SMOKE DAMPERS

Nailor Industries Inc.

Contents

GENERAL PRODUCT OVERVIEW

As today's modern commercial and industrial building construction becomes increasingly life safety oriented, fire containment and active smoke management systems are being utilized to a higher degree as more sophisticated technology is developed and implemented into building codes. The development process begins with the understanding of fire and smoke behavior through the research and study of real life emergency situations, and culminates in the design, testing of, and ultimate use of new products to better control and manage the ravages of fire and smoke. Thus, resulting property damage is minimized and occupant safety is maximized. Nailor Industries commitment to the development of new and existing fire and smoke control technology has resulted in a comprehensive line of premium quality smoke, fire and combination fire/smoke dampers and accessories, available at a reasonable cost and in a timely fashion.

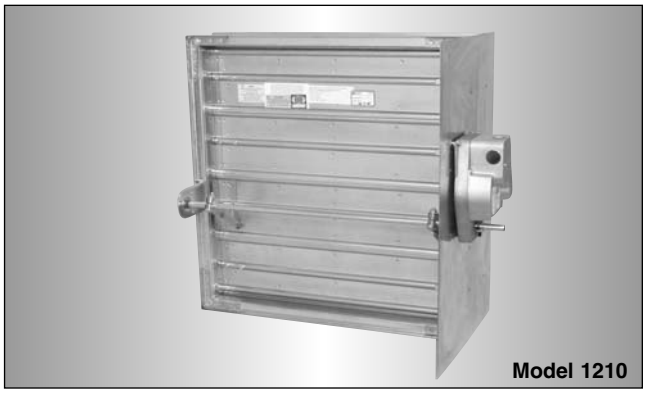

Model 1280

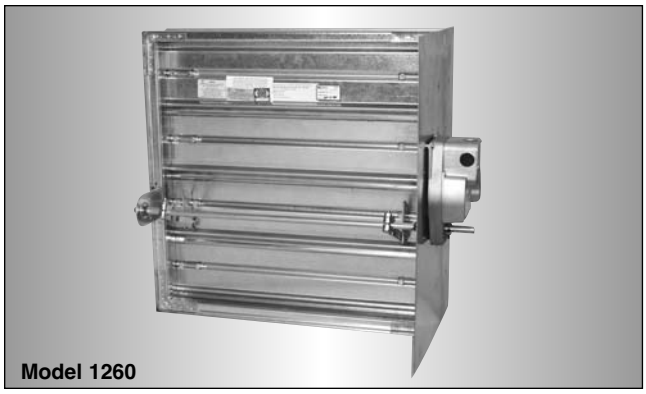
MODEL SERIES 1280
EXTRUDED ALUMINUM AIRFOIL BLADE
PREMIUM PERFORMANCE

Nailor's premium choice for applications where a leakage rated damper is required as part of a static smoke control or dynamic smoke management system. Features include a smoothly contoured extruded aluminum airfoil blade and compression type seals that have been specially designed to offer not only the lowest leakage class available with airflow in either direction, but also ultra-low pressure drop characteristics. Together with maintenance-free concealed linkage out of the airstream, the design minimizes unwanted turbulence and noise generation.

MODEL SERIES 1210
STEEL AIRFOIL BLADE • PREMIUM PERFORMANCE

The 1210 Series dampers feature an innovative inter-locking double-skin airfoil blade design that eliminates the need for combustible blade seals to maintain leakage class. The unique blade design combines high performance and low pressure drop while providing complete flame and smoke seal under fire conditions. Designed and tested to offer the lowest leakage class available with airflow in either direction, the 1210 Series is perfect for applications where a leakage rated (smoke) damper is required as part of a static smoke control or dynamic smoke management system.


Model 1210


Model 1260

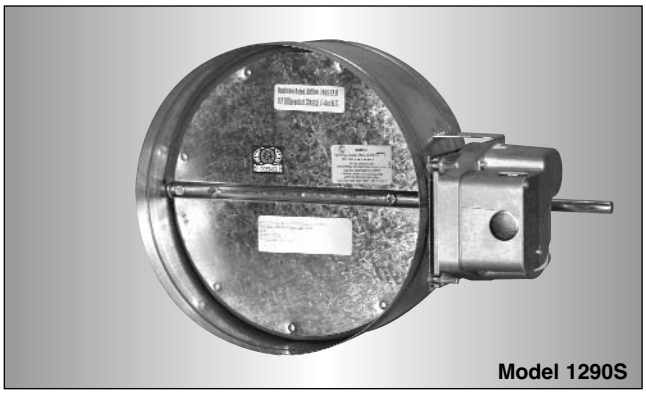
MODEL SERIES 1260
VEE-STYLE BLADES

The Nailor 1260 Series dampers are a ruggedly built yet economical choice for use where a smoke barrier has been penetrated by ductwork or where a leakage rated damper is required in a static or dynamic smoke control system. The 1260 Series dampers are classified to UL Standard 555S Class I, II, or III at 250°F or 350°F Elevated Temperatures, and are available with type B and C enclosures for small sizes and round ductwork. Featuring a vee style blade design for strength.

GENERAL PRODUCT OVERVIEW

MODEL 1290S
TRUE ROUND SMOKE DAMPER

Nailor's true round smoke damper, Model 1290S is ideal for applications where building codes require a leakage rated smoke damper for operational smoke control in static or dynamic smoke management systems. The 1290S damper is an economical true round smoke damper designed and qualified for round ductwork. Features include a sturdy beaded casing for superior rigidity and a laminated blade that is double bolted to axles for positive connection. The 1290S smoke damper offers the lowest leakage class available and is qualified for installation with airflow in either direction.



Model 1290S

- **UL 555S CLASSIFIED SMOKE DAMPER**
- **CLASS I or II at 250° or 350°**
- **PREMIUM PERFORMANCE**
- **EXTRUDED ALUMINUM AIRFOIL BLADE**

Model 1280 (shown with SMP)

MODELS:

1280 TYPE A
1281 TYPE A IN SLEEVE
1282 TYPE B
1283 TYPE C

AIRFOIL

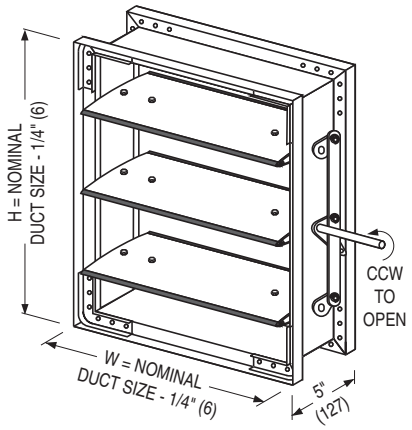
The 1280 Series Smoke (Leakage Rated) dampers are Nailor's premium choice for applications where a leakage rated damper is required as part of a static smoke control or dynamic smoke management system. Features of the 1280 Series include a smoothly contoured extruded aluminum airfoil blade and compression type seals that have been specially designed to offer not only the lowest leakage class available with airflow in either direction, but also ultra-low pressure drop characteristics. Together with maintenance-free concealed linkage out of the airstream, the design minimizes unwanted turbulence and noise generation. A rugged hat channel style frame with die-formed corner gussets for superior rigidity virtually eliminates racking for worry free installation.

QUALIFICATIONS:

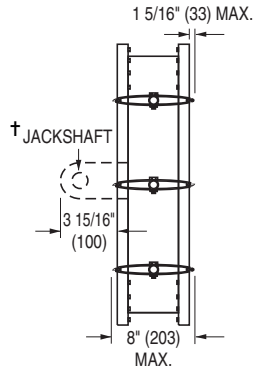
- UL 555S Classified Smoke Damper (File # 9492).
- Leakage Class I or II at 250°F or 350°F Elevated Temperature.
- Meets NFPA 90A and NFPA 92A, requirements for Leakage Rated (Smoke) Dampers.
- Tested in accordance with AMCA Standard 500-D for pressure drop.
- Maximum velocity 2000 fpm @ 4" w.g. (10 m/s @ 1 kPa), dependent upon actuator.

CONSTRUCTION DETAILS:

FRAME:	5" x 7/8" x 16 ga. (127 x 22 x 1.6) galvanized steel hat channel.
BLADES:	Airfoil type 6063-T5 extruded aluminum on 5 1/2" (140) centers. Parallel action.
LINKAGE:	Concealed in frame. 12 ga. (2.7) plated steel.
BEARINGS:	1/2" (13) dia. self-lubricating oilite bronze.
AXLES:	1/2" (13) dia. plated steel bolted to blades.
DRIVE SHAFT:	6" (152) long x 1/2" (13) dia. plated steel rigid shaft extension.
JAMB SEALS:	Cambered stainless steel.
BLADE SEALS:	Silicone.
MINIMUM SIZE:	8" x 8" (203 x 203).
MAXIMUM SIZE:	Single Section Vertical or Horizontal mount: 36" x 48" (914 x 1219). Multiple Section Assembly Vertical or Horizontal mount: 144" x 96" (3658 x 2438), 288" x 48" (7315 x 1219) or 72" x 144" (1829 x 3658).



† jackshaft standard on multiple section dampers using a single actuator or when actuators are mounted in the airstream.



TYPE A: MODEL 1280
TYPE A IN SLEEVE: MODEL 1281

Standard factory sleeve (caulked to UL requirements) 16" long x 20 ga. (406 x 1.0) (18 ga. for dampers over 84" (2134) in width).

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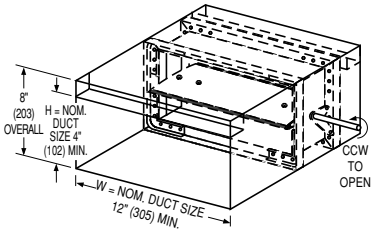
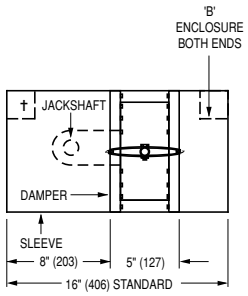
SMOKE DAMPERS

Model Series 1280 dampers with duct heights less than 8" (203) require a Type 'B' sleeve enclosure (Model 1282). Overall damper height is 8" (203). Units less than 8" (203) in width only, or in both width and height, require a Type 'C' enclosure (Model 1283).

