CURTAIN FIRE DAMPERS

Nailor Industries Inc.

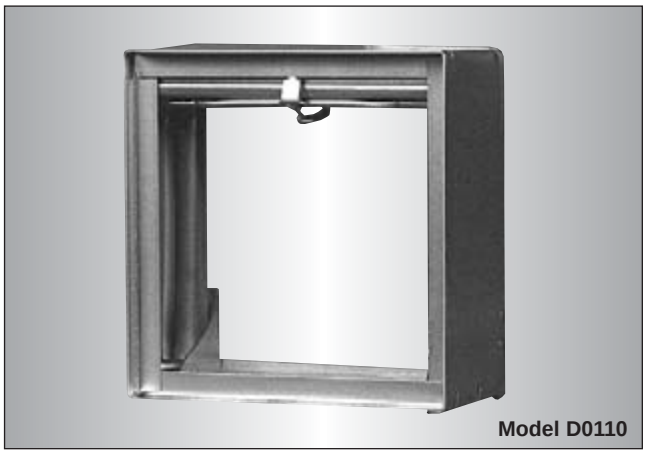
Contents

GENERAL PRODUCT OVERVIEW

Since 1971, Nailor Industries fire dampers have been an intrinsic part of HVAC systems in commercial and industrial buildings. As an industry leader, Nailor's commitment to quality construction and product development has helped limit property damage and make buildings safer for occupants all over the world by restricting the passage of flame and smoke. Building codes require fire dampers to maintain the fire resistance ratings of walls, partitions and floors which have been penetrated by ducts or other similar openings. Nailor provides a variety of dampers to suit the wide array of structures that require protection, whether a dynamic (fans operate during emergency) or static (fans shut down) type HVAC system is utilized. All Nailor dynamic fire dampers have been tested to minumum 2000 fpm (10.16 m/s) @ 4" w.g. (1 kPa) as per the latest UL 555 Safety Standard.

MODEL SERIES D0110/D0114
DYNAMIC • 1 1/2 HOUR

The Nailor D0100 Series dynamic curtain fire dampers are UL 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 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. Model Series D0114 includes an integral sleeve to make jobsite installation fast and simple.


Model D0110

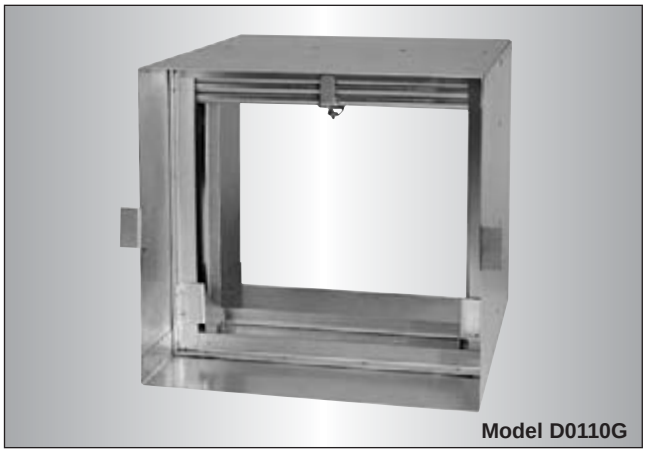

Model D0510

MODEL SERIES D0500
DYNAMIC • 3 HOUR

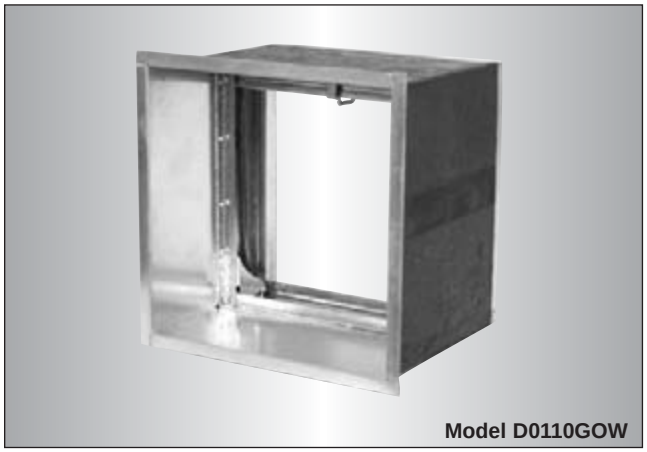
The Nailor D0500 Series dynamic curtain fire dampers are UL approved for use where building codes require protection of HVAC ductwork penetrations in walls, partitions or floors that have a fire resistance rating of 4 hours or less. Classified for use in dynamic systems where the HVAC system remains 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.

MODEL SERIES D0110G
INTEGRAL SLEEVE FOR USE WITH GRILLE
DYNAMIC • 1 1/2 HOUR

Designed for use in conjunction with a steel grille when ductwork terminates at an opening in a fire rated wall/partition. This unique product utilizes special grille mounting flanges on the sleeve that eliminate the requirement for unsightly retaining angles which commonly protrude from behind the grille. The steel grille installs over and completely conceals the mounting flanges for a clean, aesthetic finish. The fire damper is offset in the sleeve to accommodate a single or double deflection supply air grille, single deflection supply air register or a return air grille or register. Countersunk screw holes in the the grille frame will match to mounting flanges when Nailor grille is ordered in conjunction with the damper assembly.


Model D0110G

GENERAL PRODUCT OVERVIEW

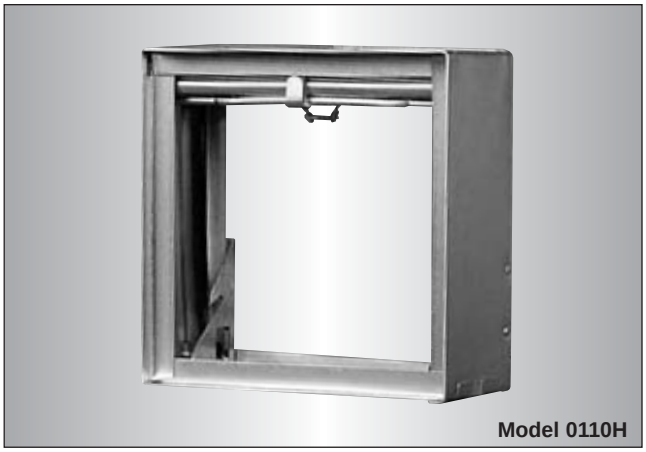

Model D0110GOW

MODEL D0110GOW
OUT OF WALL • INTEGRAL SLEEVE FOR GRILLE
DYNAMIC • 1 1/2 HOUR

The Model D0110GOW is an "out of wall or floor" integral sleeve dynamic curtain type fire damper, specifically designed for supply or return ducts that terminate at a grille or register. For use where local building codes require the protection of HVAC ductwork penetrations in walls, partitions or floors that have a fire resistance rating of up to two hours. The D0110GOW design provides sufficient damper off-set to accommodate most commercial grille/register designs while ensuring an approved installation in any fire partition or wall no matter how narrow. This model is particularly suited for use in common steel stud drywall partition designs, as narrow as 3 1/2" (89) where a traditional "within the plane of the wall" fire damper installation is not possible.

MODEL SERIES 0110/0114
STATIC • 1 1/2 HOUR

The Nailor 0100 Series curtain fire dampers, for use in static "fans off" systems where the HVAC system shuts down in the event of a fire, are UL approved to provide protection of HVAC ductwork penetrations in walls, partitions or floors that have a fire resistance rating of 2 hours or less. The 0100 Series features corrosion resistant steel frame and blades for performance that lasts, and a choice of transition styles to suit duct size. Model Series 0114 includes an integral sleeve to make jobsite installation fast and easy.


Model 0110H


Model 0210V

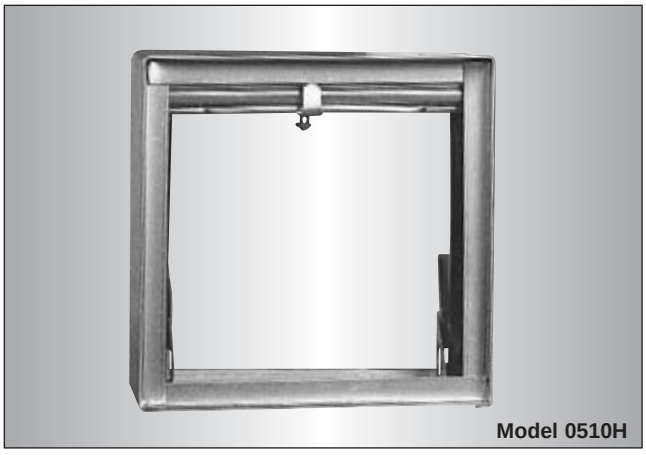
MODEL SERIES 0200
THINLINE FRAME • STATIC • 1 1/2 HOUR

Thinline curtain fire dampers are UL approved for use where building codes require the protection of HVAC ductwork penetrations in walls, partitions or floors that have a fire resistance rating of 2 hours or less. The 0200 Series is classified for use only in static "fans off" systems where the HVAC system is automatically shut down in the event of a fire alarm. The 0200 Series Thinline dampers are only 2" (51) deep making them ideal for installation in narrow fire rated partitions, transfer duct openings, behind grilles or in any other application where space is limited.

GENERAL PRODUCT OVERVIEW

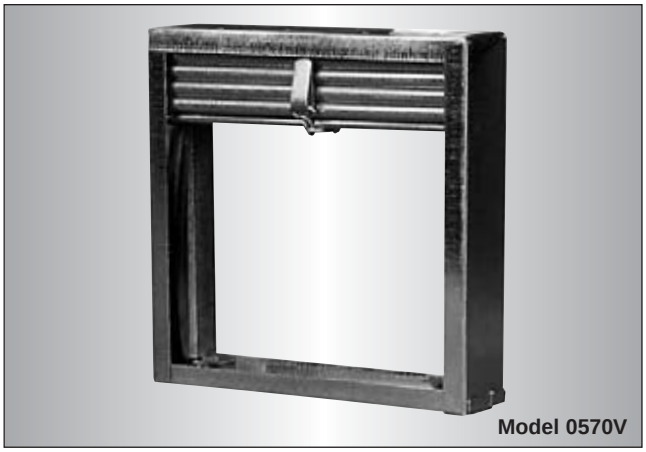
MODEL 0310
WIDE FRAME • STATIC • 1 1/2 HOUR
The Nailor Model 0310 Wide Frame curtain fire damper is UL approved for use where local building codes require the protection of HVAC ductwork penetrations in walls, partitions or floors that have a fire rating of 2 hours or less. The 0310 is classified for use only in static "fans off" systems where the HVAC system is automatically shut down in the event of a fire alarm. The wide frame allows for less blades and a larger free area.


Model 0540V


Model 0510H

MODELS 0510, 0520 AND 0530
STATIC • 3 HOUR
The Nailor 0500 Series standard frame curtain fire dampers, for use in static "fans off" systems where the HVAC system shuts down in the event of a fire, are UL approved to provide protection of HVAC ductwork penetrations in walls, partitions or floors that have a fire resistance rating of 4 hours or less. The 0500 Series features corrosion resistant steel frame and blades for performance that will last, and a choice of transition styles and factory installed sleeves to suit duct size, making installation fast and simple.

MODELS 0570, 0580 AND 0590
THINLINE FRAME • STATIC • 3 HOUR
Models 0570, 0580, and 0590 thinline curtain fire dampers are UL approved for use where building codes require the protection of HVAC ductwork penetrations in vertical fire separations (walls or partitions) that have a fire resistance rating of 4 hours or less. The 0500 Thinline Series is classified for use in static "fans off" systems where the HVAC system is automatically shut down in the event of a fire alarm. These thinline dampers are only 2" (51) deep making them ideal for installation in narrow fire rated partitions, transfer duct openings, behind grilles or any other application where room is limited. They feature corrosion resistant steel frame and blades for lasting performance, and a choice of transition styles and factory installed sleeves to suit duct size, making installation fast and simple.


Model 0570V

GENERAL PRODUCT OVERVIEW


Model 0540V

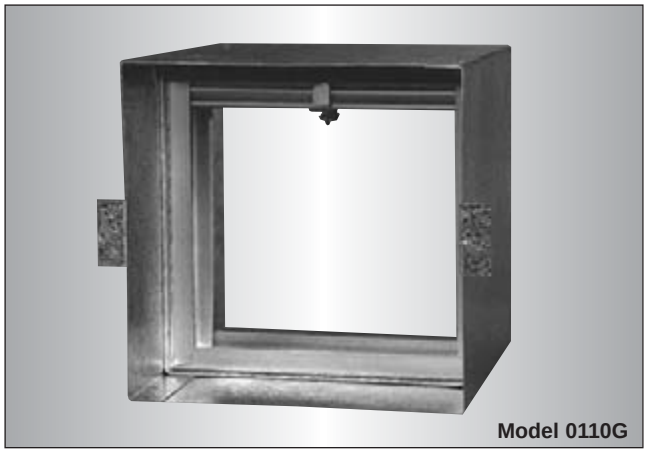
MODEL 0540
WIDE FRAME • STATIC • 3 HOUR

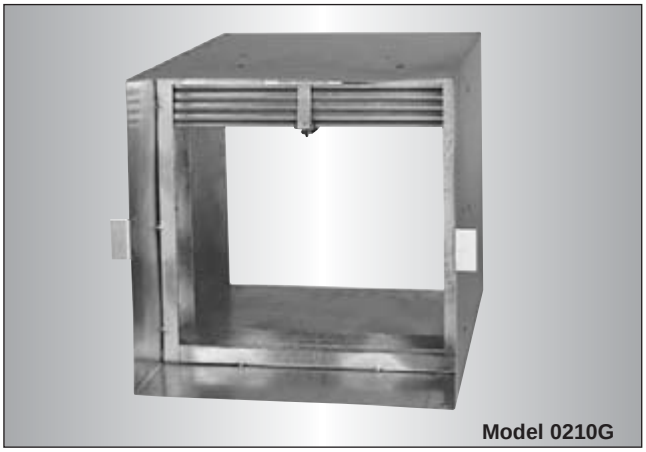
The Nailor Model 0540 wide frame curtain fire damper is UL approved for use where building codes require the protection of HVAC ductwork penetrations in vertical fire separations (walls or partitions) that have a fire resistant rating of 4 hours or less. The 0540 is classified for use in static "fans off" systems where the HVAC system is automatically shut down in the event of a fire alarm.

The 0540 is ideal for use when maximum free area is desired in situations where space or design does not yield room for a Type B damper style. Featuring corrosion resistant steel frame and blades for lasting performance, the Nailor Model 0540 is available with factory installed sleeve for fast and simple installation.

MODEL SERIES 0100G
INTEGRAL SLEEVE FOR USE WITH GRILLE
STATIC • 1 1/2 HOUR

Designed for use in conjunction with a steel grille when ductwork terminates at an opening in a fire rated wall/partition. The 0100G Series is 1 1/2 hour UL labeled for use in 2 hour fire separations or less and is classified for use in static "fans off" systems where the HVAC system shuts down in the event of a fire alarm. This unique product utilizes special grille mounting flanges on the sleeve that eliminate the requirement for unsightly retaining angles which commonly protrude from behind the grille. The steel grille installs over and completely conceals the mounting flanges for a clean, aesthetic finish.


Model 0110G


Model 0210G

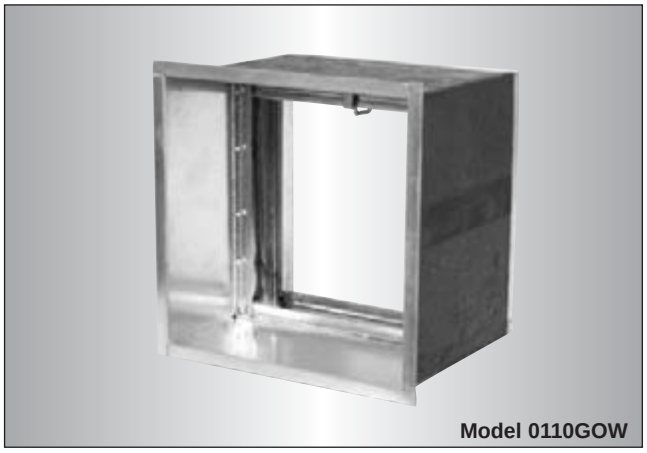
MODEL SERIES 0200G
INTEGRAL SLEEVE FOR USE WITH GRILLE
THINLINE FRAME • STATIC • 1 1/2 HOUR

Thinline Series integral sleeve fire dampers are designed for use in conjunction with a steel grille when ductwork terminates at an opening in a fire rated wall/partition. The 0200G Thinline Series is 1 1/2 hour UL labeled for use in 2 hour fire separations or less and is classified for use in static "fans off" systems where the the HVAC system shuts down in the event of a fire alarm. This unique product utilizes special grille mounting flanges on the sleeve that eliminate the requirement for unsightly retaining angles which commonly protrude from behind the grille. The steel grille installs over and completely conceals the mounting flanges for a clean, aesthetic finish. The 2" (51) deep thinline fire damper is offset in the sleeve to accommodate a single or double deflection grille or register.

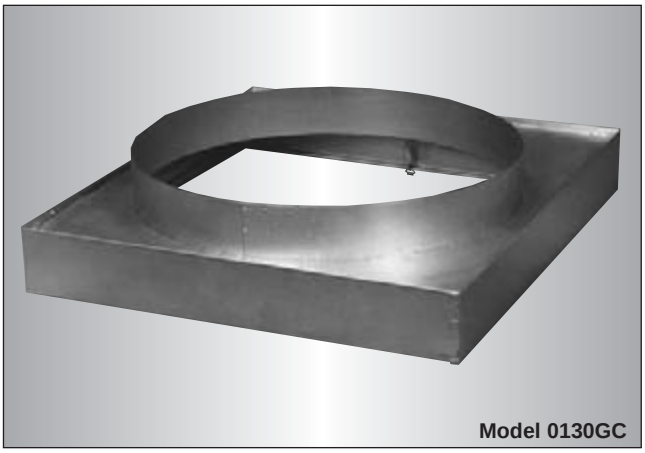
GENERAL PRODUCT OVERVIEW

MODEL 0110GOW
OUT OF WALL • INTEGRAL SLEEVE FOR GRILLE
STATIC • 1 1/2 HOUR

The Model 0110GOW is an "out of wall or floor" integral sleeve curtain type fire damper, specifically designed for supply or return ducts that terminate at a grille or register. For use where local building codes require the protection of HVAC ductwork penetrations in walls, partitions or floors that have a fire resistance rating of up to two hours. The 0110GOW is classified for use only in static “fans off” systems where the HVAC system is automatically shut down in the event of a fire alarm. The 0110GOW design provides sufficient damper off-set to accommodate most commercial grille/register designs while ensuring an approved installation in any fire partition or wall no matter how narrow. This model is particularly suited for use in common steel stud drywall partition designs, as narrow as 3 1/2" (89) where a traditional "within the plane of the wall" fire damper installation is not possible.



Model 0110GOW



Model 0130GC

MODEL 0130GC
GARBAGE CHUTE CURTAIN FIRE DAMPER

The Nailor Model 0130GC has been specially designed for garbage chute applications. The damper casing is oversized to ensure that the blade stack, fusible link and closure springs are unobstructed from falling waste. The round collar is slightly oversized for direct attachment to the outside of the garbage chute. The 100% free area 0130GC also features corrosion resistant steel construction and is available in three standard sizes, 20" dia. (508), 22" dia. (559) and 24" dia. (610), as well as custom sizes. Damper has a 1 1/2 hour fire rating.

Let Nailor Simplify Your Fire Damper Installation!

Labor saving options such as factory fitted sleeves, TDF proprietary flange duct/sleeve connections, factory supplied "Quick-Set" retaining angles, and grille mounting tab sleeves help speed and simplify jobsite installation, saving time and money.

Additional available features that simplify testing and maintenance procedures include Pull-Tab release for horizontal dampers, Nailor’s innovative Easy Maintenance Link and microswitch damper status indicators. Nailor’s complete package will simplify your fire damper installation!

CURTAIN FIRE DAMPER BASICS

DEFINITION OF A FIRE DAMPER:

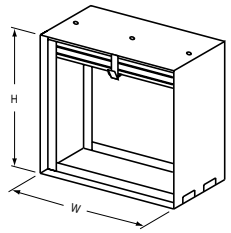
The National Fire Protection Association (NFPA) Standard 90A defines a fire damper as "a device, installed in an air distribution system, that is designed to close automatically upon detection of heat, to interrupt migratory airflow, and to restrict the passage of flame."

Although curtain fire dampers restrict flame and airflow passage as described in the NFPA definition, they are virtually transparent to heat and therefore ineffective for use in openings in fire-rated ceiling assemblies. See Ceiling Damper Basics for more details.

TYPES OF CURTAIN FIRE DAMPERS

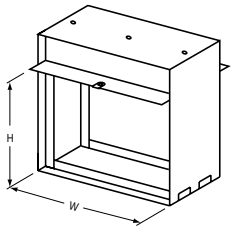
Curtain type fire dampers are generally available in three configuration as follows:

TYPE 'A'



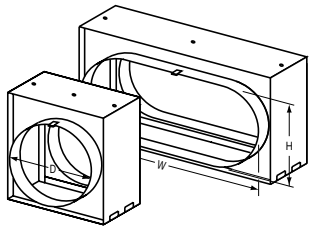
Blades and frame in the airstream.

TYPE 'B'



Blades out of the airstream; With blades out of airstream, provides better free area and resulting pressure drop characteristics than Type 'A', especially on smaller size dampers.

TYPE 'C'



Blades and frame out of the airstream; used mainly for transitioning to round or oval duct. Provides optimum pressure drop characteristics with blades and frame out of airstream.

Openings in vertical fire separations ie: walls and partitions, require a vertical mount fire damper (duct runs horizontally). Gravity causes the blades to drop closed (static rated dampers).

Openings in horizontal fire separations ie: floors, require a horizontal mount fire damper (duct runs vertically). Horizontal mount fire dampers utilize springs to pull the blades closed.

Dynamic rated fire dampers utilize closure springs in both vertical and horizontal applications to ensure the blades close fully under airflow conditions.

STATIC RATED VS. DYNAMIC RATED FIRE DAMPERS:

Static fire dampers were designed for use in HVAC systems that shut down (fans off) in the event of a fire alarm. They have not been tested to ensure closure while air is moving in the duct.

Dynamic fire dampers have been tested under specific airflow and static pressure conditions in order to ensure that the damper will close in today's HVAC designs that utilize 'fans on' smoke management systems. See **Dynamic Fire Damper Selection Procedures** in this section.

Generally, a dynamic rated damper can be used in both static (fans off) or dynamic (fans on) type systems, but a static rated fire damper can only be used in a 'static' system (fans shut down during alarm).

DID YOU KNOW?....

- Fire dampers must be mounted in a steel sleeve. The damper/sleeve assembly is held in place in the wall, partition or floor by use of retaining angles on each side of the wall etc. Ductwork shall connect to the sleeve on either side, as required, providing a connection that can 'break away' should the ductwork fall during a fire. This allows the damper/sleeve assembly to remain in the wall etc., maintaining the integrity of the fire barrier.
- NFPA 90A requires that fire barriers of less than 3 hours utilize a 1 1/2 hour rated fire damper. Fire barriers of 3 hours or more require a 3 hour rated fire damper.
- All fire dampers must be installed as per manufacturer's instructions.

DYNAMIC CURTAIN TYPE FIRE DAMPERS

(For use in **dynamic** systems.)

