



DYNAMIC CURTAIN TYPE FIRE DAMPER
3 HR. LABEL • VERTICAL OR HORIZONTAL
FOR USE IN DYNAMIC OR STATIC SYSTEMS
MODEL: D0510 (TYPE A)



QUALIFICATIONS:

- **UL 555 & CAN/ULC-S112 CLASSIFIED DYNAMIC FIRE DAMPER.** 3 hr. label (File # R9492).
- **Meets all the requirements of UL and NFPA 80, 90A and 101 for fire dampers in dynamic HVAC systems, as well as IBC and NBC (Canada) Building Code requirements.**
- **City of New York Board of Standards and Appeals. Cal. No. 460-88-SA.**
- **California State Fire Marshal: Fire Damper Listing No. 3225-0935:0113.**
- **Maximum velocity: 4000 fpm @ 4" w.g. (20 m/s @ 1 kPa).**

Model D0510 dynamic 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 resistance rating of up to 4 hours. The D0510 is 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.

STANDARD CONSTRUCTION:

- Frame:** 4 1/4" (108) 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:** 165°F (74°C) standard. UL Listed. 212°F (100°C) available.
- Blade Closure:** Stainless steel closure springs and galvanized steel locking ramps.

Sizes (Duct W x H):

Velocity/ Pressure Rating	Single Section				Multiple Section	
	Minimum		Maximum		Maximum	
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal
24	6" x 6" (152 x 152)	6" x 6" (152 x 152)	36" x 36" (914 x 914)	24" x 24" (610 x 610)	① 72" x 24" or 36" x 48" (1829 x 610 or 914 x 1219)	—
34, 44	6" x 6" (152 x 152)	—	24" x 24" (610 x 610)	—	—	—

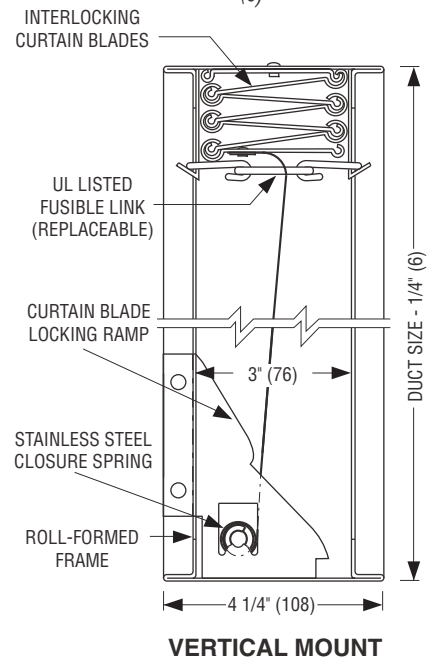
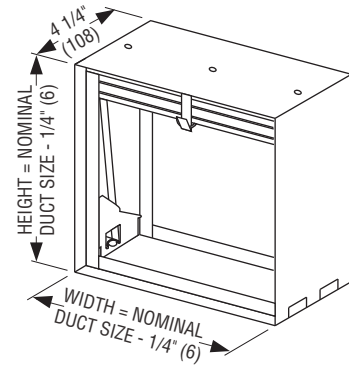
① Individual sections of multiple section assembly not to exceed 24" (610) in width, up to 48" (1219) wide. Assemblies larger than 48" (1219) in width will be made up of individual sections not to exceed 18" (457) wide.

OPTIONS:

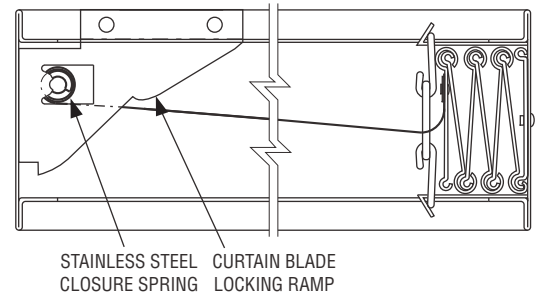
- Non-standard temperature fusible link. Specify _____.
- Factory Sleeve. Available in 10 (3.5) through 22 ga. (0.85) galvanized steel and in lengths required for application. Specify: _____ length. _____ ga.
- PT Pull Tab Release.** Permits simple reset of horizontal damper when access door is located below damper. (See dwg. ACC-PTR for details).

DYNAMIC VELOCITY/PRESSURE RATING:

- 24** 2000 fpm @ 4" w.g. (Standard)
- 34** 3000 fpm @ 4" w.g. } (Optional)
- 44** 4000 fpm @ 4" w.g. }



VERTICAL MOUNT



HORIZONTAL MOUNT

NOTES:

1. See sizing chart for relationship of duct size and damper size. Refer to drawings SC1 and SC2.

For installation instructions, see IOM-FDINST.
 Dimensions are in inches (mm).

SCHEDULE TYPE:				
PROJECT:				
ENGINEER:	DATE	B SERIES	SUPERSEDES	DRAWING NO.
CONTRACTOR:	3 - 28 - 18	FD	4 - 28 - 14	D0500-1



DYNAMIC CURTAIN TYPE FIRE DAMPER
3 HR. LABEL • VERTICAL OR HORIZONTAL
FOR USE IN DYNAMIC OR STATIC SYSTEMS
MODEL: D0520 (TYPE B)



QUALIFICATIONS:

- **UL 555 & CAN/ULC-S112 CLASSIFIED DYNAMIC FIRE DAMPER.** 3 hr. label (File # R9492).
- **Meets all the requirements of UL and NFPA 80, 90A and 101 for fire dampers in dynamic HVAC systems, as well as IBC and NBC (Canada) Building Code requirements.**
- **City of New York Board of Standards and Appeals. Cal. No. 460-88-SA.**
- **California State Fire Marshal: Fire Damper Listing No. 3225-0935:0113.**
- **Maximum velocity: 4000 fpm @ 4" w.g. (20 m/s @ 1 kPa).**

Model D0520 dynamic 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 resistance rating of up to 4 hours. The D0520 is 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. Type B fire dampers place the curtain blade pack out of the airstream for higher free area and reduced pressure drop.

STANDARD CONSTRUCTION:

- Frame:** 4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel.
- Blades:** Curtain type interlocking blades, 22 ga. (0.85) roll-formed G60 galvanized steel.
- Enclosure:** 22 ga. (0.85) galvanized steel.
- Fusible Link:** 165°F (74°C) standard. UL Listed. 212°F (100°C) available.
- Blade Closure:** Stainless steel closure springs and galvanized steel locking ramps.

Sizes (Duct W x H):

Velocity/ Pressure Rating	Single Section				Multiple Section	
	Minimum		Maximum		Maximum	
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal
24	6" x 4" (152 x 102)	6" x 4" (152 x 102)	36" x 32" (914 x 813)	24" x 21" (610 x 533)	① 72" x 21" or 36" x 45" (1829 x 533 or 914 x 1143)	—
34, 44	6" x 4" (152 x 102)	—	24" x 21" (610 x 533)	—	—	—

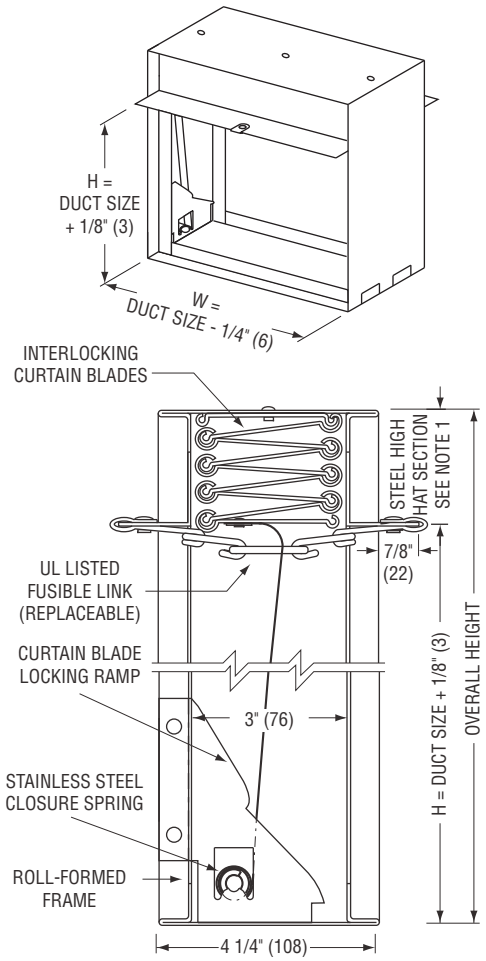
① Individual sections of multiple section assembly not to exceed 24" (610) in width, up to 48" (1219) wide. Assemblies larger than 48" (1219) in width will be made up of individual sections not to exceed 18" (457) wide.

OPTIONS:

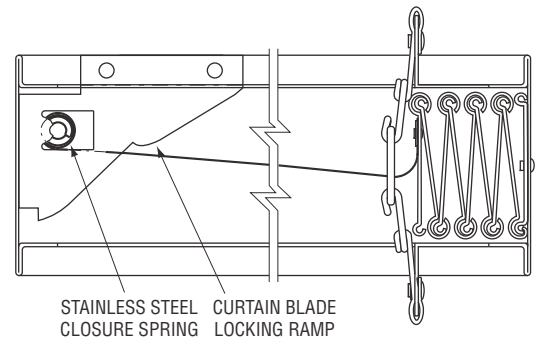
- Non-standard temperature fusible link. Specify _____.
- Factory Sleeve. Available in 10 (3.5) through 22 ga. (0.85) galvanized steel and in lengths required for application. Specify: _____ length. _____ ga.
- PT Pull Tab Release. Permits simple reset of horizontal damper when access door is located below damper. (See dwg. ACC-PTR for details).

DYNAMIC VELOCITY/PRESSURE RATING:

- 24 2000 fpm @ 4" w.g. (Standard)
- 34 3000 fpm @ 4" w.g. } (Optional)
- 44 4000 fpm @ 4" w.g. }



VERTICAL MOUNT



HORIZONTAL MOUNT

NOTES:

1. See sizing chart for relationship of duct size and damper size. Refer to drawings SC1 and SC2.

For installation instructions, see IOM-FDINST.
 Dimensions are in inches (mm).

SCHEDULE TYPE:	<table border="1"> <tr> <th>DATE</th> <th>B SERIES</th> <th>SUPERSEDES</th> <th>DRAWING NO.</th> </tr> <tr> <td>3 - 28 - 18</td> <td>FD</td> <td>4 - 28 - 14</td> <td>D0500-2</td> </tr> </table>	DATE	B SERIES	SUPERSEDES	DRAWING NO.	3 - 28 - 18	FD	4 - 28 - 14	D0500-2
DATE		B SERIES	SUPERSEDES	DRAWING NO.					
3 - 28 - 18		FD	4 - 28 - 14	D0500-2					
PROJECT:									
ENGINEER:									
CONTRACTOR:									



DYNAMIC CURTAIN TYPE FIRE DAMPER
3 HR. LABEL • VERTICAL OR HORIZONTAL
FOR USE IN DYNAMIC OR STATIC SYSTEMS
MODEL: D0530 (TYPES CR & CO)



QUALIFICATIONS:

- **UL 555 & CAN/ULC-S112 CLASSIFIED DYNAMIC FIRE DAMPER.** 3 hr. label (File # R9492).
- **Meets all the requirements of UL and NFPA 80, 90A and 101 for fire dampers in dynamic HVAC systems, as well as IBC and NBC (Canada) Building Code requirements.**
- **City of New York Board of Standards and Appeals. Cal. No. 460-88-SA.**
- **California State Fire Marshal: Fire Damper Listing No. 3225-0935:0113.**
- **Maximum velocity: 4000 fpm @ 4" w.g. (20 m/s @ 1 kPa).**

Model D0530 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 resistance rating of up to 4 hours. The D0530 is 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. Type CR round and CO oval fire dampers use transition collars to place the curtain blade pack and damper frame out of the airstream, providing 100% free area.

STANDARD CONSTRUCTION:

- Frame:** 4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galv. steel.
Blades: Curtain type interlocking blades, 22 ga. (0.85) roll-formed G60 galvanized steel.
Enclosure: 22 ga. (0.85) galvanized steel.
Fusible Link: 165°F (74°C) standard. UL Listed. 212°F (100°C) available.
Blade Closure: Stainless steel closure springs and galv. steel locking ramps.

Sizes (Duct W x H):

Model Type	Velocity/Pressure Rating	Single Section				Multiple Section	
		Minimum		Maximum		Maximum	
		Vertical	Horizontal	Vertical	Horizontal	Vertical	Horiz.
Round CR	24	4" (102) dia.	4" (102) dia.	31" (787) dia.	20" (508) dia.	① 34" (864) dia.	—
	34, 44	4" (102) dia.	—	20" (508) dia.	—	—	—
Oval CO	24	5" x 4" (127 x 102)	5" x 4" (127 x 102)	34" x 31" (864 x 787)	22" x 20" (559 x 508)	① 70" x 20" (1778 x 508)	—
	34, 44	5" x 4" (127 x 102)	—	22" x 20" (559 x 508)	—	—	—

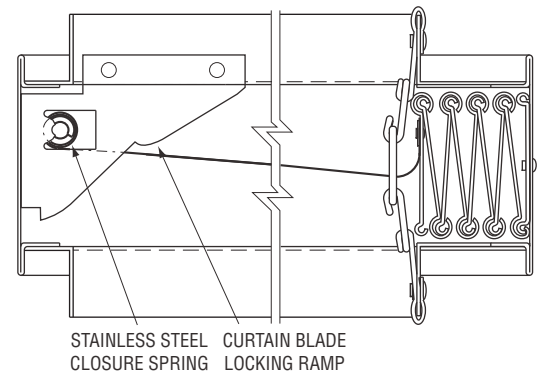
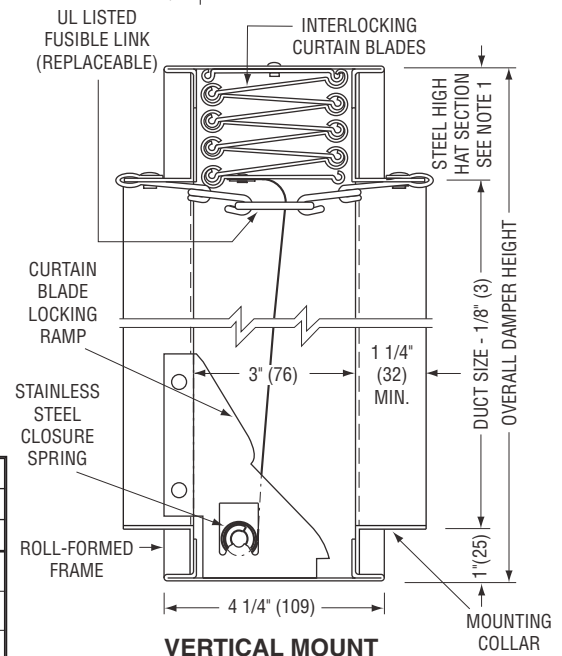
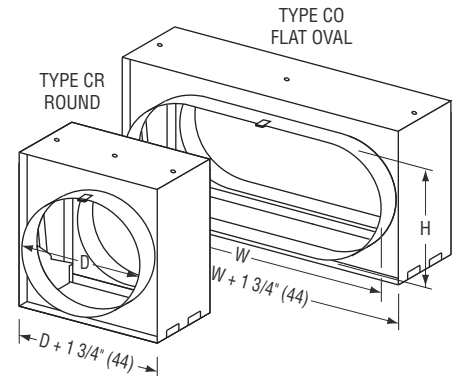
① Individual sections of multiple section assembly not to exceed 24" (610) in width, up to 48" (1219) wide. Assemblies larger than 48" (1219) in width will be made up of individual sections not to exceed 18" (457) wide.

OPTIONS:

- Non-standard temperature fusible link. Specify _____.
- Factory Sleeve. Available in 10 (3.5) through 22 ga. (0.85) galv. steel and in lengths required for application. Specify: ___ length. ___ ga.
- LP Unsealed. Suitable for low pressure systems.
- HP Sealed. Suitable for medium/high pressure systems. Externally caulked. (Up to 6 w.g. [1.5 kPa]).

DYNAMIC VELOCITY/PRESSURE RATING:

- 24 2000 fpm @ 4" w.g. (Standard)
- 34 3000 fpm @ 4" w.g. } (Optional)
- 44 4000 fpm @ 4" w.g. }



NOTES:

1. See sizing chart for relationship of duct size and damper size. Refer to drawings SC1 and SC2.

For installation instructions, see IOM-FDINST.
 Dimensions are in inches (mm).

SCHEDULE TYPE:				
PROJECT:				
ENGINEER:	DATE	B SERIES	SUPERSEDES	DRAWING NO.
CONTRACTOR:	3 - 28 - 18	FD	4 - 28 - 14	D0500-3



DYNAMIC CURTAIN TYPE FIRE DAMPER
3 HR. LABEL • VERTICAL OR HORIZONTAL
FOR USE IN DYNAMIC OR STATIC SYSTEMS
MODEL: D0530 (TYPE CSR)



QUALIFICATIONS:

- **UL 555 & CAN/ULC-S112 CLASSIFIED DYNAMIC FIRE DAMPER.** 3 hr. label (File # R9492).
- **Meets all the requirements of UL and NFPA 80, 90A and 101 for fire dampers in dynamic HVAC systems, as well as IBC and NBC (Canada) Building Code requirements.**
- **City of New York Board of Standards and Appeals. Cal. No. 460-88-SA.**
- **California State Fire Marshal: Fire Damper Listing No. 3225-0935:0113.**
- **Maximum velocity: 2000 fpm @ 4" w.g. (10 m/s @ 1 kPa).**

Model D0530 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 resistance rating of up to 4 hours. The D0530 is 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. Type CSR square or rectangular fire dampers use transition collars to place the curtain blade pack and damper frame out of the airstream, providing 100% free area.

STANDARD CONSTRUCTION:

- Frame:** 4 1/4" (108) wide, 22 ga. (0.85) roll-formed G60 galvanized steel.
- Blades:** Curtain type interlocking blades, 22 ga. (0.85) roll-formed G60 galvanized steel.
- Enclosure:** 22 ga. (0.85) galvanized steel.
- Fusible Link:** 165°F (74°C) standard. UL Listed. 212°F (100°C) available.
- Blade Closure:** Stainless steel closure springs and galvanized steel locking ramps.