TYPE B SLEEVE ENCLOSURE
MODEL: 1282

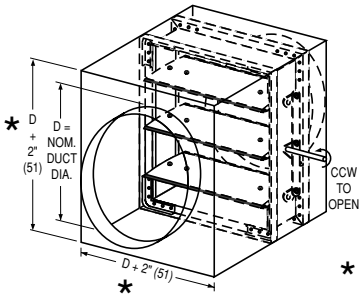




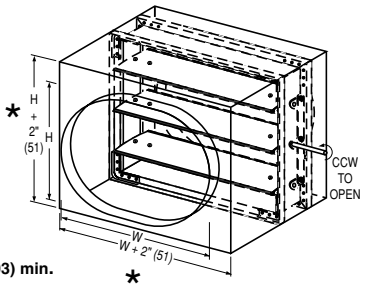
† jackshaft standard on multiple section dampers using a single actuator or when actuators are mounted in the airstream.

Min. Duct Size: 8" x 4" (203 x 102) (Overall damper H is 8" (203)).
Max. Duct Size: Vertical or Horizontal mount: Single Section 36" x 7 1/2" (914 x 191). Multiple Section Assembly 288" x 7 1/2" (7315 x 191).

TYPE C SLEEVE ENCLOSURES
MODEL: 1283

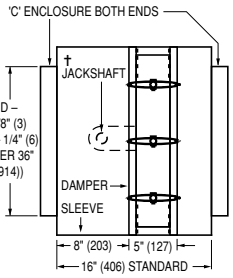


STYLE CR: FOR ROUND DUCT



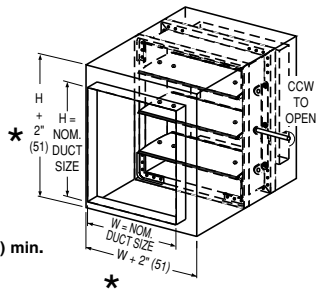
* or 8" (203) min.

STYLE CO: FOR OVAL DUCT



TYPE C SIDE VIEW

Min. Duct Size: 4" (102) diameter. (Overall damper size is 8" x 8" (203 x 203) min.).
Max. Duct Size: Vertical or Horizontal mount: Single Section 34" (864) diameter. Multiple Section Assembly 94" (2388) diameter.



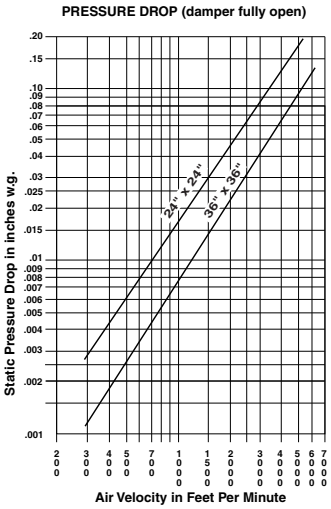
* or 8" (203) min.

STYLE CSR : FOR SQUARE or RECTANGULAR DUCT

Min. Duct Size: 4" x 4" (102 x 102). (Overall damper size is 8" x 8" (203 x 203) min.).
Max. Duct Size: Vertical or Horizontal mount: Single Section 34" x 46" (864 x 1168) Multiple Section Assembly 142" x 94" (3607 x 2388), 286" x 46" (7264 x 1168) or 70" x 142" (1778 x 3607).

PERFORMANCE DATA:

PRESSURE DROP (damper fully open)



Imperial figures shown. **To convert to SI (metric) system:**

Multiply:

CFM x .4719 = liters per second

inches w.g. x .2486 = kilopascals

fpm x .00508 = meters per second

cfm per sq. ft. x 5.08 = liters/second per sq. meter.

Tested per AMCA standard 500-D, Fig. 5.3.

LEAKAGE CLASS

The 1280 Series Smoke Damper has been designed and qualified under UL 555S in order to provide maximum system design flexibility. It is available with a Class I (currently the lowest available) or Class II leakage rating with all damper/actuator assemblies having been tested successfully at an elevated temperature of 250°F (121°C) or 350°F (176°C), depending on actuator, under airflow of 2000 fpm (10 m/s) at 4" w.g. (0.995 kPa).

The criteria for selection should be based upon both first cost consideration and the maximum total acceptable leakage of all closed dampers in the smoke management system when in the smoke control mode. This will have an influence on fan selection and capacity requirement.

Leakage Class	Maximum Leakage cfm/ft² (m³/s/m²)	
	@ 1" w.g. (0.249 kPa)	@ 4" w.g. (0.995 kPa)
I	4 (0.020)	8 (0.041)
II	10 (0.051)	20 (0.102)

SMOKE DAMPERS

MODELS: 1280/1281/1282/1283

VARIABLES/ACCESSORIES

VARIABLES:	CODE	DESCRIPTION
MOUNTING:	V	Vertical Mount (wall)
	H	Horizontal Mount (floor)
LEAKAGE/ELEV. TEMP. RATINGS:	125	Class I @ 250°F
	135	Class I @ 350°F
	225	Class II @ 250°F
	235	Class II @ 350°F
SLEEVE LENGTH/GAUGE:	Specify Sleeve Length:	12" (305) to 28" (711)
	Specify Sleeve Gauge:	20G, 18G, 16G, 14G, 10G
ACTUATORS:	MS4	Honeywell MS4X09 (120 VAC)
	MS8	Honeywell MS8X09 (24 VAC)
	4Y0	Honeywell MS4Y09 (230 VAC)
	412	Honeywell MS4120 (120 VAC)
	812	Honeywell MS8120 (24 VAC)
	462	Honeywell MS4620 (230 VAC)
	296	Siemens 331-2961 (25 psi)
ACTUATOR MOUNTING:	EXT	External Mount
	INT	Internal Mount
ACTUATOR LOCATION:	RH	Right-Hand Mount
	LH	Left-Hand Mount
	MH	Multi-Hand Mount
FAIL POSITION:	CL	Damper to Fail Closed
DAMPER LOCATION IN SLEEVE:	L8	8" (203) from Sleeve End
	L0	Specify dimension from sleeve end
FRAME MATERIAL:	EAF	Extruded Aluminum Frame
IF MODEL 1283 IS SELECTED, SPECIFY TYPE OF TRANSITION:	CR	Round Type C Transitions
	CO	Oval Type C Transitions
	CSR	Square/Rect. Type C Transitions
ACCESSORIES	**CODE**	**DESCRIPTION**
POSITION INDICATOR:	300	MLS-300 Switch Pack
E.P. SWITCH	EP1	120V Siemens 2651008
	EP2	24V Siemens 2651007
ACTUATOR MOUNTING HARDWARE:	JKS	Jackshafting (required for internal mounting of actuator)
	SMP	Side Mounting Plate (required for mounting of actuator without sleeve)
FLANGED SLEEVE (MODEL 1281 ONLY)	TDF1	TDF Flange on One End
	TDF2	TDF Flange on Both Ends

HOW TO SPECIFY OR TO ORDER

SMOKE DAMPERS

MODELS: 1280/1281/1282/1283

HOW TO ORDER:

Select model number and size, then select from each variable. Choose accessories as desired. See previous page for description of variables and accessories.

MODEL	SIZE W X H or DIA.	MOUNTING	LEAKAGE/ELEV. TEMP. RATING	SLEEVE LENGTH *	SLEEVE GAUGE *	ACTUATOR	ACTUATOR MOUNTING	ACTUATOR LOCATION	FAIL POSITION	DAMPER LOCATION IN SLEEVE	TRANSITION TYPE (MODEL 1283 ONLY)	OPTIONAL FRAME MATERIAL	ACCESSORIES
1280 1281 1282 1283	ie: 36" x 24" or 18" dia.	V/H	125 135 225 235	SPECIFY LENGTH	20G 18G 16G 14G 10G	MS4 MS8 4Y0 412 812 462 296	EXT INT	RH LH MH	CL	L8 L0	CR CO CSR	EAF	300 EP1 EP2 JKS SMP TDF1 TDF2

Notes: 1. * Standard sleeve is 16" (406) long x 20 ga. (1.0).

Specification Text File

SUGGESTED SPECIFICATION:

Provide and install, as shown on plans and/or schedules, Smoke Dampers meeting or exceeding the following criteria: Frame shall be constructed of 16 ga. (1.6) galvanized steel hat channel with mitered corners reinforced with die-formed corner gussets for strength. Blades shall be of Type 6063-T5 extruded aluminum airfoil design on maximum 6" (152) centers with integral structural reinforcing tube running full length of each blade. Blade axles shall be 1/2" (13) dia. plated steel, double bolted at each end of blade to provide positive locking connection. Hex or square friction-fit, or press-fit axles are not acceptable. Bearings shall be self-lubricating oilite bronze type. Blade linkage shall be zero-maintenance, concealed in frame, out of airstream. Jamb seals shall be compression type cambered stainless steel. Blade seals shall be silicone, mechanically locked in extruded blade slots. Adhesive or clip-on type blade seals are not acceptable.

