



STATIC CURTAIN TYPE FIRE DAMPER **1 1/2 HR. LABEL • VERT. OR HORIZ.** **FOR USE IN STATIC SYSTEMS** **MODELS: 0110V AND 0110H (TYPE A)**



QUALIFICATIONS:

- **UL 555 & CAN/ULC-S112 CLASSIFIED FIRE DAMPER. 1 1/2 hr. label (File # R9492).**
- **Meets all the requirements of UL and NFPA 80, 90A and 101 for fire dampers in static 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. 3225-0935:0100.**

Model 0110 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 2 hours. The 0110 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.

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:** Vertical mount model; gravity. Horizontal mount models are equipped with stainless steel closure springs and galvanized steel locking ramps.

Sizes (Duct W x H):

Minimum		Maximum	
Single Section	Single Section	Multiple Section	
Vertical/Horizontal	Vertical/Horizontal	Vertical	Horizontal
4" x 4" (102 x 102).	60" x 60" (1524 x 1524)	120" x 120" (3048 x 3048)	① 102" x 60" (2591 x 1524)

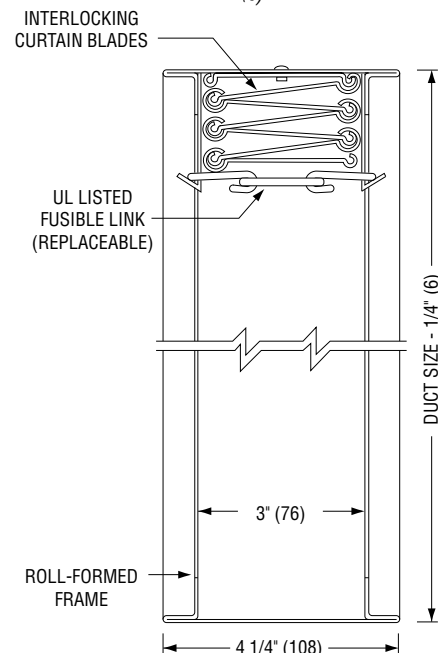
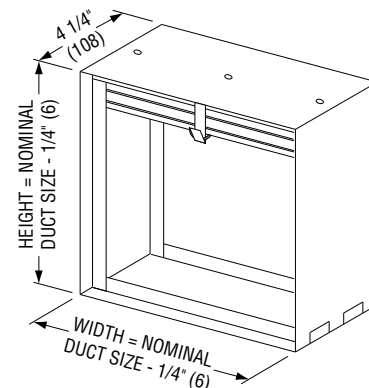
① Maximum individual sections not to exceed 34" x 60" (864 x 1524).

OPTIONS:

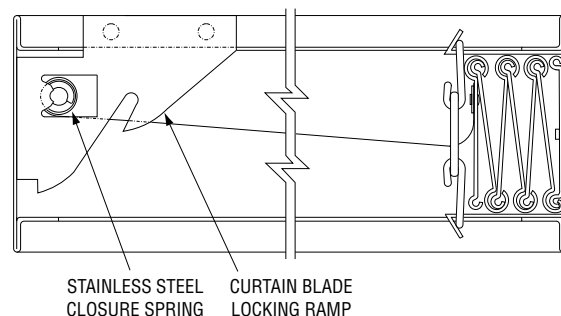
- ☐ Non-standard temperature fusible link. Specify _____.
- ☐ **PT Pull Tab Release.** Permits simple reset of horizontal damper when access door is located below damper. (See dwg. ACC-PTR for details).
- ☐ **Factory Sleeve.** Available in 10 (3.5) through 22 ga. (0.85) galvanized steel and in lengths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

NOTES:

- Units are manufactured 1/4" (6) under nominal duct size.



MODEL 0110V – VERTICAL MOUNT



MODEL 0110H – HORIZONTAL MOUNT

For installation instructions, see IOM-FDINST.

Dimensions are in inches (mm).

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

DATE

B SERIES

SUPERSEDES

DRAWING NO.

4 - 28 - 14

FD

10 - 6 - 06

0100-1



STATIC CURTAIN TYPE FIRE DAMPER
1 1/2 HR. LABEL • VERT. OR HORIZ.
FOR USE IN STATIC SYSTEMS
MODELS: 0120V AND 0120H (TYPE B)



QUALIFICATIONS:

- **UL 555 & CAN/ULC-S112 CLASSIFIED FIRE DAMPER. 1 1/2 hr. label (File # R9492).**
- **Meets all the requirements of UL and NFPA 80, 90A and 101 for fire dampers in static 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. 3225-0935:0100.**

Model 0120 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 2 hours. The 0120 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.

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:** Vertical mount model; gravity.
Horizontal mount models are equipped with stainless steel closure springs and galvanized steel locking ramps.

Sizes (Duct W x H):

Minimum		Maximum		
Single Section		Single Section	Multiple Section	
Vertical	Horizontal	Vertical/Horizontal	Vertical	Horizontal
4" x 3" (102 x 76)	4" x 4" (102 x 102)	60" x 54" (1524 x 1372)	120" x 114" (3048 x 2896)	① 102" x 54" (2591 x 1372)

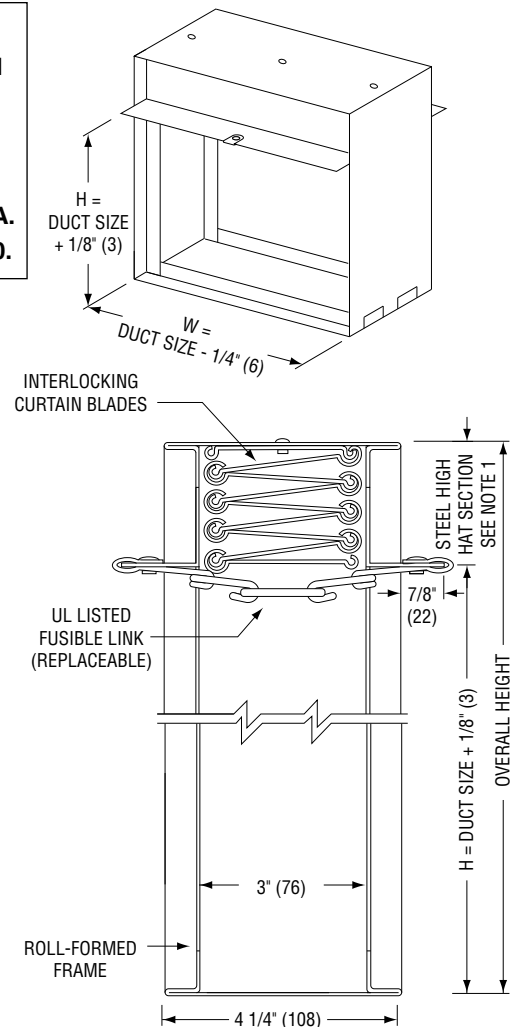
① Maximum individual sections not to exceed 34" x 60" (684 x 1524).

OPTIONS:

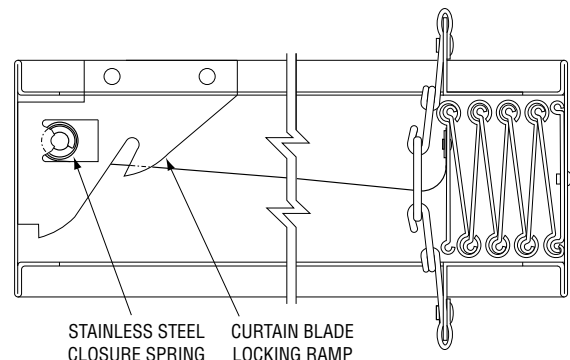
- ☐ Non-standard temperature fusible link. Specify _____.
- ☐ **PT Pull Tab Release.** Permits simple reset of horizontal damper when access door is located below damper. (See dwg. ACC-PTR for details).
- ☐ **Factory Sleeve.** Available in 10 (3.5) through 22 ga. (0.85) galvanized steel and in lengths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

NOTES:

1. See sizing chart for relationship of duct size and damper size. Refer to drawings 0100-MSSC.



MODEL 0120V – VERTICAL MOUNT



MODEL 0120H – HORIZONTAL MOUNT

For installation instructions, see IOM-FDINST.

Dimensions are in inches (mm).

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

DATE

B SERIES

SUPERSEDES

DRAWING NO.

4- 28 - 14

FD

10 - 6 - 06

0100-2

QUALIFICATIONS:

- **UL 555 & CAN/ULC-S112 CLASSIFIED FIRE DAMPER. 1 1/2 hr. label (File # R9492).**
- **Meets all the requirements of UL and NFPA 80, 90A and 101 for fire dampers in static 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. 3225-0935:0100.**

Model 0130 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 2 hours. The 0130 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.

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 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:** Vertical mount model; gravity.
Horizontal mount models are equipped with stainless steel closure springs and galvanized steel locking ramps.