Sizes (Duct W x H):

Model Type	Velocity/Pressure Rating	Single Section				Multiple Section	
		Minimum		Maximum		Maximum	
		Vertical	Horizontal	Vertical	Horizontal	Vertical	Horiz.
Sq./Rect. CSR	24	4" x 4" (102 x 102)	4" x 4" (102 x 102)	34" x 31" (864 x 787)	22" x 20" (559 x 508)	① 70" x 20" (1778 x 508)	—
	34, 44	4" x 4" (102 x 102)	—	22" x 20" (559 x 508)	—	—	—

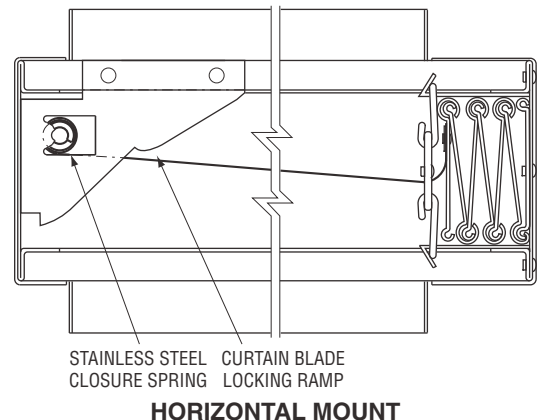
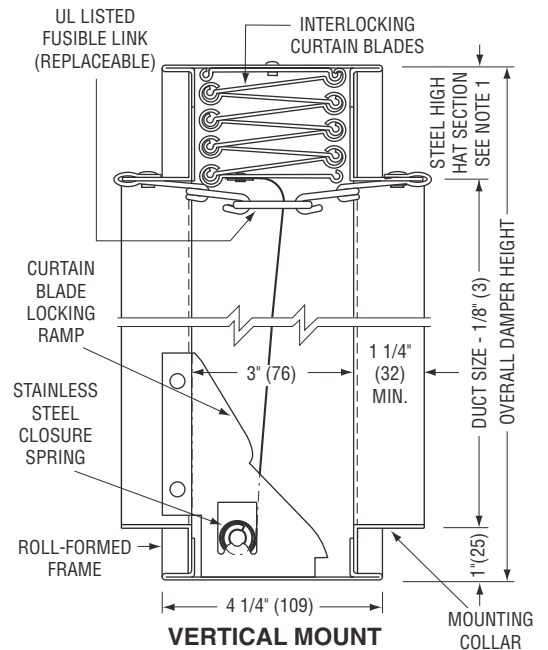
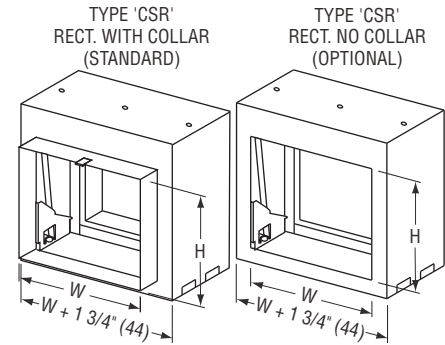
① Individual sections of multiple section assembly not to exceed 24" (610) in width, up to 48" (1219) wide. Assemblies larger than 48" (1219) in width will be made up of individual sections not to exceed 18" (457) wide.

OPTIONS:

- Non-standard temperature fusible link. Specify _____.
- Factory Sleeve. Available in 10 (3.5) through 22 ga. (0.85) galv. steel and in lengths required for application. Specify: __ length. __ ga.
- LP** Unsealed. Suitable for low pressure systems.
- HP** Sealed. Suitable for medium/high pressure systems. Externally caulked. (Up to 6 w.g. [1.5 kPa]).

DYNAMIC VELOCITY/PRESSURE RATING:

- 24** 2000 fpm @ 4" w.g. (Standard)
- 34** 3000 fpm @ 4" w.g. } (Optional)
- 44** 4000 fpm @ 4" w.g. }



NOTES:

1. See sizing chart for relationship of duct size and damper size. Refer to drawings SC1 and SC2.

For installation instructions, see IOM-FDINST. Dimensions are in inches (mm).

SCHEDULE TYPE:				
PROJECT:				
ENGINEER:	DATE	B SERIES	SUPERSEDES	DRAWING NO.
CONTRACTOR:	3 - 28 - 18	FD	4 - 28 - 14	D0500-4



**STAINLESS STEEL DYNAMIC CURTAIN TYPE
FIRE DAMPER**
3 HR. LABEL • VERTICAL
FOR USE IN DYNAMIC OR STATIC SYSTEMS
MODEL: D0510SS (TYPE A)



QUALIFICATIONS:

- **UL 555 & CAN/ULC-S112 CLASSIFIED DYNAMIC FIRE DAMPER.** 3 hr. label (File # R9492).
- **Meets all the requirements of UL and NFPA 80, 90A and 101 for fire dampers in dynamic HVAC systems, as well as IBC and NBC (Canada) Building Code requirements.**
- **City of New York Board of Standards and Appeals. Cal. No. 460-88-SA.**
- **California State Fire Marshal: Fire Damper Listing No. 3225-0935:0113.**
- **Maximum velocity: 2000 fpm @ 4" w.g. (10 m/s @ 1 kPa).**

Model D0510SS stainless steel dynamic 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 resistance rating of up to 4 hours. The D0510SS is 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.

STANDARD CONSTRUCTION:

- Frame:** 4 7/8" (124) wide, 22 ga. (0.79) roll-formed Type 304 stainless steel.
- Blades:** Curtain type interlocking blades, 22 ga. (0.79) roll-formed Type 304 stainless steel.
- Fusible Link:** 165°F (74°C) standard. UL Listed. 212°F (100°C) available.
- Blade Closure:** Stainless steel closure springs and stainless steel locking ramps.

Sizes (Duct W x H):

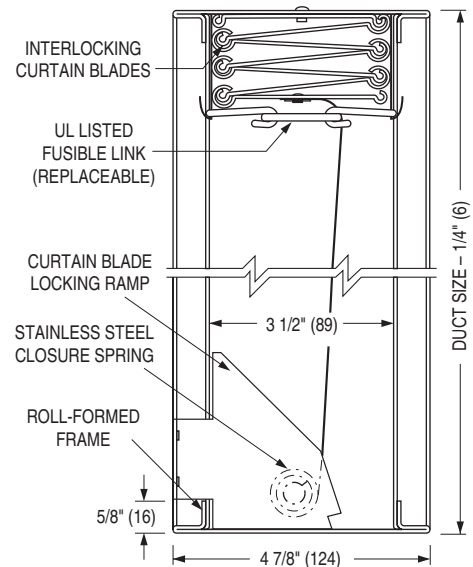
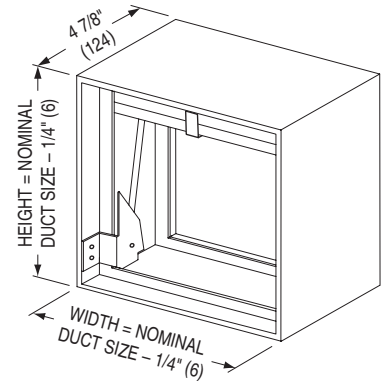
Velocity/ Pressure Rating	Single Section	
	Minimum	Maximum
	Vertical	Vertical
24	4" x 4" (102 x 102)	24" x 24" (610 x 610)

OPTIONS:

- 316 Type 316 stainless steel frame and blades.
- Non-standard temperature fusible link. Specify _____.
- Factory Sleeve. Available in 10 (3.5) through 18 ga. (1.27) stainless steel and in lengths required for application. Specify: _____ length. _____ ga.

DYNAMIC VELOCITY/PRESSURE RATING:

- 24** 2000 fpm @ 4" w.g. (Standard)



MODEL D0510SS – VERTICAL MOUNT

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

For installation instructions, see IOM-FDINST.
Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
11 - 14 - 18	FD	NEW	D0500SS-1



**STAINLESS STEEL DYNAMIC CURTAIN TYPE
FIRE DAMPER**
3 HR. LABEL • VERTICAL
FOR USE IN DYNAMIC OR STATIC SYSTEMS
MODEL: D0520SS (TYPE B)



QUALIFICATIONS:

- **UL 555 & CAN/ULC-S112 CLASSIFIED DYNAMIC FIRE DAMPER.** 3 hr. label (File # R9492).
- **Meets all the requirements of UL and NFPA 80, 90A and 101 for fire dampers in dynamic HVAC systems, as well as IBC and NBC (Canada) Building Code requirements.**
- **City of New York Board of Standards and Appeals. Cal. No. 460-88-SA.**
- **California State Fire Marshal: Fire Damper Listing No. 3225-0935:0113.**
- **Maximum velocity: 2000 fpm @ 4" w.g. (10 m/s @ 1 kPa).**

Model D0520SS stainless steel dynamic 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 resistance rating of up to 4 hours. The D0520SS is 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. Type B fire dampers place the curtain blade pack out of the airstream for higher free area and reduced pressure drop.

STANDARD CONSTRUCTION:

- Frame:** 4 7/8" (124) wide, 22 ga. (0.79) roll-formed Type 304 stainless steel.
- Blades:** Curtain type interlocking blades, 22 ga. (0.79) roll-formed Type 304 stainless steel.
- Enclosure:** 22 ga. (0.79) stainless steel.
- Fusible Link:** 165°F (74°C) standard. UL Listed. 212°F (100°C) available.
- Blade Closure:** Stainless steel closure springs and stainless steel locking ramps.

Sizes (Duct W x H):

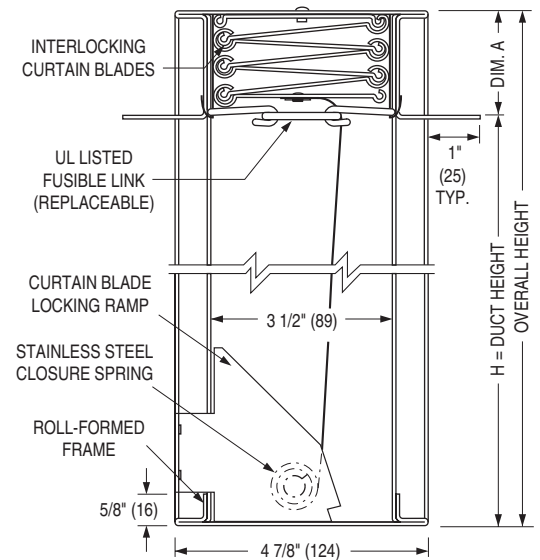
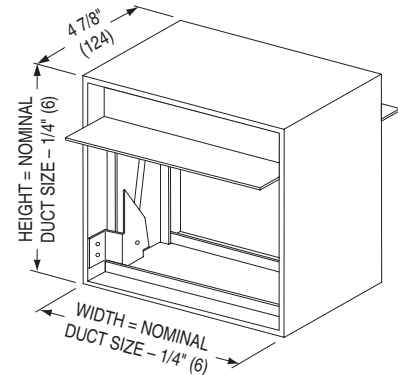
Velocity/ Pressure Rating	Single Section	
	Minimum	Maximum
	Vertical	Vertical
24	4" x 4" (102 x 102)	24" x 21" (610 x 533)

OPTIONS:

- 316 Type 316 stainless steel frame and blades.
- Non-standard temperature fusible link. Specify _____.
- Factory Sleeve. Available in 10 (3.5) through 18 ga. (1.27) stainless steel and in lengths required for application. Specify: _____ length. _____ ga.

DYNAMIC VELOCITY/PRESSURE RATING:

- 24** 2000 fpm @ 4" w.g. (Standard)



MODEL D0520SS – VERTICAL MOUNT

Duct Height H	Dim. A
4" thru 15" (102 thru 381)	2" (51)
16" thru 21" (406 thru 533)	3" (76)

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

For installation instructions, see IOM-FDINST.
Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
11 - 14 - 18	FD	NEW	D0500SS-2



**STAINLESS STEEL DYNAMIC CURTAIN TYPE
FIRE DAMPER**
3 HR. LABEL • VERTICAL
FOR USE IN DYNAMIC OR STATIC SYSTEMS
MODEL: D0530SS (TYPES CR & CO)



QUALIFICATIONS:

- **UL 555 & CAN/ULC-S112 CLASSIFIED DYNAMIC FIRE DAMPER.** 3 hr. label (File # R9492).
- **Meets all the requirements of UL and NFPA 80, 90A and 101 for fire dampers in dynamic HVAC systems, as well as IBC and NBC (Canada) Building Code requirements.**
- **City of New York Board of Standards and Appeals. Cal. No. 460-88-SA.**
- **California State Fire Marshal: Fire Damper Listing No. 3225-0935:0113.**
- **Maximum velocity: 2000 fpm @ 4" w.g. (10 m/s @ 1 kPa).**

Model D0530SS stainless steel dynamic 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 resistance rating of up to 4 hours. The D0530SS is 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. Type CR round and CO oval fire dampers use transition collars to place the curtain blade pack and damper frame out of the airstream, providing 100% free area.

STANDARD CONSTRUCTION:

- Frame:** 4 7/8" (124) wide, 22 ga. (0.79) roll-formed Type 304 stainless steel.
- Blades:** Curtain type interlocking blades, 22 ga. (0.79) roll-formed Type 304 stainless steel.
- Enclosure:** 22 ga. (0.79) stainless steel.
- Fusible Link:** 165°F (74°C) standard. UL Listed. 212°F (100°C) available.
- Blade Closure:** Stainless steel closure springs and stainless steel locking ramps.

Sizes (Duct W x H):

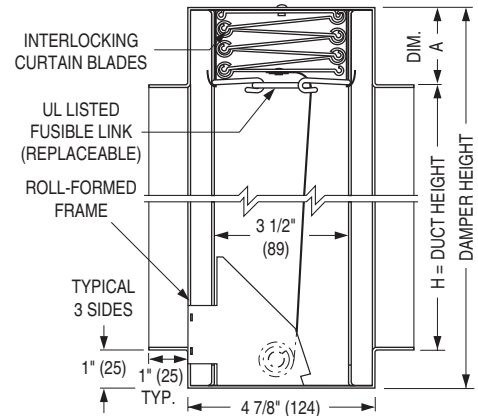
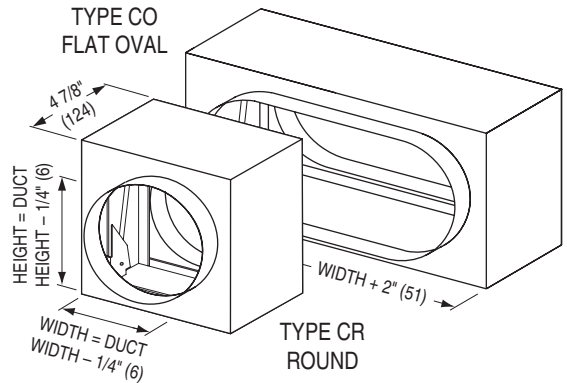
Model Type	Velocity/Pressure Rating	Single Section	
		Minimum Vertical	Maximum Vertical
Round CR	24	4" (102) dia.	21" (533) dia.
Oval CO	24	4" x 4" (102 x 102)	22" x 21" (559 x 533)

OPTIONS:

- 316 Type 316 stainless steel frame and blades.
- Non-standard temperature fusible link. Specify _____.
- Factory Sleeve. Available in 10 (3.5) through 18 ga. (1.27) stainless steel and in lengths required for application. Specify: _____ length. _____ ga.
- LP Unsealed. Suitable for low pressure systems.
- HP Sealed. Suitable for medium/high pressure systems. Externally caulked. (Up to 6 w.g. [1.5 kPa]).

DYNAMIC VELOCITY/PRESSURE RATING:

- 24 2000 fpm @ 4" w.g. (Standard)



MODEL D0530SS – CO / CR – VERTICAL MOUNT

Duct Height H	Dim. A
4" thru 15" (102 thru 381)	2" (51)
16" thru 21" (406 thru 533)	3" (76)

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

For installation instructions, see IOM-FDINST.
Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
11 - 14 - 18	FD	NEW	D0500SS-3



**STAINLESS STEEL DYNAMIC CURTAIN TYPE
FIRE DAMPER**
3 HR. LABEL • VERTICAL
FOR USE IN DYNAMIC OR STATIC SYSTEMS
MODEL: D0530SS (TYPE CSR)



QUALIFICATIONS:

- **UL 555 & CAN/ULC-S112 CLASSIFIED DYNAMIC FIRE DAMPER.** 3 hr. label (File # R9492).
- **Meets all the requirements of UL and NFPA 80, 90A and 101 for fire dampers in dynamic HVAC systems, as well as IBC and NBC (Canada) Building Code requirements.**
- **City of New York Board of Standards and Appeals. Cal. No. 460-88-SA.**
- **California State Fire Marshal: Fire Damper Listing No. 3225-0935:0113.**
- **Maximum velocity: 2000 fpm @ 4" w.g. (10 m/s @ 1 kPa).**

Model D0530SS stainless steel dynamic 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 resistance rating of up to 4 hours. The D0530SS is 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. Type CSR square or rectangular fire dampers use transition collars to place the curtain blade pack and damper frame out of the airstream, providing 100% free area.

STANDARD CONSTRUCTION:

- Frame:** 4 7/8" (124) wide, 22 ga. (0.79) roll-formed Type 304 stainless steel.
- Blades:** Curtain type interlocking blades, 22 ga. (0.79) roll-formed Type 304 stainless steel.
- Enclosure:** 22 ga. (0.79) stainless steel.
- Fusible Link:** 165°F (74°C) standard. UL Listed. 212°F (100°C) available.
- Blade Closure:** Stainless steel closure springs and stainless steel locking ramps.

Sizes (Duct W x H):

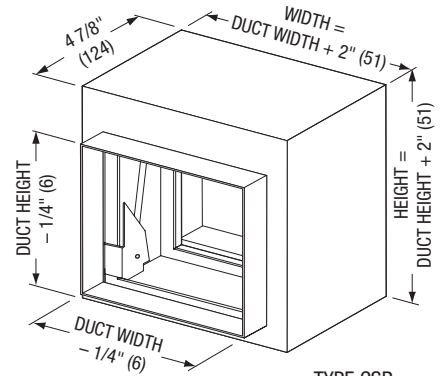
Model Type	Velocity/Pressure Rating	Single Section	
		Minimum Vertical	Maximum Vertical
Sq./Rect. CSR	24	4" x 4" (102 x 102)	22" x 21" (559 x 533)

OPTIONS:

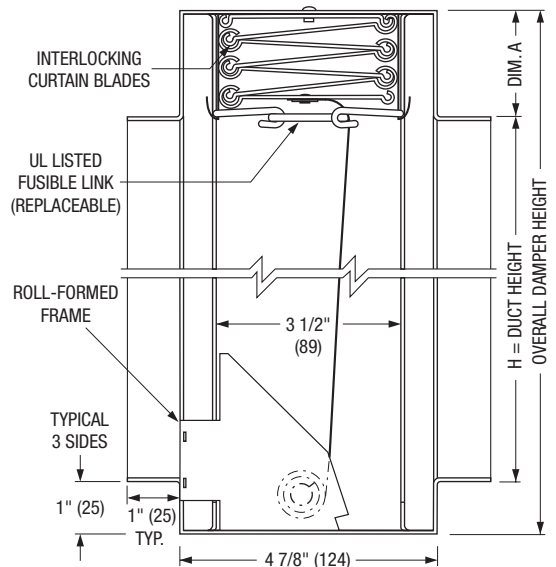
- 316 Type 316 stainless steel frame and blades.
- Non-standard temperature fusible link. Specify _____.
- Factory Sleeve. Available in 10 (3.5) through 18 ga. (1.27) stainless steel and in lengths required for application. Specify: _____ length. _____ ga.
- LP Unsealed. Suitable for low pressure systems.
- HP Sealed. Suitable for medium/high pressure systems. Externally caulked. (Up to 6 w.g. [1.5 kPa]).