Dampers shall meet the requirements of NFPA 90A and 92A and shall be classified as a Class I **or** Class II **(specifier select one)** Leakage Rated (Smoke) Damper under UL 555S at an elevated temperature of 250°F (121°C) **or** 350°F (176°C) **(specifier select one)** and each damper shall bear a UL label verifying same. Dampers shall be suitable for use in dynamic or static smoke control systems. Dampers shall have been operation tested by UL to a minimum rated airflow of 2000 fpm (10.16 m/s) velocity with blades fully open, at a rated static pressure differential of 4" w.g. (1 kPa) with blades fully closed. Appropriate electrical **or** pneumatic **(specifier select one)** actuators shall be factory installed by the damper manufacturer and shall have been tested and classified together under UL 555S at an elevated temperature of 250°F (121°C) or 350°F (176°C). Actuators shall incorporate an OEM internal spring-return mechanism. External after-market spring mechanisms are not acceptable. Damper and actuator assembly shall be factory cycled a minimum of three times to ensure correct operation.

Damper manufacturer shall submit independent test data, supporting low pressure drop design, to be based on tests in accordance with AMCA Standard 500-D, and performed in an AMCA Certified laboratory. Pressure drop across a 24" x 24" (610 x 610) damper shall not exceed 0.048" w.g. (12 Pa) at 2000 fpm (10 m/s).

Standard of acceptance: Nailor Industries Model 1280.

- UL 555S CLASSIFIED SMOKE DAMPER
- CLASS I or II at 250° or 350°
- FOR STATIC OR DYNAMIC SYSTEMS
- STEEL AIRFOIL BLADE

Model 1210 (shown with SMP)

MODELS:

1210 TYPE A
1211 TYPE A IN SLEEVE
1212 TYPE B
1213 TYPE C

AIRFOIL

The Nailor 1210 Series Smoke (Leakage Rated) Dampers feature an innovative inter-locking double-skin airfoil blade design that eliminates the need for combustible blade seals to maintain leakage class. The unique blade design combines high performance and low pressure drop while providing complete flame and smoke seal under fire conditions. Designed and tested to offer the lowest leakage class available with airflow in either direction, the 1210 Series is AMCA Licensed and is perfect for applications where a leakage rated (smoke) damper is required as part of a static smoke control or dynamic smoke management system. The sturdy steel hat channel frame design and rugged concealed linkage assures easy installation that minimizes racking and provides smooth performance. With factory installed sleeve, Model 1211, and a variety of actuators and accessories to satisfy today's demanding design requirements, the Nailor 1210 Series smoke dampers will do the job.

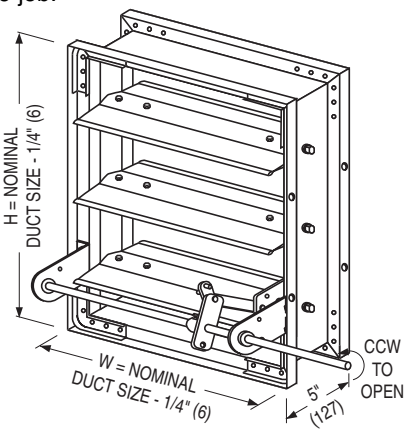
QUALIFICATIONS:

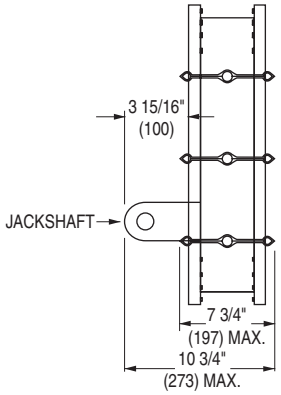
- UL 555S Classified Smoke Damper (File # 9492).
- Leakage Class I or II at 250° or 350°F Elevated Temperature.
- Meets NFPA 90A, NFPA 92A, BOCA, SBCCI, UBC, and IBC requirements.
- Maximum velocity of 2000 fpm (10 m/s) @ 4" w.g. (1kPa) (up to 4000 fpm (20 m/s) @ 8" w.g. (2 kPa) with size and actuator limitations).

CONSTRUCTION DETAILS:

FRAME:	5" x 7/8" x 16 ga. (127 x 22 x 1.6) galvanized steel hat channel.
BLADES:	14 ga. (2.0) equivalent galvanized steel formed airfoil on 5 1/2" (140) centers. Opposed action.
LINKAGE:	Concealed in frame. 12 ga. (2.7) plated steel.
BEARINGS:	1/2" (13) dia. self-lubricating oilite bronze.
AXLES:	1/2" (13) dia. plated steel double bolted to blades.
JACKSHAFT:	1/2" (13) dia. cadmium plated steel.
JAMB SEALS:	Cambered stainless steel.
MINIMUM SIZE:	8" x 8" (203 x 203).
MAXIMUM SIZE:	Single Section Vertical or Horizontal mount: 36" x 48" (914 x 1219). Multiple Section Assembly Vertical or Horizontal mount: 144" x 96" (3658 x 2438), 288" x 48" (7315 x 1219) or 72" x 144" (1829 x 3658).

Dampers with duct heights less than 8" (203) require a Type 'B' sleeve enclosure (Model 1212). Overall damper height is 8" (203).



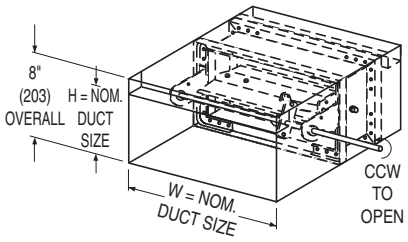


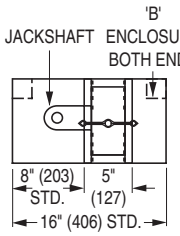
TYPE A: MODEL 1210
TYPE A IN SLEEVE: MODEL 1211

Standard factory sleeve (caulked to UL requirements) 16" long x 20 ga. (406 x 1.0) (18 ga. for dampers over 84" (2134) in width).

Model Series 1210 dampers with duct heights less than 8" (203) require a Type 'B' sleeve enclosure (Model 1212). Units less than 8" (203) in width only, or in both width and height, require a Type 'C' enclosure (Model 1213).

TYPE B SLEEVE ENCLOSURE
MODEL: 1212

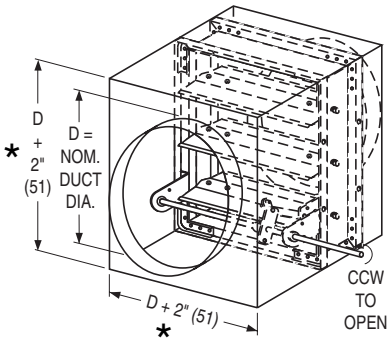




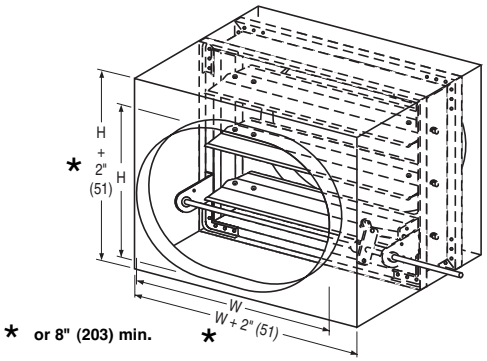
Min. Duct Size: 8" x 4" (203 x 102)
(Overall damper H is 8" (203)).

Max. Duct Size: Single Section
Vertical or Horizontal mount:
36" x 7 1/2" (914 x 191).
Multiple Section Assembly
Vertical or Horizontal mount:
288" x 7 1/2" (7315 x 191).

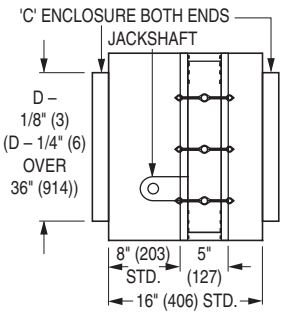
TYPE C SLEEVE ENCLOSURES
MODEL: 1213



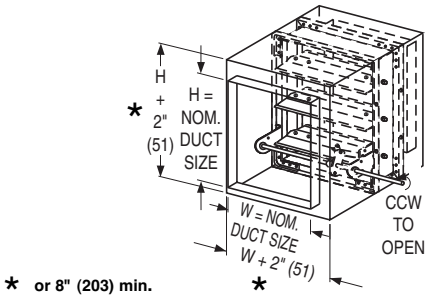
STYLE CR: FOR ROUND DUCT



STYLE CO: FOR OVAL DUCT



TYPE C SIDE VIEW



STYLE CSR : FOR SQUARE or RECTANGULAR DUCT

Min. Duct Size: 4" (102) diameter.
(Overall damper H is 8" x 8"
(203 x 203) min.).

Max. Duct Size: Single Section
Vertical or Horizontal mount:
34" (864) diameter.
Multiple Section Assembly
Vertical or Horizontal mount:
94" (2388) diameter.

Min. Duct Size: 4" x 4" (102 x 102).
(Overall damper size is 8" x 8"
(203 x 203) min.).

Max. Duct Size: Single Section
Vertical or Horizontal mount:
34" x 46" (864 x 1168).
Multiple Section Assembly
Vertical or Horizontal mount:
142" x 94" (3607 x 2388),
286" x 46" (7264 x 1168) or
70" x 142" (1778 x 3607).

MODEL: 1210

PERFORMANCE DATA:

LEAKAGE CLASS:

The 1210 Series Smoke Damper has been designed and qualified under UL 555S in order to provide maximum system design flexibility. It features a Class I (currently the lowest available) or Class II leakage rating with all damper/actuator assemblies having been tested successfully at an elevated temperature of 250°F (121°C) or 350°F (176°C), depending on actuator, under airflow of 2000 fpm (10 m/s) at 4" w.g. (0.995 kPa). The 1210 Series has also qualified under extended testing to 4000 fpm (20 m/s) at 8" w.g. (2 kPa), but with size and actuator restrictions.

The criteria for selection should be based upon both first cost consideration and the maximum total acceptable leakage of all closed dampers in the smoke management system when in the smoke control mode. This will have an influence on fan selection and capacity requirement.

Leakage Class	Maximum Leakage cfm/ft² (m³/s/m²)	
	@ 1" w.g. (0.249 kPa)	@ 4" w.g. (0.995 kPa)
I	4 (0.020)	8 (0.041)
II	10 (0.051)	20 (0.102)

Nailor Industries Inc. certifies that the Model 1210 Damper shown herein is licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to air performance ratings only.

