1067)	1.3	3.0	4.7	6.5	8.2	9.9	11.6	13.4	15.1	16.8
48 (1219)	1.5	3.5	5.4	7.4	9.4	11.4	13.3	15.3	17.3	19.2
54 (1372)	1.7	3.9	6.1	8.3	10.6	12.8	15.0	17.2	19.5	21.7

TYPE C DAMPERS HAVE FREE AREA EQUAL TO NOMINAL DUCT AREA.

To calculate Free Area of round duct:
DIAMETER² x .00545 = Free Area (sq ft.)

To determine pressure drop across open damper, calculate **free area velocity** as shown, find velocity on curve and read across for s.p. differential.

$$\text{Free Area Velocity (fpm)} = \frac{\text{cfm}}{\text{Free Area}}$$

Example:
1-36" x 24" Damper required for 8,500 cfm. (Type A)

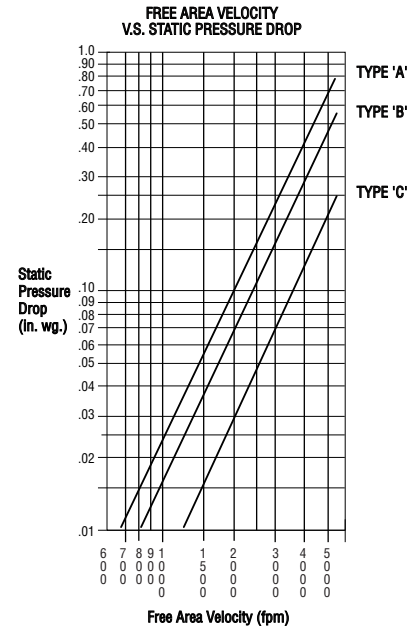
$$\text{FAV} = \frac{8500}{5} = 1700 \text{ fpm}$$

1700 fpm located on the 'A' curve shows a pressure drop of .07 in. wg.

cfm = cubic feet per minute
fpm = feet per minute velocity
S.P. = static pressure in inches water gauge
FAV = Free Area Velocity

Imperial System Shown
To convert to SI (metric) system:

Multiply cfm by .4719 for liters per second
fpm by .00508 for meters per second
in. wg. by .2486 for kilopascals
sq. ft. by .0929 for square meters



HOW TO SPECIFY

SUGGESTED SPECIFICATION:

Provide and install, as shown on plans and as described in specifications, Dynamic rated fire dampers as manufactured by Nailor Industries, meeting or exceeding the following criteria: Fire dampers shall meet the requirements of NFPA 90A and shall be manufactured, tested and labeled in accordance with UL 555 Safety Standard for Fire Dampers - Sixth Edition, June 1999, including Dynamic Closure Test (formerly the Operation Test). Dampers shall be classified for dynamic closure against an airflow velocity of 2000 fpm (10.16 m/s) at 4" w.g. (1 kPa) static pressure differential (across closed damper).

Each fire damper shall bear a UL 1 1/2 hour fire resistance rating label in addition to label verifying the airflow and closure pressure ratings as established by the Dynamic Closure Test. Each fire damper shall also be marked with the words "For use in dynamic systems". Dampers marked "For use in static systems only" are not acceptable.

Each fire damper shall be complete with a 165°F (74°C) UL Listed fusible link. Fire dampers shall each include a steel sleeve of appropriate length/gauge and retaining angles, supplied by damper manufacturer to ensure proper installation in accordance with damper manufacturer's instructions. Contractor shall provide and install an access door at each fire damper, of appropriate size to allow for inspection, testing and fusible link replacement. Data submitted for approval shall include confirmation of UL qualifications in addition to manufacturer's installation instructions. Each shipment of fire dampers shall include same installation instructions. Dynamic rated fire dampers shall be Nailor Industries Models D0110 (Type A), D0120 (Type B), D0130 (Type C).