DYNAMIC VELOCITY/PRESSURE RATING:

- 24 2000 fpm @ 4" w.g. (Standard)



TYPE CSR
SQUARE / RECTANGULAR



MODEL D0530SS – CSR – VERTICAL MOUNT

Duct Height H	Dim. A
4" thru 15" (102 thru 381)	2" (51)
16" thru 21" (406 thru 533)	3" (76)

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

For installation instructions, see IOM-FDINST.
Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
11 - 14 - 18	FD	NEW	D0500SS-4



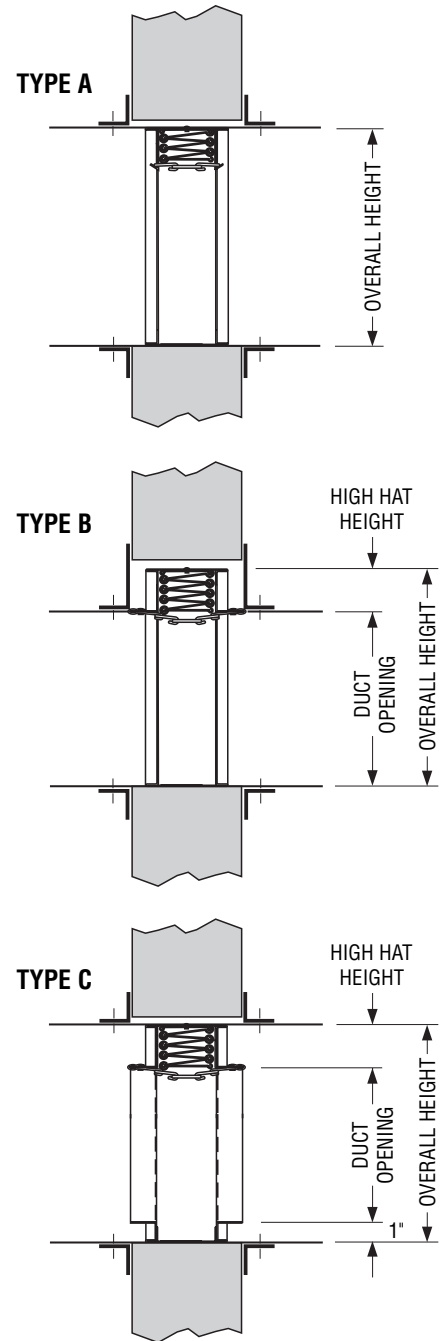
FIRE DAMPER SIZING CHART • IMPERIAL

STANDARD FRAME (4 1/4" WIDE)

MODEL SERIES 0100, 0500

DUCT OPENING HEIGHT (inches)	TYPE "A" OVERALL HEIGHT (inches)	TYPE "B" OVERALL HEIGHT (inches)	TYPE "C" OVERALL HEIGHT (inches)
4	3 3/4	6 1/8	5 3/4
5	4 3/4	7 1/8	6 3/4
6	5 3/4	8 1/8	8 3/4
7	6 3/4	9 1/8	9 3/4
8	7 3/4	10 1/8	10 3/4
9	8 3/4	11 1/8	11 3/4
10	9 3/4	12 1/8	12 3/4
11	10 3/4	13 1/8	13 3/4
12	11 3/4	14 1/8	14 3/4
13	12 3/4	15 1/8	15 3/4
14	13 3/4	16 1/8	16 3/4
15	14 3/4	17 1/8	17 3/4
16	15 3/4	18 1/8	18 3/4
17	16 3/4	19 1/8	19 3/4
18	17 3/4	21 1/8	21 3/4
19	18 3/4	22 1/8	22 3/4
20	19 3/4	23 1/8	23 3/4
21	20 3/4	24 1/8	24 3/4
22	21 3/4	25 1/8	25 3/4
23	22 3/4	26 1/8	26 3/4
24	23 3/4	27 1/8	27 3/4
25	24 3/4	28 1/8	28 3/4
26	25 3/4	29 1/8	29 3/4
27	26 3/4	30 1/8	30 3/4
28	27 3/4	32 1/8	32 3/4
29	28 3/4	33 1/8	33 3/4
30	29 3/4	34 1/8	34 3/4
31	30 3/4	35 1/8	35 3/4
32	31 3/4	36 1/8	36 3/4
33	32 3/4	37 1/8	37 3/4
34	33 3/4	38 1/8	38 3/4
35	34 3/4	39 1/8	39 3/4
36	35 3/4	40 1/8	40 3/4
37	36 3/4	42 1/8	42 3/4
38	37 3/4	43 1/8	43 3/4
39	38 3/4	44 1/8	44 3/4
40	39 3/4	45 1/8	45 3/4
41	40 3/4	46 1/8	46 3/4
42	41 3/4	47 1/8	47 3/4
43	42 3/4	48 1/8	48 3/4
44	43 3/4	49 1/8	49 3/4
45	44 3/4	50 1/8	50 3/4
46	45 3/4	52 1/8	52 3/4
47	46 3/4	53 1/8	53 3/4
48	47 3/4	54 1/8	54 3/4
49	48 3/4	55 1/8	55 3/4
50	49 3/4	56 1/8	56 3/4
51	50 3/4	57 1/8	57 3/4
52	51 3/4	58 1/8	58 3/4
53	52 3/4	59 1/8	59 3/4
54	53 3/4	60 1/8	
55	54 3/4	DAMPER WIDTH OVERALL Type "A" = Duct Opening - 1/4". Type "B" = Duct Opening - 1/4". Type "C" = Duct Opening + 1 3/4".	
56	55 3/4		
57	56 3/4		
58	57 3/4		
59	58 3/4		
60	59 3/4		

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.



Dimensions are in inches (mm).

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

DATE

B SERIES

SUPERSEDES

DRAWING NO.

1 - 24 - 06

FD

2 - 25 - 02R

SC1



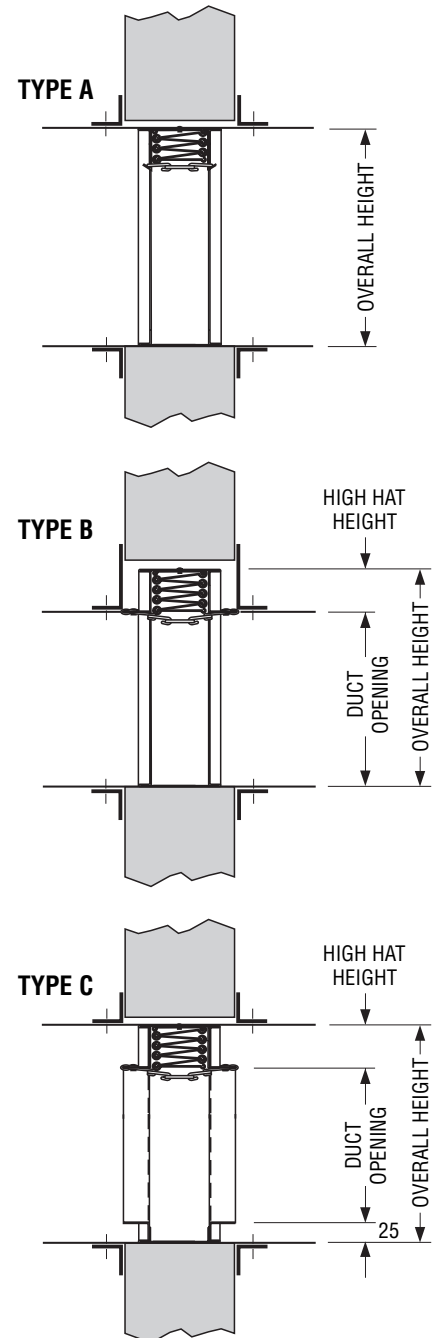
FIRE DAMPER SIZING CHART • METRIC

STANDARD FRAME (108 MM WIDE)

MODEL SERIES 0100, 0500

DUCT OPENING HEIGHT (mm)	TYPE "A" OVERALL HEIGHT (mm)	TYPE "B" OVERALL HEIGHT (mm)	TYPE "C" OVERALL HEIGHT (mm)
102	95	156	146
127	121	181	171
152	146	206	222
178	171	232	248
203	197	257	273
229	222	283	298
254	248	308	324
279	273	333	349
305	298	359	375
330	324	384	400
356	349	410	425
381	375	435	451
406	400	460	476
432	425	486	502
457	451	537	552
483	476	562	578
508	502	587	603
534	527	613	629
559	552	638	654
584	578	664	679
610	603	689	705
635	629	714	730
661	654	740	756
656	679	765	781
711	705	816	832
737	730	841	857
762	756	867	883
787	781	892	908
813	806	918	933
838	832	943	959
864	857	968	984
889	883	994	1010
914	908	1019	1035
940	933	1070	1086
965	959	1095	1111
991	984	1121	1137
1016	1010	1146	1162
1041	1035	1172	1187
1067	1060	1197	1213
1092	1086	1222	1238
1117	1111	1248	1264
1143	1137	1273	1289
1168	1162	1324	1340
1194	1187	1349	1365
1219	1213	1375	1391
1245	1238	1400	1416
1270	1264	1426	1441
1296	1289	1451	1467
1321	1314	1476	1492
1346	1340	1502	1518
1372	1365	1527	
1397	1391	DAMPER WIDTH OVERALL Type "A" = Duct Opening - 6. Type "B" = Duct Opening - 6. Type "C" = Duct Opening + 44.	
1423	1416		
1448	1441		
1473	1467		
1499	1492		
1524	1518		

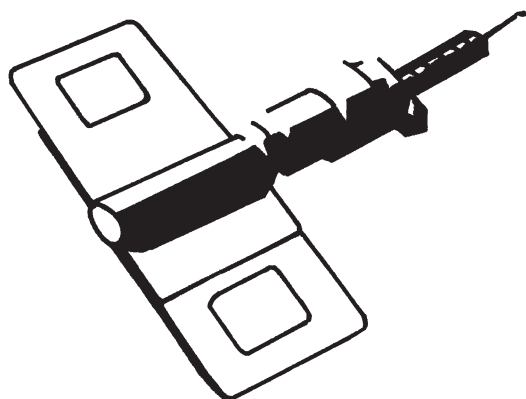
Important Note: Type "B" and "C" overall height dimensions only apply to sizes that are single section high. For overall height dimensions for sizes that are multi-section in height, please contact factory. Refer to individual model submittal drawings for maximum single section heights.



Dimensions are in inches (mm).

SCHEDULE TYPE:
PROJECT:
ENGINEER:
CONTRACTOR:

DATE	B SERIES	SUPERSEDES	DRAWING NO.
1 - 24 - 06	FD	2 - 25 - 02R	SC2



ETL®

WHAT IT IS – WHAT IT DOES

The Electro Thermal Link (ETL®) is a multi purpose, dual responsive fusible link which reacts (melts) when subjected to;

1. Local heat (165°F (74°C)) exactly the same as an ordinary link.
2. External electrical impulse of low power and short duration.

It is specifically designed to substitute for ordinary links and/or actuators in existing and new installations of Fire Dampers, Fire Doors, Fire Extinguishers, Fire and Smoke Roof Hatches, Sprinklers, Smoke Towers, and chemical or gas Automatic Release Systems.

The substitution should be made in every installation of the above devices where it is desirable to improve life safety by making those devices responsive to -

- SMOKE** in the early form of invisible products of combustion through ionization detectors, or
- FIRE** at an earlier stage than ordinary links thru the use of rate of rise or maximum temperature devices.

The ETL's electro-response is the unique feature. It is not smoke responsive of itself, but its power requirement is so low that it can be released with 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 ampere of trip current required, and 1/2 millisecond (.0005 second) response at 24 v. The electrical response is a trigger for the chemical heating of the center element which is a self-contained exothermic reactor, yielding no noise, smoke, or gas - just quick heat to open the link in seven seconds.

The ETL's thermal response is identical to that of ordinary fusible links of identical temperature (165°F (74°C)) and strength (40#) rating.

In its capacity of converting a FIRE safety device into a FIRE/SMOKE safety device the ETL can be substituted for both an ordinary link and motor, or link and electromagnetic operator with advantages of simplicity, economy, operational reliability and wide acceptability. With its dual responsiveness the ETL can be substituted for two other devices at a savings in first cost as well as operating cost and maintenance. The ETL is a Space Age Device 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 Underwriter's Laboratories, Inc. as a Fusible Link.

With the ongoing development of dynamic smoke control systems and building code changes in recent years, application and use of this product should be governed by acceptance of the local authority having jurisdiction.

SCHEDULE TYPE:		Dimensions are in inches (mm).			
PROJECT:					
ENGINEER:	DATE	B SERIES	SUPERSEDES	DRAWING NO.	
CONTRACTOR:	31 - 7 - 00R	ACC	1 - 98R/0100-6	ACC.ETL	

DESCRIPTION:

1. Pull ring: 1 1/4 (32) diameter nickel plated steel.
2. Attachment strap: 22 ga. galvanized or stainless steel.

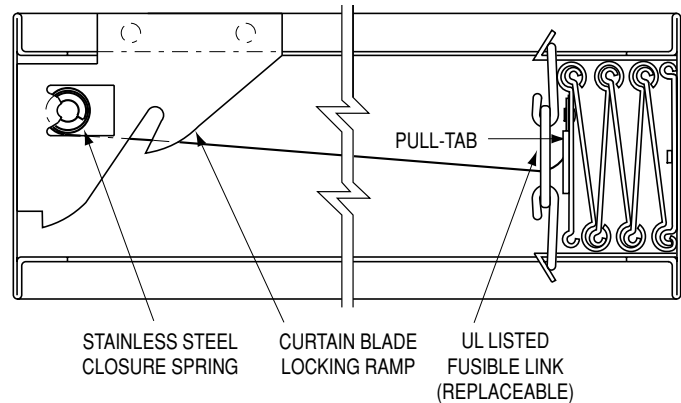
Horizontal curtain type fire dampers for use in static systems and all dynamic dampers utilize stainless steel springs and locking ramps to draw the curtain closed in the event of a fire or upon manual release.

Horizontally installed dampers are designed and tested to be mounted with the locking ramps on the top side. When periodic testing (as well as maintenance and inspection) is required, access doors should be located above the damper, so that the damper blade pack can be "pushed down" and released off the locking ramp for reset.

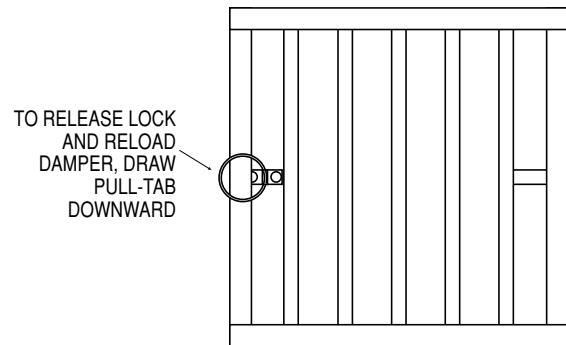
When access from above is not possible or convenient, the Pull-Tab release option permits simple resetting from beneath the damper.



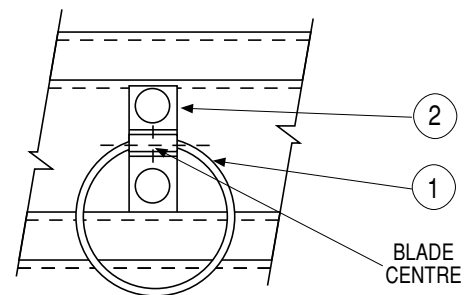
TOP OF UNIT (Horizontal Installation)



TYPE "A" MODEL 0110H (TYPE "B" SIMILAR).



**VIEW ON DAMPER FACE
(BLADES CLOSED)**



DETAIL OF PULL-TAB

SCHEDULE TYPE:				
PROJECT:				
ENGINEER:	DATE	B SERIES	SUPERSEDES	DRAWING NO.
CONTRACTOR:	3- 10 - 00R	ACC-PTR	7-90/0100-16	ACC-PTR

Dimensions are in inches (mm).

**"QUICK-SET" RETAINING ANGLES BOTH SIMPLIFY AND SPEED INSTALLATION,
 SAVING BOTH TIME AND MONEY.**

BENEFITS:

- One piece angles are fastened together in the corners. Only two sets of angles to handle per damper (rather than four separate angles per side).
- Angles are shipped with damper - no sorting or matching.
- Provided with pre-drilled fastening holes on 2" (51) centers to ensure correct angle/sleeve attachment.
- Factory fabricated by Nailor to suit the individual fire damper.
- Reduced cost when compared to conventional retaining angles.
- Dampers can ship directly to the job site complete with all necessary installation sheet metal hardware (saves on double handling at contractor's shop).
- 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 and ship with the individual damper for ultimate convenience. "Quick-Set" angles are supplied with correctly spaced pre-drilled screw-holes to ensure a quick, easy and accurate installation for all integral sleeve Nailor fire and combination fire/smoke dampers - no measuring required.

