

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

MODELS:

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



Model 1210 (shown with SMP)

AMCA LICENSED

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.

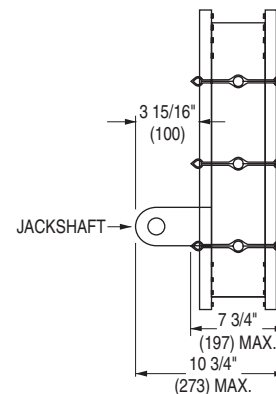
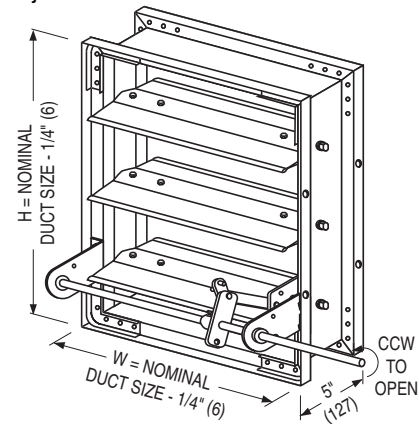
QUALIFICATIONS:

- 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

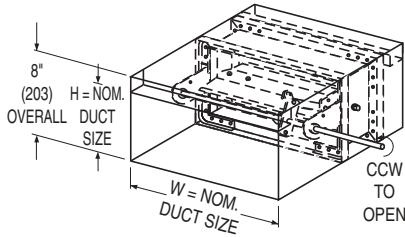
Standard factory sleeve (caulked to UL requirements) 16" long x 20 ga. (406 x 1.0) (18 ga. for dampers over 84" (2134) in width).

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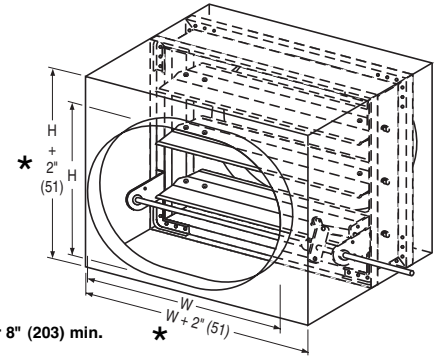
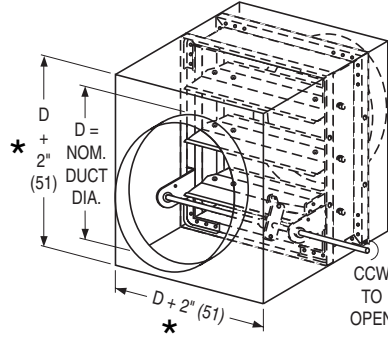
SMOKE DAMPERS

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

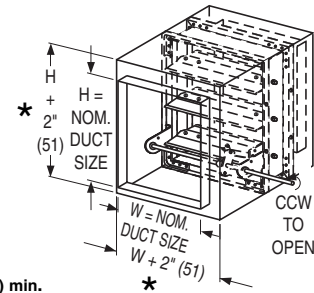
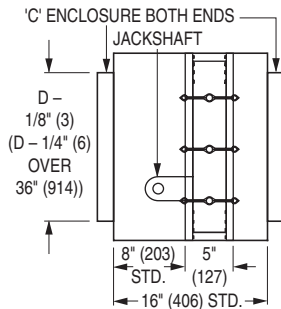
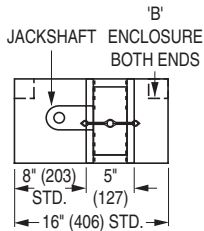


TYPE C SLEEVE ENCLOSURES MODEL: 1213



STYLE CR: FOR ROUND DUCT

STYLE CO: FOR OVAL DUCT



STYLE CSR : FOR SQUARE
or RECTANGULAR DUCT

TYPE C SIDE VIEW

SMOKE DAMPERS

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).

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.

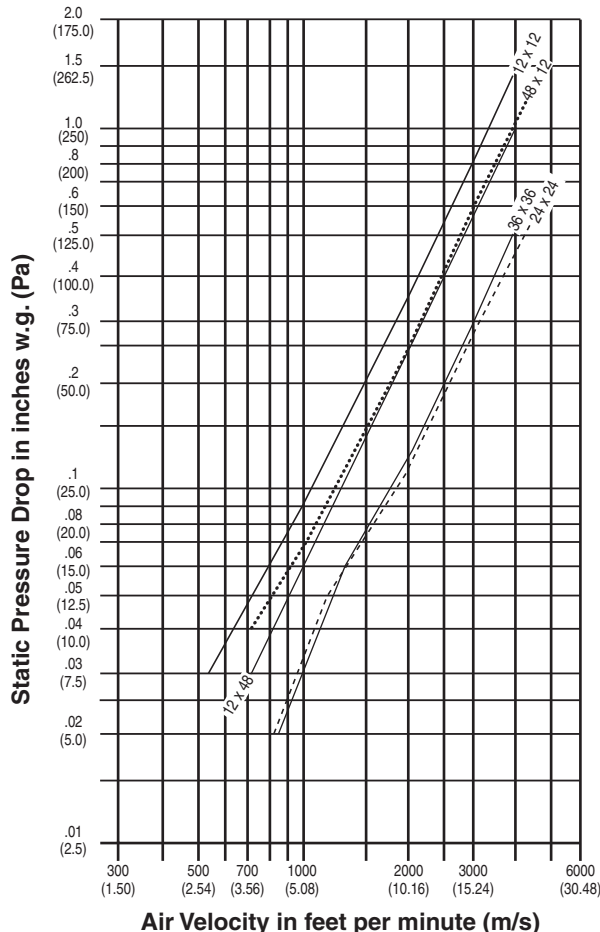
The criteria for selection should be based upon both first cost consideration and the maximum total acceptable leakage of all closed dampers in the smoke management system when in the smoke control mode. This will have an influence on fan selection and capacity requirement.

Leakage Class	Maximum Leakage cfm/ft ² (m ³ /s/m ²)	
	@ 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.

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	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:	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 1213 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 Mount Plate (required for mounting of actuator without sleeve)
FLANGED SLEEVE (MODEL 1211 ONLY)	TDF1	TDF Flange on One End
	TDF2	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	ie: 36" x 24"	V/H	125	SPECIFY LENGTH	20G	411	EXT	RH	CL	L8	CR	300	
1211	or		135		18G	811	INT	LH	OP	L0	CO	EP1	
1212	18" dia.		225		16G	MS4		MH				CSR	EP2
1213			235		14G	MS8							SMP
					10G	4Y0							TDF1
						F12							TDF2
						F24							
						412							
						812							
						462							
					GD2								
					GD1								
					GD3								
					296								
					306								

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

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.

UL SMOKE DAMPERS