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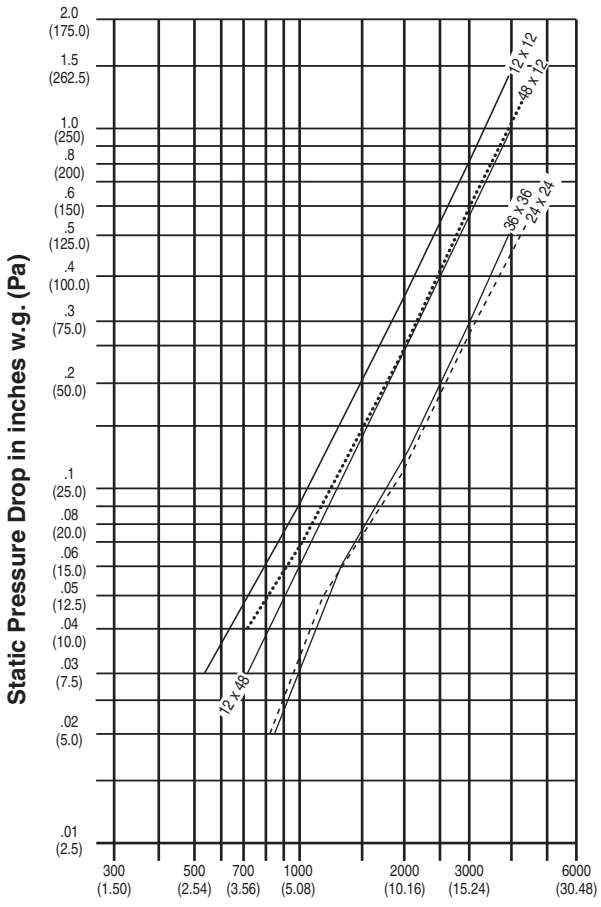
SMOKE DAMPERS

PRESSURE DROP:



Pressure drop tested per AMCA Standard 500-D-98, Figure 5.3.
Data corrected to standard air density of 0.075 lbs/ft.³.

Size: 12 x 12 (305 x 305)

VELOCITY fpm (m/s)	PRESSURE DROP in. w.g. (Pa)
542 (2.75)	.03 (7)
996 (5.06)	.09 (22)
2004 (10.18)	.36 (89)
3010 (15.29)	.83 (206)
3950 (20.07)	1.42 (353)

Size: 24 x 24 (610 x 610)

VELOCITY fpm (m/s)	PRESSURE DROP in. w.g. (Pa)
807 (4.10)	.02 (5)
1243 (6.32)	.05 (12)
1940 (9.86)	.11 (27)
3071 (15.60)	.28 (70)
4327 (21.98)	.56 (139)

Size: 36 x 36 (914 x 914)

VELOCITY fpm (m/s)	PRESSURE DROP in. w.g. (Pa)
849 (4.31)	.02 (5)
1378 (7.00)	.06 (15)
2045 (10.39)	.13 (32)
2988 (15.18)	.28 (70)
3984 (20.24)	.50 (124)

Size: 48 x 12 (1219 x 305)

VELOCITY fpm (m/s)	PRESSURE DROP in. w.g. (Pa)
718 (3.65)	.04 (10)
1018 (5.18)	.07 (17)
1949 (9.90)	.24 (60)
3084 (15.67)	.61 (152)
4355 (22.12)	1.22 (303)

Size: 12 x 48 (305 x 1219)

VELOCITY fpm (m/s)	PRESSURE DROP in. w.g. (Pa)
720 (3.66)	.03 (7)
1620 (8.23)	.17 (42)
2039 (10.36)	.26 (65)
2918 (14.83)	.54 (134)
3957 (20.10)	1.00 (249)

SMOKE DAMPERS

MODELS: 1210/1211/1212/1213

VARIABLES/ACCESSORIES

VARIABLES:	CODE	DESCRIPTION
MOUNTING:	V H	Vertical Mount (wall) Horizontal Mount (floor)
LEAKAGE/ELEV. TEMP. RATINGS:	125 135 225 235	Class I @ 250°F Class I @ 350°F Class II @ 250°F Class II @ 350°F
SLEEVE LENGTH/GAUGE:	Specify Sleeve Length: Specify Sleeve Gauge:	12" (305) to 28" (711) 20G, 18G, 16G, 14G 10G
ACTUATORS:	411 811 MS4 MS8 4Y0 F12 F24 412 812 462 GD2 GD1 GD3 296 306	Honeywell ML4115 (120 VAC) Honeywell ML8115 (24 VAC) Honeywell MS4X09 (120 VAC) Honeywell MS8X09 (24 VAC) Honeywell MS4Y09 (230 VAC) Belimo FSNF120 (120 VAC) Belimo FSNF24 (24 VAC) Honeywell MS4120 (120 VAC) Honeywell MS8120 (24 VAC) Honeywell MS4620 (230 VAC) Siemens GGD221 (120 VAC) Siemens GGD121 (24 VAC) Siemens GGD321 (230 VAC) Siemens 331-2961 (25 psi) Siemens 331-3060 (25 psi)
ACTUATOR MOUNTING:	EXT INT	External Mount Internal Mount
ACTUATOR LOCATION:	RH LH MH	Right-Hand Mount Left-Hand Mount Multi-Hand Mount
FAIL POSITION:	CL OP	Damper to Fail Closed Damper to Fail Open
DAMPER LOCATION IN SLEEVE:	L8 L0	8" (204) from Sleeve End Specify Dimension from Sleeve End
IF MODEL 1213 IS SELECTED, SPECIFY TYPE OF TRANSITION:	CR CO CSR	Round Type C Transitions Oval Type C Transitions Square/Rect. Type C Transitions
ACCESSORIES:	**CODE**	**DESCRIPTION**
POSITION INDICATOR:	300	MLS-300 Switch Pack
E.P. SWITCH	EP1 EP2	120V Siemens 2651008 24V Siemens 2651007
ACTUATOR MOUNTING HARDWARE:	SMP	Side Mount Plate (required for mounting of actuator without sleeve)
FLANGED SLEEVE (MODEL 1211 ONLY)	TDF1 TDF2	TDF Flange on One End TDF Flange on Both Ends

HOW TO SPECIFY OR TO ORDER

SMOKE DAMPERS

MODELS: 1210/1211/1212/1213

HOW TO ORDER:

Select model number and size, then select from each variable. Choose accessories as desired. See previous page for description of variables and accessories.

MODEL	SIZE W X H or DIA.	MOUNTING	LEAKAGE/ELEV. TEMP. RATING	SLEEVE LENGTH *	SLEEVE GAUGE *	ACTUATOR	ACTUATOR MOUNTING	ACTUATOR LOCATION	FAIL POSITION	DAMPER LOCATION IN SLEEVE	TRANSITION TYPE (MODEL 1213 ONLY)	ACCESSORIES **
1210 1211 1212 1213	ie: 36" x 24" or 18" dia.	V/H	125 135 225 235	SPECIFY LENGTH	20G 18G 16G 14G 10G	411 811 MS4 MS8 4Y0 F12 F24 412 812 462 GD2 GD1 GD3 296 306	EXT INT	RH LH MH	CL OP	L8 L0	CR CO CSR	300 EP1 EP2 SMP TDF1 TDF2

Notes: 1. * Standard sleeve is 16" (406) long x 20 ga. (1.0).

Specification Text File

SUGGESTED SPECIFICATION:

Provide and install, as shown on plans and/or schedules, Smoke Dampers meeting or exceeding the following criteria: Frame shall be constructed of 16 ga. (1.6) galvanized steel hat channel with mitered corners reinforced with die-formed corner gussets for strength. Blades shall be 14 ga. (2.0) equivalent galvanized steel formed double skin, airfoil design, on 5 1/2" (140) centers. Dampers shall be opposed blade configuration with an interlocking blade design that provides complete smoke seal under elevated temperature conditions when in closed position. Dampers requiring blade seals to maintain leakage class when under elevated temperature conditions are not acceptable. Blade axles shall be 1/2" (13) dia plated steel, double bolted at each end of blade to provide positive locking connection. Hex or square friction-fit, or press-fit axles are not acceptable. Bearings shall be self-lubricating oilite bronze type. Blade linkage shall be zero-maintenance, concealed in frame, out of airstream. Jamb seals shall be compression type stainless steel.

Dampers shall meet the requirements of NFPA 90A and 92A and shall be classified as a Class I **or** Class II **(specifier select one)** Leakage Rated (Smoke) Damper under UL 555S at an elevated temperature of 250°F (121°C) **or** 350°F (177°C) **(specifier select one)** and each damper shall bear a UL label verifying same. Dampers shall be suitable for use in dynamic or static smoke control systems. Dampers shall have been operation tested by UL to a minimum rated airflow of 2000 fpm (10.16 m/s) velocity with blades fully open, at a rated static pressure differential of 4" w.g. (1 kPa) with blades fully closed. Appropriate electric **or** pneumatic **(specifier select one)** actuators shall be factory installed by damper manufacturer and shall have been tested and classified together under UL 555S at an elevated temperature of 250°F (121°C) **or** 350°F (177°C). Actuators shall incorporate an OEM internal spring-return mechanism. External after-market spring mechanisms are not acceptable. Submitted pressure drop data to be based on tests in accordance with AMCA Standard 500-D and shall demonstrate a maximum pressure drop of .02" w.g. @ 849 fpm (5 Pa @ 4.3 m/s) across a 36" x 36" (914 x 914) damper. Dampers must comply with the requirements of AMCA 511 Certified Ratings Program and be qualified to bear the AMCA Seal for Air Performance. Standard of acceptance: Nailor Industries Model 1210.