SIZES (DUCT W X H):

Model Type	Minimum		Maximum		
	Single Section		Single Section	Multiple Section	
	Vertical	Horizontal	Vertical/Horizontal	Vertical	Horizontal
Round CR	3" (76) dia.	4" (102) dia.	53" (1346) dia.	112" (2896) dia.	53" (1346) dia.
Oval CO	4" x 3" (102 x 76)	5" x 4" (127 x 102)	58" x 53" (1473 x 1346)	118" x 112" (2997 x 2845)	① 100" x 53" (2540 x 1346)

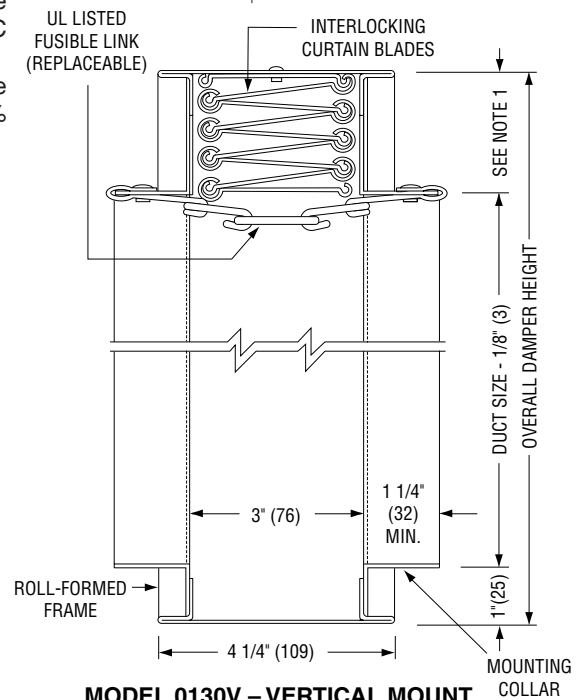
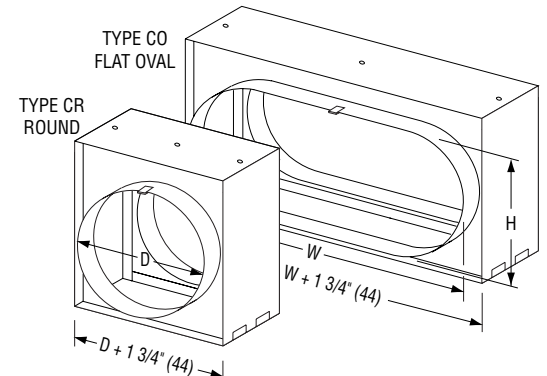
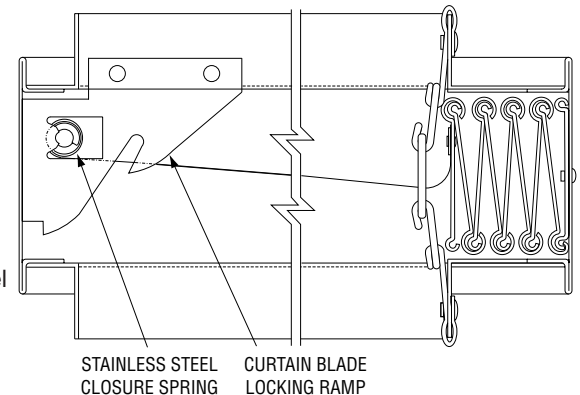
① Maximum individual sections not to exceed 34" x 60" (864 x 1524).

OPTIONS:

- ☐ Non-standard temperature fusible link. Specify _____.
- ☐ **LP** Unsealed. Suitable for low pressure systems.
- ☐ **HP** Sealed. Suitable for medium/high pressure systems. Externally caulked.
- ☐ Factory Sleeve. Available in 10 (3.5) through 22 ga. (0.85) galv. steel and in lengths required for application. Specify: ____ length. ____ ga.

NOTES:

- See sizing chart for relationship of duct size and damper size. Refer to drawing 0100-MSSC.


MODEL 0130V – VERTICAL MOUNT

MODEL 0130H – HORIZONTAL MOUNT

For installation instructions, see IOM-FDINST.

Dimensions are in inches (mm).

SCHEDULE TYPE:
PROJECT:
ENGINEER:
CONTRACTOR:

DATE	B SERIES	SUPERSEDES	DRAWING NO.
12 - 30 - 25	FD	4 - 28 - 14	0100-3

QUALIFICATIONS:

- **UL 555 & CAN/ULC-S112 CLASSIFIED FIRE DAMPER. 1 1/2 hr. label (File # R9492).**
- **Meets all the requirements of UL and NFPA 80, 90A and 101 for fire dampers in static 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. 3225-0935:0100.**

Model 0140 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 2 hours. The 0140 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. Type CSR square or rectangular fire dampers use full enclosure and transition collars to place the custom blade pack and 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:** Vertical mount model; gravity.
Horizontal mount models are equipped with stainless steel closure springs and galvanized steel locking ramps.

SIZES (DUCT W X H):

Minimum		Maximum		
Single Section		Single Section	Multiple Section	
Vertical	Horizontal	Vertical/Horizontal	Vertical	Horizontal
3" x 3" (76 x 76)	4" x 4" (102 x 102)	58" x 53" (1473 x 1346)	118" x 112" (2997 x 2845)	① 100" x 53" (2540 x 1346)

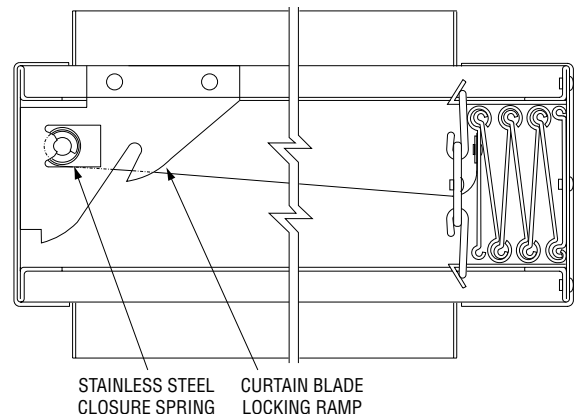
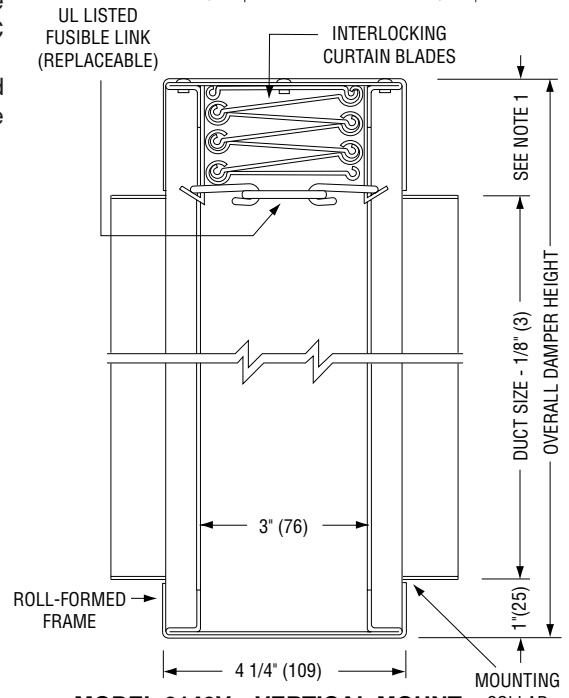
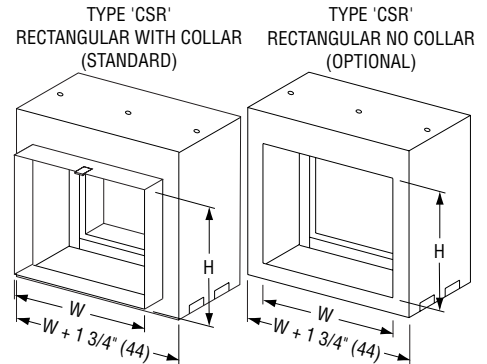
① Maximum individual sections not to exceed 34" x 60" (864 x 1524).

OPTIONS:

- ☐ Non-standard temperature fusible link. Specify _____.
- ☐ **LP** Unsealed. Suitable for low pressure systems.
- ☐ **HP** Sealed. Suitable for medium/high pressure systems. Externally caulked.
- ☐ **NC** No collar.
- ☐ **Factory Sleeve.** Available in 10 (3.5) through 22 ga. (0.85) galvanized steel and in lengths required for application. Specify: ____ length. ____ ga.

NOTES:

- See sizing chart for relationship of duct size and damper size. Refer to drawings 0100-MSSC.