MINIMUM AND MAXIMUM UL CLASSIFIED SIZES

SERIES/MODEL TYPE		SINGLE SECTION				MULTIPLE SECTION ASSEMBLY	
		MINIMUM SIZE		MAXIMUM SIZE		MAXIMUM SIZE	
		INSTALLATION		INSTALLATION		INSTALLATION	
		VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL
D0110	**A**	6" x 6" (152 x 152)	6" x 6" (152 x 152)	24" x 24" (610 x 610)	24" x 24" (610 x 610)	①72" x 24" or 36" x 48" (1829 x 610 or 914 x 1219)	Contact Factory
D0120	**B**	6" x 4" (152 x 102)	6" x 4" (152 x 102)	24" x 21" (610 x 533)	24" x 21" (610 x 533)	72" x 21" or 36" x 45" (1829 x 533 or 914 x 1143)	Contact Factory
D0130 Round	**CR**	4" dia. (102)	4" dia. (102)	20" dia. (508)	20" dia. (508)	34" dia. (864)	Contact Factory
D0130 Oval	**CO**	5" x 4" (127 x 102)	5" x 4" (127 x 102)	22" x 20" (559 x 508)	22" x 20" (559 x 508)	70" x 20" (1778 x 508)	Contact Factory
D0140 Sq./Rect.	**CSR**	4" x 4" (102 x 102)	4" x 4" (102 x 102)	22" x 20" (559 x 508)	22" x 20" (559 x 508)	70" x 20" (1778 x 508)	Contact Factory
D0114-12/14/16	**A**	6" x 6" (152 x 152)	6" x 6" (152 x 152)	24" x 24" (610 x 610)	24" x 24" (610 x 610)	—	—
D0124-12/14/16	**B**	6" x 4" (152 x 102)	6" x 4" (152 x 102)	24" x 21" (610 x 533)	24" x 21" (610 x 533)	—	—
D0134-12/14/16	**CR**	4" dia. (102)	4" dia. (102)	20" dia. (508)	20" dia. (508)	—	—
D0114HY	**A**	See Page D16	—	—	—	72" x 60" (1829 x 1524)	—
D0124HY	**B**	See Page D16	—	—	—	72" x 54" (1829 x 1372)	—
D0134HY	**CR**	See Page D16	—	—	—	53" dia. (1346)	—
D0134HY	**CO**	See Page D16	—	—	—	70" x 53" (1778 x 1346)	—
D0100G	**A,B,CR**	6" x 6" (152 x 152)	6" x 6" (152 x 152)	24" x 24" (610 x 610)	24" x 24" (610 x 610)	—	—
D0110GOW	**A**	6" x 6" (152 x 152)	6" x 6" (152 x 152)	24" x 24" (610 x 610)	24" x 24" (610 x 610)	36" x 24" (914 x 610)	—
D0510	**A**	6" x 6" (152 x 152)	6" x 6" (152 x 152)	24" x 24" (610 x 610)	24" x 24" (610 x 610)	①72" x 24" or 36" x 48" (1829 x 610 or 914 x 1219)	Contact Factory
D0520	**B**	6" x 4" (152 x 102)	6" x 4" (152 x 102)	24" x 21" (610 x 533)	24" x 21" (610 x 533)	72" x 21" or 36" x 45" (1829 x 533 or 914 x 1143)	Contact Factory
D0530 Round	**CR**	4" dia. (102)	4" dia. (102)	20" dia. (508)	20" dia. (508)	34" dia. (864)	Contact Factory
D0530 Oval	**CO**	5" x 4" (127 x 102)	5" x 4" (127 x 102)	22" x 20" (559 x 508)	22" x 20" (559 x 508)	70" x 20" (1778 x 508)	Contact Factory
D0530 Sq./Rect.	**CSR**	4" x 4" (102 x 102)	4" x 4" (102 x 102)	22" x 20" (559 x 508)	22" x 20" (559 x 508)	70" x 20" (1778 x 508)	Contact Factory

Damper Types: Type A: Blades and frame in airstream. **Type B:** Blades out of airstream for minimal restriction of airflow. **Type CR:** Round enclosure with blades and frame out of airstream for maximum free area. **Type CO:** Oval enclosure with blades and frame out of airstream for maximum free area. **Type CSR:** Square or rectangular enclosure with blades and frame out of airstream for maximum free area.

Note: Larger sizes may become available as they are tested and approved by Underwriters Laboratories. Contact your Nailor representative or consult www.nailor.com for the latest available sizes.

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STATIC CURTAIN TYPE FIRE DAMPERS

(For use in **static** systems.)

MINIMUM AND MAXIMUM UL CLASSIFIED SIZES

SERIES/MODEL TYPE		SINGLE SECTION				MULTIPLE SECTION ASSEMBLY	
		MINIMUM SIZE INSTALLATION		MAXIMUM SIZE INSTALLATION		MAXIMUM SIZE INSTALLATION	
		VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL
0110	**A**	4" x 4" (102 x 102)	4" x 4" (102 x 102)	60" x 60" (1524 x 1524)	60" x 60" (1524 x 1524)	120" x 120" (3048 x 3048)	102" x 60" (2591 x 1524)
0120	**B**	4" x 3" (102 x 76)	4" x 4" (102 x 102)	60" x 54" (1524 x 1372)	60" x 54" (1524 x 1372)	120" x 114" (3048 x 2896)	102" x 54" or 90" x 60" (2591 x 1372) or (2286 x 1524)
0130 Round	**CR**	3" dia. (76)	4" dia. (102)	53" dia. (1346)	53" dia. (1346)	112" dia. (2845)	53" dia. (1346)
0130 Oval	**CO**	4" x 3" (102 x 76)	5" x 4" (127 x 102)	58" x 53" (1473 x 1346)	58" x 53" (1473 x 1346)	118" x 112" (2997 x 2845)	100" x 53" (2540 x 1346)
0140 Sq./Rect.	**CSR**	3" x 3" (76 x 76)	4" x 4" (102 x 102)	58" x 53" (1473 x 1346)	58" x 53" (1473 x 1346)	118" x 112" (2997 x 2845)	100" x 53" (2540 x 1346)
0114-12/14/16	**A**	4" x 4" (102 x 102)	4" x 4" (102 x 102)	48" x 48" (1219 x 1219)	48" x 48" (1219 x 1219)	—	—
0124-12/14/16	**B**	4" x 3" (102 x 76)	4" x 4" (102 x 102)	48" x 43" (1219 x 1092)	48" x 43" (1219 x 1092)	—	—
0134-12/14/16	**CR**	3" dia. (76)	4" dia. (102)	42" dia. (1067)	42" dia. (1067)	—	—
0100G	**A, B, CR**	4" x 4" (102 x 102)	4" x 4" (102 x 102)	24" x 24" (610 x 610)	24" x 24" (610 x 610)	—	—
0200G	**A, B, CR**	4" x 4" (102 x 102)	4" x 4" (102 x 102)	24" x 24" (610 x 610)	24" x 24" (610 x 610)	—	—
0110GOW	**A**	4" x 4" (102 x 102)	4" x 4" (102 x 102)	36" x 24" (914 x 610)	36" x 24" (914 x 610)	—	—
0210	**A**	4" x 4" (102 x 102)	4" x 4" (102 x 102)	41" x 36" or 36" x 60" (1041 x 914) or (914 x 1524)	41" x 36" (1041 x 914)	—	—
0220	**B**	4" x 3" (102 x 76)	4" x 3" (102 x 76)	41" x 30" or 36" x 50" (1041 x 762) or (914 x 1270)	41" x 30" (1041 x 762)	—	—
0230 Round	**CR**	3" dia. (76)	3" dia. (76)	34" dia. (864)	34" dia. (864)	—	—
0230 Oval	**CO**	4" x 3" (102 x 76)	4" x 3" (102 x 76)	39" x 29" (991 x 737)	39" x 29" (991 x 737)	—	—
0240 Sq./Rect.	**CSR**	3" x 3" (76 x 76)	3" x 3" (76 x 76)	39" x 29" or 34" x 49" (991 x 737) or (864 x 1245)	39" x 29" (991 x 737)	—	—

Damper Types: Type A: Blades and frame in airstream. **Type B:** Blades out of airstream for minimal restriction of airflow. **Type CR:** Round enclosure with blades and frame out of airstream for maximum free area. **Type CO:** Oval enclosure with blades and frame out of airstream for maximum free area. **Type CSR:** Square or rectangular enclosure with blades and frame out of airstream for maximum free area.

STATIC CURTAIN TYPE FIRE DAMPERS

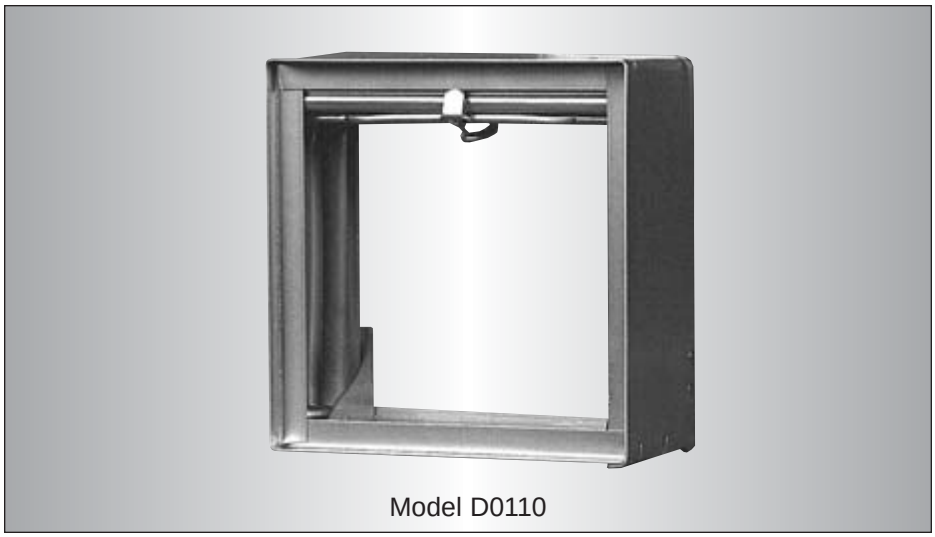
(For use in **static** systems.)

MINIMUM AND MAXIMUM UL CLASSIFIED SIZES

SERIES/MODEL TYPE		SINGLE SECTION				MULTIPLE SECTION ASSEMBLY	
		MINIMUM SIZE		MAXIMUM SIZE		MAXIMUM SIZE	
		INSTALLATION		INSTALLATION		INSTALLATION	
		VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL
0310	**A**	4" x 4" (102 x 102)	4" x 4" (102 x 102)	60" x 48" or 24" x 60" (1524 x 1219) or (610 x 1524)	48" x 48" (1219 x 1219)	—	—
0510	**A**	4" x 4" (102 x 102)	4" x 4" (102 x 102)	48" x 48" (1219 x 1219)	36" x 36" (914 x 914)	108" x 72" (2743 x 1829)	72" x 36" (1829 x 914)
0520	**B**	4" x 3" (102 x 76)	4" x 4" (102 x 102)	48" x 43" (1219 x 1092)	36" x 32" (914 x 813)	108" x 68" (2743 x 1727)	72" x 32" or 64" x 36" (1829 x 813) or (1626 x 914)
0530 Round	**CR**	3" dia. (76)	4" dia. (102)	42" dia. (1067)	31" dia. (787)	66" dia. (1676)	34" dia. (864)
0530 Oval	**CO**	4" x 3" (102 x 76)	5" x 4" (127 x 102)	46" x 42" (1168 x 1067)	34" x 31" (864 x 787)	106" x 66" (2692 x 1676)	70" x 31" (1778 x 787)
0530 Sq./Rect.	**CSR**	3" x 3" (76 x 76)	4" x 4" (102 x 102)	46" x 42" (1168 x 1067)	34" x 31" (864 x 787)	106" x 66" (2692 x 1676)	70" x 31" (1778 x 787)
0540	**A**	4" x 4" (102 x 102)	—	60" x 48" or 24" x 60" (1524 x 1219) or (610 x 1524)	—	—	—
0570	**A**	4" x 4" (102 x 102)	—	36" x 60" (914 x 1524)	—	—	—
0580	**B**	4" x 3" (102 x 76)	—	36" x 50" (914 x 1270)	—	—	—
0590 Round	**CR**	3" dia. (76)	—	34" dia. (864)	—	—	—
0590 Oval	**CO**	4" x 3" (102 x 76)	—	34" x 49" (864 x 1245)	—	—	—
0590 Sq./Rect.	**CSR**	3" x 3" (76 x 76)	—	34" x 49" (864 x 1245)	—	—	—

Damper Types: Type A: Blades and frame in airstream. **Type B:** Blades out of airstream for minimal restriction of airflow. **Type CR:** Round enclosure with blades and frame out of airstream for maximum free area. **Type CO:** Oval enclosure with blades and frame out of airstream for maximum free area. **Type CSR:** Square or rectangular enclosure with blades and frame out of airstream for maximum free area.

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



Model D0110

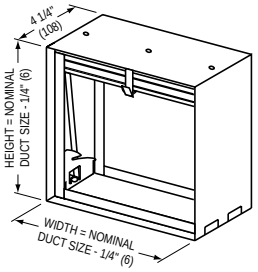
MODELS:

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

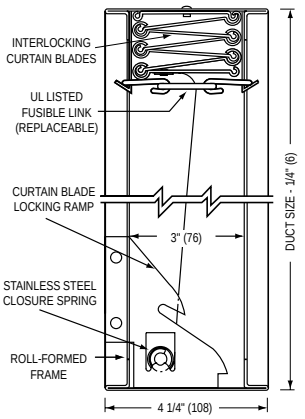
The Nailor D0100 Series dynamic curtain fire dampers are UL/ULC approved for use where building codes require protection of HVAC ductwork penetrations in walls, partitions or floors that have a fire resistance rating of 2 hours or less. Classified for use in dynamic systems (max. 2000 fpm @ 4" w.g.) 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:

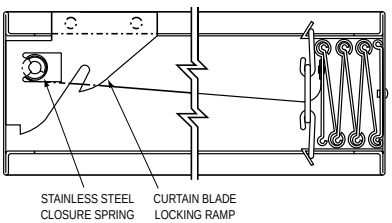
	D0110 (Type A)	D0120 (Type B)	D0130 (Type CR/CO)	D0140 (Type CSR)
FRAME:	4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel	4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel	4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel; out of airstream	4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel; out of airstream
BLADES:	Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking 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	
22 ga (.085) x12" (305) long	D0114-12	DO124-12	DO134-12	Specify SL Option
22 ga (.085) x14" (356) long	D0114-14	DO124-14	DO134-14	
22 ga (.085) x16" (406) long	D0114-16	DO124-16	DO134-16	



TYPE A: MODEL D0110

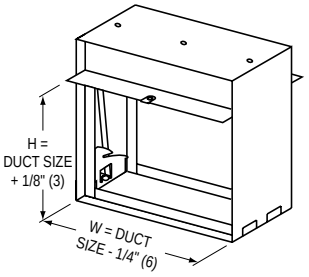


VERTICAL MOUNT

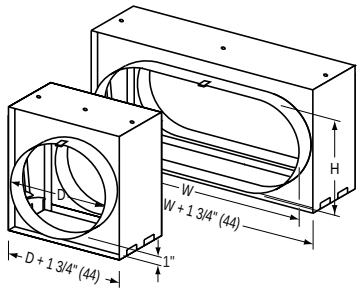


HORIZONTAL MOUNT

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

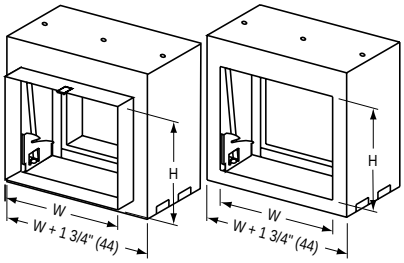


TYPE B:
MODEL D0120



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 D48.

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 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)

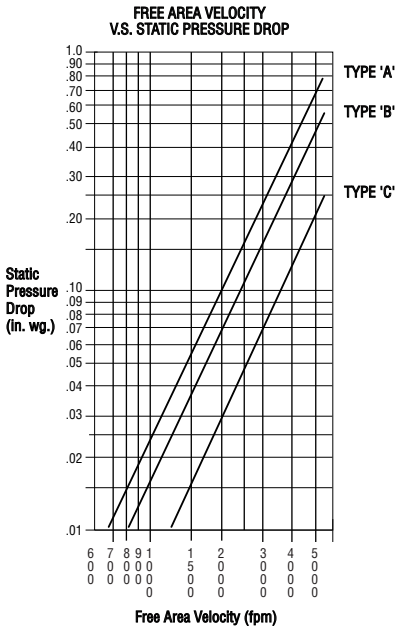
$$\text{FAV} = \frac{8500}{5 \text{ sq. ft.}} = 1700 \text{ fpm}$$

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

Specification Text File

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.

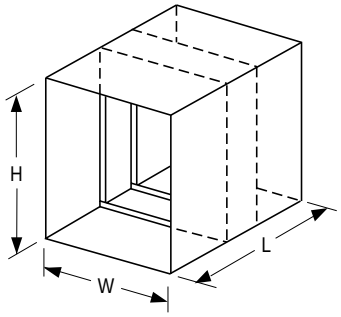
Each fire damper shall be complete with a 165°F (74°C) UL Listed fusible link. Fire dampers shall each include a steel sleeve of appropriate length/gauge and retaining angles, supplied by damper manufacturer to ensure proper installation in accordance with damper manufacturer's instructions. Contractor 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



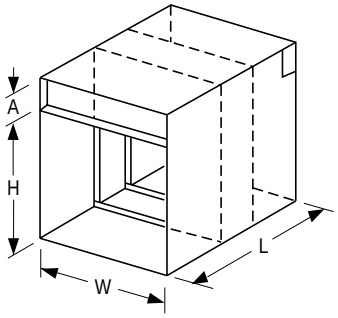
Type 'A' – Blades and frame in the airstream.

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)

CONSTRUCTION DETAILS:

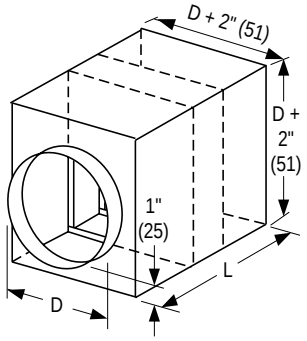
INTEGRAL SLEEVE/FRAME: 22 ga. (0.85) roll-formed G60 galvanized steel.
D01 x 4 x -12 Length 12" (305)
D01 x 4 x -14 Length 14" (356)
D01 x 4 x -16 Length 16" (406)

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

Specification Text File

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).

- HYBRID DESIGN WITH INTEGRAL SLEEVE
- FOR USE IN DYNAMIC SYSTEMS
- 1 1/2 HOUR RATING
- UL 555 CLASSIFIED
- VERTICAL MOUNT


Model D0114HY

MODELS:

D0114HY	**TYPE A**
D0124HY	**TYPE B**
D0134HY	**TYPE C**

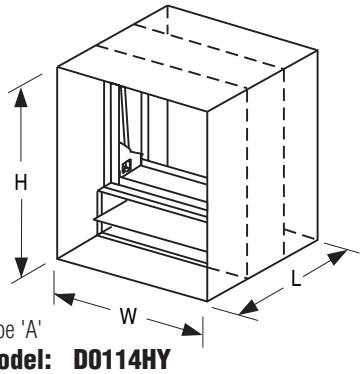
The D0100HY hybrid fire dampers are UL approved for use where local building codes require the protection of HVAC ductwork penetrations in walls and partitions that have a fire resistance rating of up to 2 hours. The D0100HYs are classified for use in dynamic "fans on" systems where the HVAC system remains operative in the event of a fire. Damper closure under airflow is assured.

Integral sleeve fire dampers offer convenience and labor savings. The costly requirement to field or shop fabricate custom sleeves is eliminated and dampers can therefore ship directly from the manufacturer to the job site – saving time and money.

Optional "Quick-Set" retaining angles complete the installation package. Factory fabricated, sized and shipped with damper, they install quickly, provide further labor savings and eliminate the need for any field fabrication.

CONSTRUCTION DETAILS:

	D0114HY (Type A)	D0124HY (Type B)	D0134HY (Type C)
SLEEVE/ ENCLOSURE:	12" (305) long x 20 ga. (1.01) standard 14" (356) or 16" (406) long available	12" (305) long x 20 ga. (1.01) standard 14" (356) or 16" (406) long available; Type B duct connections	12" (305) long x 20 ga. (1.01) standard 14" (356) or 16" (406) long available; Type C duct connections
FRAME:	5" (127) deep max. roll-formed G60 galvanized steel	5" (127) deep max. roll-formed G60 galvanized steel	5" (127) deep max. roll-formed G60 galvanized steel
BLADES:	Minimum 22 ga. (0.85) roll-formed G60 galvanized steel	Minimum 22 ga. (0.85) roll-formed G60 galvanized steel	Minimum 22 ga. (0.85) roll-formed G60 galvanized steel
FUSIBLE LINK: (UL Listed)	165°F (74°C) standard 212°F (100°C) available	165°F (74°C) standard 212°F (100°C) available	165°F (74°C) standard 212°F (100°C) available
MOUNTING:	Vertical mount only	Vertical mount only	Vertical mount only
SIZES:	See maximum sizes shown below sketches. For widths 36'' (914) and under, minimum height is 49'' (1245) (Type A). For widths over 36'' (914), minimum height is 25'' (635) (Type A). For smaller sizes see Model Series D0100.		



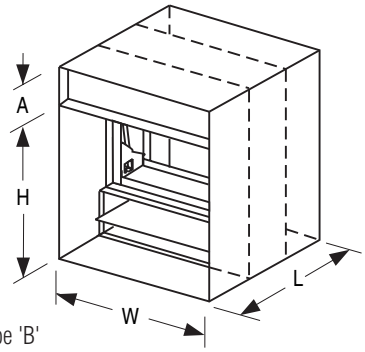
Type 'A'

Model: D0114HY

Max. size: 72" x 60" (1829 x 1524)

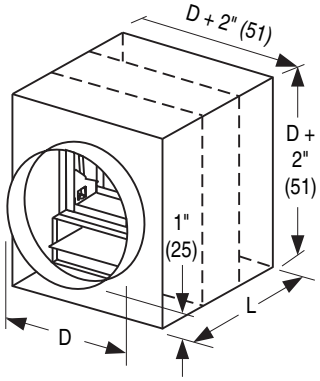
INTEGRAL SLEEVE HYBRID DYNAMIC FIRE DAMPERS

MODELS: D0114HY
D0124HY
D0134HY



Type 'B'
Model: D0124HY
Max. size: 72" x 54" (1829 x 1372)

Damper Height (H)	Dim. 'A'
22" thru 25" (559 thru 533)	2" (51)
26" thru 35" (660 thru 889)	3" (76)
36" thru 44" (914 thru 1118)	4" (102)
45" thru 53" (1143 thru 1346)	5" (127)
54" (1372)	6" (152)



Type 'CR' – Round transition collars (shown)
Type 'CO' - Oval transition collars
Model: D0134HY
CR Max. size - 53" dia. (1346)
CO Max. size - 70" x 53" (1778 x 1346)

HOW TO SPECIFY

MODELS: D0114HY, D0124HY, D0134HY – 1 1/2 HOUR RATED

Specification Text File

SUGGESTED SPECIFICATION:
Provide and install, as shown on plans and as described in specifications, Dynamic rated hybrid 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 hybrid fire dampers shall be Nailor Industries Models D0114HY (Type A), D0124HY (Type B) and D0134HY (Type C).

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


Model D0510

MODELS:

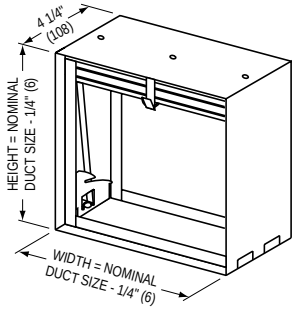
D0510	**TYPE A**
D0520	**TYPE B**
D0530	**TYPE CR/CO**
D0530	**TYPE CSR**

DYNAMIC

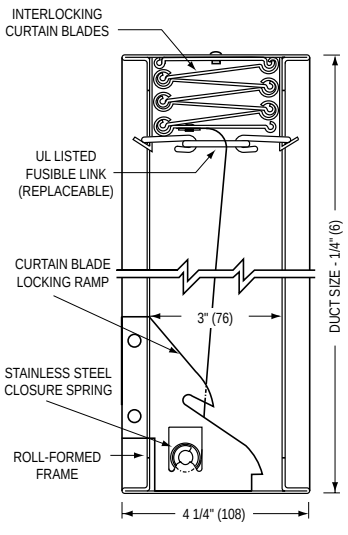
The Nailor D0500 Series dynamic curtain fire dampers are UL/ULC approved for use where building codes require protection of HVAC ductwork penetrations in walls, partitions or floors that have a fire resistance rating of 4 hours or less. Classified for use in dynamic systems (max. 2000 fpm @ 4" w.g.) 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.

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, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking 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

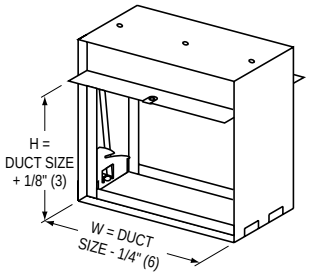


TYPE A: MODEL D0510

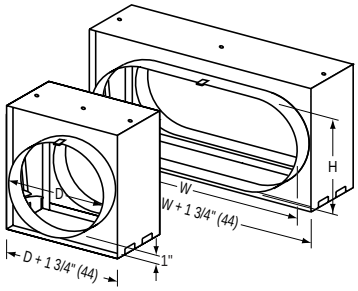


VERTICAL MOUNT

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

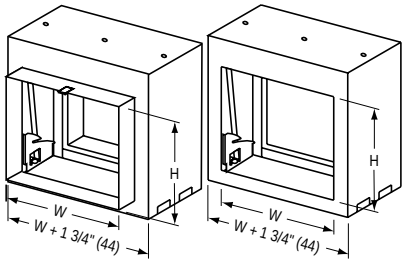


TYPE B:
MODEL D0520



TYPE CR:
MODEL D0530

TYPE CO:
MODEL D0530



TYPE CSR WITH COLLAR (STANDARD): MODEL D0530

TYPE CSR WITHOUT COLLAR: MODEL D0530

For overall damper dimensions see sizing chart on page D48.

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 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)

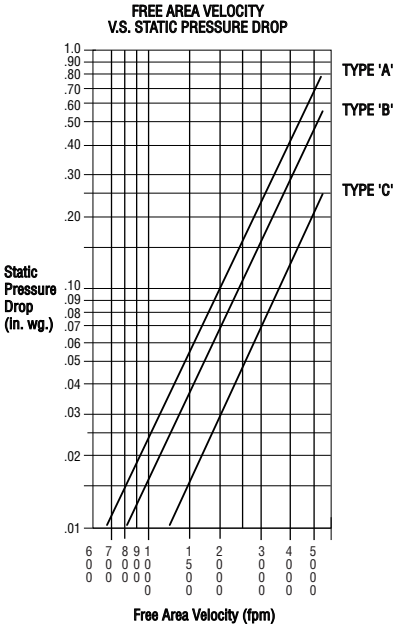
$$\text{FAV} = \frac{8500}{5 \text{ sq. ft.}} = 1700 \text{ fpm}$$

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

Specification Text File

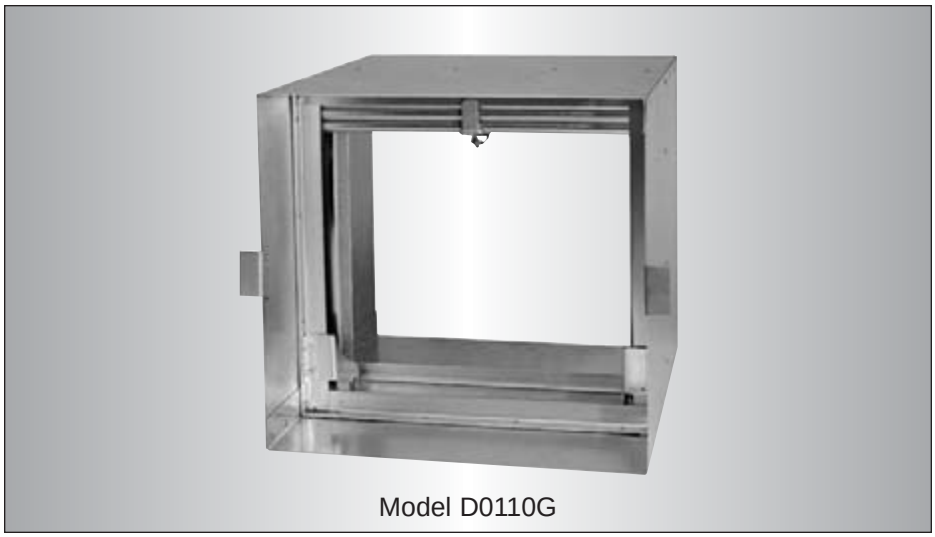
SUGGESTED SPECIFICATION:

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).

- INTEGRAL SLEEVE FOR USE WITH GRILLE
- FOR USE IN DYNAMIC SYSTEMS
- 1 1/2 HOUR RATING
- UL 555 CLASSIFIED



Model D0110G

MODELS:

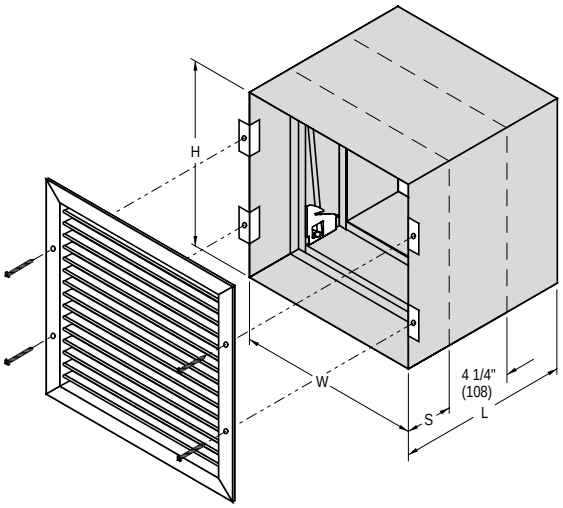
D0110G TYPE A
D0120G TYPE B
D0130G TYPE CR

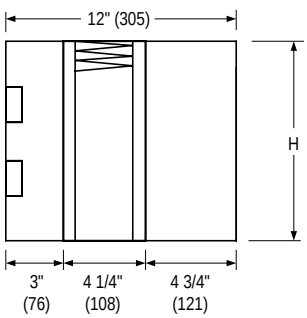
DYNAMIC

The Nailor D0100G Series dynamic integral sleeve fire dampers are designed for use in conjunction with a steel grille when ductwork terminates at an opening in a fire rated wall/partition. The D0100G Series is 1 1/2 hour UL labeled for use in 2 hour fire separations or less and are classified for use in dynamic systems (max. 2000 fpm @ 4" w.g.) where the HVAC system remains operative in the event of a fire alarm. This unique product utilizes special grille mounting flanges on the sleeve that eliminate the requirement for unsightly retaining angles which commonly protrude from behind the grille. The steel grille installs over and completely conceals the mounting flanges for a clean, aesthetic finish. The fire damper is offset in the sleeve to accommodate a single or double deflection supply air grille, single deflection supply air register or a return air grille or register. Countersunk screw holes in the the grille frame will match to mounting flanges when Nailor grille is ordered in conjunction with the damper assembly. The D0100G dampers feature stainless steel closure springs for assured closure under airflow, corrosion resistant steel frame, blades and sleeve for lasting performance, and a choice of transition styles and accessories making installation fast and simple.

CONSTRUCTION DETAILS:

	D0110G (Type A)	D0120G (Type B)	D0130G (Type CR)
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
BLADES:	Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel
STANDARD SLEEVE:	12" (305) x 22 ga. (0.85) galvanized steel with 3/4" (19) wide grille mounting flanges	12" (305) x 22 ga. (0.85) galvanized steel with 3/4" (19) wide grille mounting flanges; Type B duct connection on one end	12" (305) x 22 ga. (0.85) galvanized steel with 3/4" (19) wide grille mounting flanges; Type C duct connection on one end
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
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
MOUNTING:	Vertical or Horizontal	Vertical or Horizontal	Vertical or Horizontal
OPTIONAL GRILLE:	Steel grille with correctly located countersunk screw holes; Select model from Nailor Air Distribution Catalog	Steel grille with correctly located countersunk screw holes; Select model from Nailor Air Distribution Catalog	Steel grille with correctly located countersunk screw holes; Select model from Nailor Air Distribution Catalog



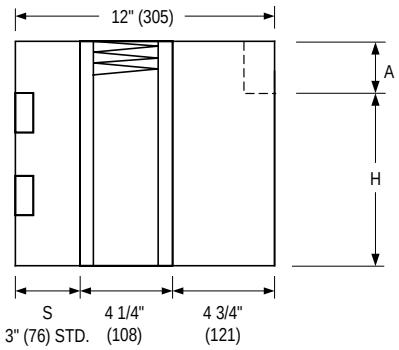


TYPE A: MODEL D0110G

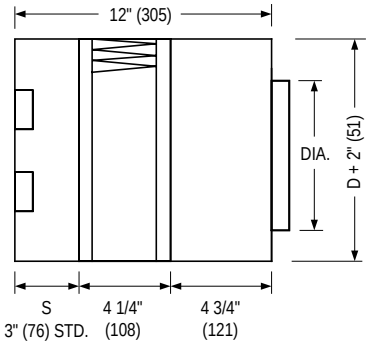
For MIN./MAX. UL SIZES see chart on page D9.

OPTIONAL DAMPER / SLEEVES:

DUCT HEIGHT (H)	'A' DIM.
6" thru 17" (152 - 432)	2" (51)
18" thru 21" (457 - 533)	3" (76)



TYPE B DUCT CONNECTION ON ONE END: MODEL D0120G



TYPE CR ROUND DUCT CONNECTION ON ONE END: MODEL D0130G

HOW TO DETERMINE SLEEVE LENGTH / DAMPER POSITION:

To calculate sleeve length, determine wall thickness and add 3" (76) minimum for rear retaining angles and duct connection. Front of assembly fits flush with wall. Damper offset (dimension 'S') should accommodate grille selection depth, but fire damper position must remain within plane of wall.

FOR NON-STANDARD SLEEVE LENGTH, SPECIFY LENGTH.

FOR NON STANDARD DAMPER POSITION IN SLEEVE, SPECIFY DIMENSION 'S'.

OTHER OPTIONS / ACCESSORIES:

	CODE	DESCRIPTION
QUICK-SET ANGLE	QS1	Single set of "Quick-Set" Retaining Angles for Rear Side
HEMMED SLEEVE	HM1	Sleeve End Hemmed for Slip and Drive Connection
MICROSWITCH	MS MSE	24V Microswitch 120/24V Microswitch with Enclosure

HOW TO SPECIFY

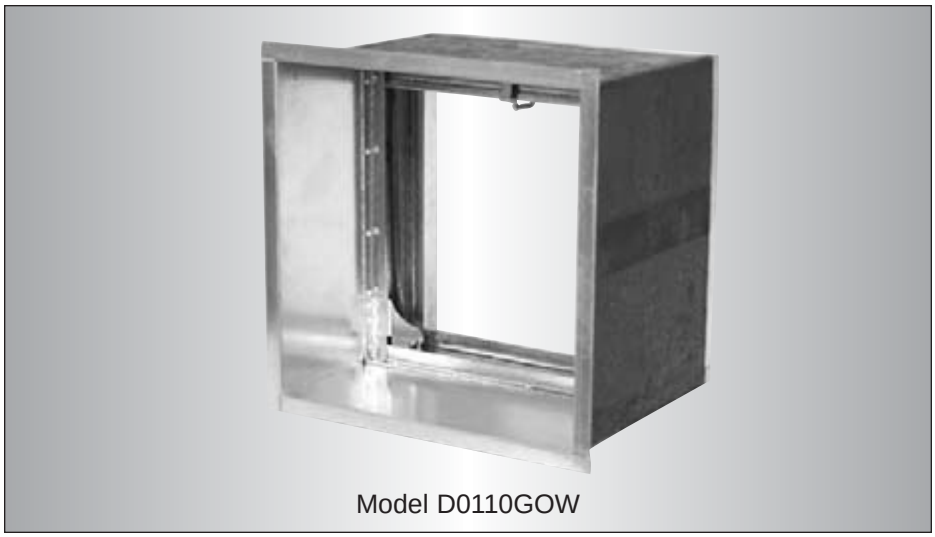
Specification Text File

SUGGESTED SPECIFICATION:

Provide and install, as shown on plans and as described in specifications, Dynamic rated fire dampers for use with grilles, 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 with one 'Quick-Set' retaining angle and grille mounting flanges specially designed for use with a steel grille of minimum 26 ga. (.5) construction. Fire damper shall be offset in the sleeve an appropriate amount to maintain positioning of fire damper within plane of wall. Data submitted for approval shall include confirmation of UL qualifications in addition to manufacturer's installation instructions. Fire dampers shall be installed in accordance with manufacturer's instructions, and same installation instructions shall be included with each fire damper shipment. Dynamic rated fire dampers for use with steel grilles shall be Nailor Industries Models D0110G (Type A), D0120G (Type B transition), D0130G (Type C transition).

- INTEGRAL "OUT OF WALL" SLEEVE FOR USE WITH GRILLE
- FOR USE IN DYNAMIC SYSTEMS
- 1 1/2 HOUR RATING
- UL 555 CLASSIFIED



Model D0110GOW

MODEL: D0110GOW

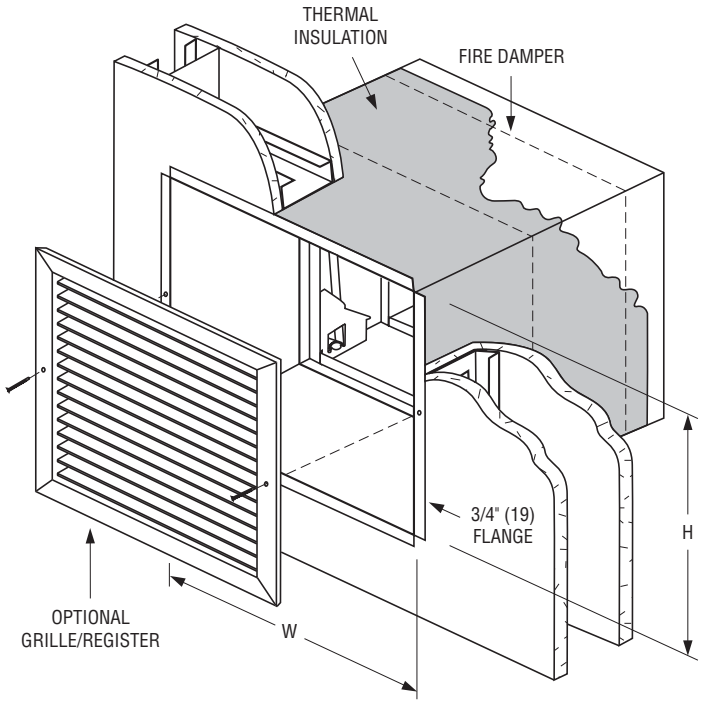
The Model D0110GOW is an "out of wall or floor" integral sleeve dynamic curtain type fire damper, specifically designed for supply or return ducts that terminate at a grille or register. For use where local building codes require the protection of HVAC ductwork penetrations in walls, partitions or floors that have a fire resistance rating of up to two hours.

The D0110GOW design provides sufficient damper off-set to accommodate most commercial grille/register designs while ensuring an approved installation in any fire partition or wall no matter how narrow. This model is particularly suited for use in common steel stud drywall partition designs, as narrow as 3 1/2" (89) where a traditional "within the plane of the wall" fire damper installation is not possible.

CONSTRUCTION DETAILS:

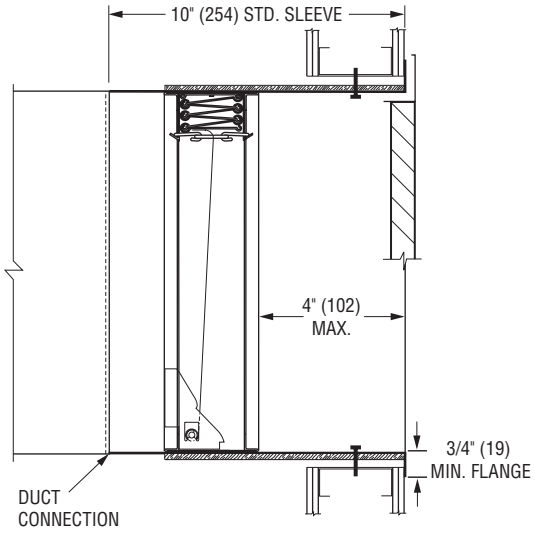
	D0110GOW (Type A)
FRAME:	4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel
BLADES:	Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel
STANDARD SLEEVE:	10" (254) x 16 ga. (1.6) galvanized steel with 3/4" (19) wide grille mounting flanges; intumescent thermal insulation on all four sides
FUSIBLE LINK: (UL Listed)	165°F (74°C) Std. 212°F (100°C) available
BLADE CLOSURE:	Stainless steel closure springs and galvanized steel locking ramps
MOUNTING:	Vertical or Horizontal
OPTIONAL GRILLE:	Steel or aluminum grille or register; Select model from Nailor Air Distribution Catalog

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

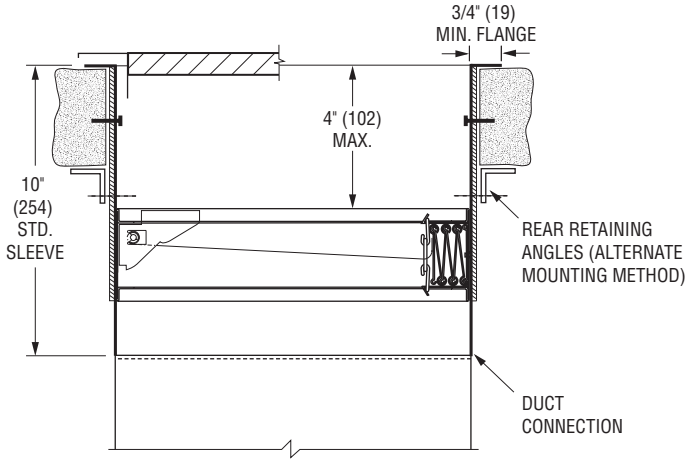


MODEL D0110GOW

MODEL: D0110GOW



VERTICAL MOUNT



HORIZONTAL MOUNT

HOW TO SPECIFY

Specification Text File

SUGGESTED SPECIFICATION:

Provide and install, as shown on plans and as described in specifications, Dynamic rated "out of wall" fire dampers for use with grilles, 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 a 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 16 ga. (1.6) galvanized steel insulated sleeve with grille mounting flanges.

Data submitted for approval shall include confirmation of UL qualifications in addition to manufacturer's installation instructions. Fire dampers shall be installed in accordance with manufacturer's instructions and same installation instructions shall be included with each fire damper shipment. Dynamic rated "out of wall" fire dampers shall be Nailor Industries Model D0110GOW.

SELECTION PROCEDURE FOR DYNAMIC FIRE DAMPERS

Underwriters Laboratories Inc. Standard for Safety UL 555 evaluates fire dampers for use as either: (A) Fire dampers for static systems – for HVAC systems that are automatically shut down in the event of a fire or for air transfer openings in walls or partitions; (B) Fire dampers for dynamic systems – for HVAC systems that are operated in the event of a fire.

Dynamic Fire Dampers are therefore required to close under airflow.

All fire dampers must be labeled to indicate if they are to be used in static or dynamic systems. For dynamic rated dampers, this label must also indicate the maximum rated velocity through the open damper, and the maximum pressure differential across the closed damper.

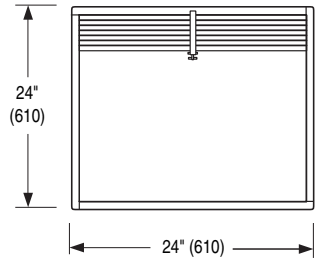
To attain approval for use in a dynamic system, UL Standard 555 requires that test dampers close three times (manually released) against their rated flow and shut-off pressure at ambient air temperature before heat is introduced to cause the fusible link to melt and close the damper one final time.

All Nailor dynamic curtain type fire dampers have been tested to 2000 fpm (10.16 m/s) and 4" w.g. (1 kPa) static pressure.

EXAMPLE #1: SINGLE SECTION FIRE DAMPER

To determine the maximum allowable airflow through the following damper:
Type A damper 24" x 24". The maximum rated velocity is 2000 fpm. 24" x 24" is 4 sq. ft. (Width in inches x Height in inches divided by 144 = sq. ft.), therefore, maximum allowable airflow is 2000 fpm x 4 sq. ft. = 8,000 cfm.

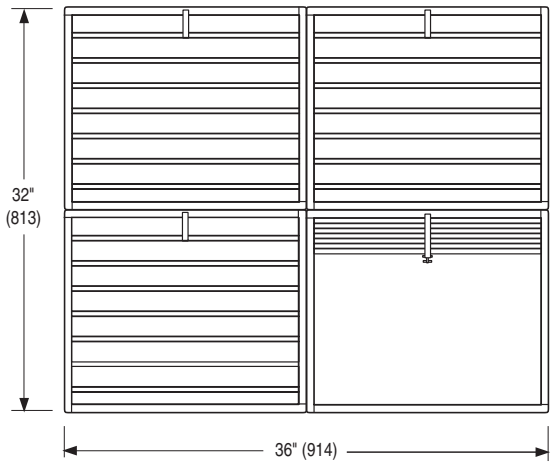
Check the maximum system pressure that could occur against a closed damper. Nailor dynamic fire dampers have been tested and are rated to close against 4" w.g.



EXAMPLE #2: MULTIPLE SECTION FIRE DAMPER

To determine the maximum allowable airflow through the following multi-section damper assembly:
Type A damper 36" x 32" opening (the assembly will consist of four 18" x 16" dampers); The maximum rated velocity is 2000 fpm. 36" x 32" is 8 sq. ft., therefore, 2000 fpm x 8 sq. ft. = 16000 cfm. This is the maximum allowable airflow that may be passed through the 36" x 32" opening.

Check the maximum system pressure that could occur against a closed damper. Nailor dynamic fire dampers have been tested and are rated to close against 4" w.g.

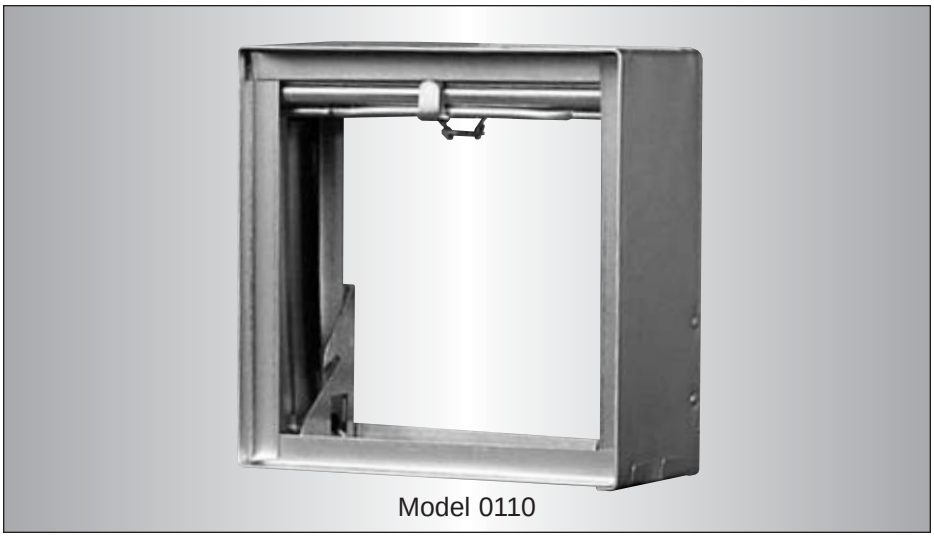


Notes:

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

MODELS:

0110 / 0114	TYPE A
0120 / 0124	TYPE B
0130 / 0134	TYPE CR/CO
0140	TYPE CSR

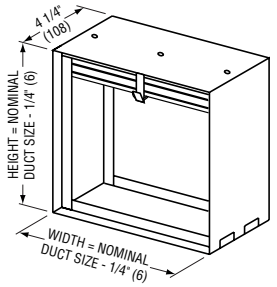


Model 0110

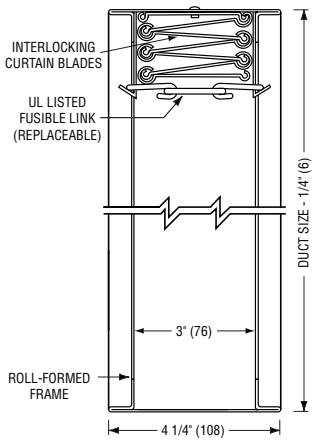
The Nailor 0100 Series curtain fire dampers, for use in static "fans off" systems where the HVAC system shuts down in the event of a fire, are UL/ULC approved to provide protection of HVAC ductwork penetrations in walls, partitions or floors that have a fire resistance rating of 2 hours or less. The 0100 Series features corrosion resistant steel frame and blades for performance that lasts, and a choice of transition styles and factory installed sleeves to suit duct size, making installation fast and simple.

CONSTRUCTION DETAILS:

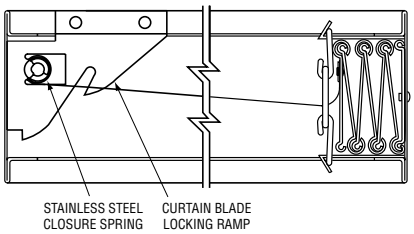
	0110 (Type A)	0120 (Type B)	0130 (Type CR/CO)	0140 (Type CSR)
FRAME:	4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel	4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel	4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel; out of airstream	4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel; out of airstream
BLADES:	Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking 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:	Vertical mount; gravity Horizontal mount; stainless steel closure springs with galvanized steel locking ramps	Vertical mount; gravity Horizontal mount; stainless steel closure springs with galvanized steel locking ramps	Vertical mount; gravity Horizontal mount; stainless steel closure springs with galvanized steel locking ramps	Vertical mount; gravity Horizontal mount; stainless steel closure springs with 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	
22 ga (.085) x12" (305) long	0114-12	0124-12	0134-12	Specify SL Option
22 ga (.085) x14" (356) long	0114-14	0124-14	0134-14	
22 ga (.085) x16" (406) long	0114-16	0124-16	0134-16	



TYPE A: MODEL 0110

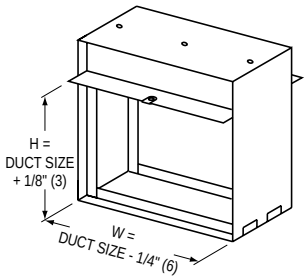


MODEL 0110V – VERTICAL MOUNT

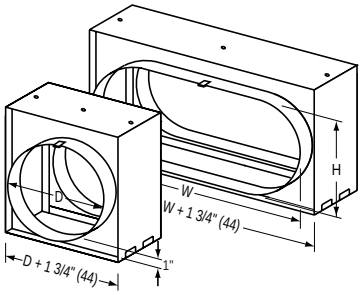


MODEL 0110H – HORIZONTAL MOUNT

For MIN./MAX. UL SIZES see chart on page D10.

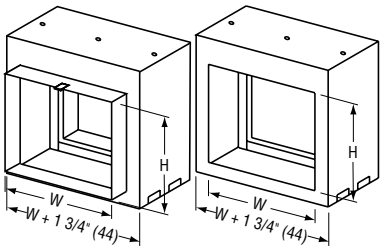


TYPE B:
MODEL 0120



TYPE CR:
MODEL 0130

TYPE CO:
MODEL 0130



TYPE CSR WITH COLLAR (STANDARD): MODEL 0140

TYPE CSR WITHOUT COLLAR: MODEL 0140

For overall damper dimensions see sizing chart on page D48.

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 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)

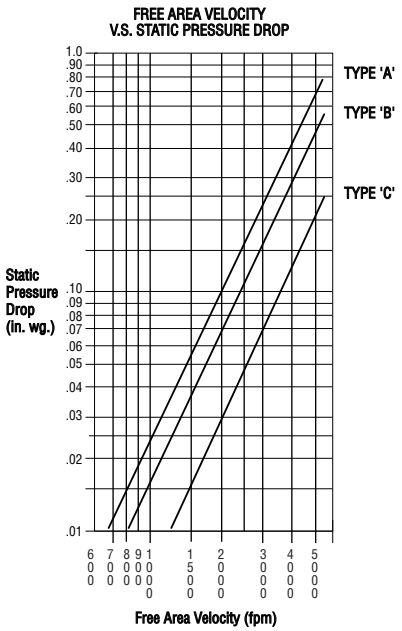
$$\text{FAV} = \frac{8500}{5 \text{ sq. ft.}} = 1700 \text{ fpm}$$

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

Specification Text File

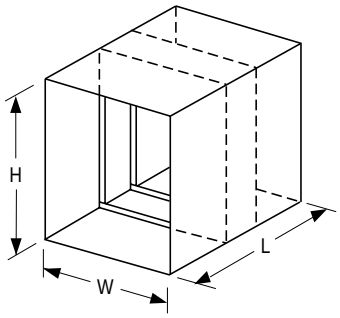
SUGGESTED SPECIFICATION:
Provide and install, as shown on plans and as described in specifications, fire dampers as manufactured by Nailor Industries, meeting or exceeding the following criteria: Fire dampers shall be manufactured, tested and labeled in accordance with UL 555 Safety Standard for Fire Dampers - Sixth Edition, June 1999, and shall have 1 1/2 hour fire resistance rating. Each fire damper shall bear a UL label verifying fire resistance rating in addition to intended mounting position. Fire dampers shall be suitably constructed for vertical or horizontal installation as required for each specific location.
Each fire damper shall be complete with a **(specifier select one)** 165°F (74°C) **or** 212°F (100°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. Information submitted for approval shall include confirmation of UL qualifications, pressure drop data and manufacturer's installation instructions. Each shipment of fire dampers shall include same installation instructions. Fire dampers shall be Nailor Industries Models 0110 (Type A), 0120 (Type B), 0130 (Type C).

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

FOR USE IN STATIC 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 0114 - 12/14/16



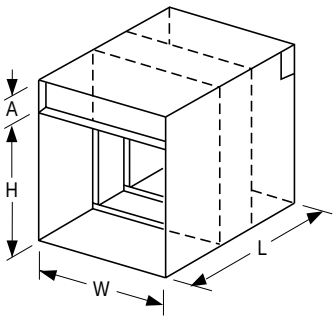
Type 'A' – Blades and frame in the airstream.

Models: 0114V Vertical and 0114H Horizontal

Min. size - Vertical or Horizontal 4" x 4" (102 x 102)

Max. size - Vertical or Horizontal 48" x 48" (1219 x 1219)

TYPE B: MODEL 0124 - 12/14/16



Type 'B' – Blades out of airstream.

Models: 0124V Vertical and 0124H Horizontal

Min. size - Vertical 4" x 3" (102 x 76)
Horizontal 4" x 4" (102 x 102)

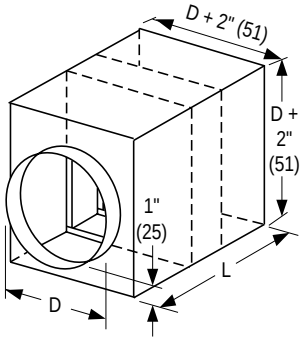
Max. size - Vertical or Horizontal 48" x 43" (1219 x 1092)

Damper Height (H)	Dim. 'A'
5" thru 17" (127 thru 432)	2" (51)
18" thru 27" (457 thru 686)	3" (76)
28" thru 36"(711 thru 914)	4" (102)
37" thru 43" (940 thru 1092)	5" (127)

CONSTRUCTION DETAILS:

INTEGRAL SLEEVE/FRAME:	22 ga. (0.85) roll-formed G60 galvanized steel. 01 x 4 x -12 Length 12" (305) 01 x 4 x -14 Length 14" (356) 01 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 mount model; gravity. Horizontal mount models are equipped with stainless steel closure springs and galvanized steel locking ramps.

TYPE C: MODEL 0134 - 12/14/16



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

Models: 0134V Vertical and 0134H Horizontal

Min. size - Vertical 3" dia. (76)
Horizontal 4" dia. (102)

Max. size - Vertical or Horizontal 42" dia. (1067)

HOW TO SPECIFY

INTEGRAL SLEEVE STATIC FIRE DAMPERS

MODELS: 0114 - 12/14/16
0124 - 12/14/16
0134 - 12/14/16

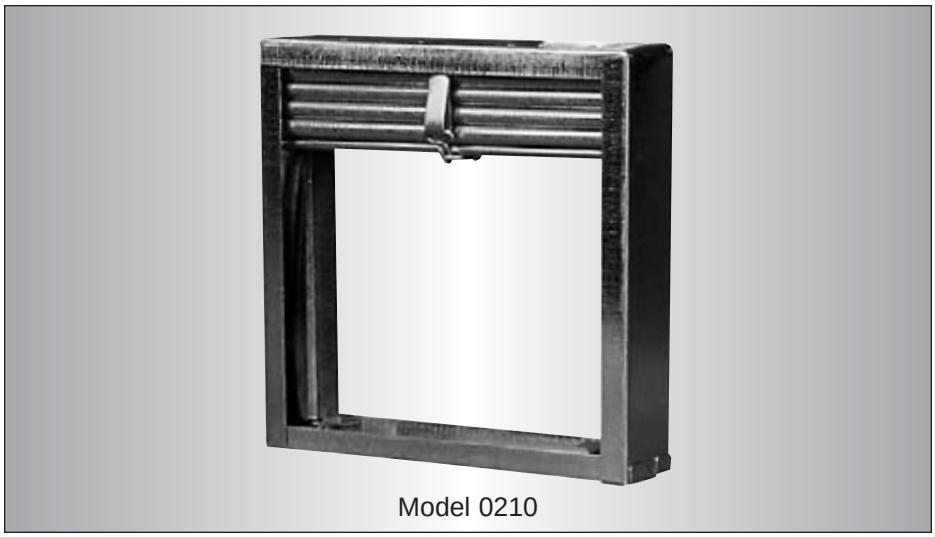
Specification Text File

SUGGESTED SPECIFICATION:
Provide and install, as shown on plans and as described in specifications, integral sleeve fire dampers as manufactured by Nailor Industries, meeting or exceeding the following criteria: Fire dampers shall be manufactured, tested and labeled in accordance with UL 555 Safety Standard for Fire Dampers - Sixth Edition, June 1999, and shall have a 1 1/2 hour fire resistance rating. Each fire damper shall bear a UL label verifying fire resistance rating in addition to intended mounting position. Fire dampers shall be suitably constructed for vertical or horizontal installation as required for each specific location. Each fire damper shall be complete with a **(specifier select one)** 165°F (74°C) **or** 212°F (100°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. Information submitted for approval shall include confirmation of UL qualifications, pressure drop data, and manufacturer's installation instructions. Each shipment of fire dampers shall include same installation instructions. Integral sleeve fire dampers shall be Nailor Industries Models 0114-12 **or** 14 **or** 16 (Type A), 0124-12 **or** 14 **or** 16 (Type B), 0134-12 **or** 14 **or** 16 (Type C).

- THINLINE FRAME
- FOR USE IN STATIC SYSTEMS
- 1 1/2 HOUR RATING
- UL 555 CLASSIFIED

MODELS:

0210	TYPE A
0220	TYPE B
0230	TYPE CR/CO
0240	TYPE CSR

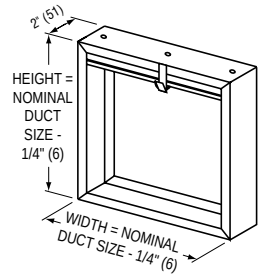


Model 0210

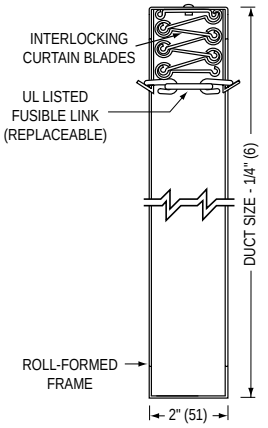
The Nailor 0200 Series Thinline curtain fire dampers are UL/ULC approved for use where building codes require the protection of HVAC ductwork penetrations in walls, partitions or floors that have a fire resistance rating of 2 hours or less. The 0200 Series is classified for use only in static "fans off" systems where the HVAC system is automatically shut down in the event of a fire alarm. The 0200 Series Thinline dampers are only 2" (51) deep making them ideal for installation in narrow fire rated partitions, transfer duct openings, behind grilles or in any other application where space is limited. The 0200 Series feature 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:

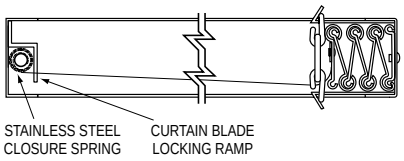
	0210 (Type A)	0220 (Type B)	0230 (Type CR/CO)	0240 (Type CSR)
FRAME:	2" (51) wide, 22 ga. (0.85) roll-formed G60 galvanized steel	2" (51) wide, 22 ga. (0.85) roll-formed G60 galvanized steel	2" (51) wide, 22 ga. (0.85) roll-formed G60 galvanized steel; out of airstream	2" (51) wide, 22 ga. (0.85) roll-formed G60 galvanized steel; out of airstream
BLADES:	Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking 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:	Vertical mount; gravity Horizontal mount; stainless steel closure springs with galvanized steel locking ramps	Vertical mount; gravity Horizontal mount; stainless steel closure springs with galvanized steel locking ramps	Vertical mount; gravity Horizontal mount; stainless steel closure springs with galvanized steel locking ramps	Vertical mount; gravity Horizontal mount; stainless steel closure springs with 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 0210

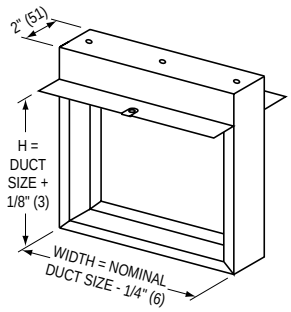


MODEL 0210V – VERTICAL MOUNT

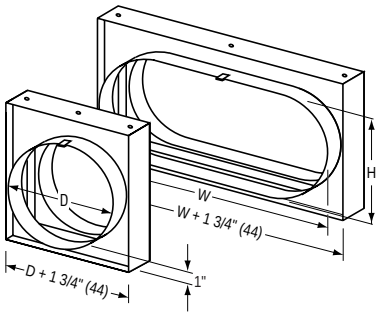


MODEL 0210H – HORIZONTAL MOUNT

For MIN./MAX. UL SIZES see chart on page D10.

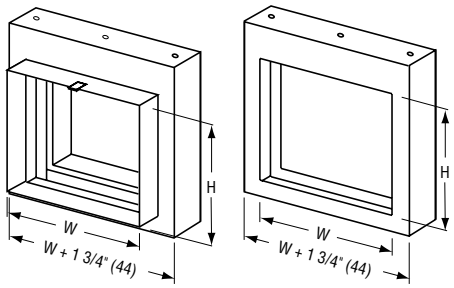


TYPE B: MODEL 0220



TYPE CR: MODEL 0230

TYPE CO: MODEL 0230



TYPE CSR WITH COLLAR (STANDARD): MODEL 0240

TYPE CSR WITHOUT COLLAR: MODEL 0240

For overall damper dimensions, see sizing chart on page D49.

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 THINLINE 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)	40 (1016)
6 (152)	.12	.27	.44	.59	.75	.94	1.02
12 (305)	.27	.61	.93	1.36	1.7	2.1	2.4
18 (457)	.42	.94	1.5	2.2	2.7	3.4	3.7
24 (610)	.55	1.29	2.1	3.0	3.7	4.5	4.9
30 (762)	.71	1.65	2.6	3.8	4.3	5.7	6.3
36 (914)	.86	2.1	3.2	4.6	5.7	7.0	7.7
40 (1067)	.93	2.3	3.5	5.1	6.3	7.6	8.8
48 (1219)	1.14	2.7	4.3	6.0	7.7	9.4	
54 (1372)	1.32	3.1	4.9	6.9	8.8	10.7	
60 (1524)	1.51	3.5	5.5	7.7	9.9	11.8	

TYPE B THINLINE 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)	40 (1016)
6 (152)	.15	.32	.52	.69	.88	1.09	1.17
12 (305)	.31	.70	1.07	1.55	1.95	2.4	2.7
18 (457)	.47	1.05	1.7	2.5	3.05	3.8	4.2
24 (610)	.62	1.44	2.3	3.4	4.2	5.1	5.6
30 (762)	.80	1.84	2.9	4.3	4.9	6.5	7.2
36 (914)	.95	2.33	3.6	5.1	6.4	7.8	
40 (1067)	1.0	2.5	3.8	5.6	7.0	8.5	
48 (1219)	1.3	3.1	4.8	6.8	8.6	10.4	

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

To calculate Free Area of round duct:
DIAMETER^2 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 36" Damper required for 14,000 cfm. (Type A)

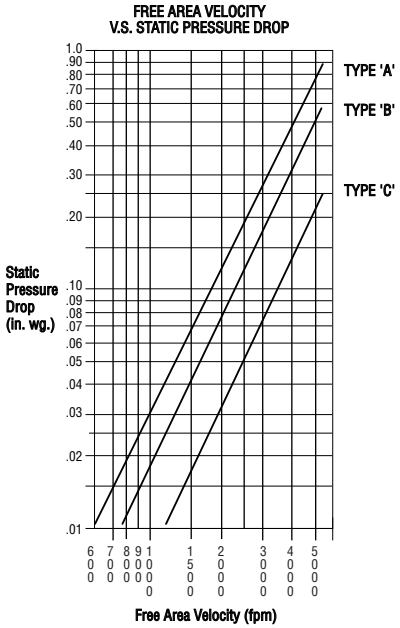
$$\text{FAV} = \frac{14{,}000}{7 \text{ sq. ft.}} = 2000 \text{ fpm}$$

2000 fpm located on the 'A' curve shows a pressure drop of .12 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

Specification Text File

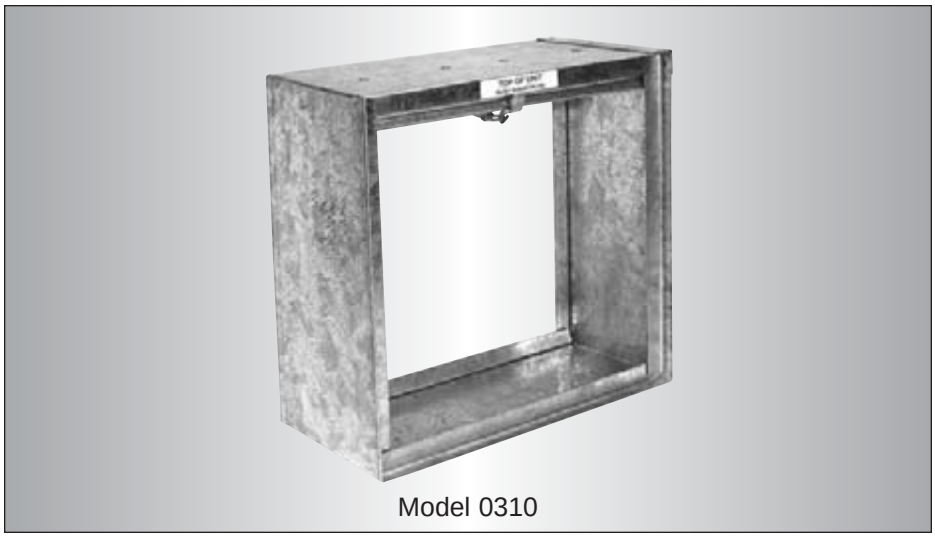
SUGGESTED SPECIFICATION:

Provide and install, as shown on plans and as described in specifications, Thinline fire dampers as manufactured by Nailor Industries, meeting or exceeding the following criteria: Fire dampers shall be manufactured, tested and labeled in accordance with UL 555 Safety Standard for Fire Dampers - Sixth Edition, June 1999, and shall have 1 1/2 hour fire resistance rating. Each fire damper shall bear a UL label verifying fire resistance rating in addition to intended mounting position. Fire dampers shall be suitably constructed for vertical or horizontal installation as required for each specific location.

Thinline style fire damper frame shall be a maximum of 2" (51) in width, roll-formed from G60 galvanized steel. Blades shall be Thinline type, roll-formed G60 galvanized steel. Each fire damper shall be complete with a **(specifier select one)** 165°F (74°C) **or** 212°F (100°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 locations where the fire damper cannot be accessed through grille or duct end opening, to allow for inspection, testing and fusible link replacement. Information submitted for approval shall include confirmation of UL qualifications, pressure drop data and manufacturer's installation instructions. Each shipment of fire dampers shall include same installation instructions. Thinline fire dampers shall be Nailor Industries Models 0210 (Type A), 0220 (Type B), 0230 (Type C).

- WIDE FRAME
- FOR USE IN STATIC SYSTEMS
- 1 1/2 HOUR RATING
- UL 555 CLASSIFIED

MODEL: 0310 TYPE A



Model 0310

The Nailor Model 0310 Wide Frame curtain fire damper is UL/ULC approved for use where local building codes require the protection of HVAC ductwork penetrations in walls, partitions or floors that have a fire rating of 2 hours or less. The 0310 is classified for use only in static "fans off" systems where the HVAC system is automatically shut down in the event of a fire alarm.

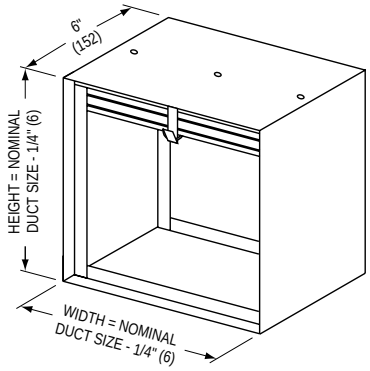
The 6" (152) wide frame design with 4 3/4" (121) blades, reduces the number of blades required in the curtain stack, thus increasing the free area and reducing the pressure drop across the damper compared to standard Type A fire dampers. The construction features corrosion resistant steel blades and frame designed for lasting performance, and available factory installed sleeves for fast, simple installation.

CONSTRUCTION DETAILS:

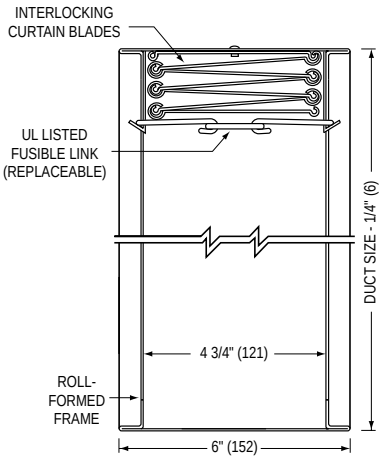
	0310 (Type A)
FRAME:	6" (152) wide, 22 ga. (0.85) roll formed G60 galvanized steel
BLADES:	Curtain type, inter-locking blades, 22 ga (0.85) roll-formed G60 galvanized steel
FUSIBLE LINK: (UL Listed)	165°F (74°C) Std. 212°F (100°C) available
BLADE CLOSURE:	Vertical mount; gravity Horizontal mount; stainless steel closure springs with galvanized steel locking ramps
MOUNTING:	Vertical or Horizontal
AVAILABLE SLEEVE:	Galvanized steel; Specify SL Option

For MIN./MAX. UL SIZES see chart on page D11.

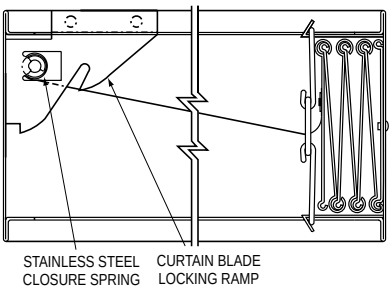
See Sizing Chart on page D50 for blade pack depth.



TYPE A: MODEL 0310



MODEL 0310V – VERTICAL MOUNT



MODEL 0310H – HORIZONTAL MOUNT

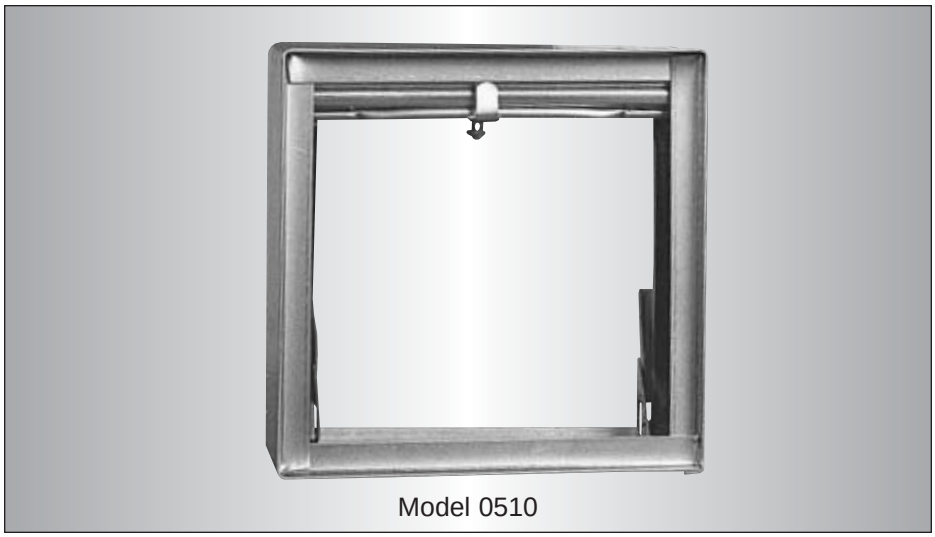
HOW TO SPECIFY

MODEL: 0310

Specification Text File

SUGGESTED SPECIFICATION:
Provide and install, as shown on plans and as described in specifications, wide frame fire dampers as manufactured by Nailor Industries, meeting or exceeding the following criteria: Fire dampers shall be manufactured, tested and labeled in accordance with UL 555 Safety Standard for Fire Dampers - Sixth Edition, June 1999, and shall have a 1 1/2 hour fire resistance rating. Each fire damper shall bear a UL label verifying fire resistance rating in addition to intended mounting position. Fire dampers shall be suitably constructed for vertical or horizontal installation as required for each specific location. Wide frame fire damper frame shall be 6" (152) in width, roll-formed from G60 galvanized steel. Blades shall be wide framed type to provide maximum free area, roll-formed from G60 galvanized steel. Each fire damper shall be complete with a **(specifier select one)** 165°F (74°C) **or** 212°F (100°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. Information submitted for approval shall include confirmation of UL qualifications and manufacturer's installation instructions. Each shipment of fire dampers shall include same installation instructions. Wide frame fire dampers shall be Nailor Industries Model 0310.

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


Model 0510

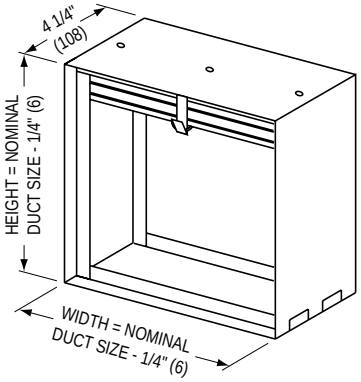
MODELS:

0510	**TYPE A**
0520	**TYPE B**
0530	**TYPE CR/CO**
0530	**TYPE CSR**

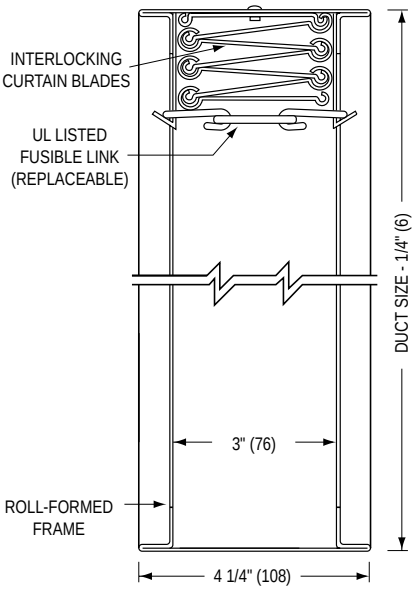
The Nailor 0500 Series standard frame curtain fire dampers, for use in static "fans off" systems where the HVAC system shuts down in the event of a fire, are UL/ULC approved to provide protection of HVAC ductwork penetrations in walls, partitions or floors that have a fire resistance rating of 4 hours or less. The 0500 Series features corrosion resistant steel frame and blades for performance that will last, and a choice of transition styles and factory installed sleeves to suit duct size, making installation fast and simple.

CONSTRUCTION DETAILS:

	0510 (Type A)	**0520** (Type B)	**0530** (Type CR/CO)	**0530** (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, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking 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:	Vertical mount; gravity Horizontal mount; stainless steel closure springs with galvanized steel locking ramps	Vertical mount; gravity Horizontal mount; stainless steel closure springs with galvanized steel locking ramps	Vertical mount; gravity Horizontal mount; stainless steel closure springs with galvanized steel locking ramps	Vertical mount; gravity Horizontal mount; stainless steel closure springs with 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

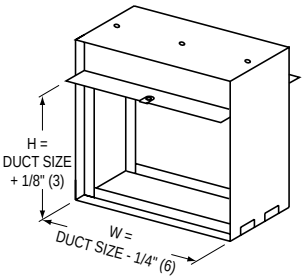


TYPE A: MODEL 0510

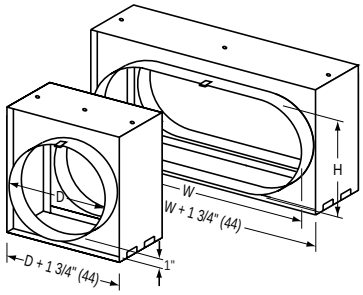


MODEL 0510V – VERTICAL MOUNT

For MIN./MAX. UL SIZES see chart on page D11.

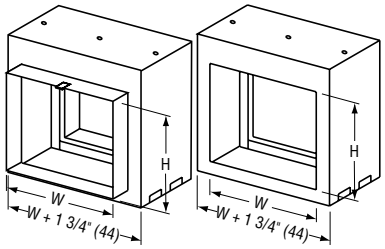


TYPE B:
MODEL 0520



TYPE CR:
MODEL 0530

TYPE CO:
MODEL 0530



TYPE CSR WITH COLLAR (STANDARD):
MODEL 0530

TYPE CSR WITHOUT COLLAR:
MODEL 0530

For overall damper dimensions see sizing chart on page D48.

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 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)

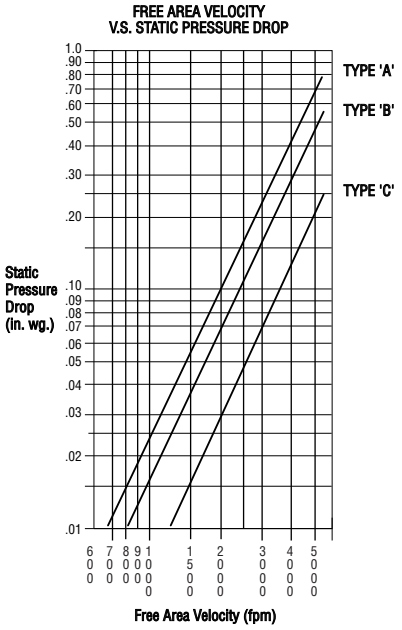
$$\text{FAV} = \frac{8500}{5 \text{ sq. ft.}} = 1700 \text{ fpm}$$

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

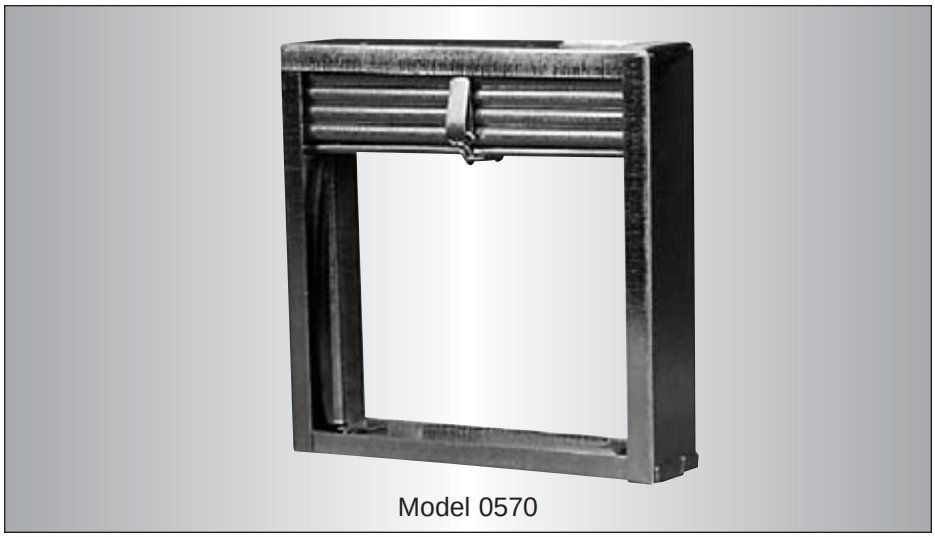
Specification Text File

SUGGESTED SPECIFICATION:

Provide and install, as shown on plans and as described in specifications, 3 hour rated fire dampers as manufactured by Nailor Industries, meeting or exceeding the following criteria: Fire dampers shall be manufactured, tested and labeled in accordance with UL 555 Safety Standard for Fire Dampers - Sixth Edition, June 1999, and shall have a 3 hour fire resistance rating. Each fire damper shall bear a UL label verifying fire resistance rating in addition to intended mounting position. Fire dampers shall be suitably constructed for vertical or horizontal installation as required for each specific location.

Each fire damper shall be complete with a **(specifier select one)** 165°F (74°C) **or** 212°F (100°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. Information submitted for approval shall include confirmation of UL qualifications, pressure drop data and manufacturer's installation instructions. Each shipment of fire dampers shall include same installation instructions. Fire dampers shall be Nailor Industries Models 0510 (Type A), 0520 (Type B), 0530 (Type C).

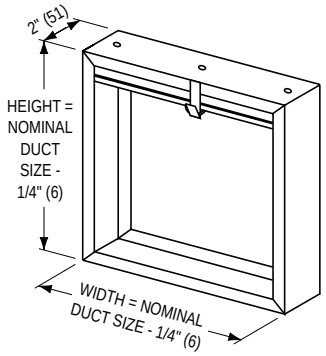
- THINLINE FRAME
- FOR USE IN STATIC SYSTEMS
- 3 HOUR RATING
- UL 555 CLASSIFIED
- VERTICAL MOUNT


Model 0570

MODELS:

0570	**TYPE A**
0580	**TYPE B**
0590	**TYPE CR/CO**
0590	**TYPE CSR**

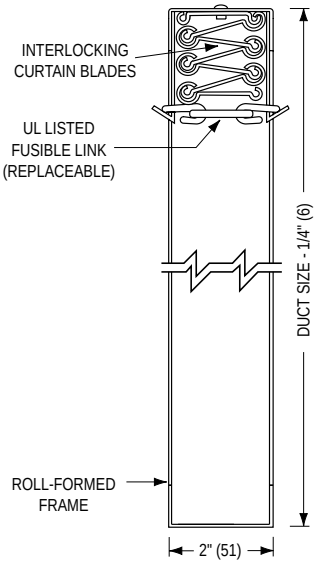
The Nailor 0500 Thinline Series, Models 0570, 0580, and 0590 curtain fire dampers are UL/ULC approved for use where building codes require the protection of HVAC ductwork penetrations in vertical fire separations (walls or partitions) that have a fire resistance rating of 4 hours or less. The 0500 Thinline Series is classified for use in static "fans off" systems where the HVAC system is automatically shut down in the event of a fire alarm. These thinline dampers are only 2" (51) deep making them ideal for installation in narrow fire rated partitions, transfer duct openings, behind grilles or any other application where room is limited. The 0500 Series feature corrosion resistant steel frame and blades for lasting performance, and a choice of transition styles and factory installed sleeves to suit duct size, making installation fast and simple.



TYPE A: MODEL 0570

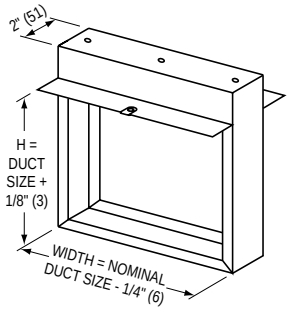
CONSTRUCTION DETAILS:

	0570 (Type A)	0580 (Type B)	0590 (Type CR/CO)	0590 (Type CSR)
FRAME:	2" (51) wide, 22 ga. (0.85) roll-formed G60 galvanized steel	2" (51) wide, 22 ga. (0.85) roll-formed G60 galvanized steel	2" (51) wide, 22 ga. (0.85) roll-formed G60 galvanized steel; out of airstream	2" (51) wide, 22 ga. (0.85) roll-formed G60 galvanized steel; out of airstream
BLADES:	Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking 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:	Gravity	Gravity	Gravity	Gravity
MOUNTING:	Vertical Only	Vertical Only	Vertical Only	Vertical Only
AVAILABLE SLEEVE:	Galvanized steel; Specify SL Option	Galvanized steel; Specify SL Option	Galvanized steel; Specify SL Option	Galvanized steel; Specify SL Option

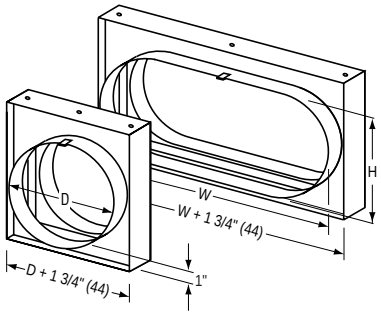


MODEL 0570V – VERTICAL MOUNT

For MIN./MAX. UL SIZES see chart on page D11.

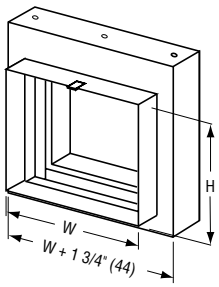


TYPE B: MODEL 0580

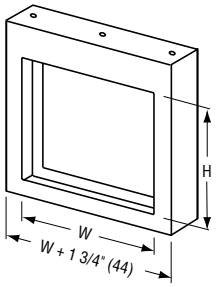


TYPE CR: MODEL 0590

TYPE CO: MODEL 0590



TYPE CSR WITH COLLAR (STANDARD): MODEL 0590



TYPE CSR WITHOUT COLLAR: MODEL 0590

For overall damper dimensions, see sizing chart on page D49.

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 THINLINE 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)	40 (1016)
6 (152)	.12	.27	.44	.59	.75	.94	1.02
12 (305)	.27	.61	.93	1.36	1.7	2.1	2.4
18 (457)	.42	.94	1.5	2.2	2.7	3.4	3.7
24 (610)	.55	1.29	2.1	3.0	3.7	4.5	4.9
30 (762)	.71	1.65	2.6	3.8	4.3	5.7	6.3
36 (914)	.86	2.1	3.2	4.6	5.7	7.0	7.7
40 (1067)	.93	2.3	3.5	5.1	6.3	7.6	8.8
48 (1219)	1.14	2.7	4.3	6.0	7.7	9.4	
54 (1372)	1.32	3.1	4.9	6.9	8.8	10.7	
60 (1524)	1.51	3.5	5.5	7.7	9.9	11.8	

TYPE B THINLINE 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)	40 (1016)
6 (152)	.15	.32	.52	.69	.88	1.09	1.17
12 (305)	.31	.70	1.07	1.55	1.95	2.4	2.7
18 (457)	.47	1.05	1.7	2.5	3.05	3.8	4.2
24 (610)	.62	1.44	2.3	3.4	4.2	5.1	5.6
30 (762)	.80	1.84	2.9	4.3	4.9	6.5	7.2
36 (914)	.95	2.33	3.6	5.1	6.4	7.8	
40 (1067)	1.0	2.5	3.8	5.6	7.0	8.5	
48 (1219)	1.3	3.1	4.8	6.8	8.6	10.4	

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

To calculate Free Area of round duct:
DIAMETER^2 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.

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

Example:
1-36" x 36" Damper required for 14,000 cfm. (Type A)

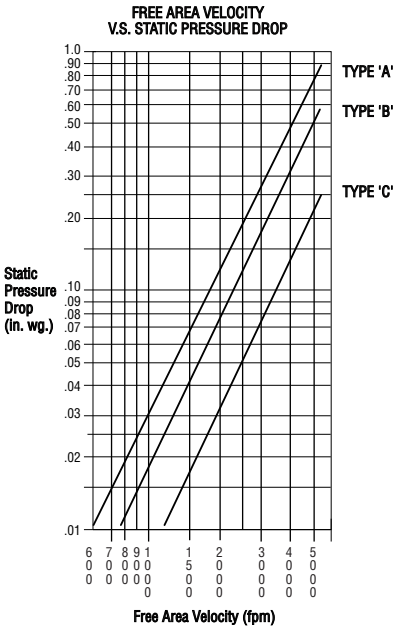
FAV = $\frac{14{,}000}{7 \text{ sq. ft.}}$ = 2000 fpm

2000 fpm located on the 'A' curve shows a pressure drop of .12 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

Specification Text File

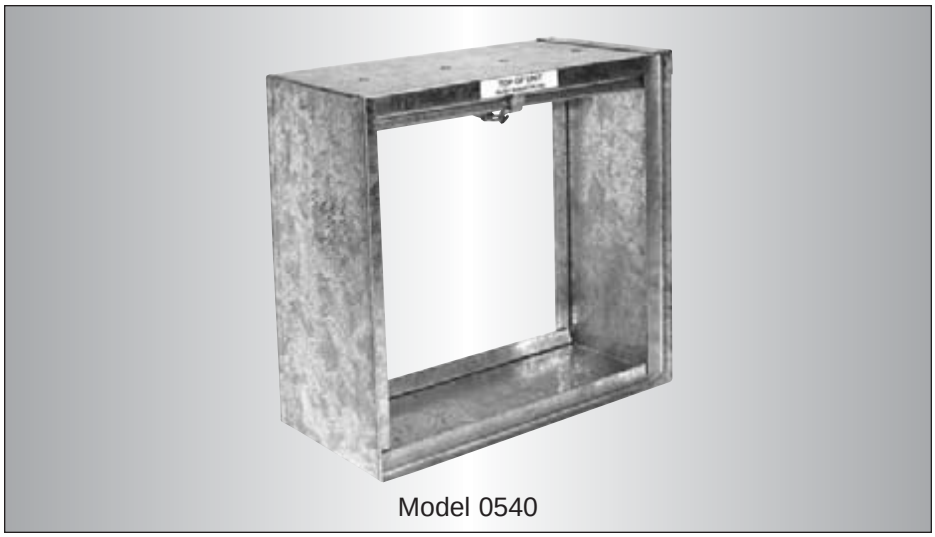
SUGGESTED SPECIFICATION:

Provide and install, as shown on plans and as described in specifications, 3 hour rated Thinline fire dampers as manufactured by Nailor Industries, meeting or exceeding the following criteria: Fire dampers shall be manufactured, tested and labeled in accordance with UL 555 Safety Standard for Fire Dampers - Sixth Edition, June 1999, and shall have a 3 hour fire resistance rating. Each fire damper shall bear a UL label verifying fire resistance rating in addition to intended mounting position. Fire dampers shall be suitably constructed for vertical or horizontal installation as required for each specific location.

Thinline style fire damper frame shall be a maximum of 2" (51) in width, roll-formed from G60 galvanized steel. Blades shall be Thinline type, roll-formed G60 galvanized steel. Each fire damper shall be complete with a **(specifier select one)** 165°F (74°C) **or** 212°F (100°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 locations where the fire damper cannot be accessed through grille or duct end opening, to allow for inspection, testing and fusible link replacement. Information submitted for approval shall include confirmation of UL qualifications, pressure drop data, and manufacturer's installation instructions. Each shipment of fire dampers shall include same installation instructions. 3 hour rated Thinline fire dampers shall be Nailor Industries Models 0570 (Type A), 0580 (Type B), 0590 (Type C).

- WIDE FRAME
- FOR USE IN STATIC SYSTEMS
- 3 HOUR RATING
- UL 555 CLASSIFIED
- VERTICAL MOUNT

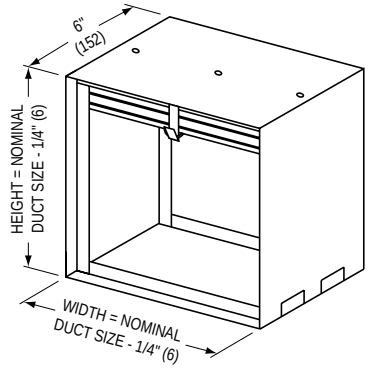
MODEL: 0540 TYPE A



Model 0540

The Nailor Model 0540 wide frame curtain fire damper is UL/ULC approved for use where building codes require the protection of HVAC ductwork penetrations in vertical fire separations (walls or partitions) that have a fire resistant rating of 4 hours or less. The 0540 is classified for use in static "fans off" systems where the HVAC system is automatically shut down in the event of a fire alarm.

The wide frame design reduces the number of blades required in the curtain stack, which increases the free area and reduces the pressure drop across the damper when compared to standard Type A curtain fire damper designs. The 0540 is ideal for use when maximum free area is desired in situations where space or design does not yield room for a Type B damper style. Featuring corrosion resistant steel frame and blades for lasting performance, the Nailor Model 0540 is available with factory installed sleeve for fast and simple installation.



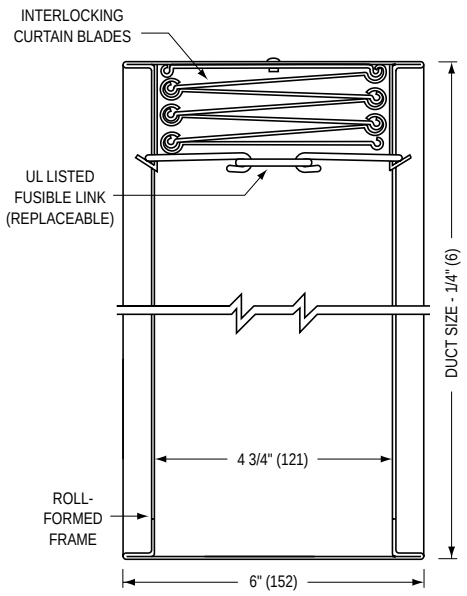
TYPE A: MODEL 0540

CONSTRUCTION DETAILS:

	0540 (Type A)
FRAME:	6" (152) wide, 22 ga. (0.85) roll formed G60 galvanized steel
BLADES:	Curtain type, interlocking blades, 22 ga (0.85) roll-formed G60 galvanized steel
FUSIBLE LINK: (UL Listed)	165°F (74°C) Std. 212°F (100°C) available
BLADE CLOSURE:	Gravity
MOUNTING:	Vertical Only
AVAILABLE SLEEVE:	Galvanized steel; Specify SL Option

For MIN./MAX. UL SIZES see chart on page D11.

See Sizing Chart on page D50 for blade pack depth.



MODEL 0540V – VERTICAL MOUNT

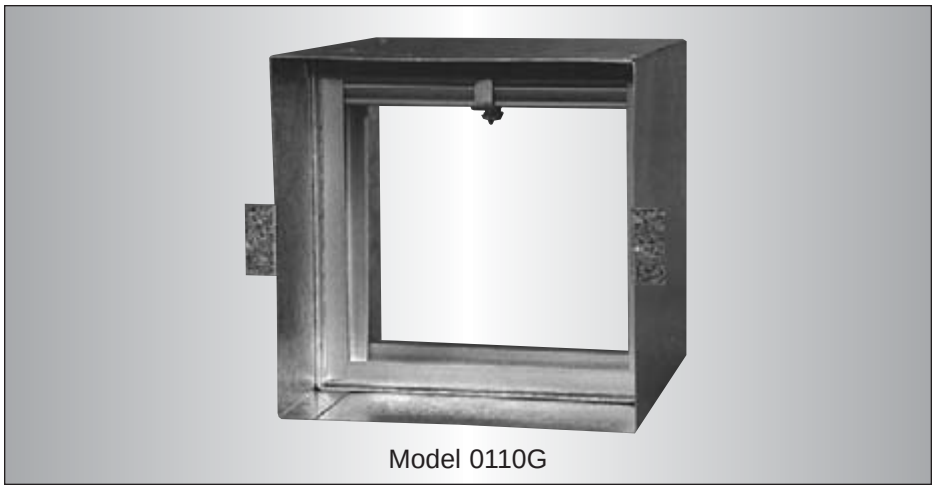
HOW TO SPECIFY

MODEL: 0540

Specification Text File

SUGGESTED SPECIFICATION:
Provide and install, as shown on plans and as described in specifications, 3 hour rated wide frame fire dampers as manufactured by Nailor Industries, meeting or exceeding the following criteria: Fire dampers shall be manufactured, tested and labeled in accordance with UL 555 Safety Standard for Fire Dampers - Sixth Edition, June 1999, and shall have a 3 hour fire resistance rating. Each fire damper shall bear a UL label verifying fire resistance rating in addition to intended mounting position. Fire dampers shall be suitably constructed for vertical or horizontal installation as required for each specific location. Wide frame style fire damper frame shall be 6" (152) in width, roll-formed from G60 galvanized steel. Blades shall be wide frame type to provide maximum free area, roll-formed from G60 galvanized steel. Each fire damper shall be complete with a **(specifier select one)** 165°F (74°C) **or** 212°F (100°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. Information submitted for approval shall include confirmation of UL qualifications and manufacturer's installation instructions. Each shipment of fire dampers shall include same installation instructions. 3 hour rated wide frame fire dampers shall be Nailor Industries Model 0540.

- INTEGRAL SLEEVE FOR USE WITH GRILLE
- FOR USE IN STATIC SYSTEMS
- 1 1/2 HOUR RATING
- UL 555 CLASSIFIED


Model 0110G

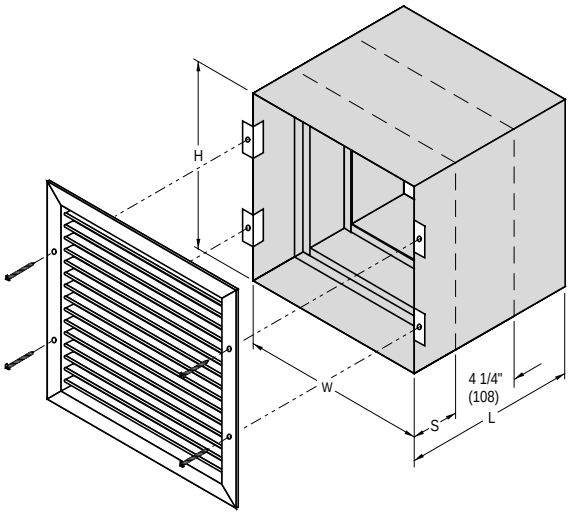
MODELS:

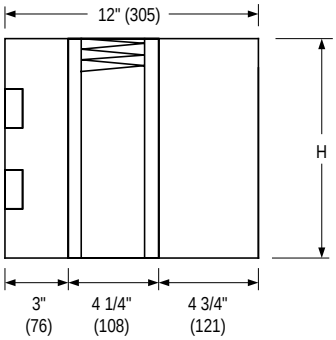
0110G	**TYPE A**
0120G	**TYPE B**
0130G	**TYPE CR**

The Nailor 0100G Series integral sleeve fire dampers are designed for use in conjunction with a steel grille when ductwork terminates at an opening in a fire rated wall/partition. The 0100G Series is 1 1/2 hour UL labeled for use in 2 hour fire separations or less and is classified for use in static "fans off" systems where the HVAC system shuts down in the event of a fire alarm. This unique product utilizes special grille mounting flanges on the sleeve that eliminate the requirement for unsightly retaining angles which commonly protrude from behind the grille. The steel grille installs over and completely conceals the mounting flanges for a clean, aesthetic finish. The fire damper is offset in the sleeve to accommodate a single or double defection supply air grille, single deflection supply air register or a return air grille or register. Countersunk screw holes in the grille frame will match to mounting flanges when Nailor grille is ordered in conjunction with the damper assembly. The 0100G Series features corrosion resistant steel frame, blades and sleeve for performance that lasts, and a choice of transition styles and accessories making installation fast and simple.

CONSTRUCTION DETAILS:

	0110G (Type A)	0120G (Type B)	0130G (Type CR)
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
BLADES:	Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel
STANDARD SLEEVE:	12" (305) x 22 ga. (0.85) galvanized steel with 3/4" (19) wide grille mounting flanges	12" (305) x 22 ga. (0.85) galvanized steel with 3/4" (19) wide grille mounting flanges; type B duct connection on one end	12" (305) x 22 ga. (0.85) galvanized steel with 3/4" (19) wide grille mounting flanges; type C duct connection on one end
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
BLADE CLOSURE:	Vertical mount; gravity Horizontal mount; stainless steel closure springs with galvanized steel locking ramps	Vertical mount; gravity Horizontal mount; stainless steel closure springs with galvanized steel locking ramps	Vertical mount; gravity Horizontal mount; stainless steel closure springs with galvanized steel locking ramps
MOUNTING:	Vertical or Horizontal	Vertical or Horizontal	Vertical or Horizontal
OPTIONAL GRILLE:	Steel grille with correctly located countersunk screw holes; Select model from Nailor Air Distribution Catalog	Steel grille with correctly located countersunk screw holes; Select model from Nailor Air Distribution Catalog	Steel grille with correctly located countersunk screw holes; Select model from Nailor Air Distribution Catalog



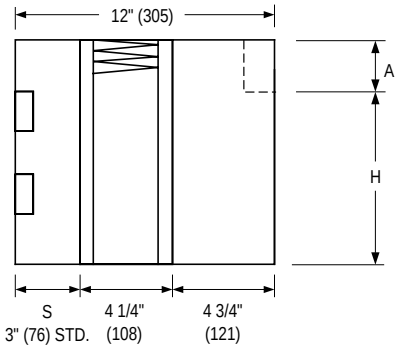


TYPE A: MODEL 0110G

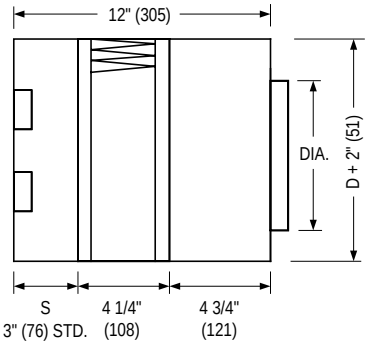
For MIN./MAX. UL SIZES see chart on page D10.

OPTIONAL DAMPER / SLEEVES:

DUCT HEIGHT (H)	'A' DIM.
6" thru 17" (152 - 432)	2" (51)
18" thru 21" (457 - 533)	3" (76)



TYPE B DUCT CONNECTION ON ONE END: MODEL 0120G



TYPE C ROUND DUCT CONNECTION ON ONE END: MODEL 0130G

HOW TO DETERMINE SLEEVE LENGTH / DAMPER POSITION:

To calculate sleeve length, determine wall thickness and add 3" (76) minimum for rear retaining angles and duct connection. Front of assembly fits flush with wall. Damper offset (dimension 'S') should accommodate grille selection depth, but fire damper position must remain within plane of wall.

FOR NON-STANDARD SLEEVE LENGTH, SPECIFY LENGTH.

FOR NON-STANDARD DAMPER POSITION IN SLEEVE, SPECIFY DIMENSION 'S'.

OTHER OPTIONS / ACCESSORIES:

	CODE	DESCRIPTION
QUICK-SET ANGLE	QS1	Single set of "Quick-Set" Retaining Angles for Rear Side
HEMMED SLEEVE	HM1	Sleeve End Hemmed for Slip and Drive Connection
MICROSWITCH	MS MSE	24V Microswitch 120/24V Microswitch with Enclosure

HOW TO SPECIFY

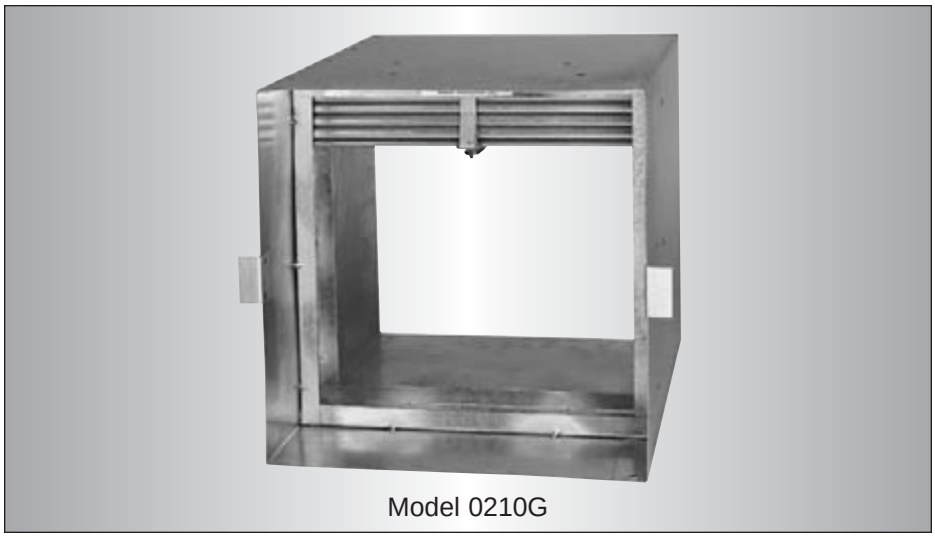
Specification Text File

SUGGESTED SPECIFICATION:

Provide and install, as shown on plans and as described in specifications, fire dampers for use with grilles, as manufactured by Nailor Industries, meeting or exceeding the following criteria: Fire dampers shall be manufactured, tested and labeled in accordance with UL 555 Safety Standard for Fire Dampers - Sixth Edition, June 1999, and shall have 1 1/2 hour fire resistance rating. Each fire damper shall bear a UL label verifying fire resistance rating in addition to intended mounting position.

Each fire damper shall be complete with a **(specifier select one)** 165°F (74°C) **or** 212°F (100°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 with one 'Quick-Set' retaining angle, and grille mounting flanges specially designed for use with a steel grille of minimum 26 ga. (.5) construction. Fire dampers shall be offset in the sleeve an appropriate amount to maintain positioning of fire damper within plane of wall. Data submitted for approval shall include confirmation of UL qualifications in addition to manufacturer's installation instructions. Fire dampers shall be installed in accordance with manufacturer's instructions, and same installation instructions shall be included with each fire damper shipment. Fire dampers for use with steel grilles shall be Nailor Industries Models 0110G (Type A), 0120G (Type B transition), 0130G (Type C transition).

- INTEGRAL SLEEVE FOR USE WITH GRILLE
- THINLINE FIRE DAMPER
- FOR USE IN STATIC SYSTEMS
- 1 1/2 HOUR RATING
- UL 555 CLASSIFIED



Model 0210G

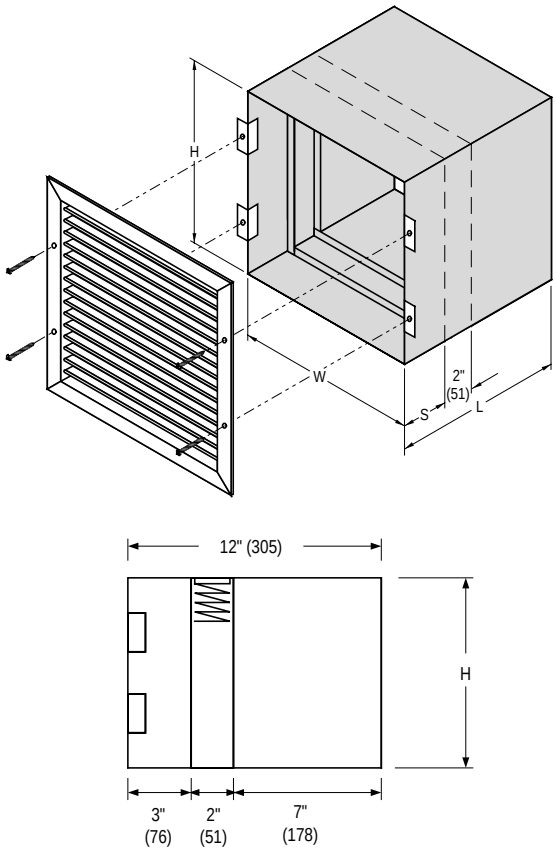
MODELS:

0210G TYPE A
0220G TYPE B
0230G TYPE CR

The Nailor 0200G Thinline Series integral sleeve fire dampers are designed for use in conjunction with a steel grille when ductwork terminates at an opening in a fire rated wall/partition. The 0200G Thinline Series is 1 1/2 hour UL labeled for use in 2 hour fire separations or less and is classified for use in static "fans off" systems where the the HVAC system shuts down in the event of a fire alarm. This unique product utilizes special grille mounting flanges on the sleeve that eliminate the requirement for unsightly retaining angles which commonly protrude from behind the grille. The steel grille installs over and completely conceals the mounting flanges for a clean, aesthetic finish. The 2" (51) deep thinline fire damper is offset in the sleeve to accommodate a single or double deflection grille or register. Countersunk screw holes in the grille frame will match to mounting flanges when Nailor grille is ordered in conjunction with the damper assembly. The 0200G Series features corrosion resistant steel frame, blades and sleeve for lasting performance, and a choice of transition styles and accessories making installation simple and fast.

CONSTRUCTION DETAILS:

	0210G (Type A)	0220G (Type B)	0230G (Type CR)
FRAME:	2" (51) wide, 22 ga. (0.85) roll-formed G60 galvanized steel	2" (51) wide, 22 ga. (0.85) roll-formed G60 galvanized steel	2" (51) wide, 22 ga. (0.85) roll-formed G60 galvanized steel; out of airstream
BLADES:	Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel	Out of airstream. Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel
STANDARD SLEEVE:	12" (305) x 22 ga. (0.85) galvanized steel with 3/4" (19) wide grille mounting flanges	12" (305) x 22 ga. (0.85) galvanized steel with 3/4" (19) wide grille mounting flanges; Type B duct connection on one end	12" (305) x 22 ga. (0.85) galvanized steel with 3/4" (19) wide grille mounting flanges; Type C duct connection on one end
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
BLADE CLOSURE:	Gravity	Gravity	Gravity
MOUNTING:	For Vertical Mounting	For Vertical Mounting	For Vertical Mounting
OPTIONAL GRILLE:	Steel grille with correctly located countersunk screw holes; Select model from Nailor Air Distribution Catalog	Steel grille with correctly located countersunk screw holes; Select model from Nailor Air Distribution Catalog	Steel grille with correctly located countersunk screw holes; Select model from Nailor Air Distribution Catalog

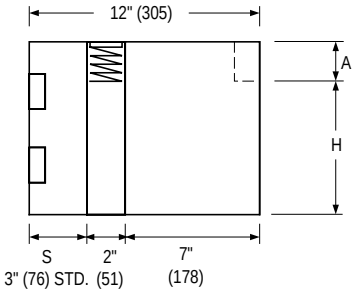


TYPE A: MODEL 0210G

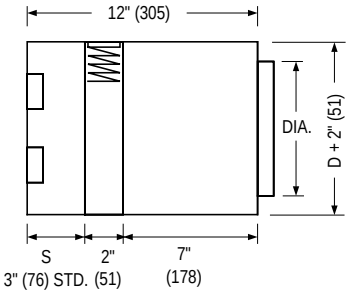
For MIN./MAX. UL SIZES see chart on page D10.

OPTIONAL DAMPER / SLEEVES:

DUCT HEIGHT (H)	'A' DIM.
6" thru 9" (152 - 229)	2" (51)
10" thru 15" (254 - 381)	3" (76)
16" thru 19" (406 - 483)	4" (102)



TYPE B DUCT CONNECTION ON ONE END: MODEL 0220G



TYPE C ROUND DUCT CONNECTION ON ONE END: MODEL 0230G

HOW TO DETERMINE SLEEVE LENGTH / DAMPER POSITION:

To calculate sleeve length, determine wall thickness and add 3" (76) minimum for rear retaining angles and duct connection. Front of assembly fits flush with wall. Damper offset (dimension 'S') should accommodate grille selection depth, but fire damper position must remain within plane of wall.

FOR NON-STANDARD SLEEVE LENGTH, SPECIFY LENGTH.

FOR NON-STANDARD DAMPER POSITION IN SLEEVE, SPECIFY DIMENSION 'S'.

OTHER OPTIONS / ACCESSORIES:

	CODE	DESCRIPTION
QUICK-SET ANGLE	QS1	Single set of "Quick-Set" Retaining Angles for Rear Side
HEMMED SLEEVE	HM1	Sleeve End Hemmed for Slip and Drive Connection
MICROSWITCH	MS	24V Microswitch
	MSE	120/24V Microswitch with Enclosure

HOW TO SPECIFY

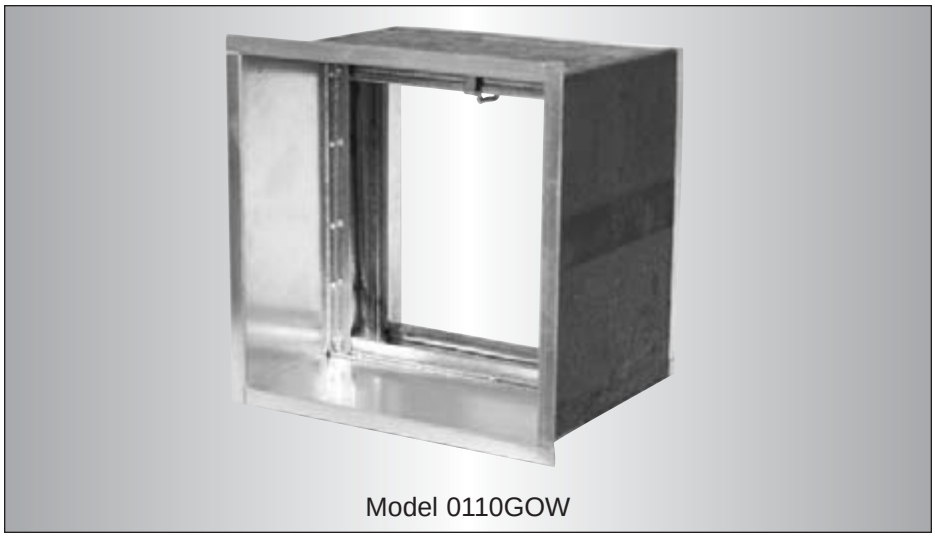
Specification Text File

SUGGESTED SPECIFICATION:

Provide and install, as shown on plans and as described in specifications, Thinline fire dampers for use with grilles, as manufactured by Nailor Industries, meeting or exceeding the following criteria: Fire dampers shall be manufactured, tested and labeled in accordance with UL 555 Safety Standard for Fire Dampers - Sixth Edition, June 1999, and shall have a 1 1/2 hour fire resistance rating. Each fire damper shall bear a UL label verifying fire resistance rating in addition to intended mounting position.

Thinline style fire damper frame shall be a maximum of 2" (51) in width, roll-formed from G60 galvanized steel. Blades shall be Thinline type, roll-formed G60 galvanized steel. Each fire damper shall be complete with a **(specifier select one)** 165°F (74°C) **or** 212°F (100°C) UL Listed fusible link. In addition, each Thinline fire damper shall be provided from the factory in an integral 22 ga (0.85) galvanized steel sleeve with one 'Quick-Set' retaining angle, and grille mounting flanges specially designed for use with a steel grille of minimum 26 ga. (.5) construction. Fire damper shall be offset in the sleeve an appropriate amount to maintain positioning of fire damper within plane of wall. Data submitted for approval shall include confirmation of UL qualifications in addition to manufacturer's installation instructions. Fire dampers shall be installed in accordance with manufacturer's instructions, and same installation instructions shall be included with each fire damper shipment. Thinline fire dampers for use with steel grilles shall be Nailor Industries Models 0210G (Type A), 0220G (Type B transition), 0230G (Type C transition).

- INTEGRAL "OUT OF WALL" SLEEVE FOR USE WITH GRILLE
- FOR USE IN STATIC SYSTEMS
- 1 1/2 HOUR RATING
- UL 555 CLASSIFIED



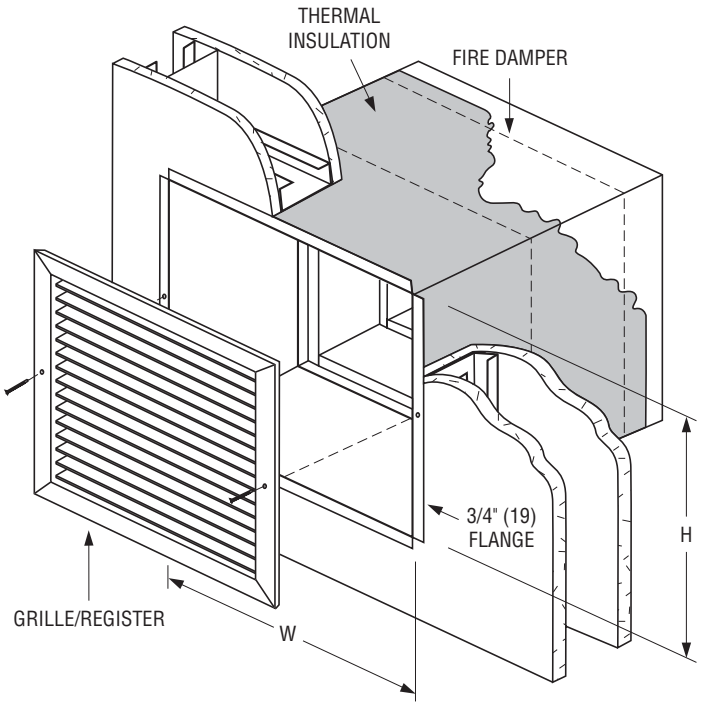
Model 0110GOW

MODEL: 0110GOW

The Model 0110GOW is an "out of wall or floor" integral sleeve curtain type fire damper, specifically designed for supply or return ducts that terminate at a grille or register. For use where local building codes require the protection of HVAC ductwork penetrations in walls, partitions or floors that have a fire resistance rating of up to two hours. The 0110GOW is classified for use only in static "fans off" systems where the HVAC system is automatically shut down in the event of a fire alarm.
The 0110GOW design provides sufficient damper off-set to accommodate most commercial grille/register designs while ensuring an approved installation in any fire partition or wall no matter how narrow. This model is particularly suited for use in common steel stud drywall partition designs, as narrow as 3 1/2" (89) where a traditional "within the plane of the wall" fire damper installation is not possible.

CONSTRUCTION DETAILS:

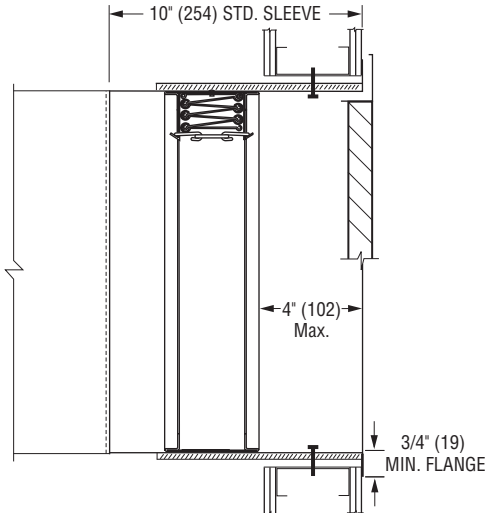
	0110GOW (Type A)
FRAME:	4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel
BLADES:	Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel
STANDARD SLEEVE:	10" (254) x 16 ga. (1.6) galvanized steel with 3/4" (19) wide grille mounting flanges; intumescent thermal insulation on all four sides
FUSIBLE LINK: (UL Listed)	165°F (74°C) Std. 212°F (100°C) available
BLADE CLOSURE:	Vertical mount; gravity Horizontal mount stainless steel closure springs with galvanized steel locking ramps
MOUNTING:	Vertical or Horizontal
OPTIONAL GRILLE:	Steel or aluminum grille or register; Select model from Nailor Air Distribution Catalog



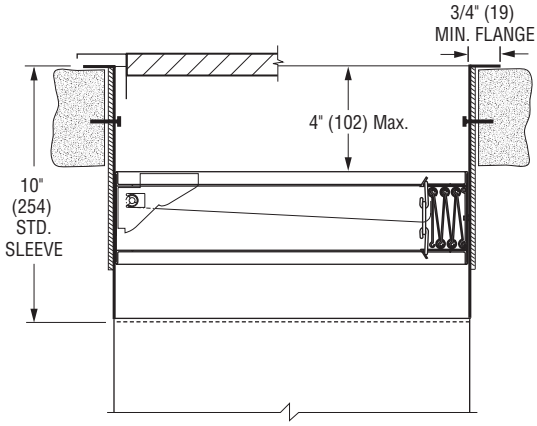
MODEL: 0110GOW

For MIN./MAX. UL SIZES see chart on page D10.

MODEL: 0110GOW



VERTICAL MOUNT



HORIZONTAL MOUNT

HOW TO SPECIFY

Specification Text File

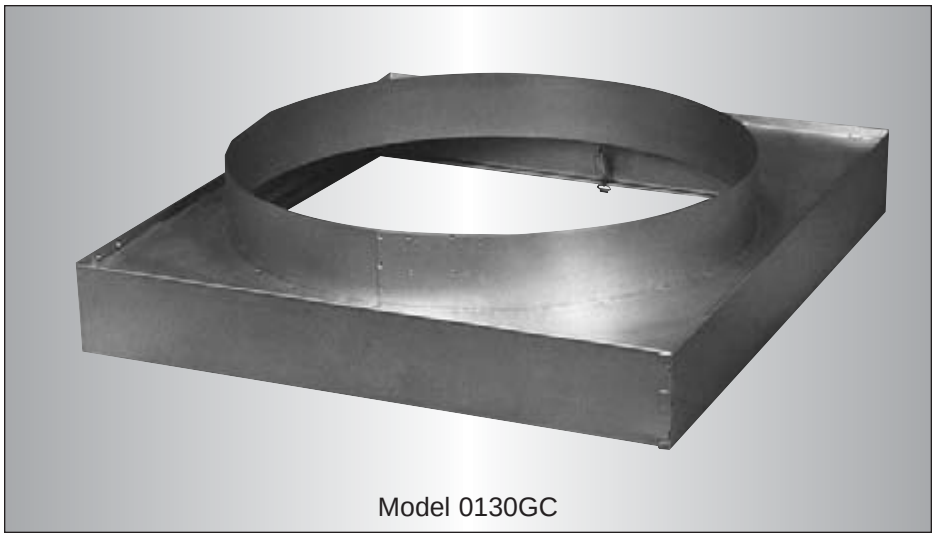
SUGGESTED SPECIFICATION:

Provide and install, as shown on plans and as described in specifications, “out of wall” fire dampers for use with grilles, as manufactured by Nailor Industries, meeting or exceeding the following criteria: Fire dampers shall be manufactured, tested and labeled in accordance with UL 555 Safety Standard for Fire Dampers - Sixth Edition, June 1999, and shall have 1 1/2 hour fire resistance rating. Each fire damper shall bear a UL label verifying fire resistance rating in addition to intended mounting position.

Each fire damper shall be complete with a **(specifier select one)** 165°F (74°C) **or** 212°F (100°C) UL Listed fusible link. In addition, each fire damper shall be provided from the factory in an integral 16 ga. (1.6) galvanized steel insulated sleeve with grille mounting flanges. Data submitted for approval shall include confirmation of UL qualifications in addition to manufacturer’s installation instructions. Fire dampers shall be installed in accordance with manufacturer’s instructions, and same installation instructions shall be included with each fire damper shipment. “Out of wall” fire dampers shall be Nailor Industries Model 0110GOW.

- GARBAGE CHUTE FIRE DAMPER
- 1 1/2 HOUR RATING
- 100% FREE AREA

MODEL: 0130GC

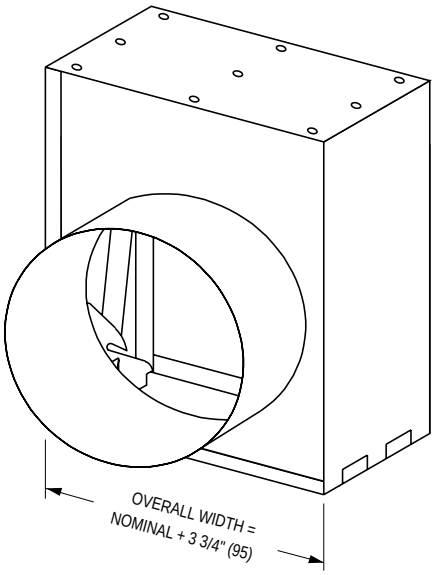


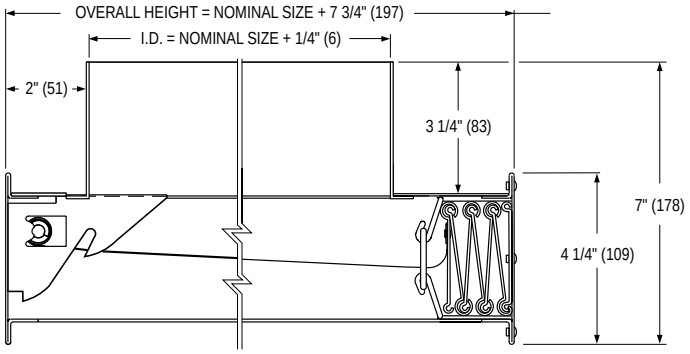
Model 0130GC

The Nailor Model 0130GC has been specially designed for garbage chute applications. The damper casing is oversized to ensure that the blade stack, fusible link and closure springs are unobstructed from falling waste. The round collar is slightly oversized for direct attachment to the outside of the garbage chute. The 100% free area 0130GC also features corrosion resistant steel construction and is available in three standard sizes, 20" dia. (508), 22" dia. (559) and 24" dia. (610), as well as custom sizes. Damper has a 1 1/2 hour fire rating.

CONSTRUCTION DETAILS:

	0130GC
FRAME:	4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel
BLADES:	Curtain type, inter-locking blades, 22 ga. (0.85) roll-formed G60 galvanized steel
MOUNTING COLLAR:	22 ga (.085) galvanized steel; round collar oversized for connection to outside of chute
FUSIBLE LINK: (UL Listed)	165°F (74°C) Std. 212°F (100°C) available
BLADE CLOSURE:	Stainless steel closure springs with galvanized steel locking clamps
MOUNTING:	Horizontal Mount
STANDARD SIZES:	20" (508) diameter 22" (559) diameter 24" (610) diameter Note: Other sizes available upon request





HOW TO SPECIFY

GARBAGE CHUTE FIRE DAMPER
MODEL 0130GC

Specification Text File

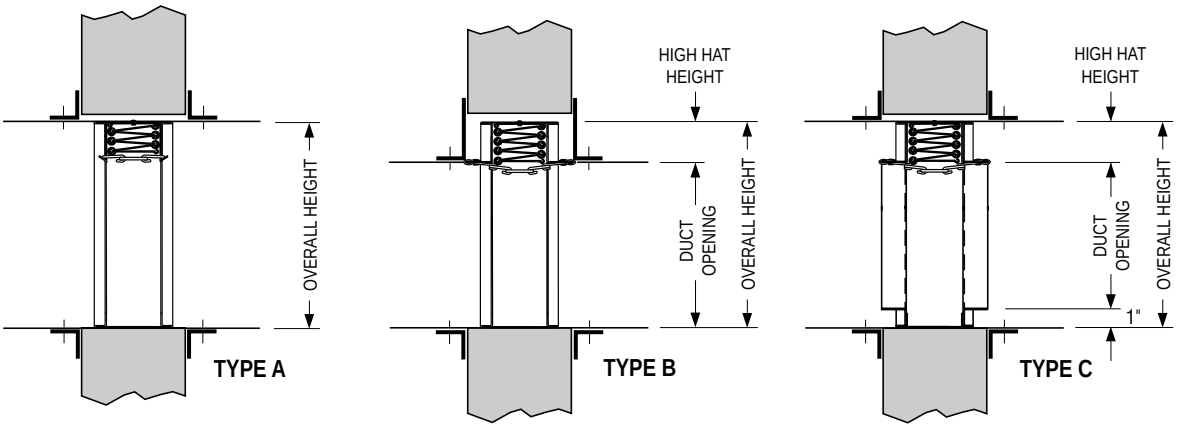
SUGGESTED SPECIFICATION:
Provide and install, as shown on plans and as described in specifications, garbage chute type fire dampers as manufactured by Nailor Industries, meeting or exceeding the following criteria: Fire dampers shall be manufactured, tested and labeled in accordance with UL 555 Safety Standard for Fire Dampers – Sixth Edition, June 1999, and shall have a 1 1/2 hour fire resistance rating. Each fire damper shall bear a UL label verifying fire resistance rating in addition to intended mounting position.
Each fire damper shall be complete with a **(specifier select one)** 165°F (74°C) **or** 212°F (100°C) UL Listed fusible link.
Garbage chute type fire dampers shall be equipped with closure springs and locking ramps suitable for horizontal mounting and shall be enclosed in a Type C housing, oversized to ensure all damper parts are not exposed to falling debris. Round collar of minimum 22 ga. (0.85) shall be provided on top side only, and shall be oversized for connection over chute.
Information submitted for approval shall include confirmation of UL qualifications and manufacturer's installation instructions. Each shipment of fire dampers shall include same installation instructions. Garbage chute type fire dampers shall be Nailor Industries Model 0130GC.

FIRE DAMPER SIZING CHART

FOR ALL STANDARD 4 1/4" (108) FRAME FIRE DAMPERS:

SERIES / MODELS: D0100, D0500, 0100, 0510, 0520, 0530.

Use the following chart to determine overall dimensions for Type A, B, and C curtain type fire dampers:

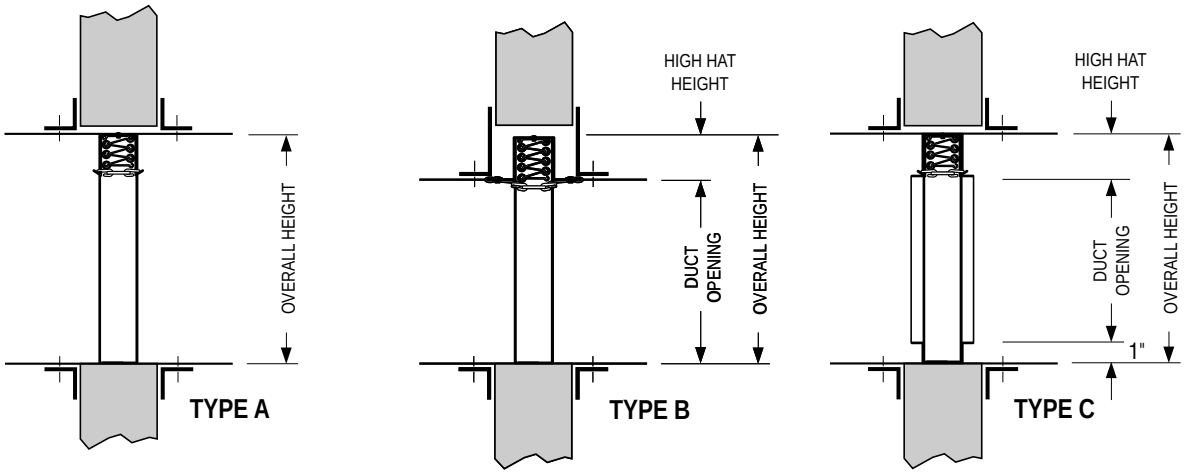


	DUCT OPENING HEIGHT		OVERALL HEIGHT	
	IMPERIAL	METRIC	IMPERIAL	METRIC
TYPE A	4" ➔ 60"	100 mm ➔ 1525 mm	DUCT HEIGHT – 1/4"	DUCT HEIGHT – 6 mm
	NOTE: TYPE A DAMPER OVERALL WIDTH = DUCT OPENING – 1/4" (6 mm)			
TYPE B	3" ➔ 17"	75 ➔ 425 mm	DUCT HEIGHT + 2 1/8"	DUCT HEIGHT + 54 mm
	18" ➔ 27"	450 ➔ 675 mm	" + 3 1/8"	" + 79 mm
	28" ➔ 36"	700 ➔ 925 mm	" + 4 1/8"	" + 105 mm
	37" ➔ 45"	950 ➔ 1150 mm	" + 5 1/8"	" + 130 mm
	46" ➔ 54"	1175 ➔ 1375 mm	" + 6 1/8"	" + 156 mm
	NOTE: TYPE B DAMPER OVERALL WIDTH = DUCT OPENING – 1/4" (6 mm)			
TYPE C	3" ➔ 5"	75 ➔ 125 mm	DUCT HEIGHT + 1 3/4"	DUCT HEIGHT + 44 mm
	6" ➔ 17"	150 ➔ 425 mm	DUCT HEIGHT + 2 3/4"	DUCT HEIGHT + 70 mm
	18" ➔ 27"	450 ➔ 675 mm	" + 3 3/4"	" + 95 mm
	28" ➔ 36"	700 ➔ 900 mm	" + 4 3/4"	" + 121 mm
	37" ➔ 45"	925 ➔ 1150 mm	" + 5 3/4"	" + 146 mm
	46" ➔ 53"	1175 ➔ 1350 mm	" + 6 3/4"	" + 172 mm
	NOTE: TYPE C DAMPER OVERALL WIDTH = DUCT OPENING + 1 3/4" (44 mm)			

Important Note: Type "B" and "C" overall height dimensions only apply to sizes that are single section high. For overall height dimensions for sizes that are multi-section in height, please contact factory. Refer to individual model submittal drawings for maximum single section heights.

FIRE DAMPER SIZING CHART
FOR ALL THINLINE 2" (51) FRAME FIRE DAMPERS:
SERIES / MODELS: 0200, 0570, 0580, 0590

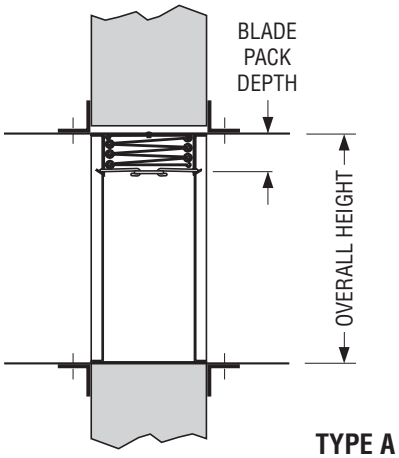
Use the following chart to determine overall dimensions for Type A, B, and C curtain type fire dampers:



	DUCT OPENING HEIGHT		OVERALL HEIGHT	
	IMPERIAL	METRIC	IMPERIAL	METRIC
TYPE A	4" ➔ 60"	100 mm ➔ 1525 mm	DUCT HEIGHT – 1/4"	DUCT HEIGHT – 6 mm
	NOTE: TYPE A DAMPER OVERALL WIDTH = DUCT OPENING – 1/4" (6 mm)			
TYPE B	3" ➔ 9"	75 ➔ 225 mm	DUCT HEIGHT + 2 1/8"	DUCT HEIGHT + 54 mm
	10" ➔ 15"	250 ➔ 375 mm	" + 3 1/8"	" + 79 mm
	16" ➔ 19"	400 ➔ 475 mm	" + 4 1/8"	" + 105 mm
	20" ➔ 25"	500 ➔ 625 mm	" + 5 1/8"	" + 130 mm
	26" ➔ 31"	650 ➔ 775 mm	" + 6 1/8"	" + 156 mm
	32" ➔ 34"	800 ➔ 850 mm	" + 7 1/8"	" + 181 mm
	35" ➔ 40"	875 ➔ 1025 mm	" + 8 1/8"	" + 206 mm
	41" ➔ 46"	1050 ➔ 1175 mm	" + 9 1/8"	" + 232 mm
	47" ➔ 50"	1200 ➔ 1275 mm	" + 10 1/8"	" + 257 mm
	NOTE: TYPE B DAMPER OVERALL WIDTH = DUCT OPENING – 1/4" (6 mm)			
TYPE C	3" ➔ 9"	75 ➔ 225 mm	DUCT HEIGHT + 2 3/4"	DUCT HEIGHT + 70 mm
	10" ➔ 15"	250 ➔ 375 mm	" + 3 3/4"	" + 95 mm
	16" ➔ 19"	400 ➔ 475 mm	" + 4 3/4"	" + 121 mm
	20" ➔ 25"	500 ➔ 625 mm	" + 5 3/4"	" + 146 mm
	26" ➔ 31"	650 ➔ 775 mm	" + 6 3/4"	" + 172 mm
	32" ➔ 34"	800 ➔ 850 mm	" + 7 3/4"	" + 197 mm
	35" ➔ 40"	875 ➔ 1025 mm	" + 8 3/4"	" + 222 mm
	41" ➔ 46"	1050 ➔ 1175 mm	" + 9 3/4"	" + 248 mm
	47" ➔ 49"	1200 ➔ 1250 mm	" + 10 3/4"	" + 273 mm
	NOTE: TYPE C DAMPER OVERALL WIDTH = DUCT OPENING + 1 3/4" (44 mm)			

FIRE DAMPER SIZING CHART
BLADE PACK DEPTH FOR 6" (152) WIDE FRAME FIRE DAMPERS
MODELS: 0310 AND 0540 (TYPE A)

DUCT OPENING HEIGHT		TYPE "A" OVERALL HEIGHT		BLADE PACK DEPTH	
(inches)	(mm)	(inches)	(mm)	(inches)	(mm)
4	102	3 3/4	95	3/4	19
5	127	4 3/4	121	7/8	22
6	152	5 3/4	146	7/8	22
7	178	6 3/4	171	7/8	22
8	203	7 3/4	197	1 1/4	32
9	229	8 3/4	222	1 1/4	32
10	254	9 3/4	248	1 1/4	32
11	279	10 3/4	273	1 3/8	35
12	305	11 3/4	298	1 3/8	35
13	330	12 3/4	324	1 3/8	35
14	356	13 3/4	349	1 5/8	41
15	381	14 3/4	375	1 5/8	41
16	406	15 3/4	400	1 5/8	41
17	432	16 3/4	425	1 3/4	44
18	457	17 3/4	451	1 3/4	44
19	483	18 3/4	476	1 3/4	44
20	508	19 3/4	502	2	51
21	534	20 3/4	527	2	51
22	559	21 3/4	552	2	51
23	584	22 3/4	578	2	51
24	610	23 3/4	603	2 1/4	57
25	635	24 3/4	629	2 1/4	57
26	661	25 3/4	654	2 1/2	64
27	656	26 3/4	679	2 1/2	64
28	711	27 3/4	705	2 1/2	64
29	737	28 3/4	730	2 1/2	64
30	762	29 3/4	756	2 5/8	67
31	787	30 3/4	781	2 5/8	67
32	813	31 3/4	806	2 5/8	67
33	838	32 3/4	832	2 5/8	67
34	864	33 3/4	857	2 7/8	73
35	889	34 3/4	883	2 7/8	73
36	914	35 3/4	908	2 7/8	73
37	940	36 3/4	933	3 1/8	79
38	965	37 3/4	959	3 1/8	79
39	991	38 3/4	984	3 1/8	79
40	1016	39 3/4	1010	3 3/8	86
41	1041	40 3/4	1035	3 3/8	86
42	1067	41 3/4	1060	3 3/8	86
43	1092	42 3/4	1086	3 3/8	86
44	1117	43 3/4	1111	3 1/2	89
45	1143	44 3/4	1137	3 1/2	89
46	1168	45 3/4	1162	3 1/2	89
47	1194	46 3/4	1187	3 3/4	95
48	1219	47 3/4	1213	3 3/4	95
49	1245	48 3/4	1238	3 3/4	95
50	1270	49 3/4	1264	3 3/4	95
51	1296	50 3/4	1289	3 7/8	98
52	1321	51 3/4	1314	3 7/8	98
53	1346	52 3/4	1340	3 7/8	98
54	1372	53 3/4	1365	4 1/8	105
55	1397	54 3/4	1391	4 1/8	105
56	1423	55 3/4	1416	4 1/8	105
57	1448	56 3/4	1441	4 1/8	105
58	1473	57 3/4	1467	4 1/4	108
59	1499	58 3/4	1492	4 1/4	108
60	1524	59 3/4	1518	4 1/4	108



TYPE A

DAMPER OVERALL WIDTH
= Duct Opening - 1/4" (6).

MODEL SERIES: (D)0100/0200/0300/(D)0500

OPTIONS/VARIABLES FOR CURTAIN FIRE DAMPERS

OPTIONS/VARIABLES:	CODE	DESCRIPTION
TRANSITION: (Type C Dampers Only)	CR CO CSR	Round Type C Transition Oval Type C Transition Square/Round Type C Transition
PRESSURE: (Type C Dampers Only)	LP HP	Unsealed; For Low Pressure Applications Sealed; For High Pressure Applications
COLLAR: (Type CSR Dampers Only)	WC NC	With Collars (Standard) No Collars (Optional)
CLOSURE DEVICE:	FL EML ETL	Fusible Link Easy Maintenance Link Electro-Thermal Link
CLOSURE TEMPERATURE:	165 212	165°F (74°C) Fusible Link 212°F (100°C) Fusible Link
SLEEVE:	OO SL	No Sleeve With Sleeve (Specify Sleeve Length)
SLEEVE GAUGE:	NA 10G 14G 16G 18G 20G 22G	Not Applicable (No Sleeve) 10 Gauge Sleeve 14 Gauge Sleeve 16 Gauge Sleeve 18 Gauge Sleeve 20 Gauge Sleeve 22 Gauge Sleeve
QUICK SET ANGLES:	QS1 QS2	Single Set of "Quick Set" Retaining Angles Pair of two "Quick Set" Retaining Angles
HEMMED SLEEVE:	HM2 HM1	Both Ends Hemmed for Slip and Drive Connection (Type A and B only) One End Hemmed for Slip and Drive Connection (Type G)
FLANGED SLEEVE:	TDF1 TDF2	Flanged on One End Flanged on Both Ends
PULL TAB: (Horizontal Mount Only)	PT	Pull Tab Release
MICROSWITCH:	MS MSE	24V Microswitch 120/24V Microswitch with Enclosure

HOW TO ORDER

HOW TO ORDER:

Specify model/mounting and size, then select from each variable as applicable. Choose options as desired. Standard construction (default) is shown in highlighted box.

MODEL/MOUNTING	SIZE W X H or DIA.	TYPE C ONLY: TRANSITION TYPE	TYPE C ONLY: PRESSURE	TYPE C ONLY: COLLAR (Type CSR only)	CLOSURE DEVICE	CLOSURE TEMPERATURE	SLEEVE	SLEEVE GAUGE	OPTIONS
ie: 0110V	ie: 24" X 12" or 18" dia. (600 x 300 or 450 dia.)	CR CO CSR	LP HP	WC NC	FL EML ETL	165 212	OO SL	20G 22G 18G 16G 14G 10G	QS1 QS2 HM1 HM2 TDF1 TDF2 PT MS MSE

Notes: 1. If SL (sleeve) is selected, specify sleeve length and gauge.
2. Std. sleeve is 12" (305) long x 20 ga. (1.0). Factory mounted/integral sleeves are manufactured of 22 ga. (0.85) minimum.

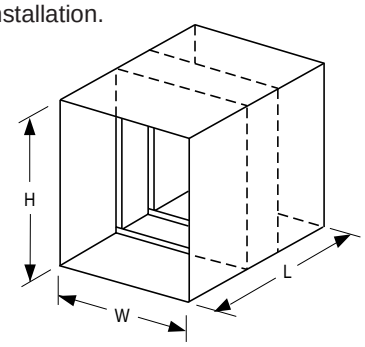
Options and Variables

Nailor curtain type fire dampers are tested by and listed with Underwriters Laboratories Inc. and are manufactured within UL procedural requirements. Approved variables including a variety of options are available to suit specific applications.

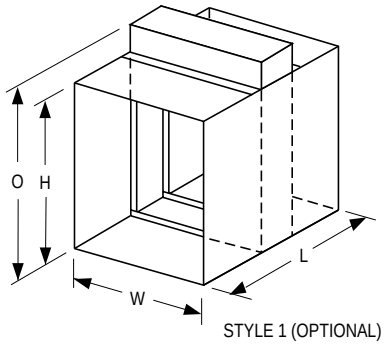
SLEEVE OPTIONS:

FOR NON-INTEGRAL SLEEVE MODELS

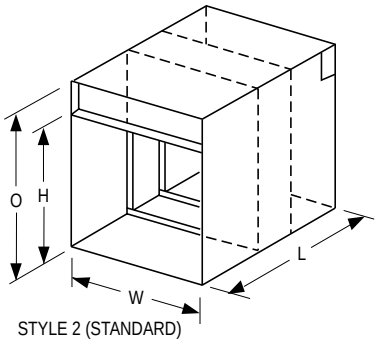
Fire dampers, in most cases, must be mounted in a steel sleeve and the damper/sleeve assembly is to be held in place in the wall, partition or floor by use of steel perimeter angles. This allows for the ductwork to 'break-away' from the sleeve should the ductwork fall during a fire, thus leaving the sleeve/fire damper intact in the opening to maintain the integrity of the fire separation. Nailor factory furnished sleeves ensure proper fit to UL standards, allow for direct shipment of dampers to jobsite eliminating the need for costly shop handling and provide for convenient, fast installation.



TYPE 'A'
BLADES AND FRAME IN AIRSTREAM

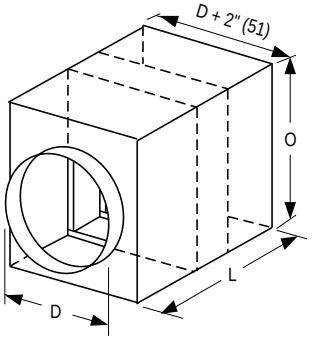


STYLE 1 (OPTIONAL)

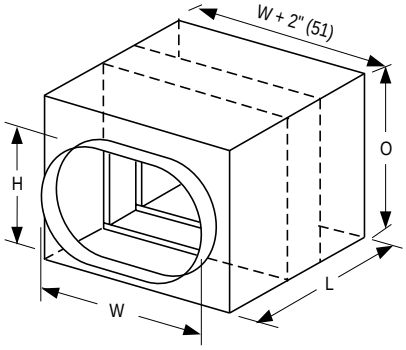


STYLE 2 (STANDARD)

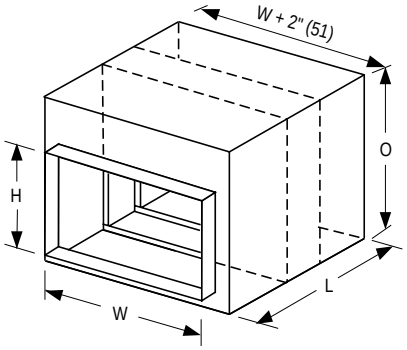
TYPE 'B' BLADES OUT OF AIRSTREAM



TYPE 'CR'
ROUND TRANSITION COLLARS/DUCT.
100% FREE AREA.



TYPE 'CO'
FLAT OVAL TRANSITION COLLARS/DUCT.
100% FREE AREA.



TYPE 'CSR'
RECTANGULAR TRANSITION COLLARS/DUCT.
100% FREE AREA.

Dimensional Data:

W = Nominal duct width
H = Nominal duct height
D = Nominal duct diameter
L = Sleeve length
O = Overall damper height

For 'O' dimension and relationship to duct height, refer to the particular damper model sizing chart.

Notes:

1. Type CR duct collars are furnished 1/8" (3) undersize for duct dimensions up to 36" dia. (914) and 1/4" (6) undersize on larger sizes. Type CO and CSR duct collars are furnished 1/8" (3) undersize for duct dimensions up to 36" x 24" (914 x 610) and 1/4" (6) undersize on larger sizes. Collars are 1 1/4" (32) minimum length.
2. For size limitations see MIN/MAX. UL SIZES charts beginning on page D9.
3. Dampers are centered in sleeve unless specified otherwise.
4. Multiple section damper assemblies are shipped knocked down for field assembly.

Options and Variables

Nailor curtain type fire dampers are tested by and listed with Underwriters Laboratories Inc. and are manufactured within UL procedural requirements. Approved variables including a variety of options are available to suit specific applications.

SLEEVE OPTIONS:

FOR NON-INTEGRAL SLEEVE MODELS

OPTION CODE **SL**
SLEEVE LENGTH

When selecting sleeve option SL please specify sleeve length.
Fire damper sleeves are required to extend out beyond the wall or floor opening an adequate amount in order to allow for fastening of perimeter angles to sleeve and connection to duct. UL 555 requires that the length of the sleeve extending beyond the wall or floor opening shall not exceed 6" (152) on each side for fire dampers intended for use without an actuator or factory installed access door in the sleeve.
However, the sleeve may extend up to a maximum of 16" (406) beyond the wall or floor on either side provided the extended side(s) is used to accommodate an actuator or a factory mounted access door (See UL 555 Sixth Edition June 1999, Section 6.4).

Sleeves are available in lengths up to 36" (914).
Standard sleeve is 12" (305) long x 20 ga. (1.0).

OPTION CODES
10G, 14G, 16G, 18G, 20G, 22G
SLEEVE GAUGE

When selecting sleeve option SL please specify sleeve gauge if other than standard.
Nailor factory-fitted sleeves are constructed from quality galvanized steel and are available in 10 ga. through 22 ga. (3.5 through 0.85) as required for application. Standard sleeve is 12" (305) long x 20 ga. (1.0). Sleeves over 84" (2134) in width are minimum 18 ga. (1.3). Sleeve gauge must conform to SMACNA Duct Construction Standards and shall not be less than the gauge of the duct to which it is attached, for sleeves exposed to the airstream.

OPTION CODES **HM1, HM2**
HEMMED SLEEVE END(S)

Sleeve with Option Code HM2 shown.

In order to more easily facilitate connection to square or rectangular ducts, Nailor offers hemmed sleeve ends suitable for use as a 'breakaway' connection on sleeves of up to a maximum 20" (508) in height, in accordance with UL requirements. This allows "S" slips and flat drive slips to be used. Option Code **HM1** will provide only one end hemmed, suitable for use on sleeves that terminate flush with a wall to facilitate grille mounting for example. Option Code **HM2** will provide both ends hemmed for connection of ductwork to both ends of sleeve.

Options and Variables

Nailor curtain type fire dampers are tested by and listed with Underwriters Laboratories Inc. and are manufactured within UL procedural requirements. Approved variables including a variety of options are available to suit specific applications.

RETAINING ANGLES:

OPTION CODES **QS1, QS2**
'QUICK-SET' RETAINING ANGLES

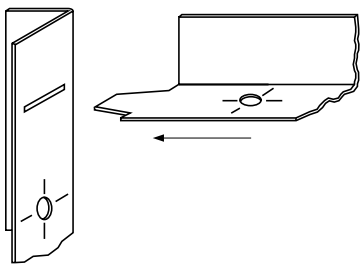
FOR USE WITH ALL SLEEVED FIRE DAMPERS

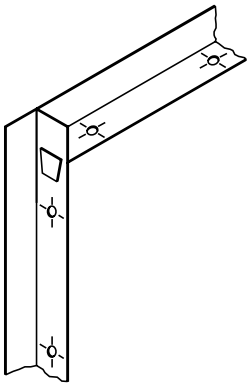
- Maximum size: 90" x 48" (2286 x 1219) or 48" x 90" (1219 x 2286).

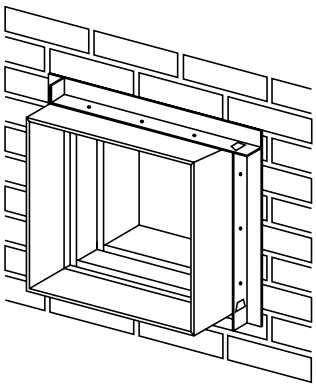
BENEFITS:

- Factory fabricated by the manufacturer to suit the individual fire damper.
- Dampers can ship directly to the job site complete with all necessary installation sheet metal hardware (saves on double handling at contractor's shop).
- Reduced cost when compared to conventional retaining angles.
- Only two sets of angles to handle per damper (rather than eight).
- Angles ship with individual damper - no sorting or matching.
- Pre-drilled holes on 8" (203) centers to ensure correct angle/sleeve attachment.
- Help ensure a correct installation as per U.L. approved installation instructions.

The majority of installing contractors view fire damper installation as a costly time consuming and troublesome procedure. Eight conventional angles must be custom fabricated for each damper either in a sheet metal shop or at the job site and sized to suit each individual damper. Invariably, they are mislaid or lost and must be matched to each factory supplied damper. The Nailor "Quick-Set" solution solves the majority of problems. They are pre-formed to fit each damper and shipped with the individual damper units for ultimate convenience.
Option Code **QS1** provides a single set of angles for applications requiring angles on one side of the damper only.
Option Code **QS2** provides the complete kit of two sets of angles suitable for most applications that require angles on both sides of the damper.
"Quick-Set" angles are supplied with correctly spaced pre-drilled screw-holes to ensure a quick, easy and accurate installation for all Nailor fire dampers - no measuring required.
"Quick-Set" retaining angles when specified and supplied with Nailor integral sleeve fire dampers provide the "complete" installation package. Simple, fast, convenient.







Options and Variables

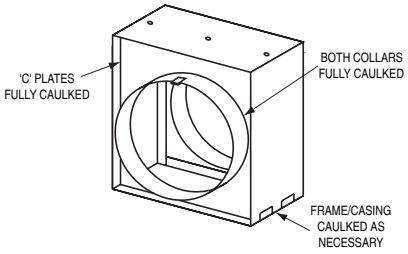
Nailor curtain type fire dampers are tested by and listed with Underwriters Laboratories Inc. and are manufactured within UL procedural requirements. Approved variables including a variety of options are available to suit specific applications.

SEALING OPTIONS FOR TYPE C DAMPERS:

OPTION CODE **LP**
UNSEALED: FOR LOW PRESSURE

Standard construction on Type C fire dampers. Transition casing and collars are unsealed. Suitable for use in most low pressure applications involving static pressures up to 2" w.g. (5 kPa).

OPTION CODE **HP**
SEALED: FOR MEDIUM/HIGH PRESSURE



Sealed for use in medium and high pressure applications up to 6" w.g. (1.5 kPa), Type C fire dampers with HP option are externally caulked to minimize leakage through casing and collars.

CLOSURE DEVICES:

OPTION CODE **FL**
FUSIBLE LINK

All Nailor curtain type fire dampers are equipped as standard with a UL Listed fusible link that will melt, or 'fuse', when it is subjected to it's rated melting temperature, allowing the damper to close. 165°F (74°C) fusible link is provided as standard. 212°F (100°C) is also available (See Closure Temperature Options).

Options and Variables

Nailor curtain type fire dampers are tested by and listed with Underwriters Laboratories Inc. and are manufactured within UL procedural requirements. Approved variables including a variety of options are available to suit specific applications.

CLOSURE DEVICES:

OPTION CODE **EML**
EASY MAINTENANCE LINK

Nailor's Easy Maintenance Link provides a simple solution for the awkward task of manually testing curtain type fire dampers.
NFPA Standard 90A, Appendix B, suggests examining and testing each fire damper every two years to ensure proper operation, and the National Fire Code of Canada states that fire dampers shall be inspected at intervals not greater than 12 months. Nailor's EML allows you to release, test and reload a standard 4 1/4" (108) deep frame fire damper quickly and easily with one hand, even through the smallest access door. This saves time and money, and even encourages fire damper maintenance, ensuring the protection of building occupants. 165°F (74°C) temperature rating is standard. 212°F (100°C) is also available. The EML is accessible from either side of the damper, providing safe and reliable convenience.

SUGGESTED SPECIFICATION:

(Add to standard frame fire damper specifications):

Curtain type fire dampers shall each be equipped with factory installed Easy Maintenance Link (EML), as manufactured by Nailor Industries. EML shall be accessible from either side of damper and shall allow for releasing, testing and relatching of blades with one hand.

Options and Variables

Nailor curtain type fire dampers are tested by and listed with Underwriters Laboratories Inc. and are manufactured within UL procedural requirements. Approved variables including a variety of options are available to suit specific applications.

CLOSURE DEVICES:

OPTION CODE **ETL**
ELECTRO-THERMAL LINK

Nailor's Electro-Thermal Link (ETL®) is a dual responsive fusible link that melts when either the link is subjected to local heat (165°F (74°C)) exactly the same as an ordinary fusible link, or when an electrical impulse from an external source such as a smoke detector is sent to it. The ETL® can be substituted for ordinary fusible links in existing or new installations of fire dampers where it is desirable to improve life safety by making the fire damper respond to smoke in the early form of invisible products of combustion through ionization smoke detectors for example.

The ETL®'s electro-response is the unique feature. It in itself is not smoke responsive, but it's power requirement is so low that it can be released by an electrical impulse from any smoke detector's power source. It is compatible with every smoke detector on the market in the United States today. The operating range is 6 to 30 volts AC or DC, less than 0.2 amperes of trip current required (for 50 millisecond duration). The electrical response is a trigger for the chemical heating of the center element which is a self-contained exo-thermic reactor, yielding no noise, smoke or gas… just quick heat to open the link in about seven seconds. The ETL®'s thermal response is the same as that of ordinary fusible links that have a 165°F (74°C) and 40 lbs. rating.

With it's dual responsiveness the ETL® can be substituted for two other devices at a savings in initial cost as well as operating cost and maintenance. It is built to zero defect standards and to last at least fifty years and then still react properly, only on fire or smoke emergency. It is totally independent of power failures since it draws power from the detector standby source if needed. The ETL® is listed by UL as a Fusible Link, however, with the ongoing development of dynamic smoke control systems and building code changes, application and use should be governed by acceptance of the local authority having jurisdiction.

SUGGESTED SPECIFICATION:

(Add to standard frame fire damper specifications)

Curtain type fire dampers, where indicated on plans and/or schedules, shall each be equipped with factory installed Electro-Thermal Links (ETL®), as supplied by Nailor Industries. Operating range shall be 6 to 30 volts AC or DC, less than 0.2 amperes of trip current required (for 50 millisecond duration). Link shall open within seven seconds and shall have a temperature rating of 165°F (74°C) and a 40 lbs. strength rating.

Options and Variables

Nailor curtain type fire dampers are tested by and listed with Underwriters Laboratories Inc. and are manufactured within UL procedural requirements. Approved variables including a variety of options are available to suit specific applications.

CLOSURE TEMPERATURES:

OPTION CODES **165 & 212**
165 or 212°F FUSIBLE LINKS

Fusible links for curtain type fire dampers are available with a choice of several melting temperature ratings. Nailor fire dampers are provided as standard with 165°F (74°C) fusible link. Available 212°F (100°C) link can be installed on damper at time of manufacturing, or can be ordered separately as a replacement part for field installation as part of a regular maintenance program or after a fire emergency (providing damper is still functional).
The National Fire Protection Association Standard 90A states that "fusible links shall have a temperature rating approximately 50°F (28°C) above the maximum temperature that normally is encountered when the system is in operation or shut down, but not less than 160°F (71°C)." Adhering to this guideline helps prevent 'nuisance trips' resulting in unnecessary replacement costs and labor time.

UL 555 Update

As of July 01/2002, UL 555 Safety Standard Sixth Edition (June 1999) requires that fire dampers for **static systems** have a heat responsive device of minimum 160°F (71°C), maximum 212°F (100°C) rating. Fire dampers for **dynamic systems** must utilize 160°F (71°C) minimum, 350°F (177°C) maximum rated devices. Note that local building codes may also stipulate a maximum closure temperature rating.

OPTIONAL PULL-TAB RELEASE

OPTION CODE **PT**
PULL-TAB RELEASE

To release locked blades simply tug Pull-Tab downward!

Nailor's Pull-Tab release permits easy resetting of horizontal fire dampers from either side of damper.
Horizontal fire dampers are required to be installed with the locking ramps on the top side. When testing/inspecting, access for unlocking the closed blades is required to be above the damper so that the blade pack can be "pushed down" and released off of the locking ramps for reset. This is not always possible or convenient. Nailor's PT option provides the solution. A 1 1/4" (32) dia. nickel plated steel pull ring is fastened to the locking blade on the downward facing side allowing for unlocking and resetting of the blades from below the fire damper, as well as from above. The PT option is available on all Type A and Type B horizontal mount curtain fire dampers.

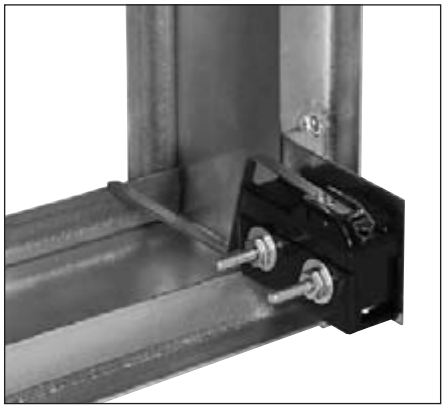
Options and Variables

Nailor curtain type fire dampers are tested by and listed with Underwriters Laboratories Inc. and are manufactured within UL procedural requirements. Approved variables including a variety of options are available to suit specific applications.

OPTIONAL MICROSWITCHES:

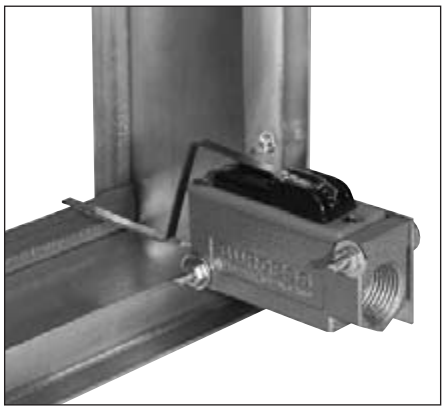
FOR STATUS INDICATION OR FAN SHUT-OFF

OPTION CODE **MS**
24V MICROSWITCH



Option Code MS provides any Nailor fire damper with a factory mounted micro switch suitable for use in low voltage (24V) applications. Activated when the damper blades are closed, the switch can be used for status indication of damper when wired into a control panel or can be utilized to shut a fan off upon closure of damper. UL and CSA approved single pole, double throw switch is rated up to 15 amps. and can be wired up as normally closed or normally open, depending upon application.

OPTION CODE **MSE**
120/24V MICROSWITCH WITH ENCLOSURE



Option Code MSE, microswitch with enclosure, provides a factory mounted micro switch similar to Option MS, except the MSE with its safety enclosure is suitable for use in line voltage (120V) applications. Similarly, the MSE can be used for status indication or fan shut down and also can be wired for normally closed or normally open applications. Enclosure is tapped with 1/2 inch NPS threads for conduit connection and is also provided with an internal earthing (ground) screw.

Options and Variables

Nailor curtain type fire dampers are tested by and listed with Underwriters Laboratories Inc. and are manufactured within UL procedural requirements. Approved variables including a variety of options are available to suit specific applications.

FLANGED SLEEVE

OPTION CODES **TDF1, TDF2**
TDF FLANGE

TDF (by Engle) and **TDC** (by Lockformer) proprietary flange systems are approved as breakaway connections for connecting a factory sleeved (22 or 20 gauge) Type A or B curtain type fire damper to ductwork. They may be used in place of the approved slip joints shown in standard installation instructions.

For Option **TDF1** the sleeve is factory flanged on one end only.
For Option **TDF2** the sleeve is factory flanged on both ends.
Note that the maximum wall/floor opening size permitted by UL, relative to the damper size, may not physically allow the flange to fit through the opening. Consultation and co-ordination with the wall/floor contractor is recommended. **TDF1**, flange on one end only, will permit the non-flanged end of the sleeve to fit through the opening.

Maximum TDF1/TDF2 Sleeve Size Allowed:
For Curtain Type Fire Damper: 60" wide x 60" high (1524 x 1524).
For Multi-Blade Type Fire Damper: 36" wide x 48" high (914 x 1219).