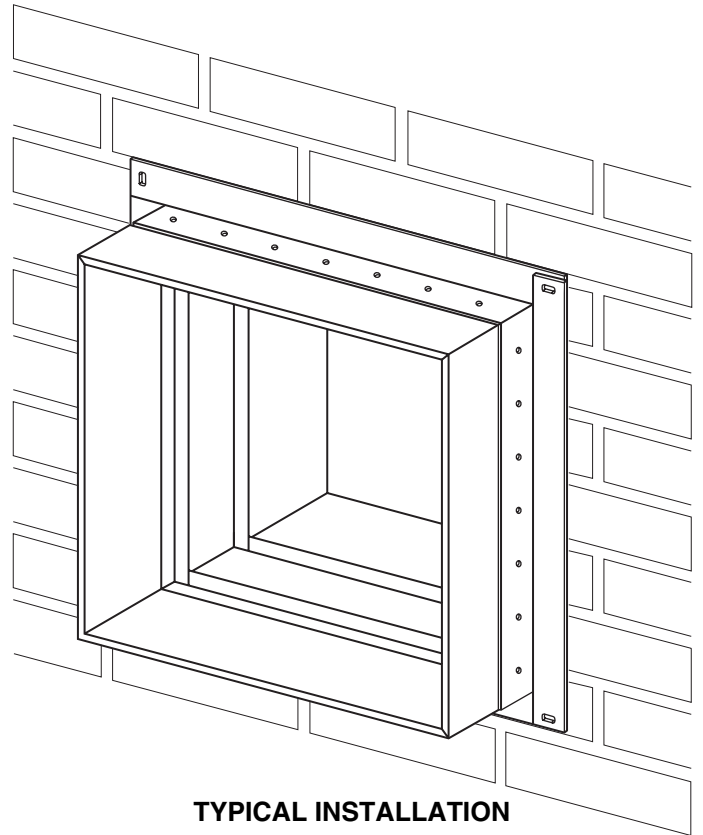
"Quick-Set" retaining angles provide the "complete" installation package. Simple, fast, convenient.

MODELS:

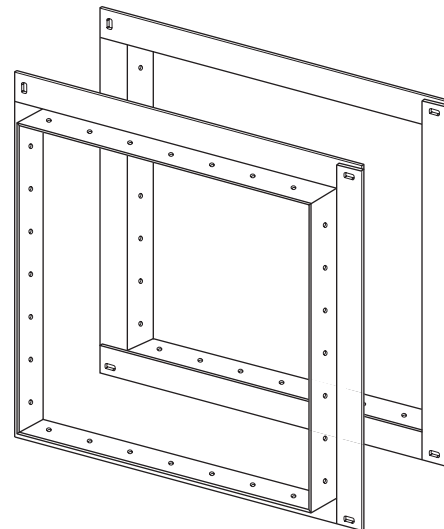
Nailor "Quick-Set" retaining angles are an accessory option for all dampers ordered with factory sleeves.

QS2: Two sides (pair). For standard installations where angles are installed on both sides of the fire partition.

QS1: One side (single set). For use in single side retaining angle installations and with grille mount and "out of wall" damper models.



TYPICAL INSTALLATION



**TYPICAL PAIR OF PRE-ASSEMBLED
 QUICK-SET' RETAINING ANGLES**



SCHEDULE TYPE:
PROJECT:
ENGINEER:
CONTRACTOR:

Page 1 of 2 Dimensions are in inches (mm).			
DATE	B SERIES	SUPERSEDES	DRAWING NO.
2 - 26 - 09	FD-ACC	6 - 5 - 03	QSRA

"QUICK-SET" RETAINING ANGLES
FOR ALL SLEEVED FIRE AND
COMBINATION FIRE/SMOKE DAMPERS
MODELS: QS1 AND QS2

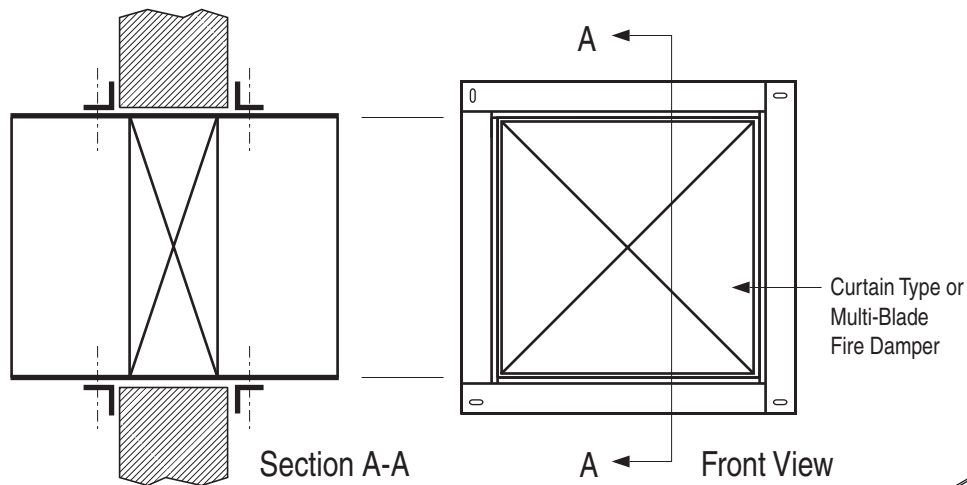


FIGURE 1. TYPICAL TWO SIDED INSTALLATION.

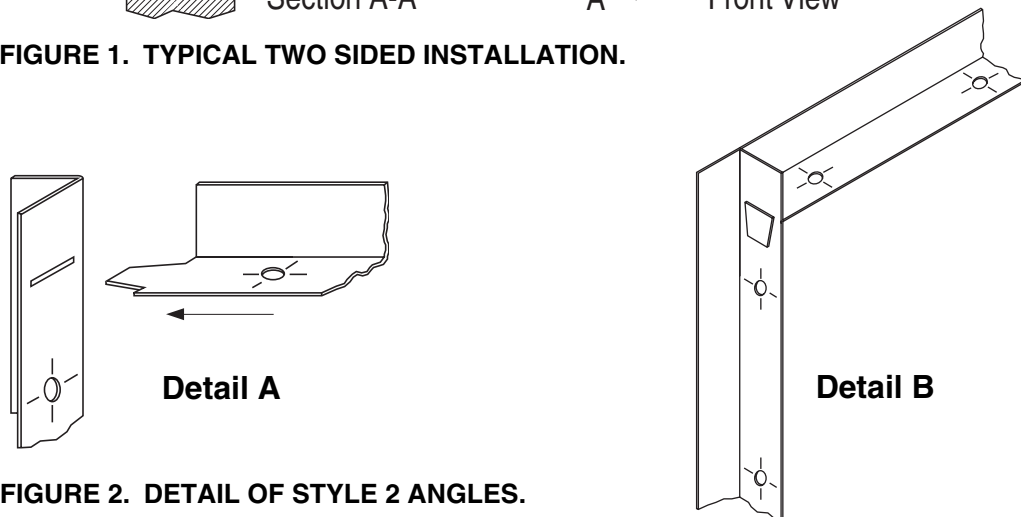


FIGURE 2. DETAIL OF STYLE 2 ANGLES.

APPLICATION:

The Nailor Quick-Set Retaining Angle System may be used in lieu of conventional retaining angles on all Nailor Fire and Combination Fire/Smoke Dampers.

Quick-Set angles are supplied in one of two styles, dependent upon fire resistance label, damper size and installation method.

Style 1: 1 1/2" x 1 1/2" x 20 ga. (38 x 38 x 1.0) Four sides are connected together with rivets in three corners.

Standard for the majority of applications with the following limitations:

- 1 1/2 hour label fire dampers.
- Maximum Size: 36" x 36" (914 x 914)
- Two sided installation only

Style 2: 1 1/2" x 1 1/2" x 16 ga. (38 x 38 x 1.6) Slot and tab design. The retaining angle assembly for each side has four angles, each with a tab end and a slot end (Detail A).

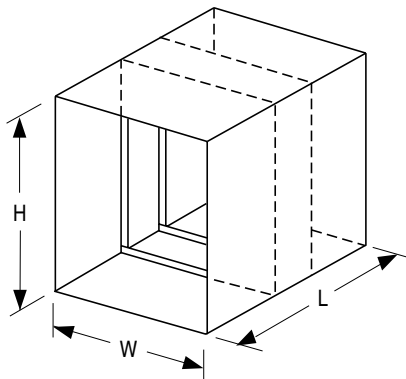
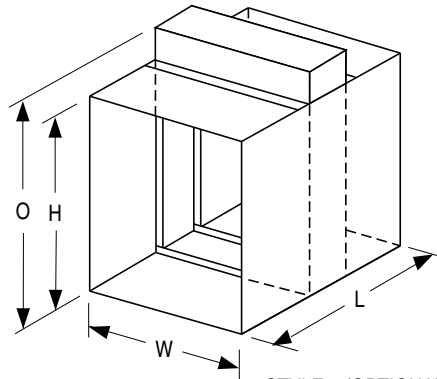
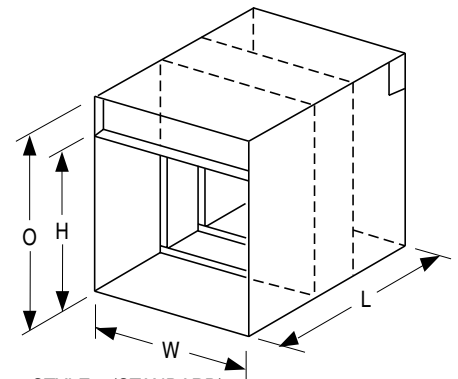
The tabs are to be inserted into the slots and knocked down either before or after fastening to the sleeve (Detail B).

- 1 1/2 or 3 hour label fire dampers
- Maximum Size: 90" x 48" (2286 x 1219) or 48" x 90" (1219 x 2286)
- Single side (1 1/2 hour only. Refer to Single Side Retaining Angles Supplementary Installation Instructions for size limitations) or two sided installation

Refer to the Following Installation Instructions:

Quick-Set Retaining Angles	FDQSRA
Curtain Type Fire Dampers (D)0100 & (D)0500	FDINST
Curtain Type Fire Dampers 0200 & 0500 Thinline	FDTINST
Multi-Blade Fire Dampers 1200 & 1250	MBFDINST
Combination Fire/Smoke Dampers 1220	1220INST
Combination Fire/Smoke Dampers 1270	1270INST
Single Side Retaining Angles	FDSSRAINST

SCHEDULE TYPE:		Page 2 of 2			
PROJECT:		Dimensions are in inches (mm).			
ENGINEER:	DATE	B SERIES	SUPERSEDES	DRAWING NO.	
CONTRACTOR:	2 - 26 - 09	FD-ACC	5 - 5 - 03	QSRA	


TYPE 'A'
BLADES AND FRAME IN AIRSTREAM

STYLE 1 (OPTIONAL)

STYLE 2 (STANDARD)
TYPE 'B' BLADES OUT OF AIRSTREAM
NOTES:
1. Dimensional Data.

W = Nominal duct width

H = Nominal duct height

L = Sleeve length

O = Overall damper height

For 'O' dimension and relationship to duct height, refer to dwgs. SC1/SC2 (standard frame) or SC3/SC4 (thinline frame) depending on damper model.

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. Sleeves are available in lengths up to 36" (914) and in 10 through 22 gauge (3.51 through 0.85) galvanized steel as required for application.

Standard sleeve is 12" (305) long x 20 gauge (1.01).

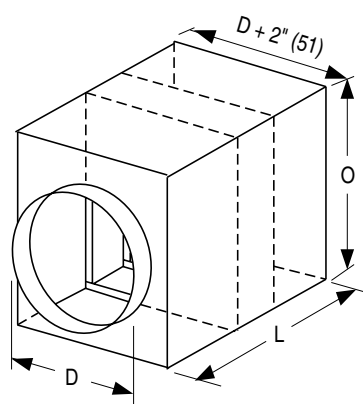
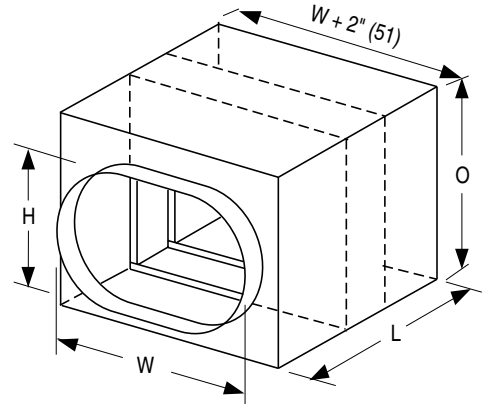
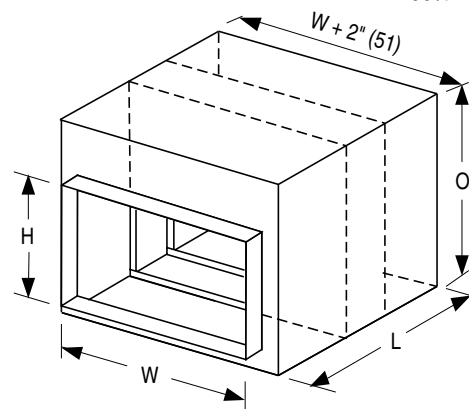
Sleeve gauge must conform to SMACNA Duct Construction Standards and shall not be less than the gauge of the duct to which it is attached for sleeves exposed to the airstream.

3. See individual models for minimum and maximum size limitations.

4. Dampers are centered in sleeve unless specified otherwise.

5. Multiple section damper assemblies are shipped knocked down for field assembly.

Type CR, CO and CSR Option:
 LP Unsealed. Suitable for low pressure systems.

 HP Sealed. Suitable for medium/high pressure systems. Externally caulked (up to 6" w.g./1.5 kPa).

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.
SCHEDULE TYPE:
PROJECT:
ENGINEER:
CONTRACTOR:

Dimensions are in inches (mm).

DATE
B SERIES
SUPERSEDES
DRAWING NO.

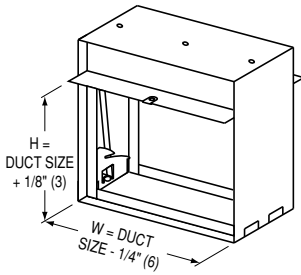
25 - 10 - 00R

FD

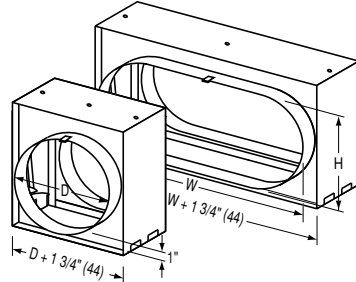
7-00/0100-14

STD-SL

DIMENSIONAL DATA:

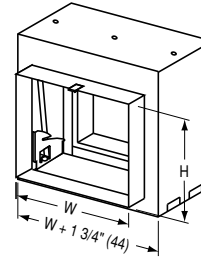


**MODEL D0520:
TYPE B**

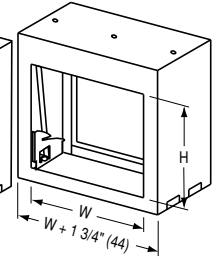


**MODEL D0530:
TYPE CR**

**MODEL D0530:
TYPE CO**



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



**MODEL D0530:
TYPE CSR
WITHOUT COLLAR**

For overall damper dimensions see sizing chart on page D53.

PERFORMANCE DATA:

MODEL SERIES: D0500 - 3 HOUR LABEL

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 Width in inches (mm)									
		6" (152)	12" (305)	18" (457)	24" (610)	30" (762)	36" (914)	42" (1067)	48" (1219)	54" (1372)	60" (1524)
Duct Height in inches (mm)	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 Width in inches (mm)									
		6" (152)	12" (305)	18" (457)	24" (610)	30" (762)	36" (914)	42" (1067)	48" (1219)	54" (1372)	60" (1524)
Duct Height in inches (mm)	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: Diameter² x .00545 = Free Area (sq. ft.)

D0500 Series - Maximum Performance Ratings	
UL 555 Fire Resistance Rating	3 Hour
Maximum Velocity	4000 fpm (20 m/s)
Maximum Pressure	4 in. w.g. (1 kPa)

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:

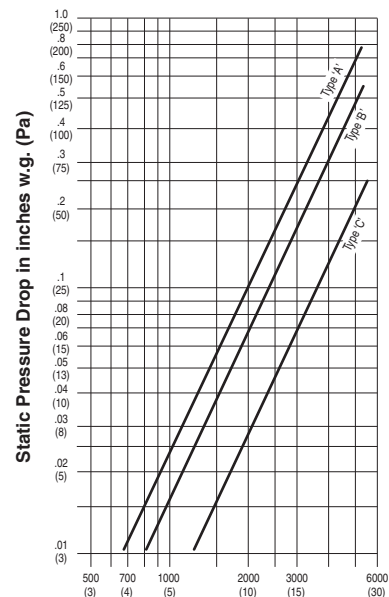
Multiply cfm by .4719 for liters per second

Multiply fpm by .00508 for meters per second

Multiply in. wg. by .2486 for kilopascals

Multiply sq. ft. by .0929 for square meters.

Pressure Drop



Free Air Velocity in feet per minute (m/s)

Dampers are an essential part of the fire protection system in a building. The NFPA recommends that fire dampers be tested periodically to verify the operational abilities of each installed damper. See NFPA 80, *Standard for Fire Doors and Other Opening Protectives*, for Operational Test and Periodic Inspection and Testing details.

CAUTION:

Some curtain fire dampers utilize high torque springs under tension; ensure HVAC fans are turned off. Testing spring assisted fire dampers under airflow conditions is **NOT RECOMMENDED** and may severely damage or destroy ductwork. Use protective eyewear or safety glasses. Keep hands out of the blade path, as this can cause serious injury. Keep any hard objects or tools out of the blade path as they can damage the blades when closing.

Periodic Inspection, Testing and Maintenance

Consult your local building code to verify whether there is a required maintenance and testing schedule. Most local jurisdictions reference NFPA 80 for Fire Dampers. Per NFPA 80, each damper should be tested and inspected 1 year after installation and then every 4 years, except for hospitals, where the frequency is every 6 years.

1. Remove any obstructions, dirt, rust, corrosion, or other observed conditions that could impede proper damper operation.
2. Check closure springs (if applicable). If damaged or defective, repair or replace.

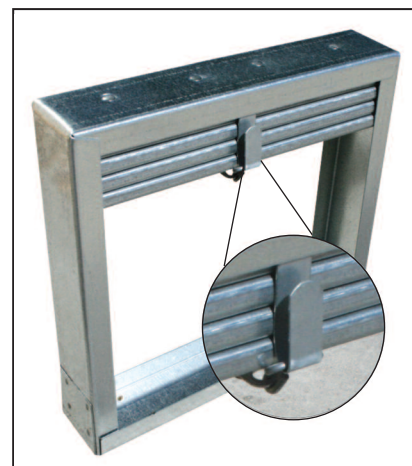
3a. Non-Spring Assisted Dampers

Bend metal straps away from damper frame so that they are straight. Remove fusible link and allow the blade package to drop and close naturally by the force of gravity. See Detail 1. Use caution, keeping fingers, hands, arms and tools out of the blade path.

3b. Dynamic Rated or Spring Assisted Dampers

AS SOON AS THE LINK HAS BEEN REMOVED, THE SPRING WILL FORCE THE BLADES TO CLOSE INSTANTANEOUSLY. THE BLADE PATH MUST BE KEPT CLEAR.