Notes:

- **UL 555S CLASSIFIED SMOKE DAMPER**
- **CLASS I, II or III at 250° or 350°**
- **FOR STATIC OR DYNAMIC SYSTEMS**

MODELS:
1260 TYPE A
1261 TYPE A IN SLEEVE
1262 TYPE B
1263 TYPE C

Model 1260 (shown with SMP)

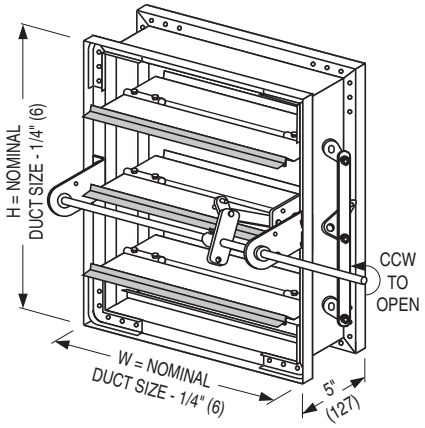
The Nailor 1260 Series Leakage Rated Dampers are a ruggedly built yet economical choice for use where a smoke barrier has been penetrated by ductwork or where a leakage rated damper is required in a static or dynamic smoke control system. The 1260 Series dampers are classified to UL Standard 555S Class I, II or III at 250°F or 350°F Elevated Temperatures, and are available with type B and C enclosures for small sizes and round ductwork. Featuring a vee-groove style blade design for strength and a sturdy hat channel frame with reinforced corner gussets for rack-free installation, the 1260 Series is available with factory installed sleeves and a wide selection of actuators and control accessories to meet the demanding requirements of today's smoke control applications.

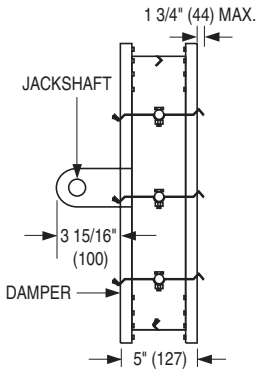
QUALIFICATIONS:

- UL 555S Classified Smoke Damper (File # 9492).
- Leakage Class I, II or III at 250° or 350°F Elevated Temperature.
- For use in Static or Dynamic Smoke Control Systems.
- Meets NFPA 90A, NFPA 92A, BOCA, SBCCI, UBC, and IBC requirements.
- Maximum velocity of 2000 fpm (10 m/s) @4" w.g. (1kPa).

CONSTRUCTION DETAILS:

FRAME:	5" x 7/8" x 16 ga. (127 x 22 x 1.6) galvanized steel hat channel.
BLADES:	6" (152) wide on 5 1/2" (140) centers. 16 ga. (1.6) galvanized steel vee groove or double skin design. Parallel action.
LINKAGE:	Concealed in frame. 12 ga. (2.7) plated steel.
BEARINGS:	1/2" (13) dia. self-lubricating oilite bronze.
AXLES:	1/2" (13) dia. plated steel bolted to blades.
JACKSHAFT:	1/2" (13) dia. cadmium plated steel.
JAMB SEALS:	Stainless steel.
BLADE SEALS:	Stainless steel.
MINIMUM SIZE:	8" x 8" (203 x 203).
MAXIMUM SIZE:	Single Section Vertical or Horizontal mount: 36" x 48" (914 x 1219). Multiple Section Assembly Vertical or Horizontal mount: 144" x 96" (3658 x 2438), 288" x 48" (7315 x 1219) or 72" x 144" (1829 x 3658).



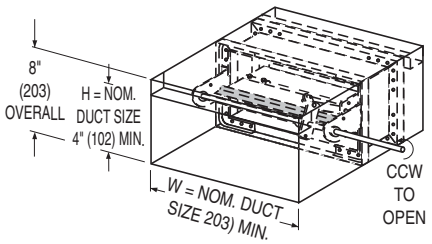


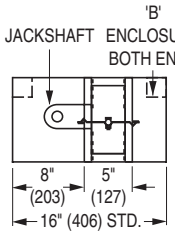
TYPE A: MODEL 1260
TYPE A IN SLEEVE: MODEL 1261

Standard factory sleeve (caulked to UL requirements) 16" long x 20 ga. (406 x 1.0) (18 ga. for dampers over 84" (2134) in width).

Model Series 1260 dampers with duct heights less than 8" (203) require a Type 'B' sleeve enclosure (Model 1262). Units less than 8" (203) in width only, or in both width and height, require a Type 'C' enclosure (Model 1263).

TYPE B SLEEVE ENCLOSURE
MODEL: 1262

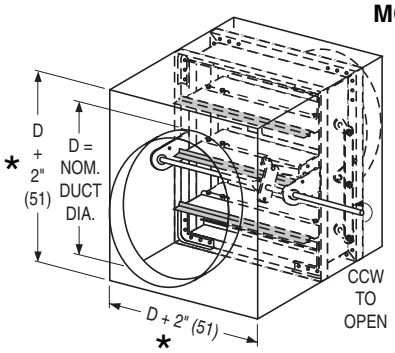




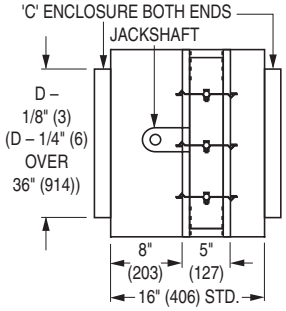
Min. Duct Size: 8" x 4" (203 x 102)
(Overall damper H is 8" (203)).

Max. Duct Size: Vertical or Horizontal mount:
Single Section
36" x 7 1/2" (914 x 191).
Multiple Section Assembly
288" x 7 1/2" (7315 x 191).

TYPE C SLEEVE ENCLOSURES
MODEL: 1263



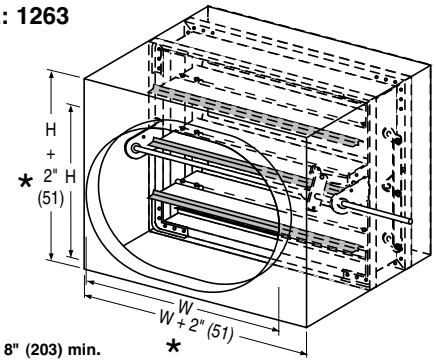
STYLE CR: FOR ROUND DUCT



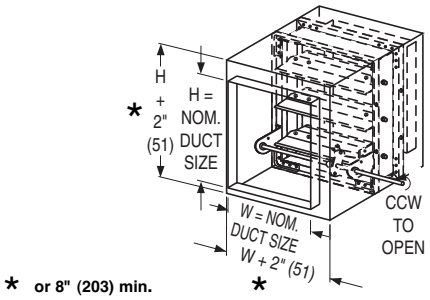
TYPE C SIDE VIEW

Min. Duct Size: 4" (102) diameter.
(Overall damper H is 8" x 8"
(203 x 203) min.).

Max. Duct Size: Vertical or Horizontal mount:
Single Section
34" (864) diameter.
Multiple Section Assembly
94" (2388) diameter.



STYLE CO: FOR OVAL DUCT



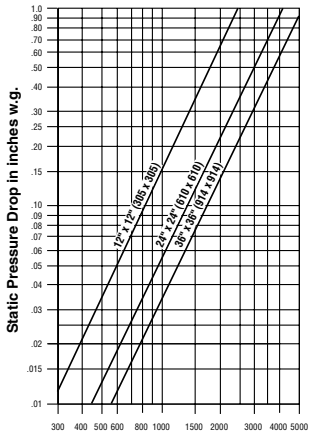
STYLE CSR : FOR SQUARE or RECTANGULAR DUCT

Min. Duct Size: 4" x 4" (102 x 102).
(Overall damper size is 8" x 8"
(203 x 203) min.).

Max. Duct Size: Vertical or Horizontal mount:
Single Section
34" x 46" (864 x 1168).
Multiple Section Assembly
142" x 94" (3607 x 2388),
286" x 46" (7264 x 1168) or
70" x 142" (1778 x 3607).

PERFORMANCE DATA:

PRESSURE DROP (damper fully open)



Tested per AMCA standard 500-D, Fig. 5.3.

Imperial figures shown.
To convert to SI (metric) system:

Multiply:

CFM x .4719 = liters per second

inches w.g. x .2486 = kilopascals

fpm x .00508 = meters per second

cfm per sq. ft. x 5.08 = liters/second per sq. meter.

LEAKAGE CLASS

The 1260 Series Smoke Damper has been designed and qualified under UL 555S in order to provide maximum system design flexibility. They are available with a Class I, II or Class III leakage rating with all damper/actuator assemblies having been tested successfully at an elevated temperature of 250°F (121°C) or 350°F (176°C) under airflow of 2000 fpm (10 m/s) at 4" w.g. (0.995 kPa).

The criteria for selection should be based upon both first cost consideration and the maximum total acceptable leakage of all closed dampers in the smoke management system when in the smoke control mode. This will have an influence on fan selection and capacity requirement.