MODEL 0140H – HORIZONTAL MOUNT

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

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

DATE	B SERIES	SUPERSEDES	DRAWING NO.
12 - 30 - 25	FD	4 - 28 - 14	0100-4



STAINLESS STEEL CURTAIN TYPE FIRE DAMPER
1 1/2 HR. LABEL • VERTICAL OR HORIZONTAL
FOR USE IN STATIC SYSTEMS
MODELS: 0110SS (TYPE A)



QUALIFICATIONS:

- **UL 555 & CAN/ULC-S112 CLASSIFIED FIRE DAMPER. 1 1/2 hr. label (File # R9492).**
- **Meets all the requirements of UL and NFPA 80, 90A and 101 for fire dampers in static 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. 3225-0935:0100.**

Model 0110SS stainless steel 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 2 hours. The 0110SS 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.

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:** Vertical mount: gravity.
Horizontal mount models are equipped with stainless steel closure springs and stainless steel locking ramps.

Sizes (Duct W x H):

Minimum	Maximum			
Single Section	Single Section		Multiple Section *	
Vertical/Horizontal	Vertical	Horizontal	Vertical	Horizontal
4" x 4" (102 x 102)	60" x 60" (1524 x 1524)	48" x 48" (1219 x 1219)	120" x 80" (3048 x 2032)	97" x 42" (2464 x 1067)

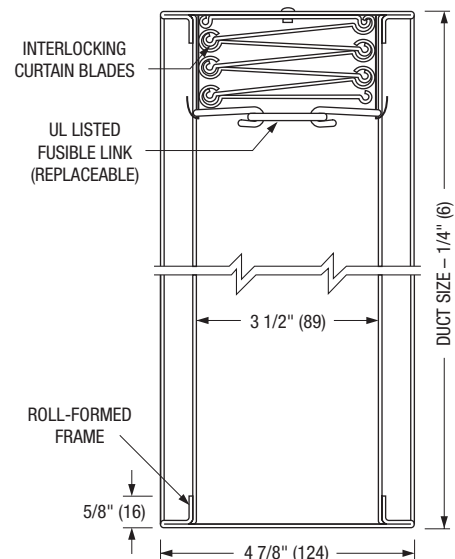
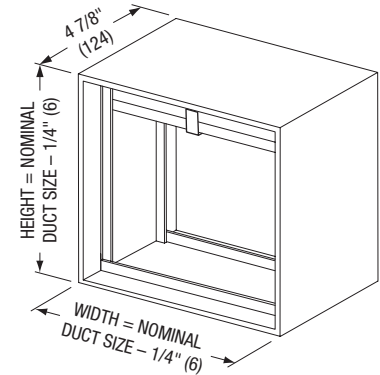
* Maximum individual sections not to exceed 40" x 40" (1016 x 1016) for vertical mount and 36" x 42" (914 x 1067) for horizontal mount.

OPTIONS:

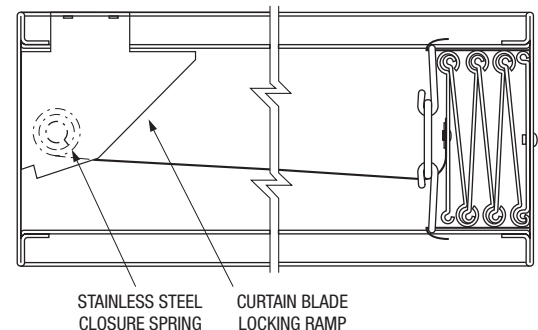
- ☐ 316 Type 316 stainless steel frame and blades.
- ☐ Non-standard temperature fusible link. Specify _____.
- ☐ Factory Sleeve. Available in 10 (3.5) through 18 ga. (1.27) stainless steel and in lengths required for application (up to 30" [762]).
Specify: _____ length. _____ ga.

NOTES:

1. Units are manufactured 1/4" (6) under nominal duct size.



VERTICAL MOUNT



HORIZONTAL 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	0100SS-1



**STAINLESS STEEL STATIC CURTAIN TYPE
FIRE DAMPER**
1 1/2 HR. LABEL • VERTICAL OR HORIZONTAL
FOR USE IN STATIC SYSTEMS
MODEL: 0120SS (TYPE B)



QUALIFICATIONS:

- UL 555 & CAN/ULC-S112 CLASSIFIED DYNAMIC FIRE DAMPER. 1 1/2 hr. label (File # R9492).
- Meets all the requirements of UL and NFPA 80, 90A and 101 for fire dampers in static 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.

Model 0120SS stainless steel 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 2 hours. The 0120SS is classified for use in static "fans off" systems where the HVAC system is automatically shut down in the event of a fire alarm.

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. ETL available.
- Blade Closure:** Vertical mount model: gravity.
Horizontal mount models are equipped with stainless steel closure springs and stainless steel locking ramps.

Sizes (Duct W x H):

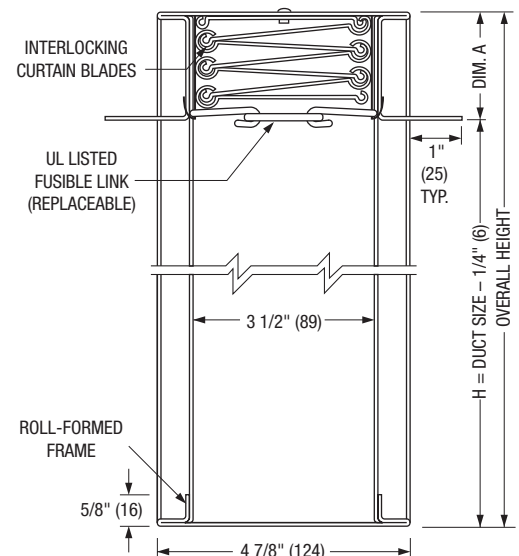
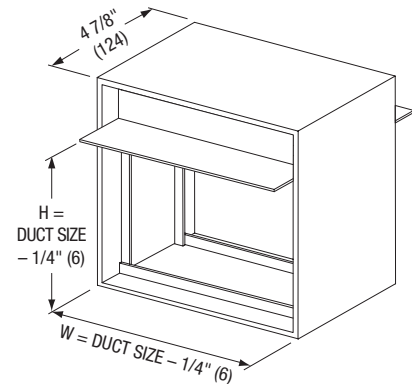
Minimum		Maximum		
Single Section	Single Section	Multiple Section *		
Vertical/Horizontal	Vertical	Horizontal	Vertical	Horizontal
4" x 4" (102 x 102)	60" x 55" (1524 x 1397)	48" x 43" (1219 x 1092)	120" x 75" (3048 x 1905)	97" x 37" (2464 x 940)

* Maximum individual sections not to exceed 40" x 40" (1016 x 1016) for vertical mount and 36" x 42" (914 x 1067) for horizontal mount.

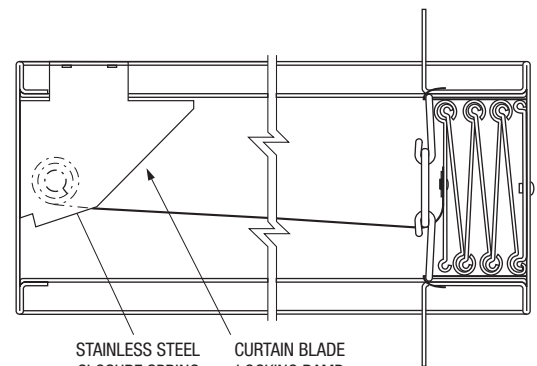
OPTIONS:

- ☐ 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.

Duct Height H	Dim. A
4" thru 15" (102 thru 381)	2" (51)
16" thru 27" (406 thru 686)	3" (76)
28" thru 39" (711 thru 991)	4" (102)
40" thru 55" (1016 thru 1397)	5" (127)
40" thru 43" (1016 thru 1092 – Horizontal only)	



VERTICAL MOUNT



HORIZONTAL MOUNT

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

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

DATE	B SERIES	SUPERSEDES	DRAWING NO.
1 - 26 - 22	FD	11 - 14 - 18	0100SS-2



STAINLESS STEEL STATIC CURTAIN TYPE FIRE DAMPER
1 1/2 HR. LABEL • VERTICAL OR HORIZONTAL
FOR USE IN STATIC SYSTEMS
MODELS: 0130SS (TYPES CR & CO)



QUALIFICATIONS:

- **UL 555 & CAN/ULC-S112 CLASSIFIED DYNAMIC FIRE DAMPER.**
1 1/2 hr. label (File # R9492).
- **Meets all the requirements of UL and NFPA 80, 90A and 101 for fire dampers in static 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.**

Model 0130SS stainless steel 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 2 hours. The 0130SS 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. 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. ETL available.
- Blade Closure:** Vertical mount model: gravity.
Horizontal mount models are equipped with stainless steel closure springs and stainless steel locking ramps.