4. Ensure the damper closes completely, without assistance. If the damper design incorporates a locking ramp to hold the damper in the fully closed position, confirm that the ramp locks properly.
5. Clean damper blades and other moving parts if necessary. Use of a mild detergent or solvents is recommended for any cleaning required. Lubricate moving parts with a dry lubricant (such as T.F.E. Dry Lube). Never use a regular lubricating oil on dampers, as it will attract dirt and grit.
6. Lift the blade package to the top of the damper to reopen and replace the fusible link. Take care not to rack, deform or damage the blades when reopening.

**Detail 1**

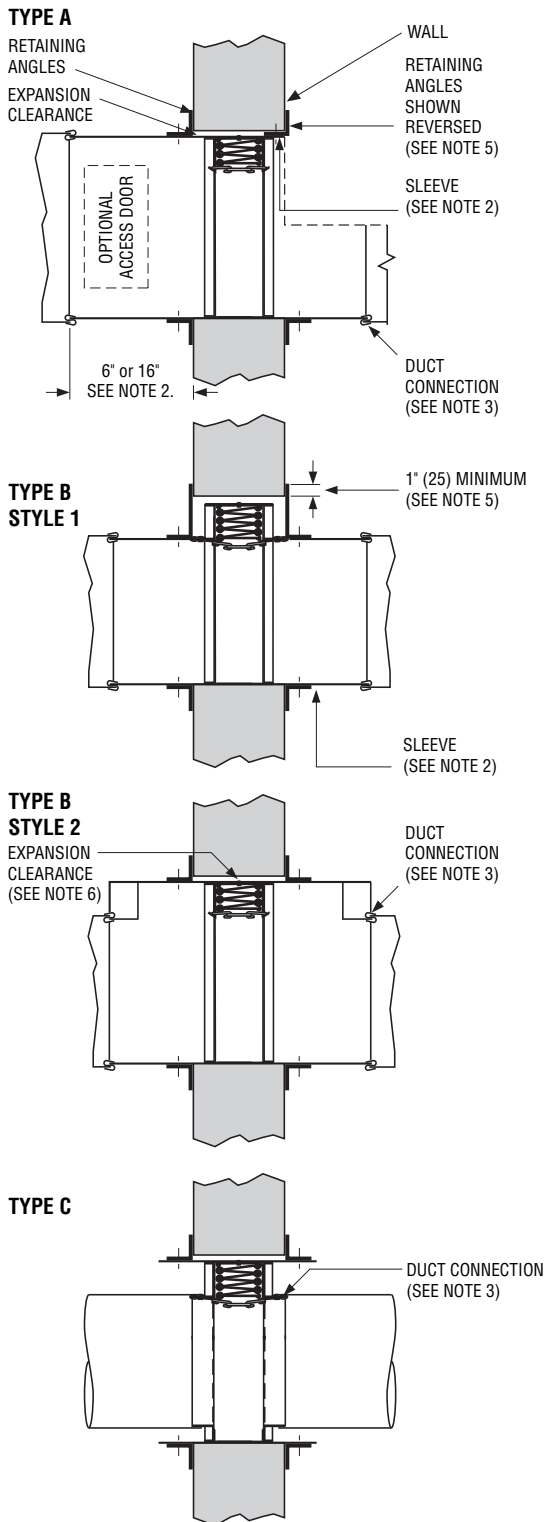
Reopening spring assisted fire dampers may be extremely difficult and in some cases, impossible. If it is determined that the damper is impossible or impractical to test or reopen, a thorough examination of the blade path is required to ensure that nothing will prevent the damper from closing. Common obstructions include: racked damper frames, retaining angle installation screws, construction debris and contaminants.

7. Slide the replacement fusible link onto the metal straps. When replacing the fusible link, make sure it is the same temperature rating of the link you are replacing. If a different temperature, contact factory. Install fusible link so that the temperature rating is facing outward and is visible.
8. Bend the metal straps up to hold the fusible link in place.

Receiving, Storage, Preparation

Upon delivery, inspect shipping containers and contents closely. Note any damages on freight carrier's delivery receipt. Store dampers in a cool, dry and safe location in an orderly manner away from construction site, warehouse traffic, other materials, etc. Cover with plastic sheeting to protect from excessive moisture, dirt and debris.

Inspect dampers prior to installation. Dampers must be cleaned per procedures outlined in this document prior to installation if dirt, rust or corrosion is observed.



QUALIFICATIONS:

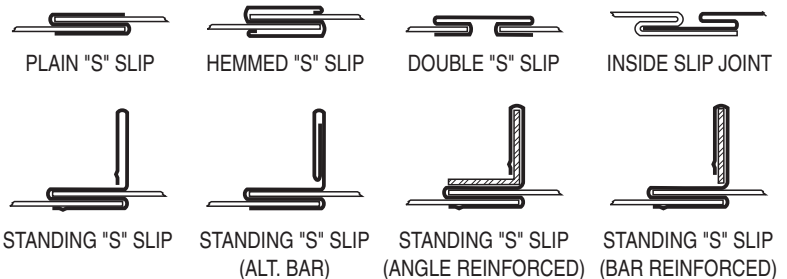
- Meets all the requirements of UL 555 and CAN/ULC-S112.
- Meets the requirements for NFPA 80, 90A and 101, as well as IBC and NBC (Canada) building codes.
- California State Fire Marshal Listing No. 03225-0935:0113.
- City of New York Board of Standards and Appeals. Cal. No. 460-88-SA.

NOTES:

1. Installation shall be in accordance with the appropriate requirements of the National Fire Protection Association Standard NFPA 90A latest edition.
2. **Damper Sleeve:** Sleeve thickness must be equal to or thicker than the duct connected to it. Sleeve gauge requirements are listed in the SMACNA Fire, Smoke and Radiation Damper Installation Guide for HVAC Systems and in NFPA 90A. If a break-away style duct/sleeve connection is not used, damper sleeves up to 36" wide by 24" (914 x 610) high of not less than 16 gauge (1.61) coated steel, or larger sleeves of not less than 14 gauge (1.99) thick coated steel may be attached to the duct with screws or other types of mechanical fasteners. The maximum sleeve thickness for such rigid joints is 10 gauge (3.51) for coated steel. The connecting duct shall not be continuous thru the wall or floor opening but shall terminate at the sleeve. Sleeves shall extend a maximum of 6" (152) on either side of the wall or floor opening or 16" (406) on one side when incorporating a factory installed access door.

3. Break-away duct/sleeve connections:

- a. Rectangular ducts must use one or more of the following connections if the gauge is less than the requirement in note 2 for rigid connections:



In addition:

- A maximum of two #10 sheet metal screws on each side and on the bottom, located in the center of the slip pocket and penetrating both sides of the slip pocket may be used.
- One of the above connections on the top and bottom joints with flat drive slip connections on the side joints may be used for dampers up to 20" (508) in height.



- b. Round and oval duct may be attached to the round or oval collar which is part of the damper/sleeve in the following manner:
 - Duct diameters 22" (559) and smaller must use three #10 sheet metal screws equally spaced around the circumference.
 - Duct diameters over 22" (559) up to and including 36" (914) may use five #10 sheet metal screws equally spaced around the circumference.
 - Duct diameters larger than 36" (914) wide or diameter may use eight #10 sheet metal screws equally spaced around the circumference.

Dimensions are in inches (mm).

Note: When optional sealing of these break-away connections is desired, the duct sealant shall be PA2084T Duct Sealant by Precision or water based DP1010 by Design Polymetrics.

c. For the use of approved alternative Ductmate or TDC/TDF break-away connections, refer to the supplements noted on page 4.

4. Damper/sleeve attachment: Damper shall be secured to sleeve with 1/4" (6) long welds, spot welds, 3/16" (4.76) steel rivets, 1/4" (6.35) dia. bolts and nuts, #8 sheet metal screws, or 3/16" (4.76) dia. buttonloks on both sides at 6" (152) on center and a maximum of 2" (51) from the corners of the damper on all four sides. For field assembled sleeves, the inner dimensions of the sleeve shall be equal to the outer dimensions of the damper.

5. Retaining angles shall be a minimum of 1 1/2" x 1 1/2" x 16 gauge (38 x 38 x 1.61) for dampers up to 90" (2286) in width and up to 90" (2286) in height. For dampers exceeding these dimensions, the angles shall be a minimum of 2" x 2" x 10 gauge (51 x 51 x 3.51). Secure the retaining angles to the sleeve with 1/2" (12.7) long welds, 1/4" (6.35) dia. bolts and nuts, 3/16" (4.76) dia. steel rivets or #8 sheet metal screws 8" (203) on center and 2" (51) maximum from corner of sleeve on all four sides. The retaining angles must lap the structural opening by 1" (25.4) minimum. When the ductwork terminates at the wall or floor, the retaining angles may be turned inwards, providing the opening size is increased by an amount equal to twice the combined thickness of the angle and the height of the screw or bolthead to maintain the required expansion clearance. Field fabricated retaining angles are not to be mechanically fastened at the corners.

6. Expansion clearance between the sleeve and wall or floor shall be a minimum of 1/8" per foot (3.18 per 305) of width or height of the sleeve. The maximum size of the opening shall be 2" (50.8) larger in either dimension than the allowable minimum size. For example; a sleeve dimension of 36" x 36" (914 x 914) shall have an opening size of 36 3/8" x 36 3/8" (924 x 924) minimum and 38 3/8" x 38 3/8" (975 x 975) maximum.

7. The maximum Type A fire damper sizes are as follows:

Model Series				Single Section	Multiple Section
0100	Static	Vertical	(1 1/2 hr. label)	60" x 60" (1524 x 1524)	120" x 120" (3048 x 3048)
		Horizontal	(1 1/2 hr. label)	60" x 60" (1524 x 1524)	102" x 60" (2591 x 1524) **
0300	Static	Vertical	(1 1/2 hr. label)	60" x 48" (1524 x 1219)	—
		Horizontal	(1 1/2 hr. label)	48" x 48" (1219 x 1219)	—
D0100	Dynamic	Vertical	(1 1/2 hr. label)	36" x 36" (914 x 914)	36" x 48" (914 x 1219) OR **** 72" x 24" (1829 x 610)
		Horizontal	(1 1/2 hr. label)	24" x 24" (610 x 610)	—
0500	Static	Vertical	(3 hr. label)	48" x 48" (1219 x 1219)	108" x 72" (2743 x 1829) ***
		Horizontal	(3 hr. label)	36" x 36" (914 x 914)	72" x 36" (1829 x 914)
0540	Static	Vertical	(3 hr. label)	60" x 48" (1524 x 1219) or 24" x 60" (610 x 1524)	—
		Horizontal	(3 hr. label)	24" x 24" (610 x 610)	—
D0500	Dynamic	Vertical	(3 hr. label)	36" x 36" (914 x 914)	36" x 48" (914 x 1219) OR **** 72" x 24" (1829 x 610)
		Horizontal	(3 hr. label)	24" x 24" (610 x 610)	—

* Type B and C dampers have the same overall damper size but the connecting ducts are smaller due to the B or C enclosures. See Type B and Type C specification drawings for maximum duct sizes.

** Maximum individual sections not to exceed 34" x 60" (864 x 1524).

*** Maximum individual sections not to exceed 36" x 36" (914 x 914).

**** Maximum individual sections not to exceed 24" x 24" (610 x 610), up to 48" x 24" (1219 x 610). Assemblies larger than 48" x 24" (1219 x 610) will be made up of individual sections not to exceed 18" x 24" (457 x 610).

8. Multiple Section Assemblies. Individual dampers may be joined together to make multiple section damper assemblies (see Figure 1). The frames shall be fastened together using 1/4" (6) long welds, 3/16" (4.76) steel rivets, 1/4" (6.35) bolts and nuts, #8 sheet metal screws or 3/16" (4.76) buttonloks on both sides of the damper at 6" (152) max. on center and 2" (51) max. from the corner of the damper on all 4 sides. The following additional requirements shall be met:

Vertical dampers, 1 1/2 hr. label over 84" (2134) in width require a 12 ga. x 4 1/4" (2.75 x 108) wide steel mullion plate placed between adjacent vertical damper frames and the frames fastened together through this with 1/4" (6.35) bolts and nuts, 12" (305) max. on center. Dampers over 84" (2134) in height require a full length 2" x 2" x 10 ga. (51 x 51 x 3.51) steel angle bolted along horizontal joints on both sides of the assembly using 1/4" (6.35) bolts and nuts, 12" (305) max. on center (see Figure 2).

Horizontal dampers, 1 1/2 hr. label over 84" (2134) wide require a 14 ga. x 4 1/4" (1.99 x 108) wide steel mullion plate placed between adjacent damper frames and the frames fastened together through this using 1/4" (6.35) bolts and nuts, 1/4" (6) long welds or #8 sheet metal screws, 4" (102) max. on center.

Vertical dampers, 3 hr. label multiple sections require a 16 ga. x 6" (1.61 ga. x 152) wide "Z" mullion with 7/8" (22) flanges shall be placed between any horizontal joints (see Figure 3). The frames shall be joined together using 3/16" (4.76) bolts and nuts, 1/4" (6) long welds or #8 sheet metal screws, 6" (152) max. on center.

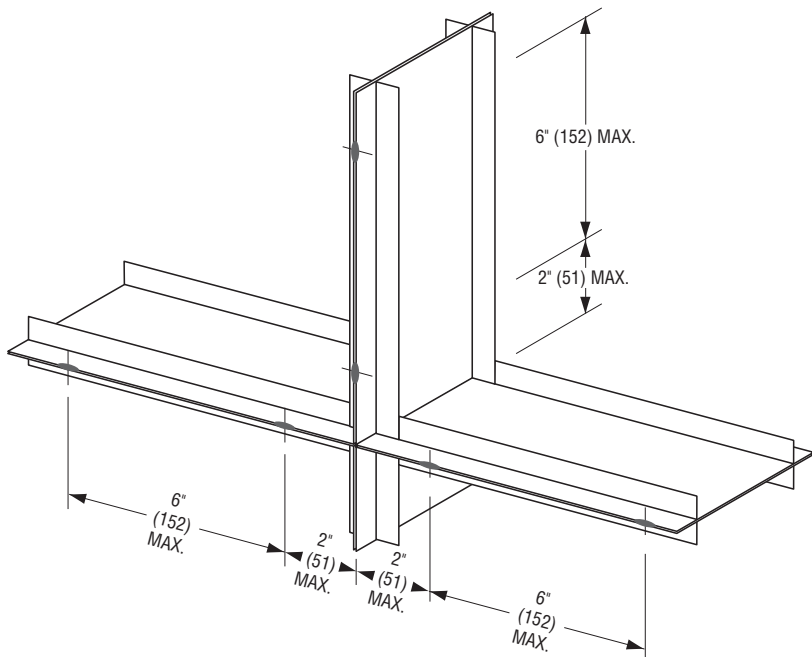


Figure 1.
Fastening of damper frames (see note 8).

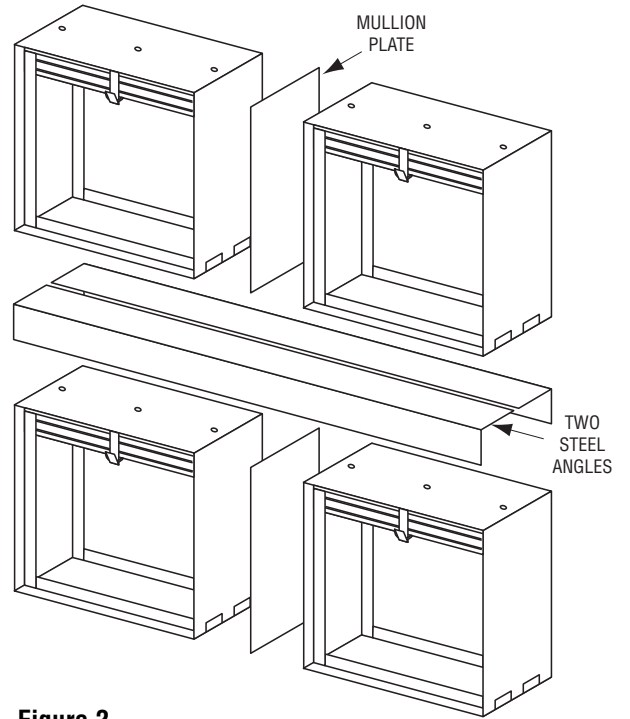


Figure 2.
1 1/2 hr. label vertical installation
over 84" x 84" (2134 x 2134) (see note 8).

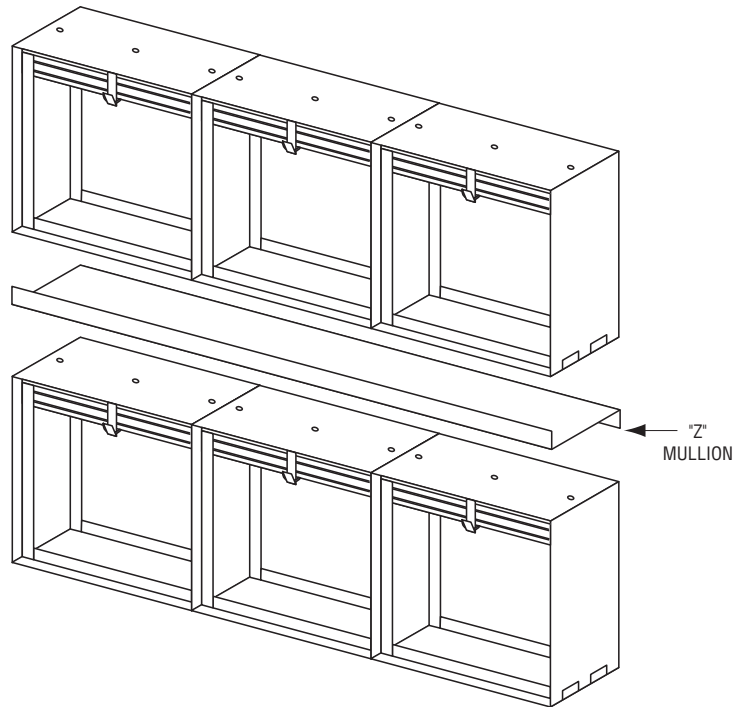


Figure 3.
3 hr. label vertical installation multiple section (see note 8).

9. In cases where the openings are larger than specified in note 7, a UL tested and qualified steel mullion must be provided between assemblies (refer to supplementary installation sheet FDSMINST).

IMPORTANT

DO NOT CAST DAMPER IN PLACE.
DO NOT FASTEN RETAINING ANGLES OR DAMPER DIRECTLY TO WALL OR FLOOR.
DO NOT INSTALL DAMPER OUT OF SQUARE OR OUT OF FLAT.
VERTICAL MOUNTING SHOWN ON MASONRY WALL.
FOR INSTALLATION IN DRYWALL FRAMING, SEE DOC. FDSWSFINST.
HORIZONTAL MOUNTING SIMILAR FOR MASONRY FLOOR.

REFER TO THE APPROPRIATE NAILOR INSTALLATION INSTRUCTION SUPPLEMENTS FOR THE FOLLOWING SPECIAL REQUIREMENTS:

STEEL MULLIONS (for dampers in oversized wall openings)	FDSMINST
SINGLE SIDED RETAINING ANGLES	FDSSRAINST
STEEL AND WOOD STUD FRAMING	FDSWSFINST
CAVITY SHAFT WALL PARTITIONS	FDCSWINST
FLANGED TYPE ALTERNATIVE BREAKAWAY CONNECTIONS	FDFABC
TDC/TDF FLANGED DUCT CONNECTION	FDTDCFINST
QUICK-SET RETAINING ANGLES	FDQSRA

Dimensions are in inches (mm).

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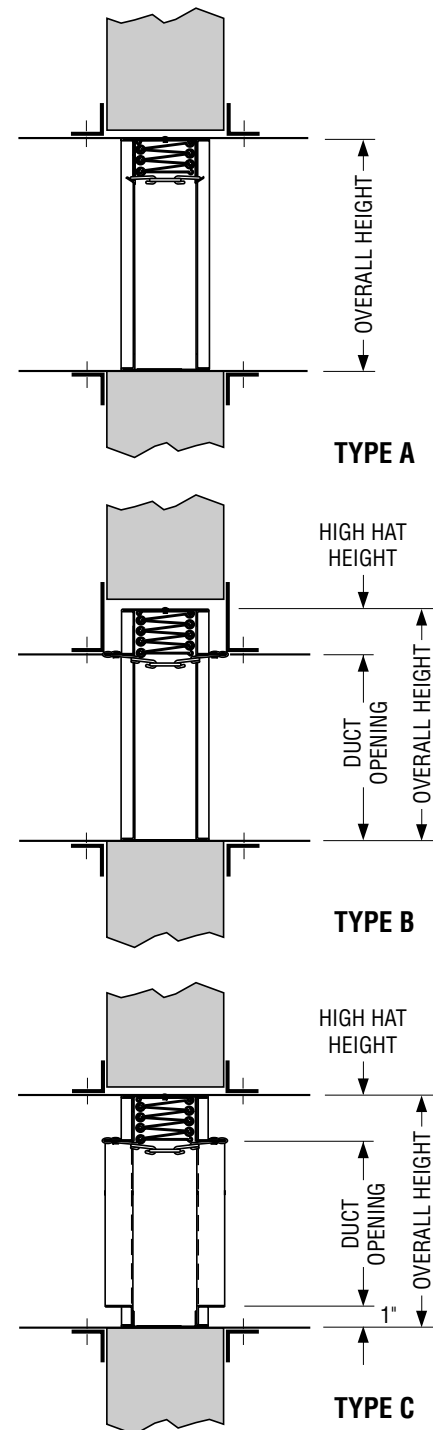
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Fax: 702-638-0400

Toronto, Canada
Tel: 416-744-3300
Fax: 416-744-3360

Calgary, Canada
Tel: 403-279-8619
Fax: 403-279-5035

DUCT OPENING HEIGHT (inches)	TYPE "A" OVERALL HEIGHT (inches)	TYPE "B" OVERALL HEIGHT (inches)	TYPE "C" OVERALL HEIGHT (inches)
4	3 3/4	6 1/8	5 3/4
5	4 3/4	7 1/8	6 3/4
6	5 3/4	8 1/8	8 3/4
7	6 3/4	9 1/8	9 3/4
8	7 3/4	10 1/8	10 3/4
9	8 3/4	11 1/8	11 3/4
10	9 3/4	12 1/8	12 3/4
11	10 3/4	13 1/8	13 3/4
12	11 3/4	14 1/8	14 3/4
13	12 3/4	15 1/8	15 3/4
14	13 3/4	16 1/8	16 3/4
15	14 3/4	17 1/8	17 3/4
16	15 3/4	18 1/8	18 3/4
17	16 3/4	19 1/8	19 3/4
18	17 3/4	21 1/8	21 3/4
19	18 3/4	22 1/8	22 3/4
20	19 3/4	23 1/8	23 3/4
21	20 3/4	24 1/8	24 3/4
22	21 3/4	25 1/8	25 3/4
23	22 3/4	26 1/8	26 3/4
24	23 3/4	27 1/8	27 3/4
25	24 3/4	28 1/8	28 3/4
26	25 3/4	29 1/8	29 3/4
27	26 3/4	30 1/8	30 3/4
28	27 3/4	32 1/8	32 3/4
29	28 3/4	33 1/8	33 3/4
30	29 3/4	34 1/8	34 3/4
31	30 3/4	35 1/8	35 3/4
32	31 3/4	36 1/8	36 3/4
33	32 3/4	37 1/8	37 3/4
34	33 3/4	38 1/8	38 3/4
35	34 3/4	39 1/8	39 3/4
36	35 3/4	40 1/8	40 3/4
37	36 3/4	42 1/8	42 3/4
38	37 3/4	43 1/8	43 3/4
39	38 3/4	44 1/8	44 3/4
40	39 3/4	45 1/8	45 3/4
41	40 3/4	46 1/8	46 3/4
42	41 3/4	47 1/8	47 3/4
43	42 3/4	48 1/8	48 3/4
44	43 3/4	49 1/8	49 3/4
45	44 3/4	50 1/8	50 3/4
46	45 3/4	52 1/8	52 3/4
47	46 3/4	53 1/8	53 3/4
48	47 3/4	54 1/8	54 3/4
49	48 3/4	55 1/8	55 3/4
50	49 3/4	56 1/8	56 3/4
51	50 3/4	57 1/8	57 3/4
52	51 3/4	58 1/8	58 3/4
53	52 3/4	59 1/8	59 3/4
54	53 3/4	60 1/8	
55	54 3/4	DAMPER WIDTH OVERALL Type "A" = Duct Opening - 1/4". Type "B" = Duct Opening - 1/4". Type "C" = Duct Opening + 1 3/4".	
56	55 3/4		
57	56 3/4		
58	57 3/4		
59	58 3/4		
60	59 3/4		



Dimensions are in inches (mm).

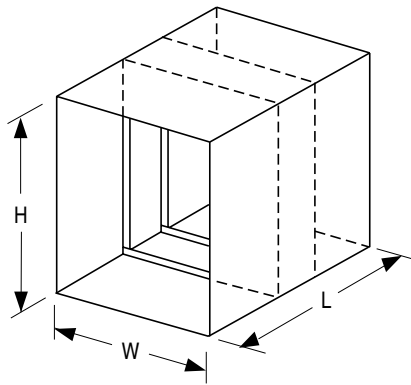


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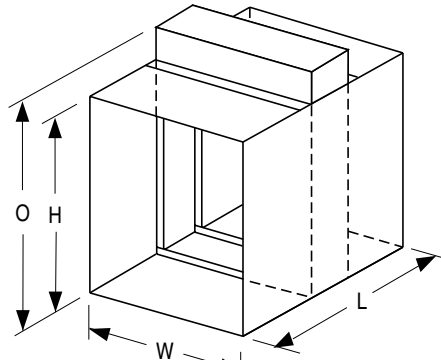
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Tel: 954-351-2444
Fax: 954-351-2440

Toronto, Canada
Tel: 416-744-3300
Fax: 416-744-3360

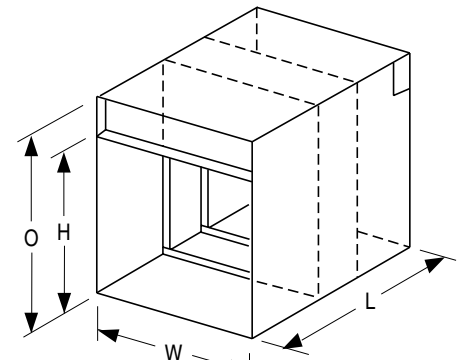
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Fax: 403-279-5035



TYPE 'A'
BLADES AND FRAME IN AIRSTREAM



STYLE 1 (OPTIONAL)



STYLE 2 (STANDARD)

TYPE 'B' BLADES OUT OF AIRSTREAM

NOTES:

1. Dimensional Data.

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

For 'O' dimension and relationship to duct height, refer to dwgs. FDSC (standard frame) or FDTSC (thinline frame) depending on damper model.

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. Sleeves are available in lengths up to 36" (914) and in 10 through 22 gauge (3.51 through 0.85) galvanized steel as required for application.

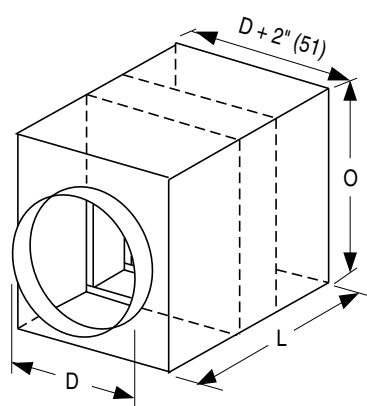
Standard sleeve is 12" (305) long x 20 gauge (1.01).

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.

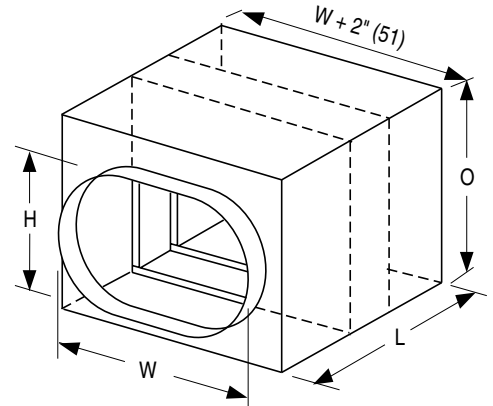
- 3. See individual models for minimum and maximum size limitations.
- 4. Dampers are centered in sleeve unless specified otherwise.
- 5. Multiple section damper assemblies are shipped knocked down for field assembly.

Type CR, CO and CSR Option:

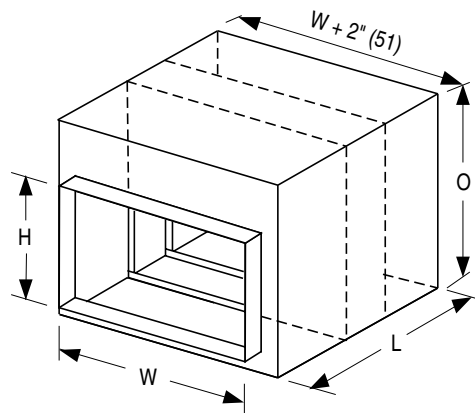
- LP Unsealed. Suitable for low pressure systems.
- HP Sealed. Suitable for medium/high pressure systems. Externally caulked (up to 6" w.g./1.5 kPa).



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.

Dimensions are in inches (mm).



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Calgary, Canada
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Fax: 403-279-5035

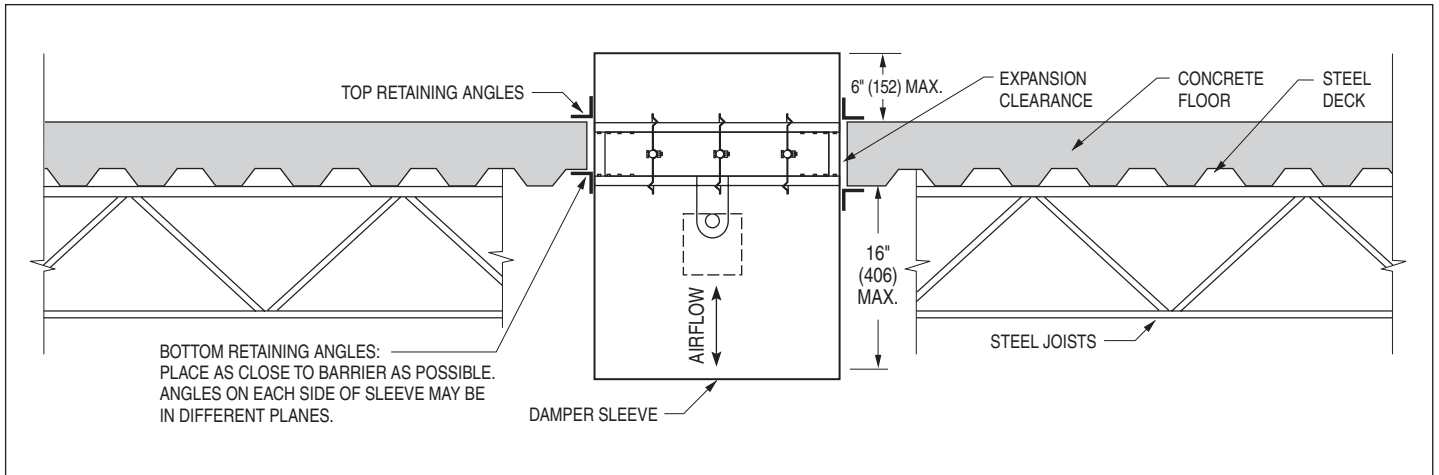


Fig. 1. Floor Opening Detail.

APPLICATION:

Horizontal installation of fire and combination fire/smoke dampers in concrete floors utilizing a steel deck may not allow the bottom angles to be placed against the steel deck on an even plane. This installation details how to properly install the required angles next to the steel deck.

NOTES:

1. Retaining angles are required on top and bottom sides of the damper as detailed in the damper installation instructions for the specific model. Angles may be reversed so that one leg of the angle points into the floor opening provided the required clearance is maintained between angle leg fasteners and the floor opening.
Important: When positioning damper in floor and attaching retaining angles to sleeve, ensure fasteners clear and do not penetrate damper frame. Failure to do so may prevent correct damper operation or closure due to fouling of linkage or damper blades.
2. Installation of the bottom angle against the uneven steel deck shall be done so the angles on each side of the sleeve are as close to the barrier as possible. The angles may be in different planes relative to each other (see Figures 1 and 2).
3. When viewed from the end of the sleeve, the angles must overlap each other in the corners to prevent "see through".

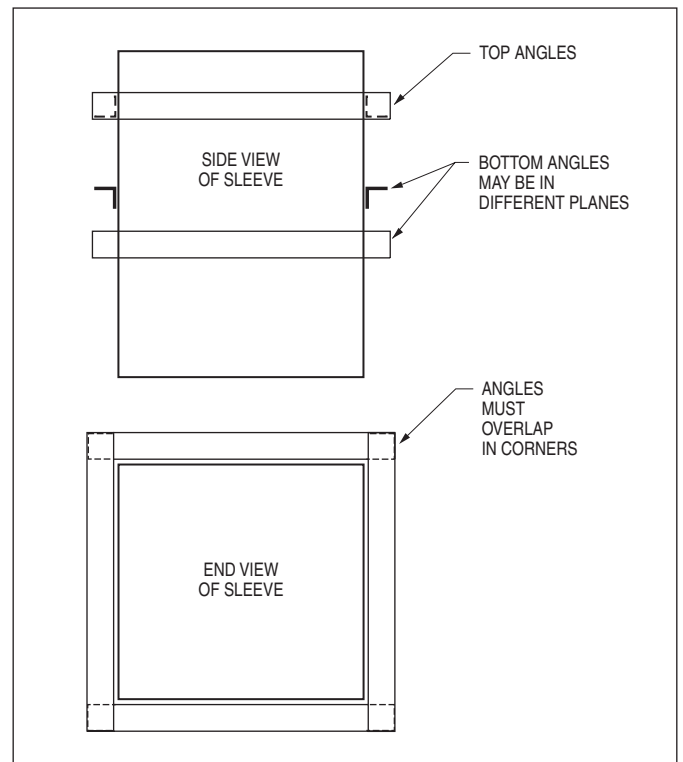


Fig. 2. Retaining Angle Detail

Refer to the Following Installation Instructions:

Curtain Type Fire Dampers (D)0100 & (D)0500	FDINST
Curtain Type Fire Dampers 0200 & 0500 Thinline	FDTINST
Multi-Blade Fire Dampers 1200 & 1250	MBFDINST
Combination Fire/Smoke Dampers 1220	1220INST
Combination Fire/Smoke Dampers 1270	1270INST



Dimensions are in inches (mm).



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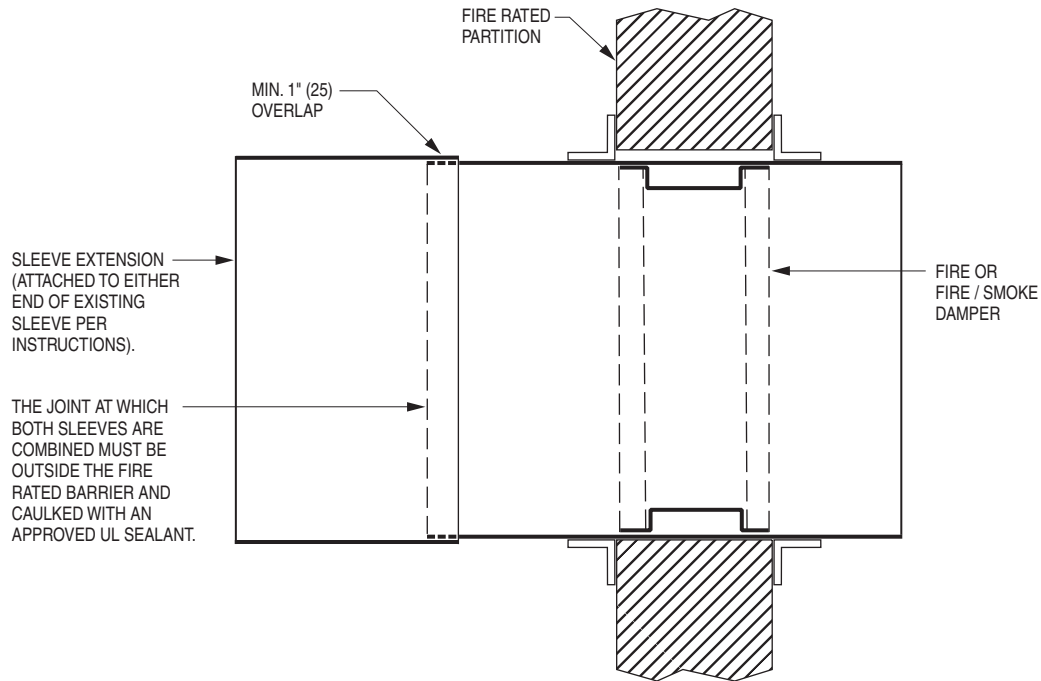


Figure 1. Sleeve Extension Detail

APPLICATION:

Factory installed sleeves may sometimes need to be extended in the field when of insufficient length for ductwork connection relative to the depth of the fire partition. This supplement installation instruction provides details for attachment of the sleeve extension. Consult Authority Having Jurisdiction for approval.

NOTES (Refer to Figure 1):

1. Sleeve extension must be same material and gauge as factory sleeve.
2. The inside dimensions of the sleeve extension must be the same dimensions as the outside dimensions of the factory sleeve.
3. Sleeve extension must overlap the factory sleeve a minimum of 1" (25).
4. All four sides of the sleeve extension must be attached to the factory sleeve. Attachments must be spaced a maximum of 6" (152) on center and a maximum of 2" (51) from corners. A minimum of 2 attachments per side (8 per damper) are required. Attach the sleeve extension using 1/2" (13) long tack or spot welds, #10 sheet metal screws, 1/4" (6.35) dia. bolts and nuts or 3/16" (5) steel pop rivets.
5. Products with a smoke leakage rating require that the joint between the two sleeves be sealed with a continuous 1/8" (3) bead of GE RTV108 or Dow Corning RTV732 silicone sealant.

6. Sleeve extensions can be made to either end of the factory sleeve. However, the sleeve cannot extend beyond the fire partition more than 6" (152) on either side or 16" (406) on one side if equipped with an actuator or integral access door.
7. The joint created by the factory sleeve and sleeve extension cannot be in the plane of the partition.

Refer to the Following Installation Instructions:

Curtain Type Fire Dampers (D)0100 & (D)0500	FDINST
Curtain Type Fire Dampers 0200 & 0500 Thinline	FDTINST
Multi-Blade Fire Dampers 1200 & 1250	MBFDINST
Combination Fire/Smoke Dampers 1220	1220INST
Combination Fire/Smoke Dampers 1270	1270INST



Dimensions are in inches (mm).

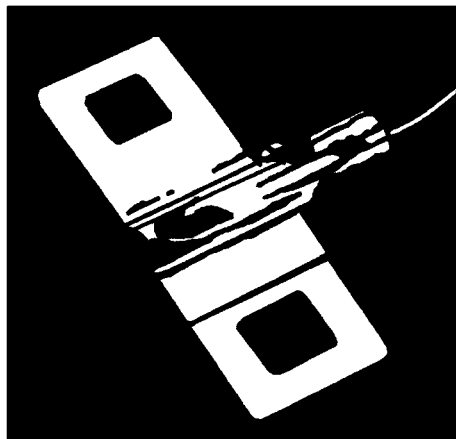
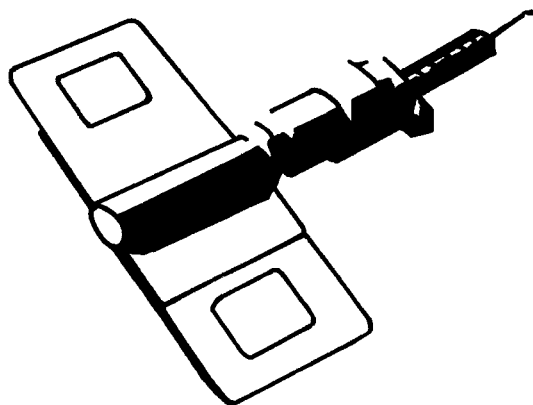


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ETL[®]

WHAT IT IS – WHAT IT DOES

The Electro Thermal Link (ETL[®]) is a multi purpose, dual responsive fusible link which reacts (melts) when subjected to;

1. Local heat (165°F (74°C)) exactly the same as an ordinary link.
2. External electrical impulse of low power and short duration.

It is specifically designed to substitute for ordinary links and/or actuators in existing and new installations of Fire Dampers, Fire Doors, Fire Extinguishers, Fire and Smoke Roof Hatches, Sprinklers, Smoke Towers, and chemical or gas Automatic Release Systems.

The substitution should be made in every installation of the above devices where it is desirable to improve life safety by making those devices responsive to -

SMOKE in the early form of invisible products of combustion through ionization detectors, or
FIRE at an earlier stage than ordinary links thru the use of rate of rise or maximum temperature devices.

The ETL's electro-response is the unique feature. It is not smoke responsive of itself, but its power requirement is so low that it can be released with 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 ampere of trip current required, and 1/2 millisecond (.0005 second) response at 24 v. 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 seven seconds.

The ETL's thermal response is identical to that of ordinary fusible links of identical temperature (165°F (74°C)) and strength (40#) rating.

In its capacity of converting a FIRE safety device into a FIRE/SMOKE safety device the ETL can be substituted for both an ordinary link and motor, or link and electromagnetic operator with advantages of simplicity, economy, operational reliability and wide acceptability. With its dual responsiveness the ETL can be substituted for two other devices at a savings in first cost as well as operating cost and maintenance. The ETL is a Space Age Device 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 Underwriter's Laboratories, Inc. as a Fusible Link.

With the ongoing development of dynamic smoke control systems and building code changes in recent years, application and use of this product should be governed by acceptance of the local authority having jurisdiction.



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DESCRIPTION:

1. Pull ring: 1 1/4 (32) diameter nickel plated steel.
2. Attachment strap: 22 ga. galvanized or stainless steel.

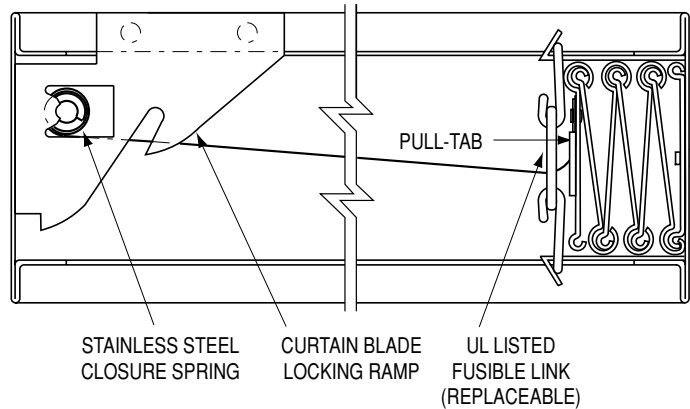
Horizontal curtain type fire dampers for use in static systems and all dynamic dampers utilize stainless steel springs and locking ramps to draw the curtain closed in the event of a fire or upon manual release.

Horizontally installed dampers are designed and tested to be mounted with the locking ramps on the top side. When periodic testing (as well as maintenance and inspection) is required, access doors should be located above the damper, so that the damper blade pack can be "pushed down" and released off the locking ramp for reset.

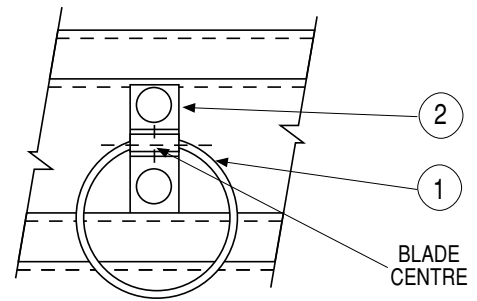
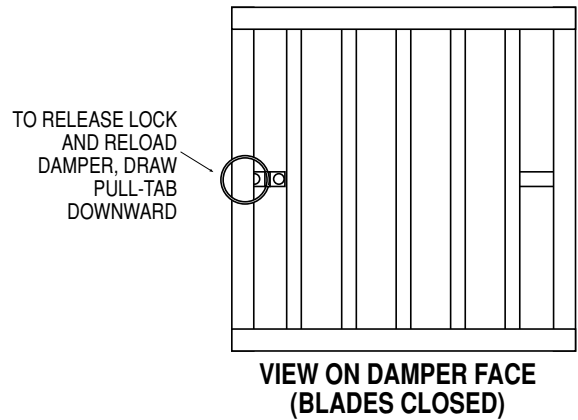
When access from above is not possible or convenient, the Pull-Tab release option permits simple resetting from beneath the damper.



TOP OF UNIT (Horizontal Installation)



TYPE "A" MODEL 0110H (TYPE "B" SIMILAR).



DETAIL OF PULL-TAB

Dimensions are in inches (mm).



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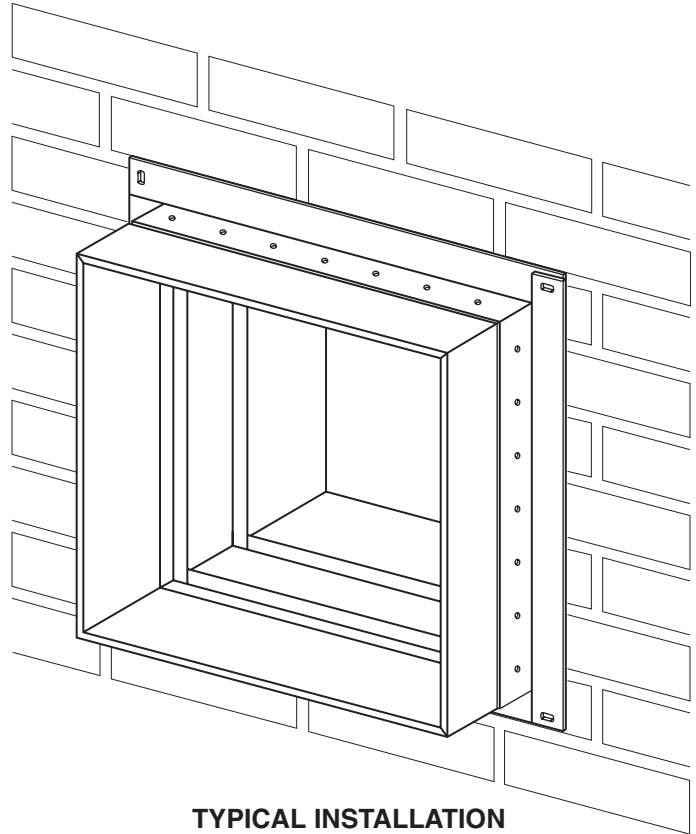
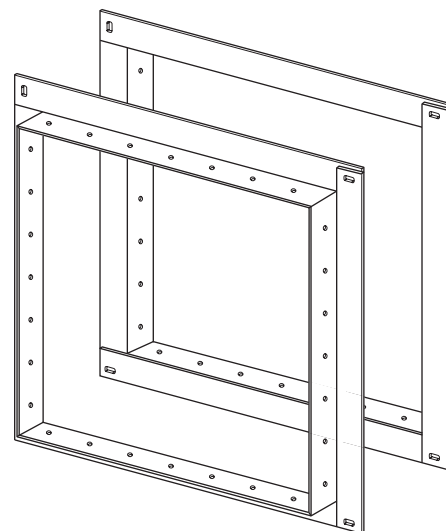
**"QUICK-SET" RETAINING ANGLES BOTH SIMPLIFY AND SPEED INSTALLATION,
SAVING BOTH TIME AND MONEY.****BENEFITS:**

- One piece angles are fastened together in the corners. Only two sets of angles to handle per damper (rather than four separate angles per side).
- Angles are shipped with damper - no sorting or matching.
- Provided with pre-drilled fastening holes on 2" (51) centers to ensure correct angle/sleeve attachment.
- Factory fabricated by Nailor to suit the individual fire damper.
- Reduced cost when compared to conventional retaining angles.
- Dampers can ship directly to the job site complete with all necessary installation sheet metal hardware (saves on double handling at contractor's shop).
- 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 and ship with the individual damper for ultimate convenience. "Quick-Set" angles are supplied with correctly spaced pre-drilled screw-holes to ensure a quick, easy and accurate installation for all integral sleeve Nailor fire and combination fire/smoke dampers - no measuring required.

"Quick-Set" retaining angles provide the "complete" installation package. Simple, fast, convenient.

**TYPICAL INSTALLATION****TYPICAL PAIR OF PRE-ASSEMBLED
'QUICK-SET' RETAINING ANGLES**

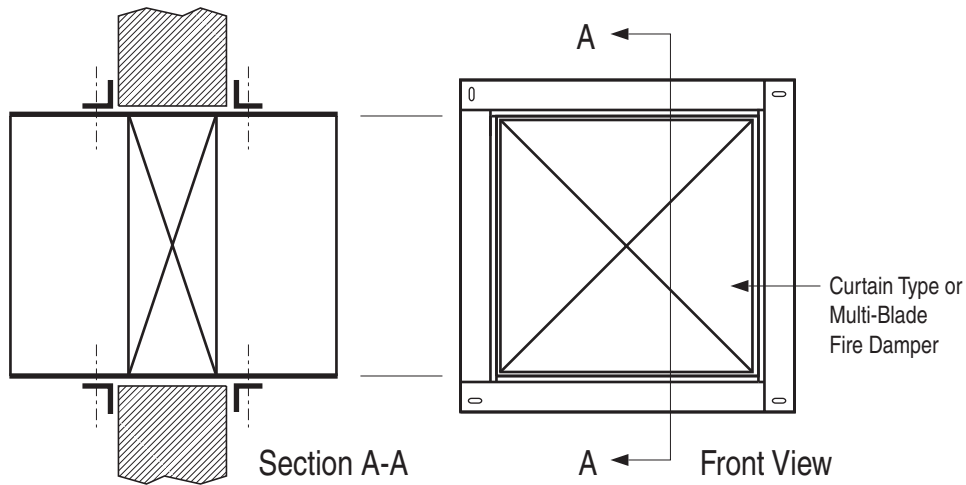


FIGURE 1. TYPICAL TWO SIDED INSTALLATION.

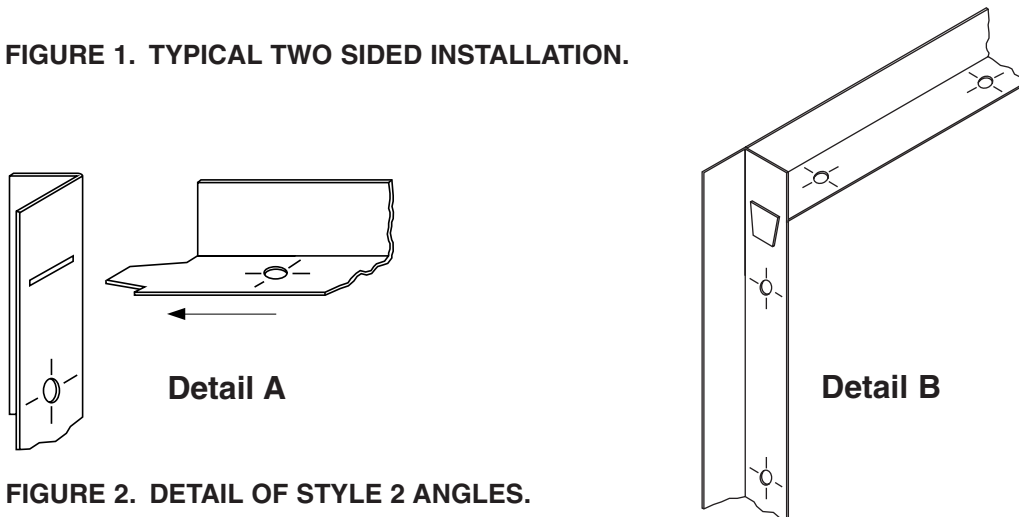


FIGURE 2. DETAIL OF STYLE 2 ANGLES.

APPLICATION:

The Nailor Quick-Set Retaining Angle System may be used in lieu of conventional retaining angles on all Nailor Fire and Combination Fire / Smoke Dampers.

Quick-Set angles are supplied in one of two styles, dependent upon fire resistance label, damper size and installation method.

Style 1: 1 1/2" x 1 1/2" x 20 ga. (38 x 38 x 1.0) Four sides are connected together with rivets in three corners.

Standard for the majority of applications with the following limitations:

- 1 1/2 hour label fire dampers
- Maximum Size: 36" x 36" (914 x 914)
- Two sided installation only

Style 2: 1 1/2" x 1 1/2" x 16 ga. (38 x 38 x 1.6) Slot and tab design. The retaining angle assembly for each side has four angles, each with a tab end and a slot end (Detail A). The tabs are to be inserted into the slots and knocked down either before or after fastening to the sleeve (Detail B).

- 1 1/2 or 3 hour label fire dampers
- Maximum Size: 90" x 48" (2286 x 1219) or 48" x 90" (1219 x 2286)
- Single side (1 1/2 hour only. Refer to Single Side Retaining Angles Supplementary Installation Instructions for size limitations) or two sided installation

Refer to the Following Installation Instructions:

Curtain Type Fire Dampers (D)0100 & (D)0500	FDINST
Curtain Type Fire Dampers 0200 & 0500 Thinline	FDTINST
Multi-Blade Fire Dampers 1200 & 1250	MBFDINST
Combination Fire/Smoke Dampers 1220	1220INST
Combination Fire/Smoke Dampers 1270	1270INST
Single Side Retaining Angles	FDSSRAINST



Dimensions are in inches (mm).



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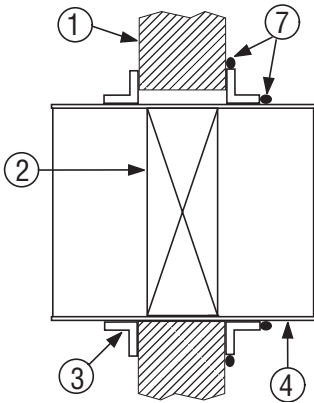


Figure 1. Damper ducted both sides.

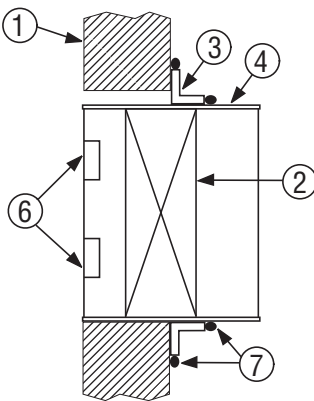


Figure 2. Damper sleeve with tabs for grille mounting

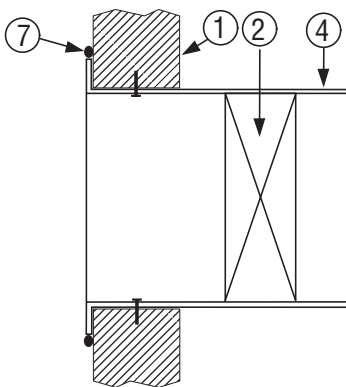


Figure 3. Out of Wall damper with flanged sleeve for grille mounting

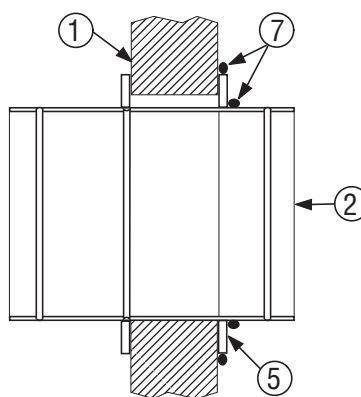


Figure 4. Round damper

APPLICATION:

Application of sealant between the retaining angles, retaining plates, or sleeve retaining flange and the fire rated wall or floor as applicable to the damper installation is not required by UL as a standard procedure. However, if an airtight seal is required by specification or local building code, sealant shall be applied as shown.