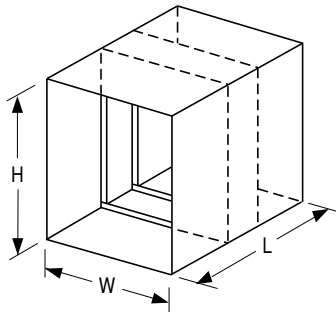


INTEGRAL SLEEVE DYNAMIC FIRE DAMPERS (1 1/2 HOUR LISTING)

FOR USE IN DYNAMIC SYSTEMS.

Nailor integral sleeve fire dampers ensure proper damper mounting in sleeve and can be shipped direct to job site for immediate installation, eliminating costly and inconvenient shop handling. All units are constructed with 22 ga. (0.85) roll-formed G60 galvanized steel integral sleeve available in 12" (305), 14" (356) or 16" (406) length. Optional 'Quick-Set' retaining angles are available to complete the installation package.

TYPE A: MODEL D0114 - 12/14/16



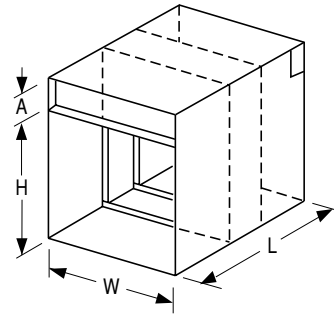
Type 'A' – Blades and frame in the airstream.

Model: D0114

Min. size - 6" x 6" (152 x 152)

Max. size - 24" x 24" (610 x 610)

TYPE B: MODEL D0124 - 12/14/16



Type 'B' – Blades out of airstream.

Model: D0124

Min. size - 6" x 4" (152 x 102)

Max. size - 24" x 21" (610 x 533)

Damper Height (H)	Dim. 'A'
5" thru 17" (127 thru 432)	2" (51)
18" thru 21" (457 thru 533)	3" (76)

D

CURTAIN FIRE DAMPERS

CONSTRUCTION DETAILS:

INTEGRAL

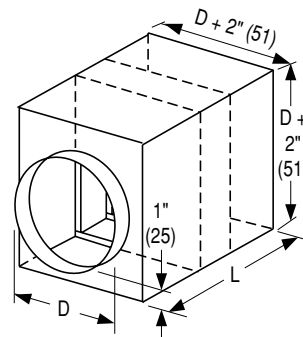
SLEEVE/FRAME: 22 ga. (0.85) roll-formed G60 galvanized steel.
 D01 x 4 x -12 Length 12" (305)
 D01 x 4 x -14 Length 14" (356)
 D01 x 4 x -16 Length 16" (406)

BLADES: Curtain type interlocking blades, 22 ga. (0.85) roll-formed G60 galvanized steel.

FUSIBLE LINK: 165°F (74°C) standard. UL Listed.
 212°F (100°C) available.

BLADE CLOSURE: Vertical and Horizontal mount.
 Stainless steel closure springs and galvanized steel locking ramps.

TYPE CR: MODEL D0134 - 12/14/16



Type 'CR' – Round transition collars.
 Blades partially in airstream

Model: D0134

Min. size - 4" dia. (102)

Max. size - 20" dia. (508)

HOW TO SPECIFY

INTEGRAL SLEEVE DYNAMIC FIRE DAMPERS

MODELS: D0114 - 12/14/16
D0124 - 12/14/16
D0134 - 12/14/16



SUGGESTED SPECIFICATION:

Provide and install, as shown on plans and as described in specifications, Dynamic rated fire dampers as manufactured by Nailor Industries, meeting or exceeding the following criteria: Fire dampers shall meet the requirements of NFPA 90A and shall be manufactured, tested and labeled in accordance with UL 555 Safety Standard for Fire Dampers - Sixth Edition, June 1999, including Dynamic Closure Test (formerly the Operation Test). Dampers shall be classified for dynamic closure against an airflow velocity of 2000 fpm (10.16 m/s) at 4" w.g. (1 kPa) static pressure differential (across closed damper).

Each fire damper shall bear a UL 1 1/2 hour fire resistance rating label in addition to label verifying the airflow and closure pressure ratings as established by the Dynamic Closure Test. Each fire damper shall also be marked with the words "For use in dynamic systems". Dampers marked "For use in static systems only" are not acceptable.