SIZES (DUCT W X H):

Model Type	Minimum		Maximum		
	Single Section		Single Section		Multiple Section *
	Vertical/Horizontal	Vertical	Horizontal	Vertical	Horizontal
Round CR	4" (102) dia.	54" (1372) dia.	42" (1067) dia.	74" (1880) dia.	N/A
Oval CO	4" x 4" (102 x 102)	58" x 54" (1473 x 1372)	46" x 42" (1167 x 1067)	118" x 74" (2997 x 1880)	95" x 36" (2413 x 914)

* Maximum individual sections not to exceed 40" x 40" (1016 x 1016) for vertical mount and 36" x 42" (914 x 1067) for horizontal mount.

OPTIONS:

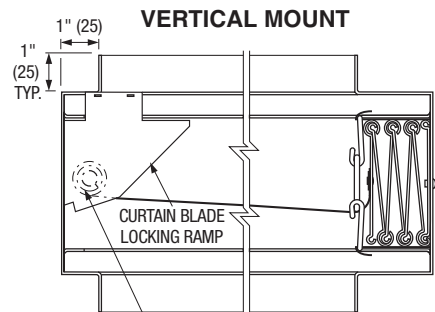
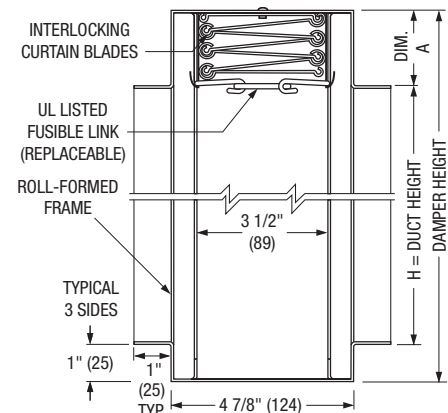
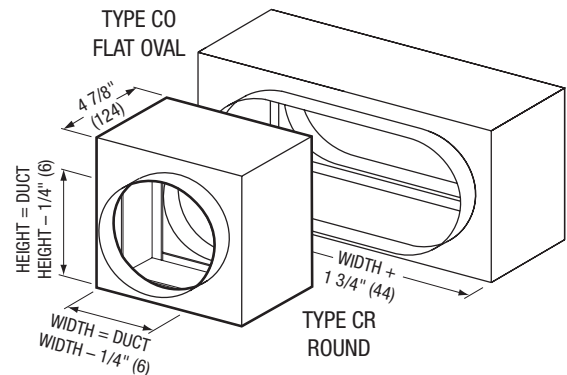
- ☐ **316** Type 316 stainless steel frame and blades.
- ☐ Non-standard temperature fusible link. Specify _____.
- ☐ **Factory Sleeve.** Available in 10 (3.5) through 18 ga. (1.27) stainless steel and in lengths required for application. Up to 30" (762). Specify: _____ length. _____ ga.
- ☐ **LP** Unsealed. Suitable for low pressure systems. Tack welded.
- ☐ **HP** Sealed. Suitable for medium/high pressure systems. Externally caulked.

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:



STAINLESS STEEL CLOSURE SPRING

HORIZONTAL MOUNT

Duct Height	Dim. A
4" thru 15" (102 thru 381)	2" (51)
16" thru 27" (406 thru 686)	3" (76)
28" thru 39" (711 thru 991)	4" (102)
40" thru 55" (1016 thru 1397)	5" (127)
40" thru 43" (1016 thru 1092 - Horizontal only)	

For installation instructions, see IOM-FDINST.

Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
12 - 30 - 25	FD	11 - 14 - 18	0100SS-3

QUALIFICATIONS:

- **UL 555 & CAN/ULC-S112 CLASSIFIED DYNAMIC FIRE DAMPER.**
1 1/2 hr. label (File # R9492).
- **Meets all the requirements of UL and NFPA 80, 90A and 101 for fire dampers in static 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. 3225-0935:0100.**

Model 0140SS stainless steel 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 2 hours. The 0140SS 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.

Type CSR square or rectangular fire dampers use full enclosure and transition collars to place the custom blade pack and 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. ETL available.
- Blade Closure:** Vertical mount model: gravity.
Horizontal mount models are equipped with stainless steel closure springs and stainless steel locking ramps.

SIZES (DUCT W X H):

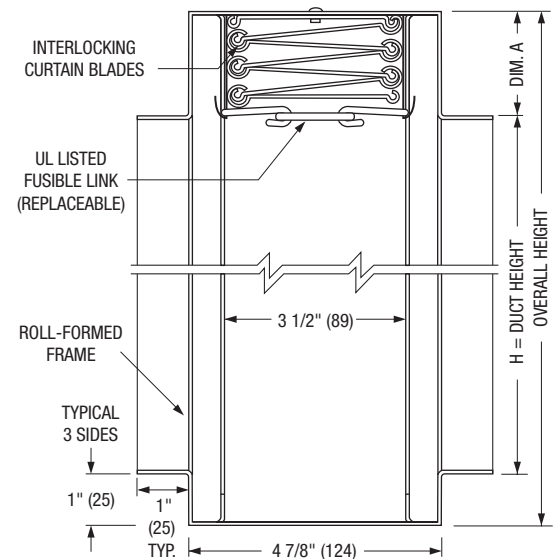
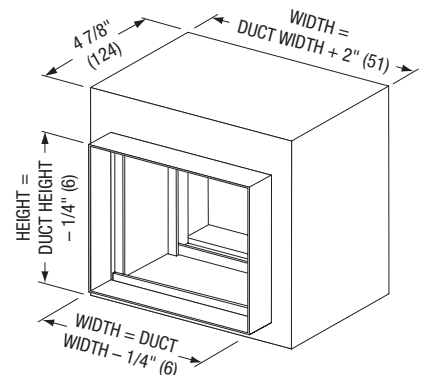
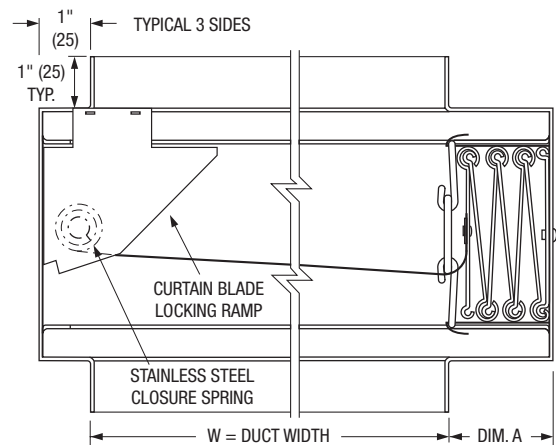
Model Type	Single Section	Single Section		Multiple Section	
	Minimum	Maximum		Maximum *	
	Vertical/Horizontal	Vertical	Horizontal	Vertical	Horizontal
Square/Rectangular CSR	4" x 4" (102 x 102)	58" x 54" (1473 x 1372)	46" x 42" (1168 x 1067)	118" x 74" (2997 x 1880)	95" x 36" (2413 x 914)

* Maximum individual sections not to exceed 40" x 40" (1016 x 1016) for vertical mount and 36" x 42" (914 x 1067) for horizontal mount.

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.

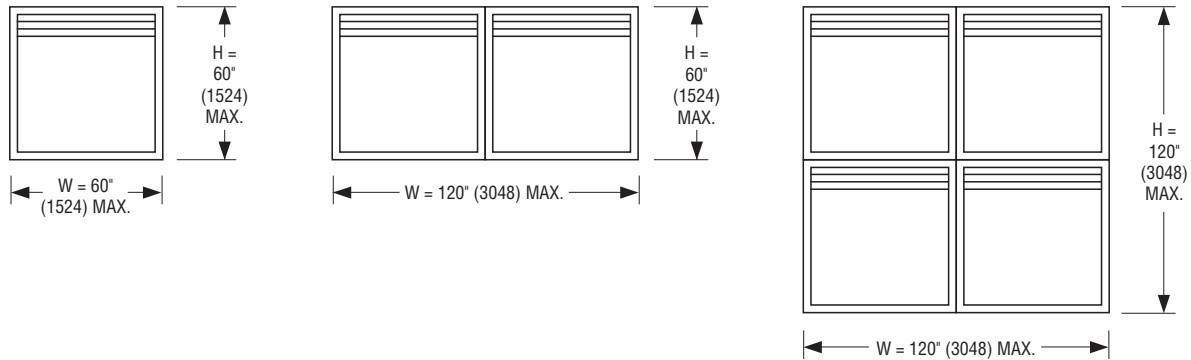
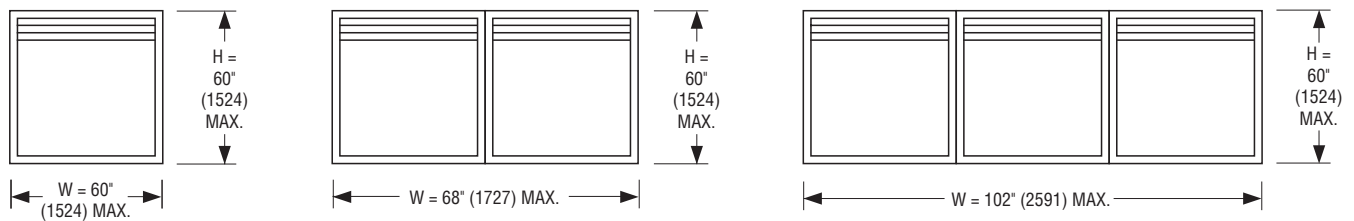
Duct Height H	Dim. A
4" thru 15" (102 thru 381)	2" (51)
16" thru 27" (406 thru 686)	3" (76)
28" thru 39" (711 thru 991)	4" (102)
40" thru 55" (1016 thru 1397)	5" (127)
40" thru 43" (1016 thru 1092 – Horizontal only)	


VERTICAL MOUNT

HORIZONTAL MOUNT

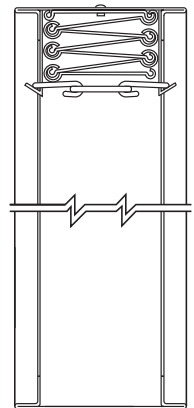
For installation instructions, see IOM-FDINST.
Dimensions are in inches (mm).