METHOD

Follow the sealant manufacturers' directions; remove dirt, grease, and moisture from the surfaces to be sealed. Apply a continuous bead of Dow Corning RTV732, Hilti Corporation FS-One, Nuco Inc. Self-Seal GG-200, Johns Manville Firetemp C1 or GE RTV108 sealant. Location of sealant should be as shown in Figures 1 through 4 and may be applied on one or both sides of the fire separation, as applicable to the model specific installation.

IMPORTANT:

Do not apply sealant within the required expansion gap between the damper and the fire rated wall or floor.

Press the surface of the sealant in place to dispel any air. Allow sealant to set and become tack-free before operating the damper.

Refer to the appropriate damper installation instructions for details on damper installation.

ITEMS

1. Fire Rated Wall or Floor
2. Damper
3. Retaining Angles
4. Sleeve
5. Retaining Plate
6. Mounting Tabs
7. Sealant (refer to text for specific sealant)

Dimensions are in inches (mm).



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NOTES:

1. These details are based upon tests conducted by the Gypsum Association. Consult the local authority having jurisdiction for other acceptable framing methods.
2. Frame wall openings as shown in Figure 1 or 2.
3. Gypsum panels must be screwed to all stud and runner flanges, 12" (305) max. o.c. surrounding opening.
4. All fasteners to be per UL/ULC Classified wall design.
5. UL/ULC wood stud designs require gypsum wallboard filler pieces to be installed around entire opening, screwed 12" (305) o.c. to web of runners and studs, covering all wood stud surfaces.
 In UL metal stud designs, exposed steel surfaces need not be covered with gypsum wallboard. ULC metal stud construction however may still require filler pieces, check with the local authorities.
6. Refer to standard installation instructions sheet for additional details.

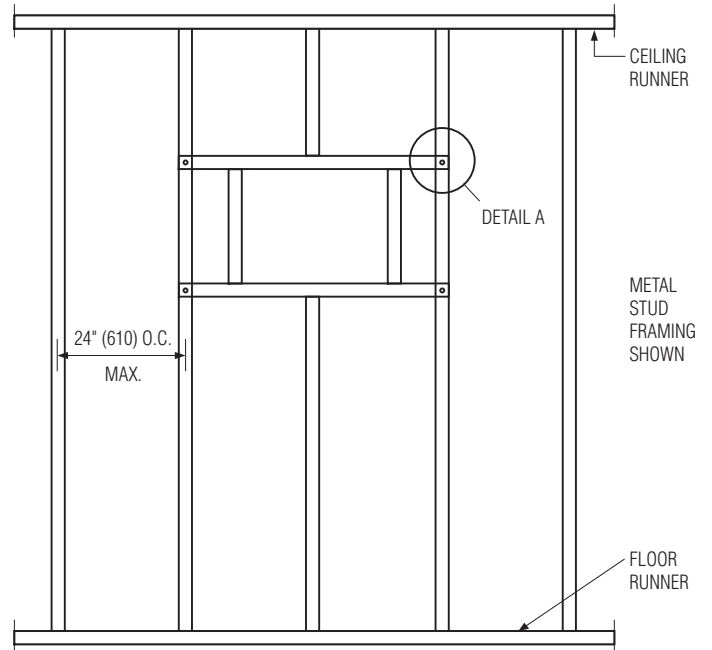


FIGURE 1. SINGLE VERTICAL STUD OPENING PREPARATION DETAILS.
 DAMPERS UP TO 36" x 36" (914 x 914).

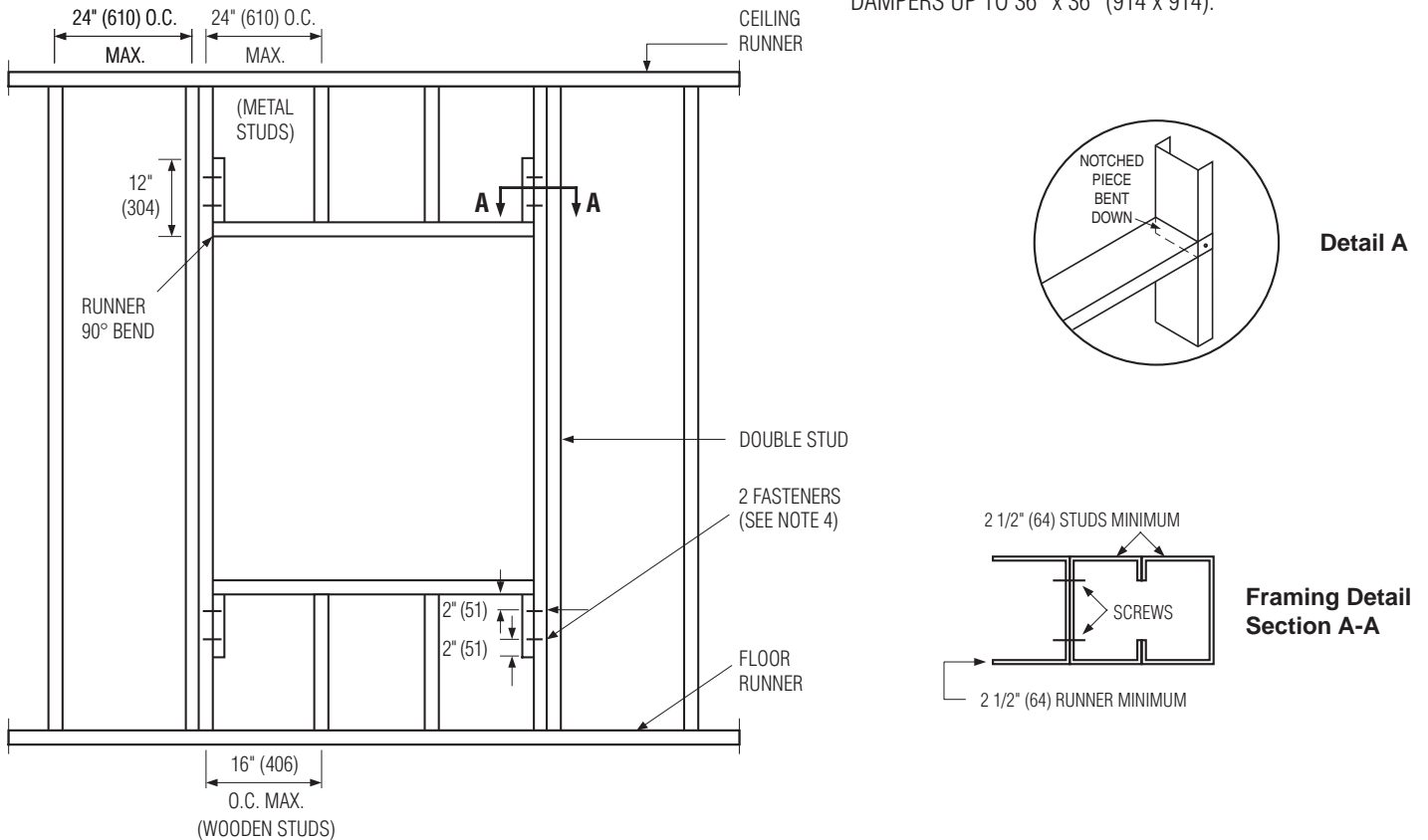
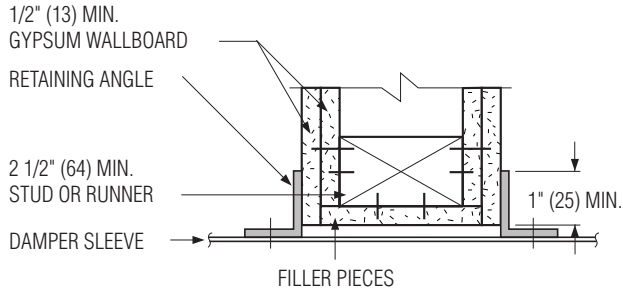


FIGURE 2. DOUBLE VERTICAL STUD OPENING PREPARATION DETAILS.
 DAMPERS OVER 36" x 36" (914 x 914).

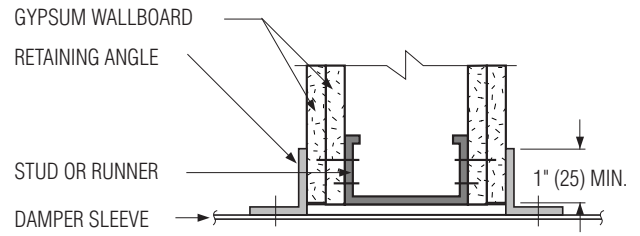
TYPICAL STUD WALL DETAILS (See Notes on Page 1)

WOOD STUD DETAIL

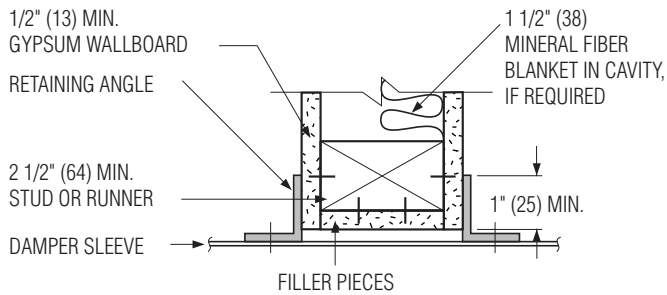


2 Hour Partition Rating

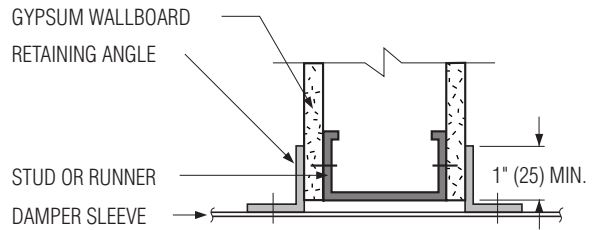
METAL STUD DETAIL (UL DESIGN)



2 Hour Partition Rating



1 Hour Partition Rating



1 Hour Partition Rating

Dimensions are in inches (mm).

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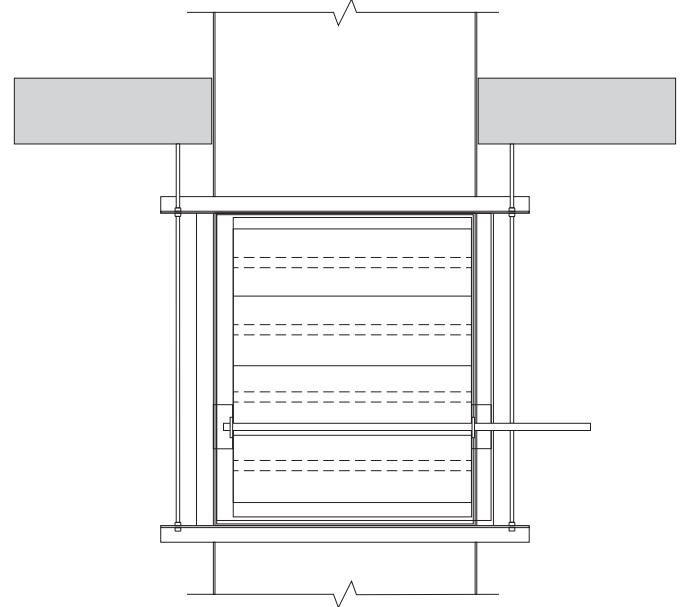
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These instructions are for installing vertical mount fire and combination fire smoke dampers in a fire resistant ventilation duct (UL Ventilation duct Assembly HNLN.V-5).



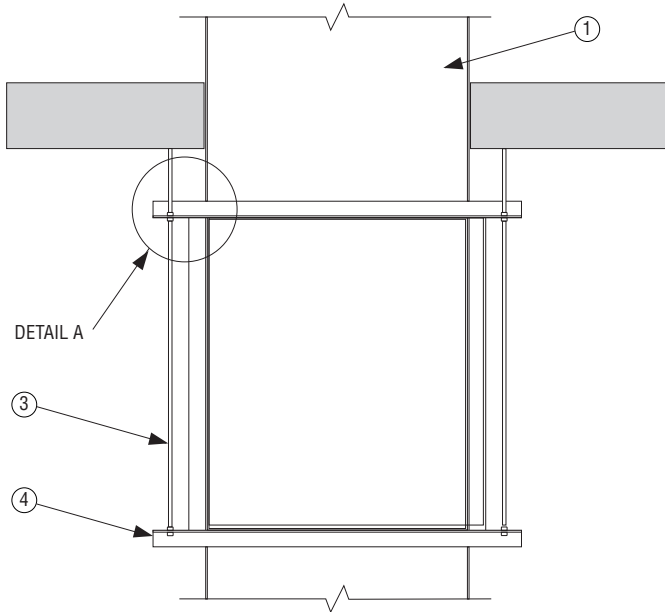
NOTES:

1. The damper sleeve must slip inside the fire resistant duct spool. Damper sleeve assembly will be 1/4" (6), 1/2" (13) maximum, smaller than duct spool size.
2. Damper is to be supplied with factory mounted sleeve. Sleeve gauge will be minimum of 16 ga. (1.5) for dampers up to 36" wide x 24" high (914 x 610) and 14 ga. (2) for dampers exceeding 36" wide x 24" high (914 x 610).
3. Mounting angles need to be the following sizes:
 - 1 1/2" x 1 1/2" x 1/4" up to 24" (38 x 38 x 6 up to 610)
 - 2" x 2" x 1/4" over 24" up to 32" (51 x 51 x 6 over 610 up to 813)
 - 2 1/2" x 2 1/2" x 1/4" over 32" up to 40" (64 x 64 x 6 over 813 up to 1016)
 - 3" x 3" x 1/4" above 40" (76 x 76 x 6 above 1016)
4. Mounting angle fasteners:
 - #10 bolts or screws
 - 3/16" (4.7) steel rivets
 - 1/2" (13) long welds
5. Mounting Angle Fasteners Spacing:
 - Mounting angles to dampers, space fasteners on 6" (152) on center.
 - Mounting angle to spool flange, space fasteners on 12" (305) on center.
 - Minimum 2 fasteners per side
6. Hanger rods:
 - 3/8" (10) threaded rod anchored to the floor above and attached to the mounting angles through hole in the angles and secured with hex nut and washer (items 5 & 6). Anchor to masonry per assembly No. V-5.
7. Duct to Damper Sleeve Connection:
 - See the fire damper or the combination fire smoke installation instructions for breakaway, flanged, or non-breakaway connections.

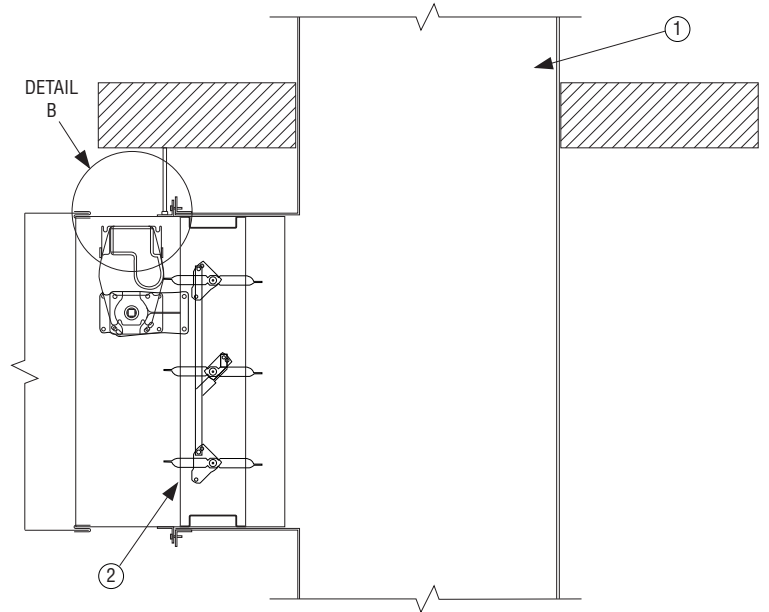


END VIEW

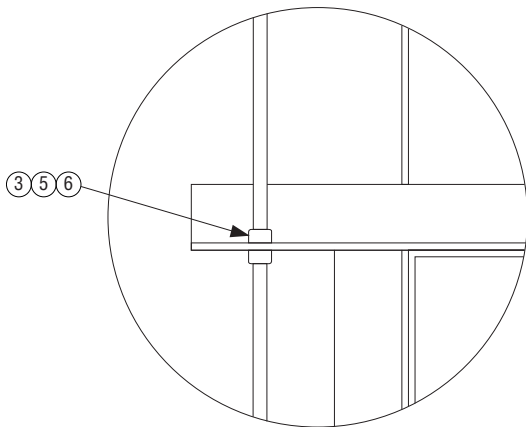
Item	Description
1	Fire Resistant Ventilation Duct (UL HNLN Assembly No. V-5)
2	Fire Damper or Combination Fire/Smoke Damper
3	Hanger rods in accordance with assembly No. V-5
4	Mounting angles (see instruction #3)
5	3/8" (10) hex nuts
6	3/8" (10) flat washer
7	Mounting angle fasteners (see instruction #4)



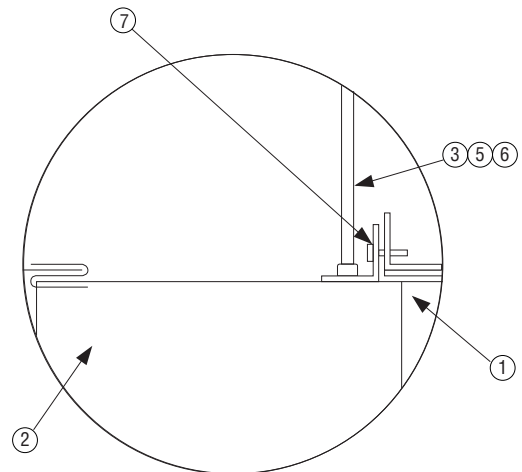
END VIEW



SIDE VIEW



DETAIL A



DETAIL B

Dimensions are in inches (mm).



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