Each fire damper shall be complete with a 165°F (74°C) UL Listed fusible link. In addition, each fire damper shall be provided from the factory in an integral 22 ga. (0.85) galvanized steel sleeve of **(specifier select one)** 12" (305), 14" (356) **or** 16" (406) in length complete with Nailor 'Quick-Set' retaining angles, to ensure proper installation in accordance with damper manufacturer's instructions. Contractor shall provide and install an access door at each fire damper, of appropriate size to allow for inspection, testing and fusible link replacement. Data submitted for approval shall include confirmation of UL qualifications in addition to manufacturer's installation instructions. Each shipment of fire dampers shall include same installation instructions. Integral sleeve Dynamic rated fire dampers shall be Nailor Industries Models D0114-12 **or** 14 **or** 16 (Type A), D0124-12 **or** 14 **or** 16 (Type B), D0134-12 **or** 14 **or** 16 (Type C).

- STANDARD FRAME
- FOR USE IN DYNAMIC SYSTEMS
- 3 HOUR RATING
- UL 555 CLASSIFIED

MODELS:

- D0510 TYPE A
- D0520 TYPE B
- D0530 TYPE CR/CO
- D0530 TYPE CSR

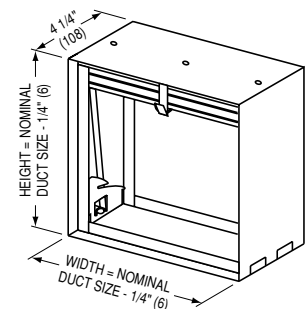


The Nailor D0500 Series dynamic curtain fire dampers are UL/ULC approved for use where building codes require protection of HVAC ductwork penetrations in walls, partitions or floors that have a fire resistance rating of 4 hours or less. Classified for use in dynamic systems (max. 2000 fpm @ 4" w.g.) where the HVAC system remains operative in the event of a fire, the D0500 Series features stainless steel closure springs for assured damper closure under airflow, corrosion resistant steel frame and blades for lasting performance, and choice of transition styles and factory installed sleeves to suit duct size, making installation fast and simple.

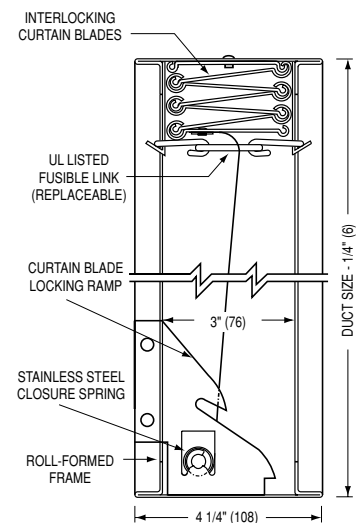
D
CURTAIN FIRE DAMPERS

CONSTRUCTION DETAILS:

	D0510 (Type A)	D0520 (Type B)	D0530 (Type CR/CO)	D0530 (Type CSR)
FRAME:	4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel	4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel	4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel; out of airstream	4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel; out of airstream
BLADES:	Curtain type, interlocking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, interlocking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, interlocking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, interlocking blades, 22 ga. (0.85) roll-formed G60 galvanized steel
ENCLOSURE:	N/A	Type B 22 ga. (.085) galvanized steel	Type C Round or Oval 22 ga. (.085) galvanized steel	Type C Square or Rect. 22 ga. (.085) galvanized steel
FUSIBLE LINK: (UL Listed)	165°F (74°C) Std. 212°F (100°C) available	165°F (74°C) Std. 212°F (100°C) available	165°F (74°C) Std. 212°F (100°C) available	165°F (74°C) Std. 212°F (100°C) available
BLADE CLOSURE:	Stainless steel closure springs and galvanized steel locking ramps	Stainless steel closure springs and galvanized steel locking ramps	Stainless steel closure springs and galvanized steel locking ramps	Stainless steel closure springs and galvanized steel locking ramps
MOUNTING:	Vertical or Horizontal	Vertical or Horizontal	Vertical or Horizontal	Vertical or Horizontal
AVAILABLE SLEEVE:	Galvanized steel; Specify SL Option	Galvanized steel; Specify SL Option	Galvanized steel; Specify SL Option	Galvanized steel; Specify SL Option