SCHEDULE TYPE:
PROJECT:
ENGINEER:
CONTRACTOR:

DATE	B SERIES	SUPERSEDES	DRAWING NO.
12 - 30 - 25	FD	11 - 14 - 18	0100SS-4

VERTICAL INSTALLATION:

HORIZONTAL INSTALLATION:

Notes:

1. The above diagrams illustrate the maximum sizes available for single section and multiple section assemblies.
2. Modules are equal divisions of nominal size.
3. Dimension "W" Width and "H" Height are maximum duct size.
4. Modules are manufactured 1/4" (6) under nominal duct size.



MODEL 0110: TYPE A
 WIDTH AND HEIGHT =
 NOMINAL SIZE - 1/4" (6)

SCHEDULE TYPE:
PROJECT:
ENGINEER:
CONTRACTOR:

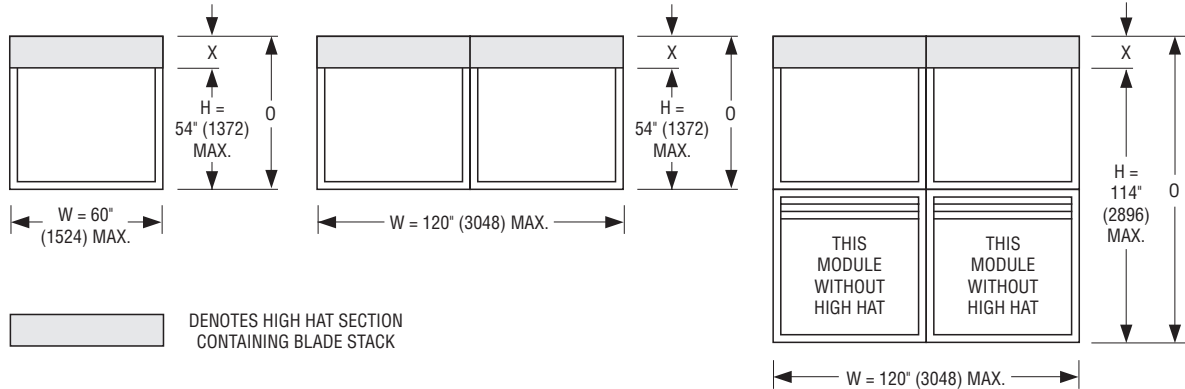
Page 1 of 4
 Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
1 - 16 - 17	0100	2 - 1 - 14	0100-MSSC

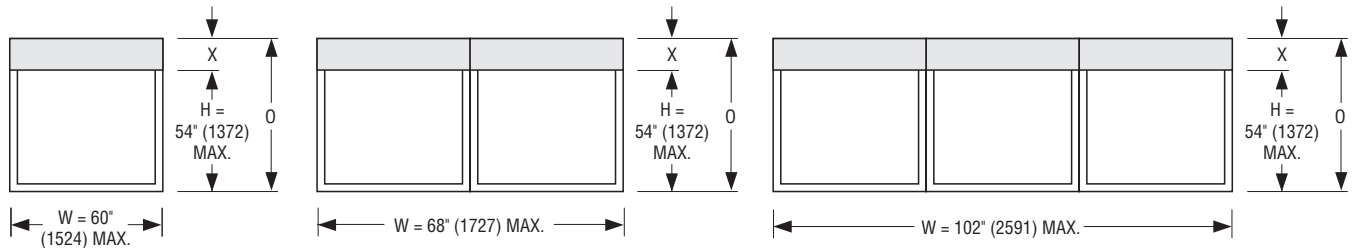
STATIC CURTAIN FIRE DAMPER SIZING CHARTS

MODEL: 0120 TYPE B

VERTICAL INSTALLATION:



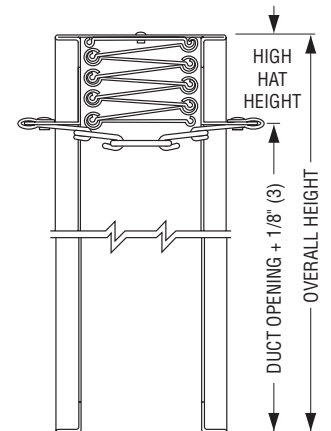
HORIZONTAL INSTALLATION:



Type B	H Dimension Nominal Duct Height	X Dimension High Hat	O Dimension Overall Height
Single High Assemblies	3" – 17" (76 – 432)	2" (51)	H + 2 1/8" (54)
	18" – 27" (457 – 686)	3" (76)	H + 3 1/8" (79)
	28" – 36" (711 – 914)	4" (102)	H + 4 1/8" (105)
	37" – 45" (940 – 1143)	5" (127)	H + 5 1/8" (130)
	46" – 54" (1168 – 1372)	6" (152)	H + 6 1/8" (156)
Double High Assemblies	55" – 76" (1397 – 1930)	4" (102)	H + 4 1/8" (105)
	77" – 95" (1956 – 2413)	5" (127)	H + 5 1/8" (130)
	96" – 114" (2438 – 2896)	6" (152)	H + 6 1/8" (156)

Notes:

- The above diagrams illustrate the maximum sizes available for single section and multiple section assemblies.
- Modules are equal divisions of nominal size.
- Dimension "W" Width and "H" Height are maximum duct size.
- Modules without high hat section are manufactured 1/4" (6) under nominal duct size.
- Modules with high hat section are manufactured to nominal width minus 1/4" (6) and to nominal height plus 1/8" (3).
- "X" High Hat dimension and "O" Overall Damper Height are per the table above.



MODEL 0120: TYPE B
 WIDTH = NOMINAL SIZE - 1/4" (6)

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

Page 2 of 4
 Dimensions are in inches (mm).

DATE

B SERIES

SUPERSEDES

DRAWING NO.

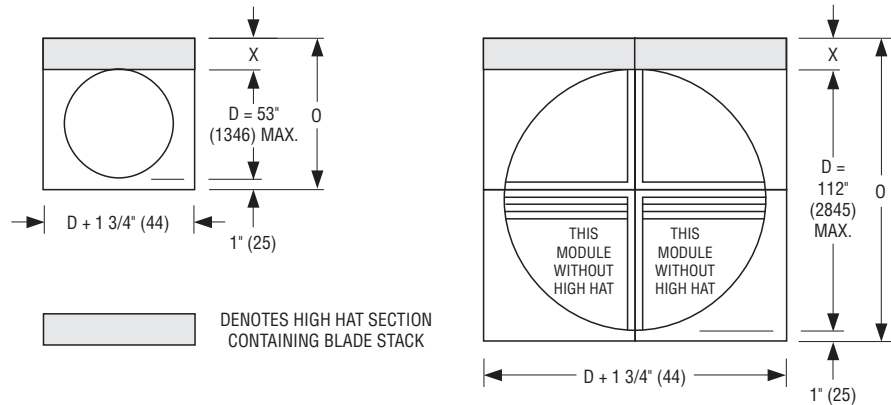
1 - 16 - 17

0100

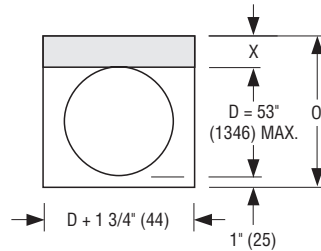
2 - 1 - 14

0100-MSSC

VERTICAL INSTALLATION:



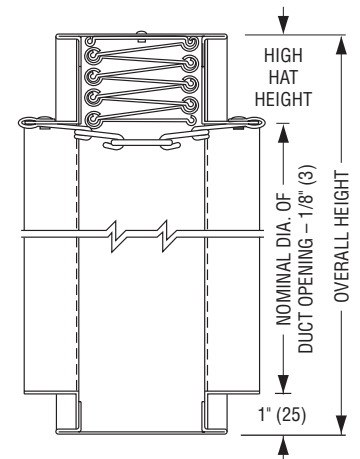
HORIZONTAL INSTALLATION:



Type CR	D Dimension Nom. Duct Diameter	X Dimension High Hat	O Dimension Overall Height
Single High Assemblies	3" – 5" (76 – 127)	1" (25)	D + 1 3/4" (44)
	6" – 17" (152 – 432)	2" (51)	D + 2 3/4" (70)
	18" – 27" (457 – 686)	3" (76)	D + 3 3/4" (95)
	28" – 36" (711 – 914)	4" (102)	D + 4 3/4" (121)
	37" – 45" (940 – 1143)	5" (127)	D + 5 3/4" (146)
Double High Assemblies	46" – 53" (1168 – 1346)	6" (152)	D + 6 3/4" (171)
	54" – 75" (1372 – 1905)	4" (102)	D + 4 3/4" (121)
	76" – 94" (1930 – 2388)	5" (127)	D + 5 3/4" (146)
	95" – 112" (2413 – 2845)	6" (152)	D + 6 3/4" (171)

Notes:

1. The above diagrams illustrate the maximum sizes available for single section and multiple section assemblies.
2. Modules are equal divisions of nominal size.
3. Dimension "D" Diameter is maximum duct size.
4. Modules are manufactured 1/8" (3) under nominal duct size.
5. "X" High Hat dimension and "O" Overall Damper Height are per the table above.



MODEL 0130: TYPE CR ROUND
 OVERALL WIDTH = DUCT SIZE + 1 3/4" (44)

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

Page 3 of 4
 Dimensions are in inches (mm).

DATE

B SERIES

SUPERSEDES

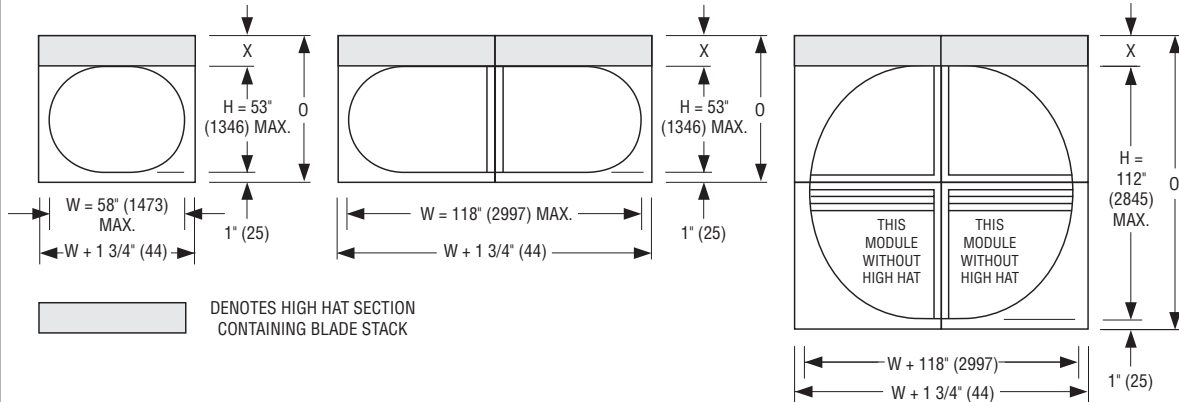
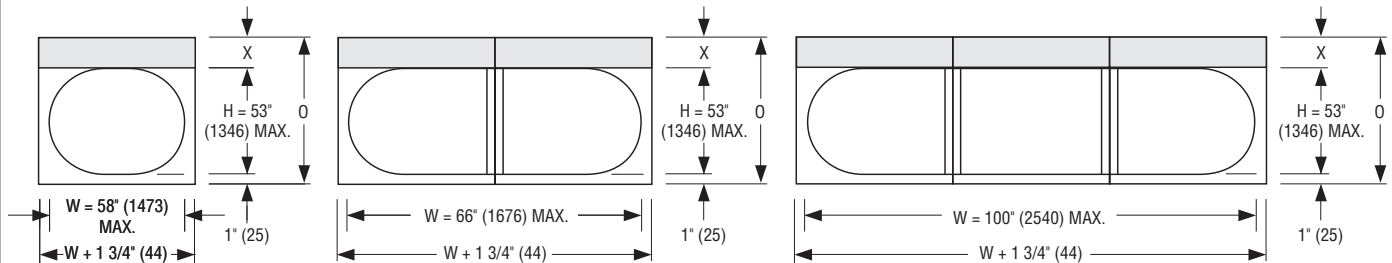
DRAWING NO.

1 - 16 - 17

0100

2 - 1 - 14

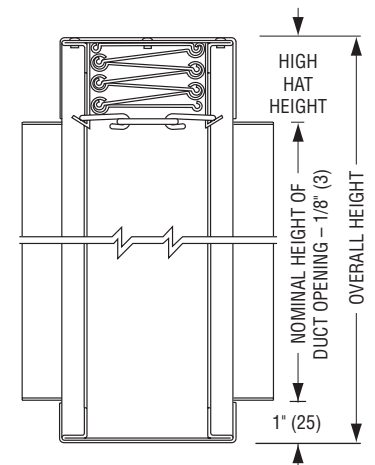
0100-MSSC

VERTICAL INSTALLATION:

HORIZONTAL INSTALLATION:


	Types CO/CSR	H Dimension Nominal Duct Height	X Dimension High Hat	O Dimension Overall Height
Single High Assemblies	CO	3" – 5" (76 – 127)	1" (25)	H + 1 3/4" (44)
	CO	6" – 17" (152 – 432)	2" (51)	H + 2 3/4" (70)
	CSR	3" – 17" (76 – 432)	2" (51)	H + 2 3/4" (70)
	CO/CSR	18" – 27" (457 – 686)	3" (76)	H + 3 3/4" (95)
	CO/CSR	28" – 36" (711 – 914)	4" (102)	H + 4 3/4" (121)
	CO/CSR	37" – 45" (940 – 1143)	5" (127)	H + 5 3/4" (146)
Double High Assemblies	CO/CSR	46" – 53" (1168 – 1346)	6" (152)	H + 6 3/4" (171)
	CO/CSR	54" – 75" (1372 – 1905)	4" (102)	H + 4 3/4" (121)
	CO/CSR	76" – 94" (1930 – 2388)	5" (127)	H + 5 3/4" (146)
	CO/CSR	95" – 112" (2413 – 2845)	6" (152)	H + 6 3/4" (171)

Notes:

- The above diagrams illustrate the maximum sizes available for single section and multiple section assemblies. Type CO (flat oval duct) dampers are illustrated, but dimensions also apply to Type CSR (rectangular duct) dampers.
- Modules are equal divisions of nominal size.
- Dimension "W" Width and "H" Height are maximum duct size.
- Modules are manufactured 1/8" (3) under nominal duct size.
- "X" High Hat dimension and "O" Overall Damper Height are per the table above.



MODEL: 0130 TYPE CO OVAL
MODEL: 0140 TYPE CSR RECTANGULAR
 OVERALL WIDTH = DUCT SIZE + 1 3/4" (44)

SCHEDULE TYPE:
PROJECT:
ENGINEER:
CONTRACTOR:

Page 4 of 4
 Dimensions are in inches (mm).

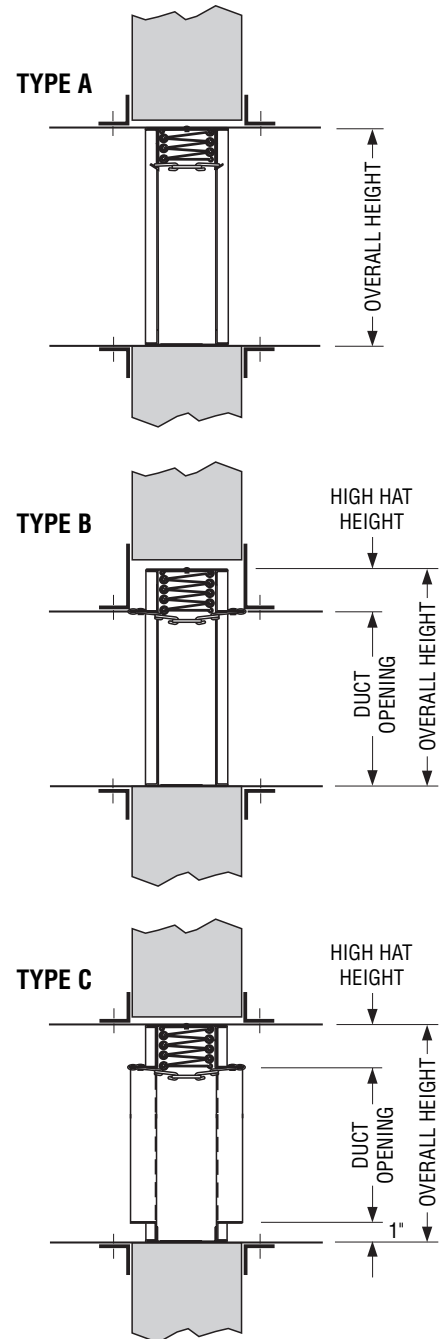
DATE	B SERIES	SUPERSEDES	DRAWING NO.
1 - 16 - 17	0100	2 - 1 - 14	0100-MSSC



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
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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

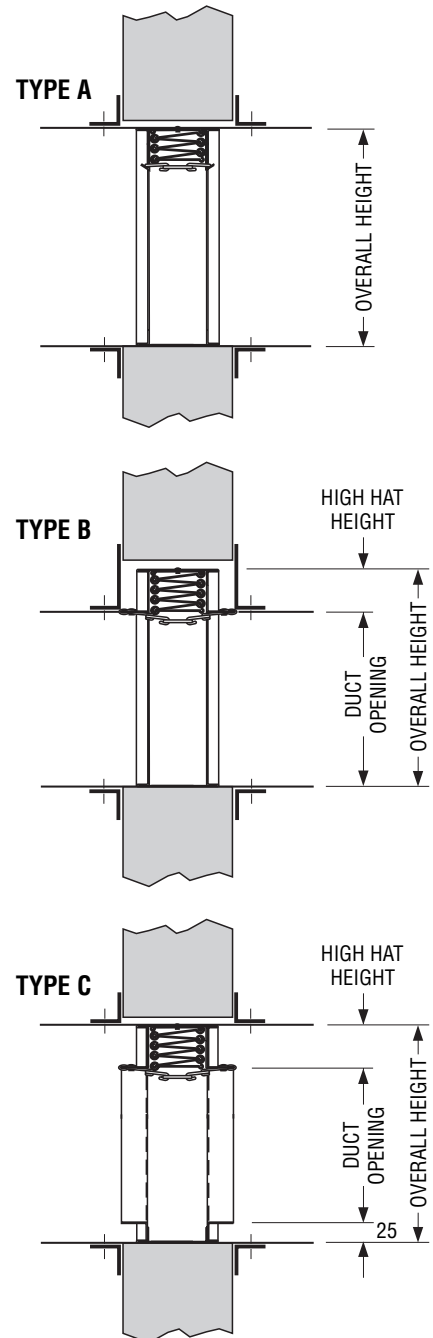
SC1



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

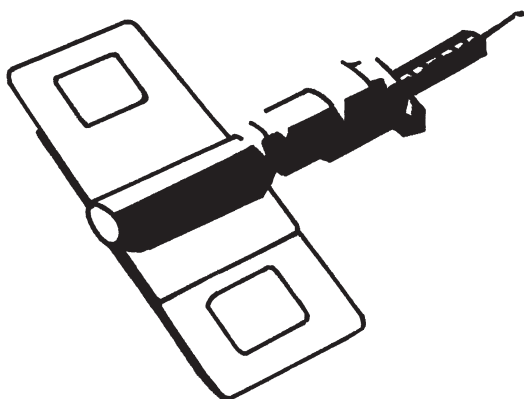
DRAWING NO.

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:

PROJECT:

ENGINEER:

CONTRACTOR:

Dimensions are in inches (mm).

DATE

B SERIES

SUPERSEDES

DRAWING NO.

31 - 7 - 00R

ACC

1 - 98R/0100-6

ACC.ETL

DESCRIPTION:

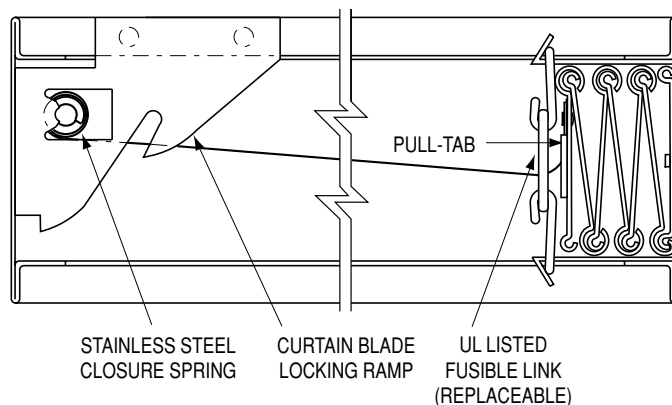
1. Pull ring: 1 1/4 (32) diameter nickel plated steel.
2. Attachment strap: 22 ga. galvanized or stainless steel.

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.

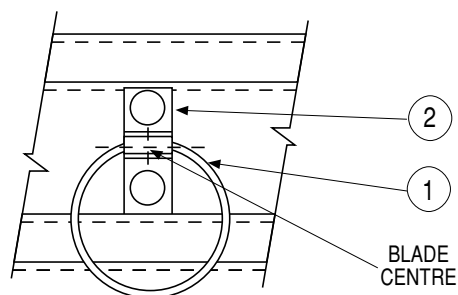
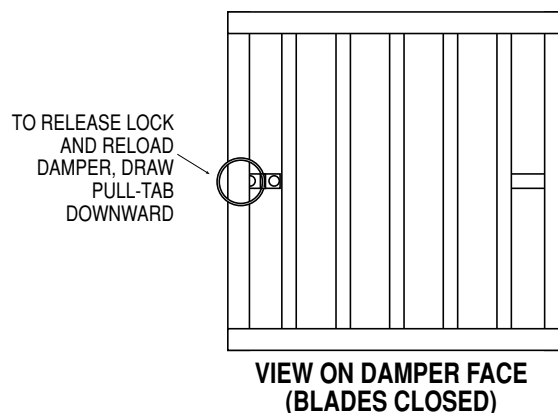
Horizontally installed dampers are designed and tested to be mounted with the locking ramps on the top side. When periodic testing (as well as maintenance and inspection) is required, access doors should be located above the damper, so that the damper blade pack can be "pushed down" and released off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



DETAIL OF PULL-TAB

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
3- 10 - 00R	ACC-PTR	7-90/0100-16	ACC-PTR

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

**"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.

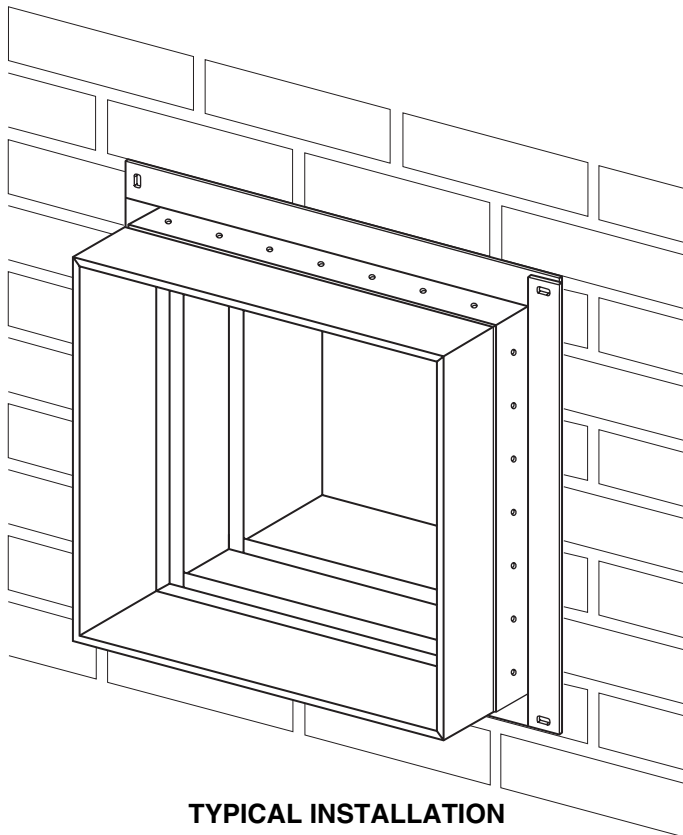
"Quick-Set" retaining angles provide the "complete" installation package. Simple, fast, convenient.

MODELS:

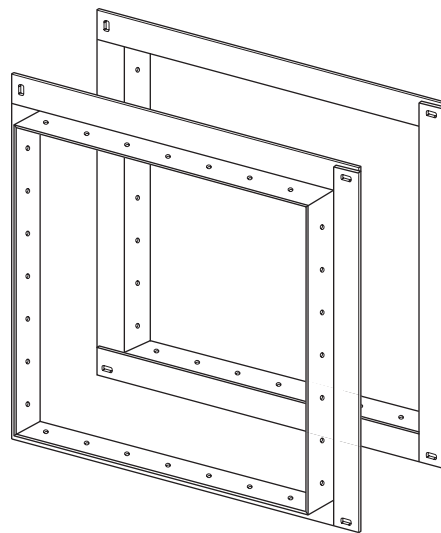
Nailor "Quick-Set" retaining angles are an accessory option for all dampers ordered with factory sleeves.

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**



Refer to the UL or ULC
Classification marking
the product.

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

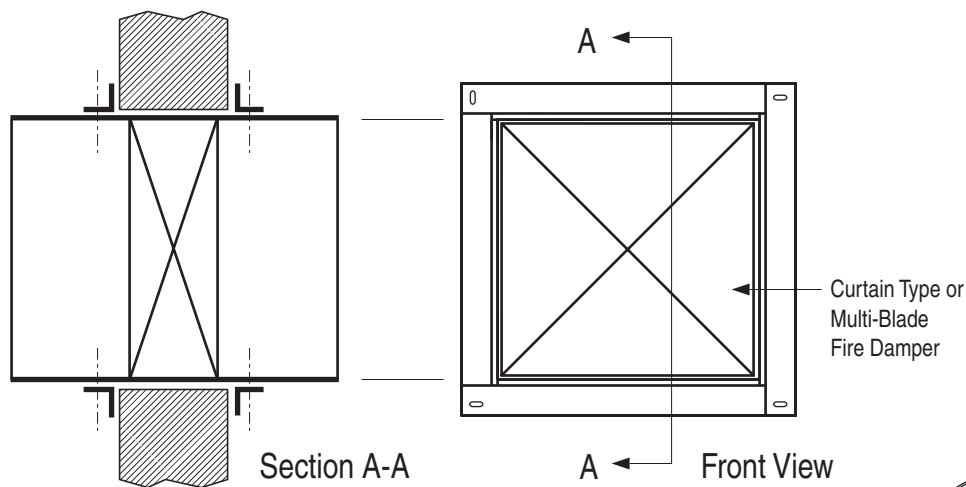


FIGURE 1. TYPICAL TWO SIDED INSTALLATION.

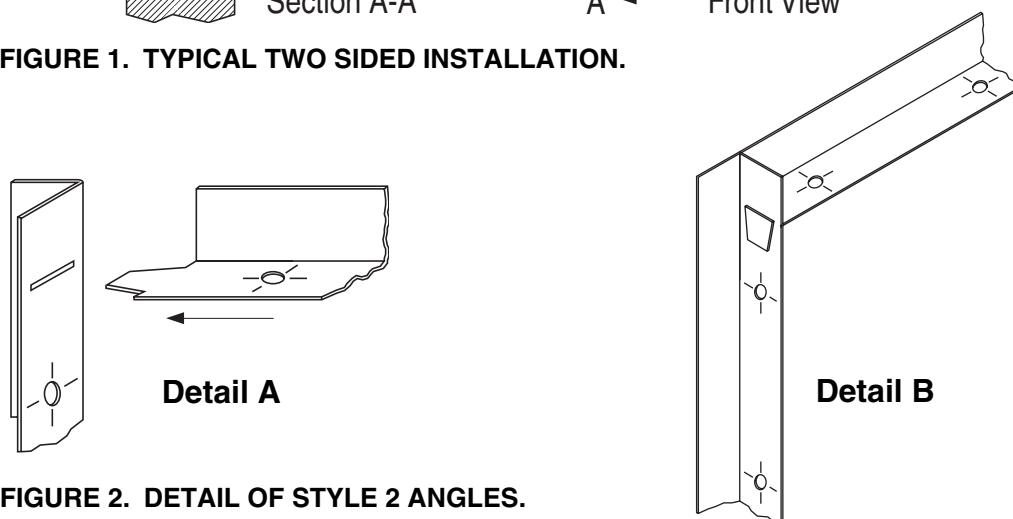


FIGURE 2. DETAIL OF STYLE 2 ANGLES.

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:

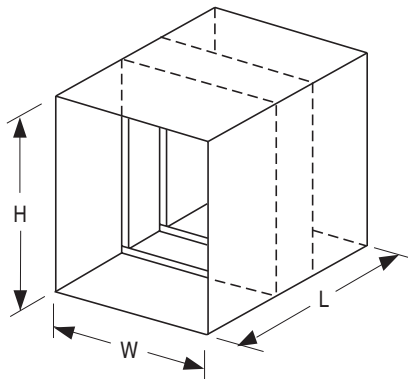
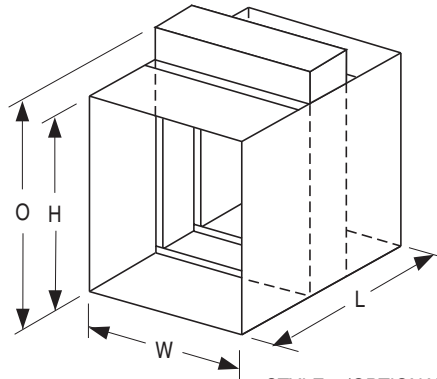
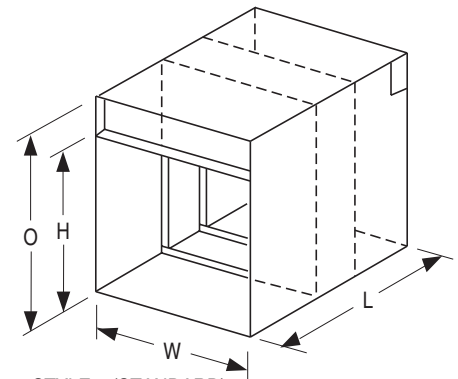
PROJECT:

ENGINEER:

CONTRACTOR:

Page 2 of 2
Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
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.

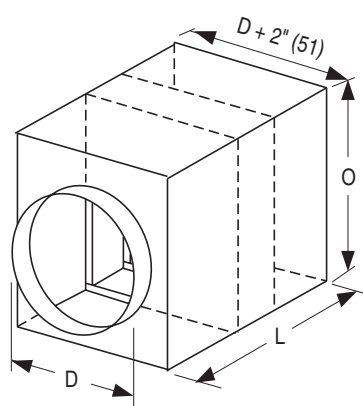
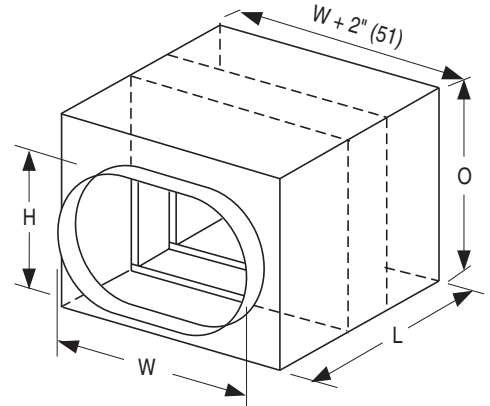
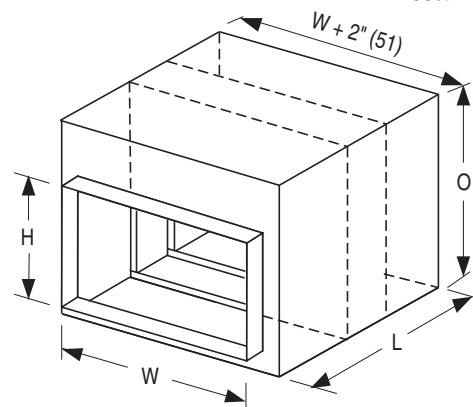
Type CO and CSR duct collars are furnished 1/8" (3) undersize for duct dimensions up to 36" x 24" (914 x 610) and 1/4" (6) undersize on larger sizes. Collars are 1 1/4" (32) minimum length.

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.

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.

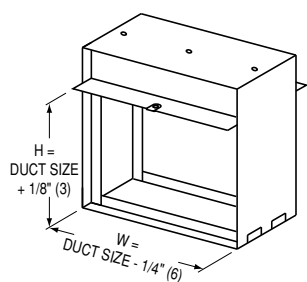
12 - 30 - 25

FD

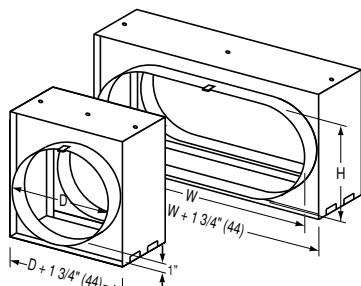
25 - 10 - 00R

STD-SL

DIMENSIONAL DATA:

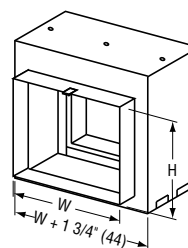


**MODEL 0120:
TYPE B**

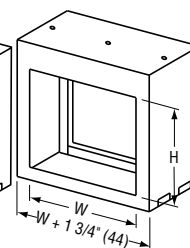


**MODEL 0130:
TYPE CR**

**MODEL 0130:
TYPE CO**



**MODEL 0140:
TYPE CSR
WITH COLLAR
(STANDARD)**



**MODEL 0140:
TYPE CSR
WITHOUT COLLAR**

For overall damper dimensions see sizing chart on page D53.

PERFORMANCE DATA:

MODEL SERIES: 0100V/H - 1 1/2 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.)

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