Leakage Class	Maximum Leakage cfm/ft² (m³/s/m²)	
	@ 1" w.g. (0.249 kPa)	@ 4" w.g. (0.995 kPa)
I	4 (0.020)	8 (0.041)
II	10 (0.051)	20 (0.102)
III	40 (0.204)	80 (0.408)

SMOKE DAMPERS

MODELS: 1260/1261/1262/1263

VARIABLES/ACCESSORIES

VARIABLES:	CODE	DESCRIPTION
MOUNTING:	V	Vertical Mount (wall)
	H	Horizontal Mount (floor)
LEAKAGE/ELEV. TEMP. RATINGS:	125	Class I @ 250°F
	135	Class I @ 350°F
	225	Class II @ 250°F
	235	Class II @ 350°F
	325	Class III @ 250°F
	335	Class III @ 350°F
SLEEVE LENGTH/GAUGE:	Specify Sleeve Length:	12" (305) to 28" (711)
	Specify Sleeve Gauge:	20G, 18G, 16G, 14G 10G
ACTUATORS:	411	Honeywell ML4115 (120 VAC)
	811	Honeywell ML8115 (24 VAC)
	MS4	Honeywell MS4X09 (120 VAC)
	MS8	Honeywell MS8X09 (24 VAC)
	4Y0	Honeywell MS4Y09 (230 VAC)
	F12	Belimo FSNF120 (120 VAC)
	F24	Belimo FSNF24 (24 VAC)
	412	Honeywell MS4120 (120 VAC)
	812	Honeywell MS8120 (24 VAC)
	462	Honeywell MS4620 (230 VAC)
	GD2	Siemens GGD221 (120 VAC)
	GD1	Siemens GGD121 (24 VAC)
	GD3	Siemens GGD321 (230 VAC)
	296	Siemens 331-2961 (25 psi)
	306	Siemens 331-3060 (25 psi)
ACTUATOR MOUNTING:	EXT	External Mount
	INT	Internal Mount
ACTUATOR LOCATION:	RH	Right-Hand Mount
	LH	Left-Hand Mount
	MH	Multi-Hand Mount
FAIL POSITION:	CL	Damper to Fail Closed
	OP	Damper to Fail Open
DAMPER LOCATION IN SLEEVE:	L8	8" (204) from Sleeve End
	L0	Specify Dimension from Sleeve End
IF MODEL 1263 IS SELECTED, SPECIFY TYPE OF TRANSITION:	CR	Round Type C Transitions
	CO	Oval Type C Transitions
	CSR	Square/Rect. Type C Transitions
ACCESSORIES:	**CODE**	**DESCRIPTION**
POSITION INDICATOR:	300	MLS-300 Switch Pack
E.P. SWITCH	EP1	120V Siemens 2651008
	EP2	24V Siemens 2651007
ACTUATOR MOUNTING HARDWARE:	SMP	Side Mounting Plate (required for mounting of actuator without sleeve)
FLANGED SLEEVE (MODEL 1261 ONLY)	TDF1	TDF Flange on One End
	TDF2	TDF Flange on Both Ends

HOW TO SPECIFY OR TO ORDER

SMOKE DAMPERS

MODELS: 1260/1261/1262/1263

HOW TO ORDER:

Select model number and size, then select from each variable. Choose accessories as desired. See previous page for description of variables and accessories.

MODEL	SIZE W X H or DIA.	MOUNTING	LEAKAGE/ELEV. TEMP. RATING	SLEEVE LENGTH *	SLEEVE GAUGE *	ACTUATOR	ACTUATOR MOUNTING	ACTUATOR LOCATION	FAIL POSITION	DAMPER LOCATION IN SLEEVE	TRANSITION TYPE (MODEL 1263 ONLY)	ACCESSORIES
1260 1261 1262 1263	ie: 36" x 24" or 18" dia.	V/H	125 135 225 235 325 335	SPECIFY LENGTH	20G 18G 16G 14G 10G	411 811 MS4 MS8 4Y0 F12 F24 412 812 462 GD2 GD1 GD3 296 306	EXT INT	RH LH MH	CL OP	L8 L0	CR CO CSR	300 EP1 EP2 TDF1 TDF2

Notes: 1. * Standard sleeve is 16" (406) long x 20 ga. (1.0).

Specification Text File

SUGGESTED SPECIFICATION:

Provide and install, as shown on plans and/or schedules, Smoke Dampers meeting or exceeding the following criteria: Frame shall be constructed of 16 ga. (1.6) galvanized steel hat channel with mitered corners reinforced with die-formed corner gussets for strength. Blades shall be of vee groove design, 16 ga. (1.6) galvanized steel, on 5 1/2" (140) centers and shall be parallel configuration. Blade axles shall be 1/2" (13) dia. plated steel, double bolted at each end of blade to provide positive locking connection. Hex or square friction-fit, or press-fit axles are not acceptable. Bearings shall be self-lubricating oilite bronze type. Blade linkage shall be zero-maintenance, concealed in frame, out of airstream. Jamb seals shall be compression type cambered stainless steel. Blade seals shall be silicone type.

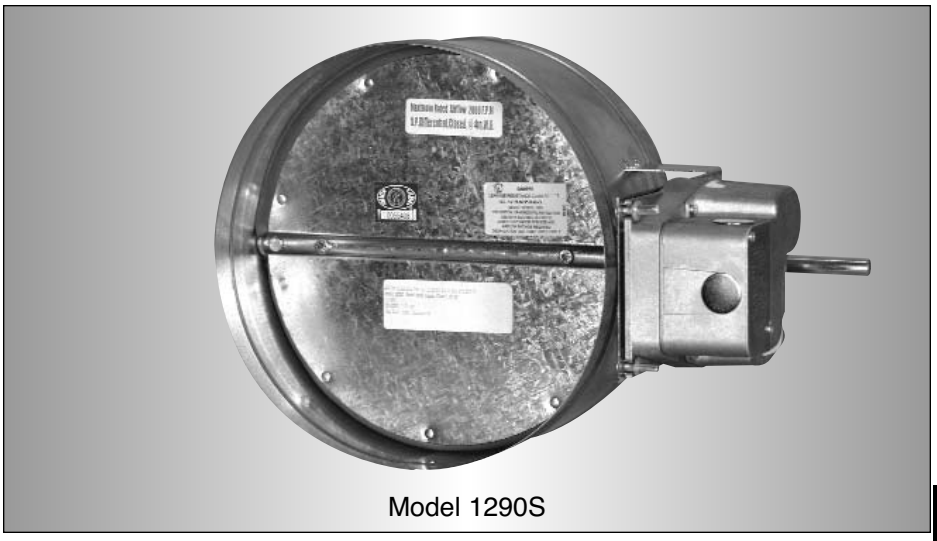
Dampers shall meet the requirements of NFPA 90A and 92A and shall be classified as **(specifier select one)** a Class I, Class II **or** Class III Leakage Rated (Smoke) Damper at an elevated temperature of **(specifier select one)** 250°F (141°C) **or** 350°F (177°C) under UL 555S. Each damper shall bear a UL label verifying same. Dampers shall have been operation tested by UL to a rated airflow of 2000 fpm (10.16 m/s) velocity with blades fully open, at a rated static pressure differential of 4" w.g. (1 kPa) with blades fully closed. Appropriate electric **or** pneumatic **(specifier select one)** actuators shall be factory installed by damper manufacturer and shall have been tested and classified together under UL 555S at an elevated temperature of **(specifier select one)** 250°F (121°C) **or** 350°F (171°C). Actuators shall incorporate an OEM internal spring-return mechanism. External after-market spring mechanisms are not acceptable. Damper and actuator assembly shall be factory cycled a minimum of three times to ensure correct operation.

Damper manufacturer shall submit independent test data verifying pressure drop, leakage characteristics and airflow conditions.

Standard of acceptance: Nailor Industries Model 1260.

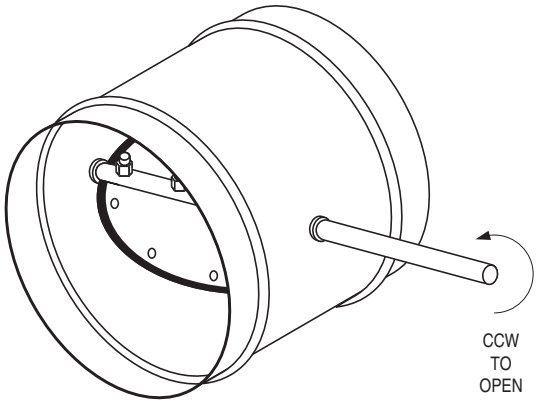
- UL 555S CLASSIFIED SMOKE DAMPER
- CLASS I AT 350°F
- TRUE ROUND DESIGN
- FOR STATIC OR DYNAMIC SYSTEMS

MODEL: 1290S



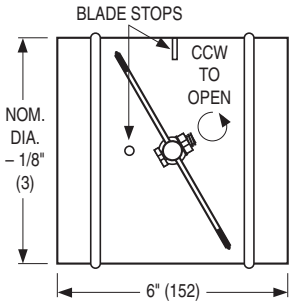
Model 1290S

Nailor's Model 1290S is ideal for applications where building codes require a leakage rated smoke damper for operational smoke control in static or dynamic smoke management systems. The 1290S damper is an economical true round smoke damper designed and qualified for round ductwork. Features include a sturdy beaded casing for superior rigidity and a laminated blade that is double bolted to axles for positive connection. The 1290S smoke damper offers the lowest leakage class available and is qualified for installation with airflow in either direction.



QUALIFICATIONS:

- UL 555S Classified Smoke Damper (File # 9492).
- Leakage Class I at 350°F Elevated Temperature.
- For use in Static or Dynamic Smoke Control Systems.
- Meets NFPA 90A, NFPA 92A, BOCA, SBCCI, UBC, and IBC requirements.
- Maximum velocity of 2000 fpm (10 m/s) @4" w.g. (1kPa).