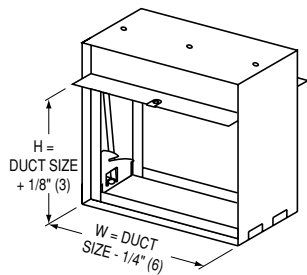


TYPE A: MODEL D0510



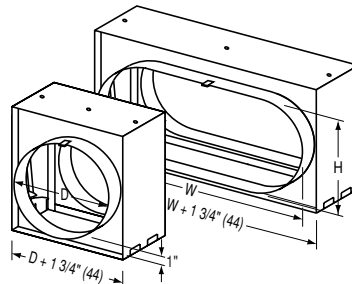
VERTICAL MOUNT

For MIN./MAX. UL SIZES see chart on page D9.



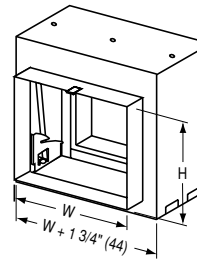
**TYPE B:
MODEL D0520**

For overall damper dimensions see sizing chart on page D46.

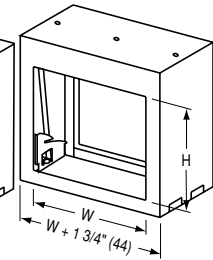


**TYPE CR:
MODEL D0530**

**TYPE CO:
MODEL D0530**



**TYPE CSR
WITH COLLAR
(STANDARD):
MODEL D0530**



**TYPE CSR
WITHOUT COLLAR:
MODEL D0530**

PERFORMANCE DATA:

Curtain type fire dampers impose minimal resistance to air flow in the system. The following charts indicate both free area for the different damper types and static pressure losses for various velocities.

TYPE A DAMPER FREE AREA – sq. ft.

DUCT HEIGHT in inches (mm)	DUCT WIDTH in inches (mm)										
	6 (152)	12 (305)	18 (457)	24 (610)	30 (762)	36 (914)	42 (1067)	48 (1219)	54 (1372)	60 (1524)	
6 (152)	.14	.33	.52	.70	.89	1.1	1.3	1.5	1.7	1.8	
12 (305)	.31	.72	1.1	1.5	1.9	2.4	2.8	3.2	3.6	4.0	
18 (457)	.48	1.1	1.7	2.4	3.0	3.7	4.3	4.9	5.6	6.2	
24 (610)	.65	1.5	2.4	3.2	4.1	5.0	5.8	6.7	7.5	8.4	
30 (762)	.82	1.9	3.0	4.1	5.2	6.3	7.3	8.4	9.5	10.6	
36 (914)	.99	2.3	3.6	4.9	6.3	7.6	8.9	10.2	11.5	12.8	
42 (1067)	1.2	2.7	4.2	5.8	7.3	8.8	10.4	11.9	13.4	15.0	
48 (1219)	1.3	3.1	4.9	6.6	8.4	10.2	11.9	13.7	15.5	17.2	
54 (1372)	1.5	3.5	5.5	7.5	9.5	11.5	13.5	15.5	17.5	19.4	
60 (1524)	1.7	3.9	6.1	8.3	10.6	12.8	15.0	17.2	19.4	21.7	

TYPE B DAMPER FREE AREA – sq. ft.

DUCT HEIGHT in inches (mm)	DUCT WIDTH in inches (mm)										
	6 (152)	12 (305)	18 (457)	24 (610)	30 (762)	36 (914)	42 (1067)	48 (1219)	54 (1372)	60 (1524)	
6 (152)	.17	.39	.62	.84	1.1	1.3	1.5	1.7	2.0	2.2	
12 (305)	.36	.83	1.3	1.8	2.3	2.7	3.2	3.7	4.1	4.6	
18 (457)	.54	1.3	2.0	2.7	3.4	4.2	4.9	5.6	6.3	7.1	
24 (610)	.73	1.7	2.7	3.7	4.6	5.6	6.6	7.5	8.5	9.5	
30 (762)	.92	2.1	3.4	4.6	5.8	7.0	8.3	9.5	10.7	11.9	
36 (914)	1.1	2.6	4.1	5.5	7.0	8.5	9.9	11.4	12.9	14.4	
42 (1067)	1.3	3.0	4.7	6.5	8.2	9.9	11.6	13.4	15.1	16.8	
48 (1219)	1.5	3.5	5.4	7.4	9.4	11.4	13.3	15.3	17.3	19.2	
54 (1372)	1.7	3.9	6.1	8.3	10.6	12.8	15.0	17.2	19.5	21.7	

TYPE C DAMPERS HAVE FREE AREA EQUAL TO NOMINAL DUCT AREA.

To calculate Free Area of round duct:
 $DIAMETER^2 \times .00545 = \text{Free Area (sq ft.)}$

To determine pressure drop across open damper, calculate **free area velocity** as shown, find velocity on curve and read across for s.p. differential.

$$\text{Free Area Velocity (fpm)} = \frac{\text{cfm}}{\text{Free Area}}$$

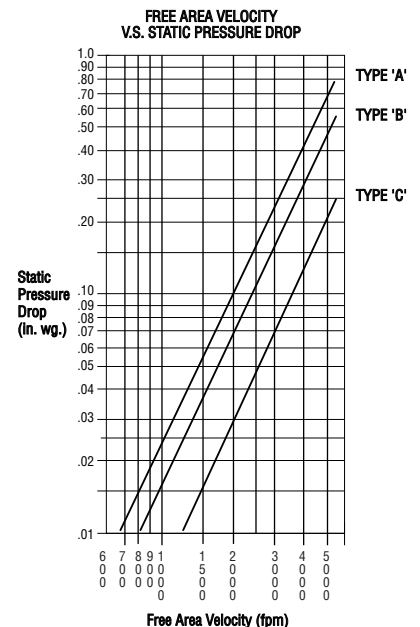
Example:
 1-36" x 24" Damper required for 8,500 cfm. (Type A)
 $FAV = \frac{8500}{5} = 1700 \text{ fpm}$
 5 sq. ft.

1700 fpm located on the 'A' curve shows a pressure drop of .07 in. wg.

cfm = cubic feet per minute
 fpm = feet per minute velocity
 S.P. = static pressure in inches water gauge
 FAV = Free Area Velocity

Imperial System Shown
 To convert to SI (metric) system:

Multiply cfm by .4719 for liters per second
 fpm by .00508 for meters per second
 in. wg. by .2486 for kilopascals
 sq. ft. by .0929 for square meters



HOW TO SPECIFY

SUGGESTED SPECIFICATION:

Provide and install, as shown on plans and as described in specifications, Dynamic 3 hour rated fire dampers as manufactured by Nailor Industries, meeting or exceeding the following criteria: Fire dampers shall meet the requirements of NFPA 90A and shall be manufactured, tested and labeled in accordance with UL 555 Safety Standard for Fire Dampers - Sixth Edition, June 1999, including Dynamic Closure Test (formerly the Operation Test). Dampers shall be classified for dynamic closure against an airflow velocity of 2000 fpm (10.16 m/s) at 4" w.g. (1 kPa) static pressure differential (across closed damper).

Each fire damper shall bear a 3 hour fire resistance rating label, in addition to label verifying the airflow and closure pressure ratings as established by the Dynamic Closure Test. Each fire damper shall also be marked with the words "For use in dynamic systems". Dampers marked "For use in static systems only" are not acceptable.

Each fire damper shall be complete with a 165°F (74°C) UL Listed fusible link. Fire dampers shall each include a steel sleeve of appropriate length/gauge and retaining angles, supplied by damper manufacturer to ensure proper installation in accordance with damper manufacturer's instructions. Contractor shall provide and install an access door at each fire damper, of appropriate size to allow for inspection, testing and fusible link replacement. Data submitted for approval shall include confirmation of UL qualifications in addition to manufacturer's installation instructions. Dynamic 3 hour rated fire dampers shall be Nailor Industries Models D0510 (Type A), D0520 (Type B), D0530 (Type C).