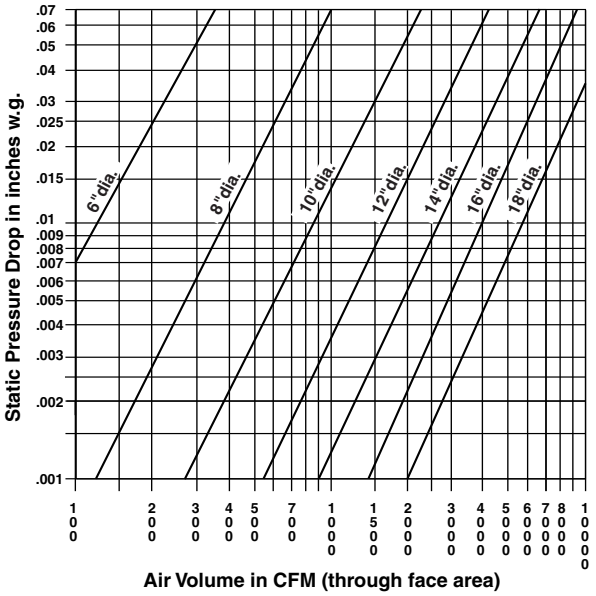


CONSTRUCTION DETAILS:

FRAME:	20 gauge (1.0) galvanized steel integral sleeve.
BLADES:	2 x 20 gauge (1.0) galvanized steel laminated together, 14 gauge (2.0) equivalent thickness.
BEARINGS:	1/2" (13) dia. self-lubricating oilite bronze.
DRIVE SHAFT/ AXLES:	1/2" (13) dia. plated steel double bolted to blade. Drive shaft extends approx. 6" (152) beyond frame.
BLADE SEAL:	Silicone rubber. Peripheral gasket sandwiched between two piece blade.
AVAILABLE SIZES:	6" (152) through 24" (610) diameter in nominal 2" (51) increments. Vertical or horizontal installation.

PERFORMANCE DATA:

PRESSURE DROP (damper fully open)



Tested per AMCA Standard 500-D, Fig. 5.3.

Imperial figures shown.
To convert to SI (metric) system:

Multiply:

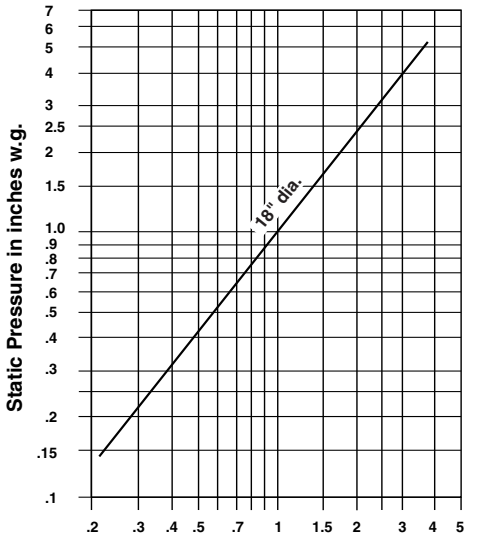
CFM x .4719 = liters per second

inches w.g. x .2486 = kilopascals

fpm x .00508 = meters per second

cfm per sq. ft. x 5.08 = liters/second per sq. meter.

AIR LEAKAGE (damper closed)



Tested per AMCA Standard 500-D, Fig. 5.5.

HOW TO SPECIFY

MODEL: 1290S

Specification Text File

SUGGESTED SPECIFICATION:

Provide and install, as shown on plans and/or schedules, Round Smoke Dampers, as manufactured by Nailor Industries, meeting or exceeding the following criteria: Frame/integral sleeve shall be roll-formed from 20 ga. (1.0) galvanized steel, beaded for structural strength. Blade shall be of two 20 ga. (1.0) galvanized steel pieces laminated together with an equivalent thickness of 14 ga. (2.0). Blade seal shall be silicone rubber sandwiched between blade pieces and shall completely encircle blade periphery. Blade axles shall be 1/2" (13) dia. plated steel double bolted to blade. Hex or square friction-fit or press-fit axles are not acceptable. Bearings shall be self-lubricating oilite bronze type.

Dampers shall meet the requirements of NFPA 90A and 92A and shall be classified as a Class I Leakage Rated (Smoke) Damper under UL 555S at an elevated temperature of 350°F (177°C) and each damper shall bear a UL label verifying same. Dampers shall be suitable for use in dynamic or static smoke control systems. Dampers shall have been operation tested by UL to a minimum rated airflow of 2000 fpm (10.16 m/s) velocity with blades fully open, at a rated static pressure differential of 4 in. w.g. (1kPa) with blades fully closed. Appropriate electric **or** pneumatic **(specifier select one)** actuators shall be factory installed by damper manufacturer and shall have been tested and classified together under UL 555S at an elevated temperature of 350°F (177°C). Actuators shall incorporate an OEM internal spring-return mechanisms. External after-market spring mechanisms are not acceptable. Damper and actuator assembly shall be factory cycled a minimum of three times to ensure correct operation.

Damper manufacturer shall submit independent test data verifying pressure drop, leakage characteristics and airflow conditions.

Standard of acceptance: Nailor Industries Model 1290S.

ROUND SMOKE DAMPER

MODEL: 1290S

VARIABLES / ACCESSORIES

VARIABLES:	CODE	DESCRIPTION
ACTUATORS:	MS4 MS8 296	Honeywell MS4X09 (120 VAC) Honeywell MS8X09 (24 VAC) Siemens 331-2961 (25 psi)
ACCESSORIES	**CODE**	**DESCRIPTION**
POSITION INDICATOR: E. P. SWITCH:	300 EP1 EP2	MLS-300 Switch Pack 120 VAC Siemens 2651008 24 VAC Siemens 2651007

HOW TO ORDER

ROUND SMOKE DAMPER

MODEL: 1290S

HOW TO ORDER:

Select model number and size, then select from each variable. Choose accessories as desired. See above for description of variables and accessories.

MODEL	SIZE (DIA.)	ACTUATOR	ACCESSORIES
1290S	ie: 12" or 304(mm) dia.	MS4 MS8 296	300 EP1 EP2

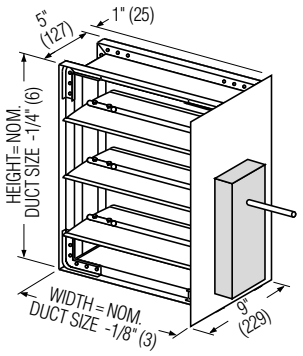
Options and Variables

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

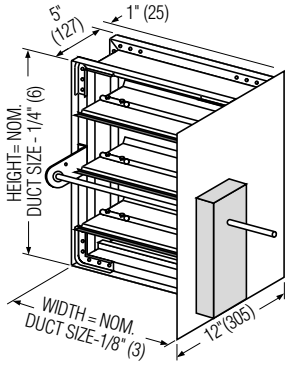
SIDE PLATES/SLEEVES FOR ACTUATOR MOUNTING:

OPTION CODE **SMP**
SIDE ACTUATOR MOUNTING PLATE

Nailors **SMP**, Side Mounting Plate provides a practical and cost effective method of factory installing an actuator onto Model Series 1210, 1260, and 1280 smoke dampers. UL 555S, Standard for Smoke Dampers latest edition, June 1999, asserts that, effective June 1, 2000, actuators shall be factory mounted securely in position. This is to help ensure that the damper/actuator assembly functions properly and eliminates possible jobsite installation errors. Nailor's SMP option allows the damper/actuator assembly to be conveniently mounted in duct opening for fast, worry-free installation.



SIDE ACTUATOR MOUNTING PLATE FOR DIRECT DRIVE



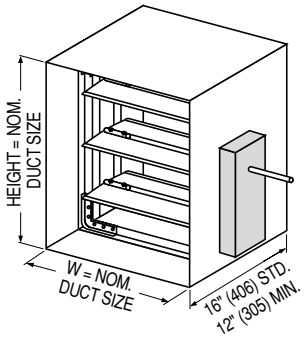
SIDE ACTUATOR MOUNTING PLATE FOR JACKSHAFT DRIVE

TYPE A SLEEVES
MODELS 1211, 1261, 1281

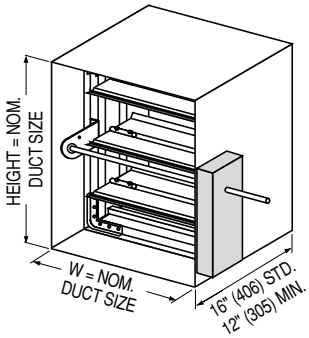
As an alternative to using a side mounting plate to mount an actuator onto a Series 1210, 1260 or 1280 smoke damper, Nailor smoke dampers can be provided in a full factory-fitted sleeve, factory caulked to UL specifications between the damper frame and sleeve. This eliminates on site worries about proper damper mounting in the duct and provides for quick and convenient jobsite installations. Standard TYPE A sleeve is 16" (406) long x 20 ga. (1.0) (18 ga. for dampers over 84" (2134) in width). Non-standard lengths and gauges are available to suit specific applications. See chart for specific sleeved model numbers.

The following indicates model numbers to order for smoke dampers with factory fitted Type A sleeves:

STANDARD MODEL #	WITH TYPE A SLEEVE
1210 →	MODEL 1211
1260 →	MODEL 1261
1280 →	MODEL 1281



TYPE A SLEEVE FOR DIRECT DRIVE



TYPE A SLEEVE FOR JACKSHAFT DRIVE

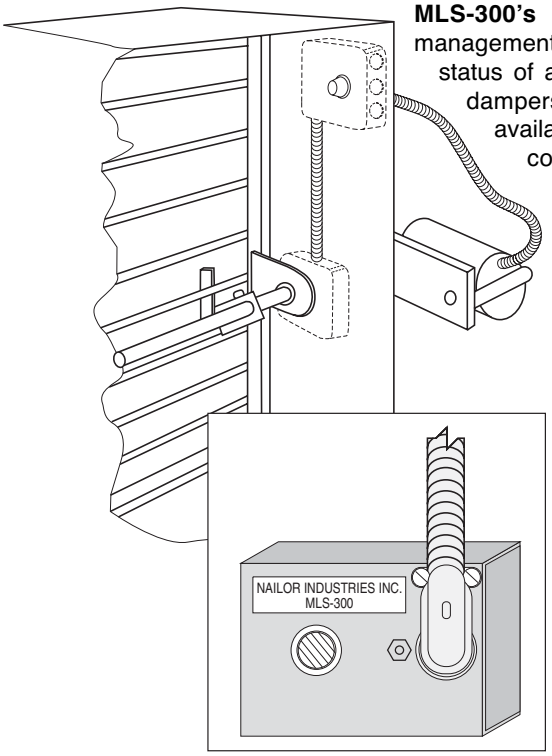
Options and Variables

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

POSITION INDICATORS:

OPTION CODE **300**
MLS-300 POSITION INDICATOR SWITCH PACK

The **MLS-300 Series Position Indicator Switch Pack** is generally utilized to indicate open and closed position of the damper blades. It incorporates two SPDT switches that may be used to operate signal lamps or to provide a start / stop circuit for remote fans or to signal alarms.



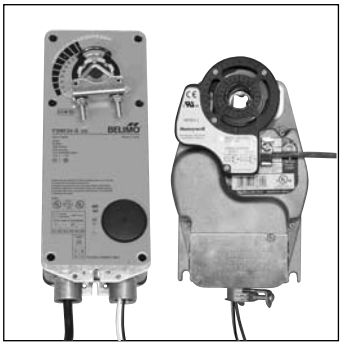
MLS-300's are used in active smoke control management systems to positively indicate the status of all combination fire / smoke and smoke dampers in the building. The **MLS-300** is available only as a factory installed option on combination fire / smoke and smoke dampers.

Features:

- Operates as a function of the damper blade position.
- Provides remote indication of damper blade position.
- Provides the ability to remotely control ON/OFF fan stations.
- Provides the ability to remotely signal alarms.

Built-in Actuator Switch Packs

Many of the newer application specific actuators designed for use on fire/smoke dampers feature "add-on" component position indicator switches manufactured and UL tested by the actuator manufacturer. Honeywell ML4115/ML8115 and MS4X09/MS8X09 actuators are examples.



Some actuator models have variants with position indicator switches built right in to the actuator. Honeywell MS4120F/MS8120F and Belimo FSNF24S/FSNF120S actuators are examples.

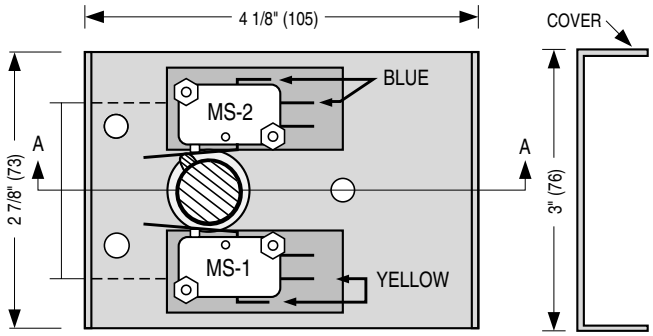
When ordered with the MLS-300 Position Indicator Switch Pack, Nailor combination fire/smoke and smoke dampers that utilize these actuators will usually be supplied with the actuator mounted switch pack, factory installed as required by UL.

Options and Variables

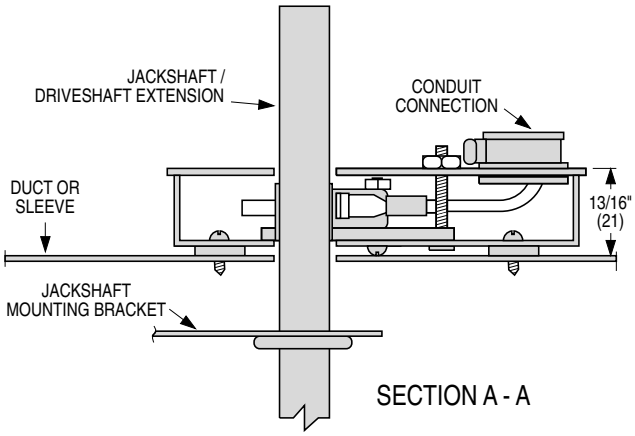
Nailor combination fire and smoke dampers are tested by and listed with Underwriters Laboratories Inc. and are manufactured within UL procedural requirements. Approved variables including a variety of options and accessories are available to suit specific applications.

POSITION INDICATORS:

NAILOR MLS-300 SWITCH DETAILS



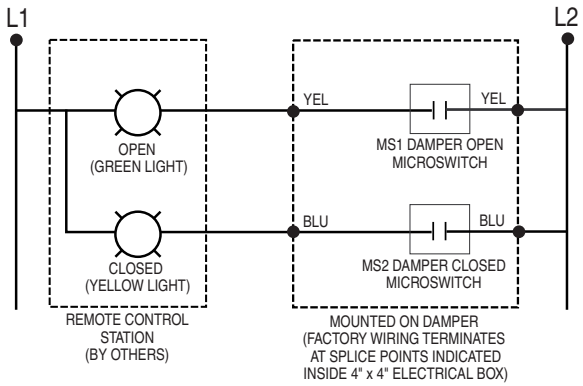
EXTERNAL RIGHT HAND MOUNTING: FRONT VIEW (LESS COVER)



Position Indicator Microswitch Data:
Switch Type: Single Pole double throw (2)
15 Amps, 1/3 HP, 125, 250 Vac or 24 Vdc.
1/2 Amp, 125 Vdc. 1/4 Amp, 250 Vdc.

Standard Mounting:
MS1 is damper open signal.
MS2 is damper closed signal.

Non-Standard Mounting:
Important: Installer must double check continuity of MS1 and MS2 before wiring to determine which switch signals the damper's open or closed position.



Options and Variables

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

JACKSHAFT:

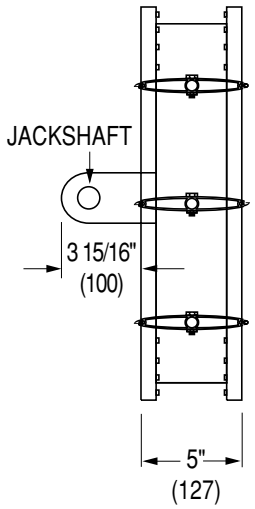
OPTION CODE **JKS**
JACKSHAFT

FOR USE ON MODEL SERIES 1280

Smoke dampers must be installed with the plane of the closed damper blades no more than 24" (610) from the smoke barrier (or before the first duct inlet or outlet, whichever is closer) as per NFPA 90A, 1999 Edition. Building construction design and electrical or plumbing routes may demand that the damper be installed within the actual smoke barrier for practical purposes. However, an external (out of duct) direct mounted actuator can restrict damper location to a position adjacent to barrier, not within it. Utilizing Nailor's optional jackshaft on Model Series 1280 will solve this problem, offsetting the actuator so that the damper can be mounted in the optimal position within the barrier.

Side mounting plate or factory fitted sleeve must be used in conjunction with jackshaft to factory mount actuator to Model 1280 damper in offset position. For internally mounted actuators (in the airstream) jackshafting must be utilized. Standard jackshafting is constructed from 1/2" (13) dia. plated steel, mounted with rugged plated steel bearing bracket affixed directly to frame for solid performance.

Model Series' 1210 and 1260 employ jackshafting as standard on all configurations.



SIDE VIEW DETAIL

SINGLE SECTION JACKSHAFT (SHOWN WITH INTERNAL ACTUATOR)

F

SMOKE DAMPERS

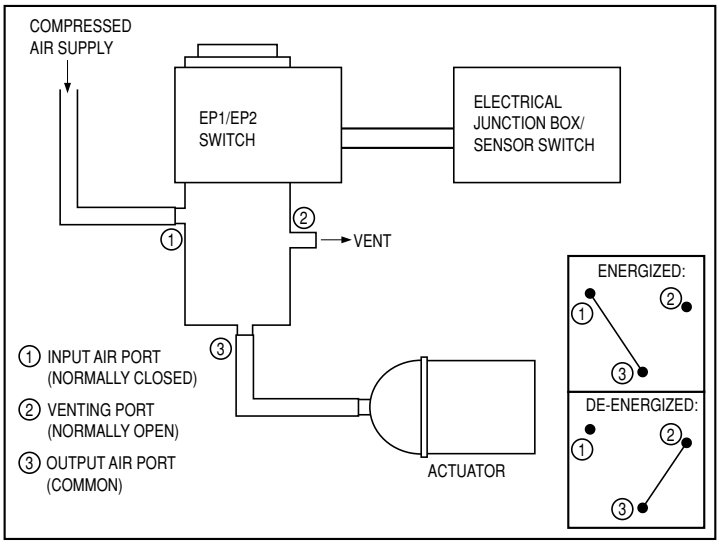
Options and Variables

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

ELECTRO-PNEUMATIC SWITCHES:

OPTION CODES **EP1** and **EP2**
EP1 120 VAC E/P SWITCH
EP2 24 VAC E/P SWITCH

Nailor Options **EP1** and **EP2** electro-pneumatic switches are electrically operated, two-position 3-way air valves. They are used to interlock an electrical smoke or fire alarm system with a pneumatic damper actuator. The **EP1 (120 VAC)** and **EP2 (24 VAC)** valves are utilized to alternately apply pressure to, and exhaust pressure from a pneumatic damper actuator by an electrical input that energizes or de-energizes the solenoid of the switch. Barb type pneumatic piping connections are sized for 1/4" (6) O.D. Polyethylene tubing. Units are UL and CSA approved and may be mounted in any position.



OPERATION:

Input air is connected to port 1 (normally closed) and the output to the actuator is connected to port 3 (common). When the solenoid is energized port 1 connects to port 3 allowing the actuator to be controlled by input air, usually holding the damper in open position. When the solenoid is de-energized, port 2 (normally open) is connected to port 3, exhausting the air from the actuator allowing it to return to its normal fail position (fail open or fail closed).

Options and Variables

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

FLANGED SLEEVE

OPTION CODE **TDF1, TDF2**
TDF FLANGE

TDF (by Engle) and **TDC** (by Lockformer) proprietary flange systems are available as an option on all model smoke dampers fitted with a factory Type A sleeve of 22 or 20 gauge thickness. The flange system allows for fast, simple duct connections in the field.

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

Notes: