

## CURVED SPIRAL DUCT GRILLES

Nailor's unique curved spiral duct grille design offers an architecturally superior appearance and saves installation time and money by directly mounting to the duct. This eliminates the need to fabricate stand-off saddles required for installing standard grilles. These grilles are available for both supply and return air applications.

- Double Deflection – Aluminum Models 51DVC, 51DHC** Page F50
- Double Deflection – Steel Models 61DVC, 61DHC** Page F54
- Single Deflection – Aluminum Models 51SVC, 51SHC** Page F51
- Single Deflection – Steel Models 61SVC, 61SHC** Page F55
- Linear Slot Face – Steel Models 61L50C, 61L75C, 61L10C** Page F67
- Perforated – Aluminum Model 51PRC** Page F52
- Perforated – Steel Model 61PRC** Page F56
- 45° Fixed Blade – Aluminum Models 5145HC, 5155HC** Page F53
- 45° Fixed Blade – Steel Models 6145HC, 6155HC** Page F57

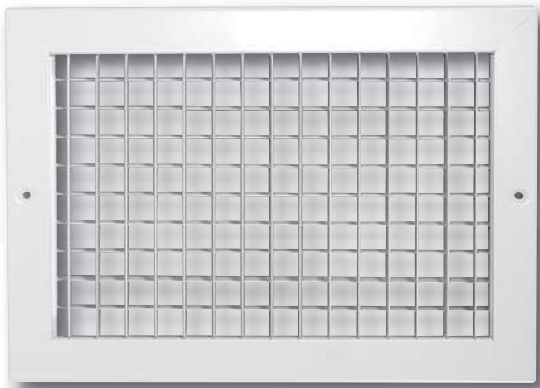


Models 61DVC, 6155HC, 61SVC

## AIRFOIL BLADE GRILLES AND REGISTERS

Sleek design, premium performance and a true extruded aluminum airfoil blade is what makes this series superior to the industry standard. The models in this series are designed for engineers and architects who require exceptional quality and performance. As standard, the grilles and registers have countersunk screw holes in the extruded aluminum frame, which make for a neat clean appearance. Optional opposed blade dampers have a screwdriver slot operator for adjustment through the face of the register.

### AIRFOIL BLADE — SUPPLY AIR



Model 71DV

#### DOUBLE DEFLECTION

A dual set of individually adjustable blades are friction pivoted and can be easily adjusted to provide maximum control of the air pattern for spread and deflection in two planes. The airfoil blades are spaced on 3/4" (19) centers.

- Aluminum – Models 71DV, 71DH**
- Suffix '-O' adds a steel OBD
- Suffix '-OA' adds an aluminum OBD

Page F71

#### SINGLE DEFLECTION

A single set of individually adjustable blades are friction pivoted and can be easily adjusted to provide the desired spread or deflection in a single plane. The airfoil blades are spaced on 3/4" (19) centers.

- Aluminum – Models 71SV, 71SH** Page F72
- Suffix '-O' adds a steel OBD
- Suffix '-OA' adds an aluminum OBD



Model 71SV

## EXCLUSIVE WARRANTY FOR NAILOR STEEL GRILLES, REGISTERS AND DIFFUSERS

LIMITED WARRANTY – SERIES 61C, 6100, 61EC, 61F, RNS, RNS2,  
UNI, 4300, 6500, 7500 AND 61CC

Nailor Industries Inc. ('Nailor') warrants to the original and each subsequent owner of a new Nailor Series Grille, Register or Ceiling Air Diffuser in the model series titled above, constructed of corrosion-resistant steel with a factory applied paint finish that should rust become visible on the exposed portion of any individual product covered by this agreement Nailor will replace the rusted unit. Any diffuser affected by chemicals or misuse, including, without limitation, the failure to perform reasonable and necessary maintenance, will not be covered by this warranty. This warranty is for sixty (60) months from the date of the shipment by Nailor.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

The rusted unit will be shipped by the owner at its cost to Nailor for replacement. The cost of the replacement, including the cost of shipment to the owner, but excluding any costs for either the removal or preparation for shipment of the rusted unit and the re-installation of the replacement unit, will be borne by Nailor. A reasonable time should be allowed after shipment to Nailor for the replacement of the rusted unit.

***This is the only warranty given with the purchase. Any warranties implied by law are limited to sixty (60) months from the date of shipment by Nailor. Nailor neither assumes nor authorizes any person to assume for it any other liability in connection with any diffuser covered by this agreement.***

***No payment or other compensation will be made for indirect or consequential damage such as, damage or injury to person or property or loss of revenue or profit which might be paid, incurred or sustained by reason of the use or inability to use a Nailor product listed above, even if such loss or damage could have been foreseen by Nailor.***

Some states do not allow the exclusion of limitation of incidental or consequential damages or limitation on how long an implied warranty lasts, so the above may not apply to you.

## CURVED SPIRAL DUCT GRILLES

- PERFORATED FACE
- SUPPLY OR RETURN
- ALUMINUM

**Model:**  
**51PRC**



Model 51PRC

Model 51PRC Curved Spiral Duct Grilles are for use in exposed spiral duct supply or return applications. The innovative design incorporates a unique aluminum frame rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles. The perforated face has 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area. Many architects prefer the smooth, unobtrusive appearance this grille has to offer.

### STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- Extensive range of sizes are available.

- The perforated face has 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area.

### CONSTRUCTION MATERIAL:

- Unique architectural single piece aluminum frame design, with a 1 3/8" (35) face border rolled to match required duct radius.

### FINISH OPTIONS:

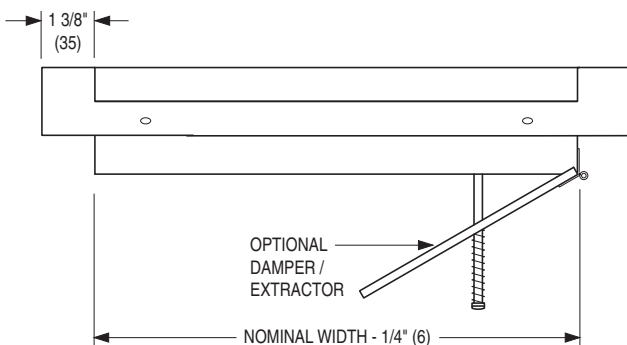
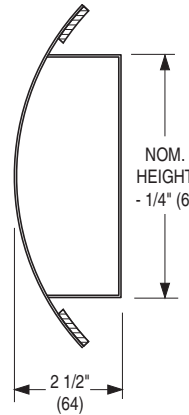
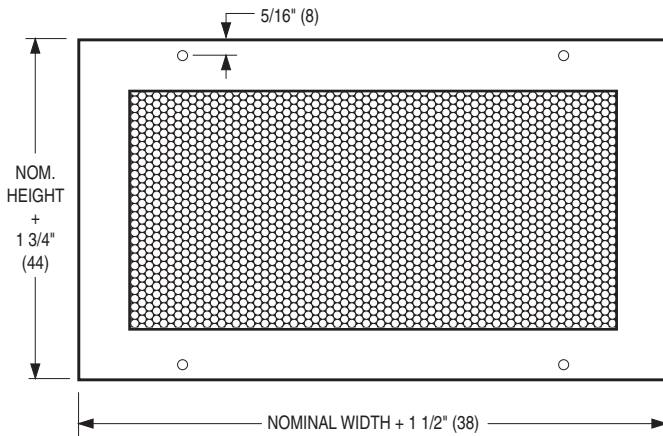
- Standard finish is AW Appliance White finish. Other finishes are available.

### OPTIONS AND ACCESSORIES:

- Optional DEX Damper/Extractor (Air Scoop) is available.

For additional options and accessories, see page F191.

For performance data, see pages F117 and F118.



### Available Sizes

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

\* Opening = Nom. + 1/4" (6) with DEX Damper/Extractor option.

**Important:** Grilles custom fabricated to fit a single specified duct dia. only.

## CURVED SPIRAL DUCT RETURN GRILLES

- FIXED 45° BLADES WITH 3/4" (19) OR 1/2" (13) SPACING
- TRUE FULL RADIUS DESIGN
- ALUMINUM

### Model:

5145HC and 5155HC



Model 5145HC

Models 5145HC and 5155C Curved Spiral Duct Grilles are for use in exposed spiral duct, return applications. The streamlined blades and open spacing minimizes intake velocity, reduces inlet pressure and provides quiet operation. The innovative design incorporates a unique architectural aluminum frame, rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles. A single set of extruded aluminum roll-formed blades on 3/4" (19) or 1/2" (13) centers are fixed at 45° and incorporate a concealed rear reinforcing mullion (maximum 16" [406] centers) and a single blade pack that provides a continuous louvered appearance.

### STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- Extensive range of sizes are available.

### CONSTRUCTION MATERIAL:

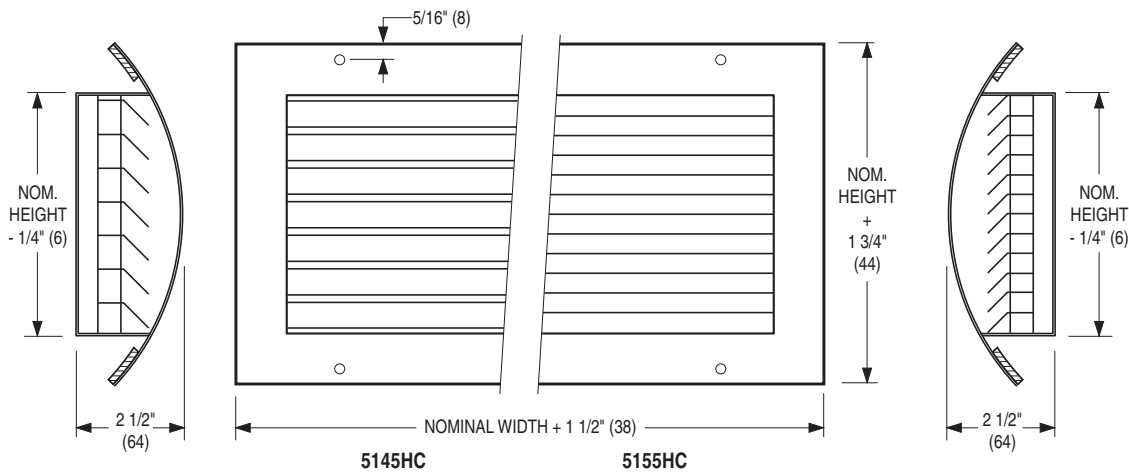
- Unique architectural aluminum frame design, with a 1 3/8" (35) face border rolled to match required duct radius.
- A single set of extruded aluminum roll-formed blades on 3/4" (19) or 1/2" (13) centers fixed at 45°.

### FINISH OPTIONS:

- Standard finish is AW Appliance White finish. Other finishes are available.

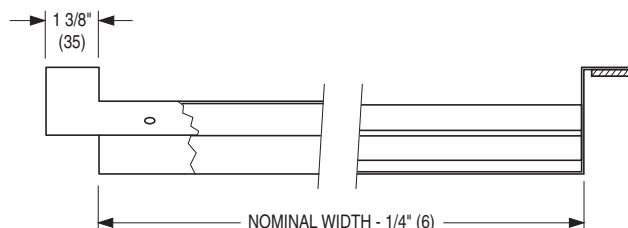
### OPTIONS AND ACCESSORIES:

For additional options and accessories, see page F191.  
For performance data, see pages F117 and F118.



### Available Sizes

Grille Width Min. - Max.	Grille Height	Duct Diameter Min. - Max.
10 - 48 (254 - 1219)	3 (76)	6 - 36 (152 - 914)
10 - 48 (254 - 1219)	4 (102)	6 - 36 (152 - 914)
10 - 48 (254 - 1219)	6 (152)	8 - 36 (203 - 914)
10 - 48 (254 - 1219)	8 (203)	10 - 36 (254 - 914)
10 - 48 (254 - 1219)	10 (254)	12 - 36 (305 - 914)
12 - 36 (305 - 914)	12 (305)	14 - 36 (356 - 914)



Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

**Important:** Grilles custom fabricated to fit a single specified duct dia. only.

## CURVED SPIRAL DUCT GRILLES

- PERFORATED FACE
- SUPPLY OR RETURN
- STEEL

**Model:**  
**61PRC**



Model 61PRC

Model 61PRC Curved Spiral Duct Grilles are for use in exposed spiral duct supply or return applications. The innovative design incorporates a unique corrosion-resistant steel frame rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles. The perforated face has 3/16" (5) diameter holes on 1/4" (6) staggered centers, providing 51% free area. Many architects prefer the smooth, unobtrusive appearance this grille has to offer.

### STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- Extensive range of sizes are available.

- The perforated face has 3/16" (5) dia. holes on 1/4" (6) staggered centers, providing 51% free area.

### CONSTRUCTION MATERIAL:

- Unique corrosion-resistant steel frame design, with a 1 3/8" (35) face border rolled to match required duct radius.

### FINISH OPTIONS:

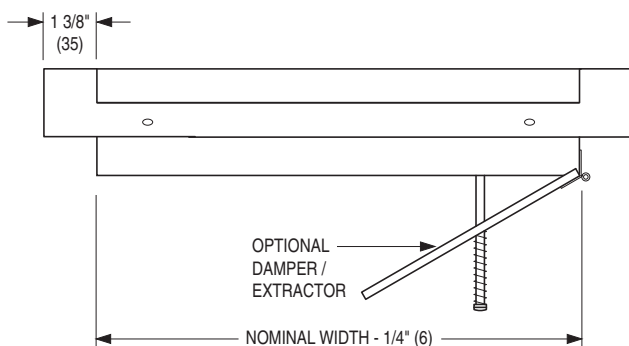
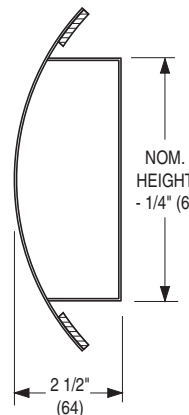
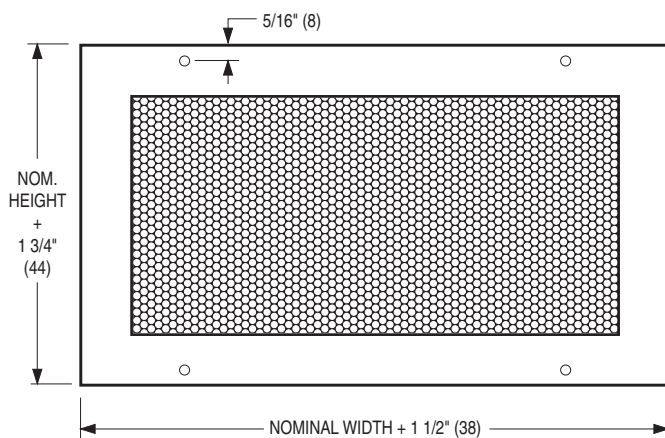
- Standard finish is AW Appliance White finish. Other finishes are available.

### OPTIONS AND ACCESSORIES:

- Optional DEX Damper/Extractor (Air Scoop) is available.

For additional options and accessories, see page F191.

For performance data, see pages F117 and F118.



### Available Sizes

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

\* Opening = Nom. + 1/4" (6) with DEX Damper/Extractor option.

### Important:

Grilles custom fabricated to fit a single specified duct dia. only.

## CURVED SPIRAL DUCT RETURN GRILLES

- FIXED 45° BLADES WITH 3/4" (19) OR 1/2" (13) SPACING
- STEEL

### Models:

6145HC and 6155HC



Model 6145HC

Models 6145HC and 6155C Curved Spiral Duct Grilles are for use in exposed spiral duct, return applications. The streamlined blades and open spacing minimizes intake velocity, reduces inlet pressure and provides quiet operation. The innovative design incorporates a unique architectural steel frame, rolled to match the required duct radius. The grille frame mounts flush with the spiral duct and thus reduces the labor and installation cost by eliminating the need to fabricate stand-off saddles. A single set of steel roll-formed blades on 3/4" (19) or 1/2" (13) centers are fixed at 45° and incorporate a concealed rear reinforcing mullion (maximum 16" [406] centers) and a single blade pack that provides a continuous louvered appearance.

### STANDARD FEATURES:

- Custom fabricated to fit only a single specified duct diameter.
- Furnished with Type A screw holes and mounting screws as standard.
- A thick foam gasket is provided to ensure a tight seal to duct.
- An extensive range of sizes available.
- A single set of roll-formed blades on 3/4" (19) or 1/2" (13) centers fixed at 45°.

### CONSTRUCTION MATERIAL:

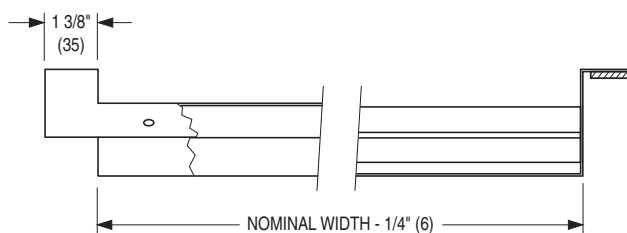
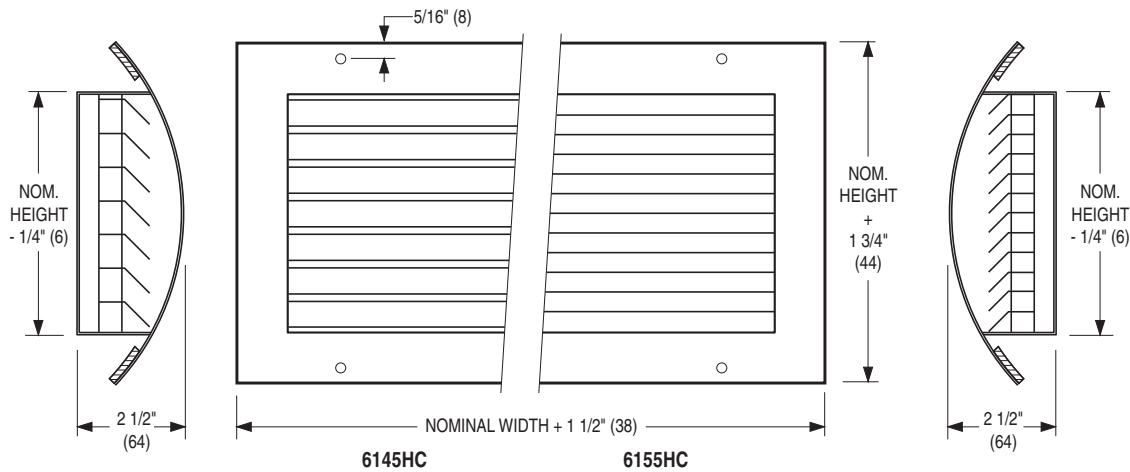
- Unique corrosion-resistant steel frame, with a 1 3/8" (35) face border rolled to match required duct radius.

### FINISH OPTIONS:

- Standard finish is AW Appliance White finish. Other finishes are available.

### OPTIONS AND ACCESSORIES:

For additional options and accessories, see page F191.



### Available Sizes

Grille Width Min. - Max.	Grille Height	Duct Diameter Min. - Max.
10 - 48 (254 - 1219)	3 (76)	6 - 36 (152 - 914)
10 - 48 (254 - 1219)	4 (102)	6 - 36 (152 - 914)
10 - 48 (254 - 1219)	6 (152)	8 - 36 (203 - 914)
10 - 48 (254 - 1219)	8 (203)	10 - 36 (254 - 914)
10 - 48 (254 - 1219)	10 (254)	12 - 36 (305 - 914)
12 - 36 (305 - 914)	12 (305)	14 - 36 (356 - 914)

Duct dia. in even sizes only. Grilles available in nom. 1" (25) increments in width.

### Important:

Grilles custom fabricated to fit a single specified duct dia. only.

## PERFORMANCE DATA:

### CURVED SPIRAL DUCT RETURN GRILLES • 6100C/5100C SERIES

#### MODELS: 6145HC, 6155HC, 5145HC, 5155HC

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100 .001 .003	200 .002 .013	300 .006 .028	400 .010 .050	500 .016 .078	600 .022 .113	700 .031 .153	800 .040 .200	900 .050 .253	1000 .062 .313
10 x 3		0.15	0.18	CFM Noise Criteria	15 -	30 -	45 -	60 -	75 -	90 15	105 20	120 24	135 28	150 32
12 x 3		0.19	0.22	CFM Noise Criteria	19 -	38 -	57 -	76 -	95 -	114 15	133 20	152 24	171 28	190 32
10 x 4	14 x 3	0.22	0.25	CFM Noise Criteria	22 -	44 -	66 -	88 -	110 -	132 16	154 21	176 25	198 29	220 33
12 x 4	16 x 3	0.27	0.29	CFM Noise Criteria	27 -	54 -	81 -	108 -	135 -	162 16	189 21	216 25	243 29	270 33
18 x 3		0.29	0.31	CFM Noise Criteria	29 -	58 -	87 -	116 -	145 -	174 17	203 22	232 26	261 30	290 34
20 x 3	10 x 6 14 x 4	0.32	0.34	CFM Noise Criteria	32 -	64 -	96 -	128 -	160 -	192 17	224 22	256 26	288 30	320 34
16 x 4	22 x 3	0.36	0.38	CFM Noise Criteria	36 -	72 -	108 -	144 -	180 -	216 18	252 23	288 27	324 31	360 35
12 x 6	18 x 4 24 x 3	0.42	0.45	CFM Noise Criteria	42 -	84 -	126 -	168 -	210 -	252 19	294 23	336 28	378 32	420 36
20 x 4	28 x 3	0.45	0.47	CFM Noise Criteria	45 -	90 -	135 -	180 -	225 -	270 19	315 23	360 28	405 32	450 36
14 x 6	10 x 8 22 x 4	0.50	0.51	CFM Noise Criteria	50 -	100 -	150 -	200 -	250 15	300 20	350 24	400 29	450 33	500 37
12 x 8	16 x 6 24 x 4 32 x 3	0.58	0.59	CFM Noise Criteria	58 -	116 -	174 -	232 -	290 15	348 20	406 24	464 29	522 33	580 37
10 x 10	26 x 4 34 x 3	0.61	0.62	CFM Noise Criteria	61 -	122 -	183 -	244 -	305 15	366 20	427 25	488 30	549 33	610 37
18 x 6	14 x 8 28 x 4 30 x 4 36 x 3	0.65	0.67	CFM Noise Criteria	65 -	130 -	195 -	260 -	325 16	390 21	455 26	520 30	585 34	650 37
12 x 10	20 x 6 30 x 4	0.74	0.74	CFM Noise Criteria	74 -	148 -	222 -	296 -	370 16	444 21	518 26	592 31	666 35	740 38
22 x 6	16 x 8 34 x 4	0.80	0.80	CFM Noise Criteria	80 -	160 -	240 -	320 -	400 16	480 21	560 26	640 31	720 35	800 38
12 x 12	14 x 10 18 x 8 24 x 6 36 x 4	0.90	0.89	CFM Noise Criteria	90 -	180 -	270 -	360 -	450 17	540 22	630 27	720 32	810 35	900 38
18 x 10	30 x 6	1.13	1.12	CFM Noise Criteria	113 -	226 -	339 -	452 -	565 17	678 22	791 27	904 32	1017 36	1130 39
24 x 8	16 x 12 20 x 10 24 x 8 34 x 6	1.20	1.19	CFM Noise Criteria	120 -	240 -	360 -	480 -	600 17	720 22	840 27	960 32	1080 36	1200 39

GRILLES AND REGISTERS

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For performance table notes, see page F62.

## PERFORMANCE DATA:

### CURVED SPIRAL DUCT RETURN GRILLES • 6100C/5100C SERIES

#### MODELS: 6145HC, 6155HC, 5145HC, 5155HC

Listed Duct Size (inches)	Alternate Size (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .003	.002 .013	.006 .028	.010 .050	.016 .078	.022 .113	.031 .153	.040 .200	.050 .253	.062 .313
18 x 12	22 x 10 28 x 8 36 x 6	1.37	1.34	CFM	137	274	411	548	685	822	959	1096	1233	1370
				Noise Criteria	-	-	-	-	18	23	28	33	36	39
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM	152	304	456	608	760	912	1064	1216	1368	1520
				Noise Criteria	-	-	-	-	18	23	28	34	37	40
32 x 8	22 x 12 26 x 10	1.61	1.59	CFM	161	322	483	644	805	966	1127	1288	1449	1610
				Noise Criteria	-	-	-	-	19	24	29	34	37	40
24 x 12	30 x 10 36 x 8	1.85	1.78	CFM	185	370	555	740	925	1110	1295	1480	1665	1850
				Noise Criteria	-	-	-	-	19	24	29	34	37	41
32 x 10	28 x 12	2.04	1.96	CFM	204	408	612	816	1020	1224	1428	1632	1836	2040
				Noise Criteria	-	-	-	-	19	25	30	35	38	41
30 x 12	36 x 10	2.32	2.23	CFM	232	464	696	928	1160	1392	1624	1856	2088	2320
				Noise Criteria	-	-	-	15	20	25	30	35	38	42
32 x 12	38 x 10 48 x 8	2.48	2.38	CFM	248	496	744	992	1240	1488	1736	1984	2232	2480
				Noise Criteria	-	-	-	15	20	26	31	36	39	42
40 x 10		2.56	2.44	CFM	256	512	768	1024	1280	1536	1792	2048	2304	2560
				Noise Criteria	-	-	-	15	20	26	31	36	39	42
36 x 12	44 x 10	2.79	2.66	CFM	279	558	837	1116	1395	1674	1953	2232	2511	2790
				Noise Criteria	-	-	-	16	21	27	31	36	39	43
48 x 10		3.08	2.92	CFM	308	616	924	1232	1540	1848	2156	2464	2772	3080
				Noise Criteria	-	-	-	16	21	27	31	36	39	43

#### Performance Notes:

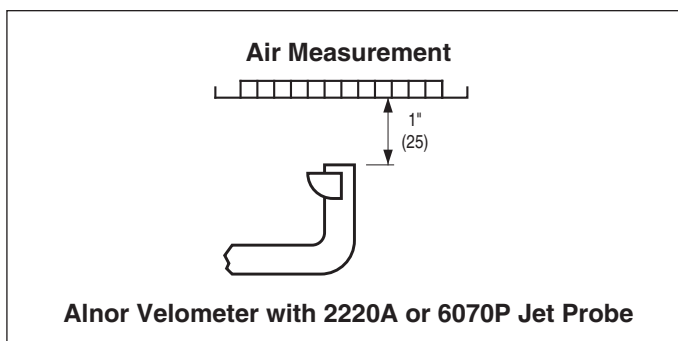
- All pressure are in inches w.g..
- Core Velocity is in feet per minute.
- Performance data is based on Model 6145HC. For Model 6155HC apply the following correction factors:

**Negative Static Pressure** Listed Value x 1.3.

**Noise Criteria** Listed value + 4.

- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (-) in space indicates an Noise Criteria of less than 15.

- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.



#### Airflow Measurements:

- Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
- Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
- Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V<sub>k</sub> in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.  
Airflow (CFM) = Average velocity (V<sub>k</sub>) x Ak.



## HOW TO ORDER

### MODEL SERIES: 5100C

### ALUMINUM CURVED SPIRAL DUCT GRILLES

EXAMPLE: 51DVC - 12 x 6 - 12 - S - AW - A - DEX

**1. Models**

**Supply Double Deflection:**

- 51DVC Vertical Front Blades,  
3/4" (19) Spacing
- 51DHC Horizontal Front Blades,  
3/4" (19) Spacing

**Supply Single Deflection:**

- 51SVC Vertical Blades,  
3/4" (19) Spacing
- 51SHC Horizontal Blades,  
3/4" (19) Spacing

**Return:**

- 51PRC Perforated Face
- 5145HC 45° Deflection,  
3/4" (19) Spacing
- 5155HC 45° Deflection,  
1/2" (13) Spacing

**2. Nominal Width x Height**

inches (mm)

**3. Duct Diameter**

inches

06 through 36 (in 2" increments)

**4. Frame/Border Type**

- S Surface Mount (default)

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- LBP Light Bronze Paint
- MBP Medium Bronze Paint
- DBP Dark Bronze Paint
- MI Mill
- PC Prime Coat
- SP Special Custom Color

**6. Fastening**

- A Screw Holes (default)
- N None

**7. Damper/Extractor**

- None (standard) (default)
- DEX Damper/Extractor

**Notes:**

1. Nailor recommends the selection of vertical front blades on supply models for the majority of applications.
2. Refer to "Available Sizes" table for grille height/duct diameter limitations.
3. Not available in fractional or metric sizes.
4. For a standard grille with no special requirements, the "default" will automatically be selected. For example, an aluminum double deflection grille with vertical front blades is Model 51DVC. Unit will be supplied with screw holes and AW Appliance White finish.

**Available Sizes**

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

## HOW TO SPECIFY

### MODEL SERIES: 5100C

### ALUMINUM CURVED SPIRAL DUCT GRILLES

#### SUGGESTED SPECIFICATION:

##### 51DVC, 51DHC Double Deflection

Furnish and install **Nailor Model** (select one) **51DVC** or **51DHC Double Deflection Curved Spiral Duct Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a dual set of extruded aluminum "teardrop" blades spaced on 3/4" (19) centers. The frame shall be made from a single piece aluminum design that is rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### 51SVC, 51SHC Single Deflection

Furnish and install **Nailor Model** (select one) **51SVC** or **51SHC Single Deflection Curved Spiral Duct Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of extruded aluminum "teardrop" blades spaced on 3/4" (19) centers. The frame shall be made from a single piece aluminum design that is rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### 51PRC Perforated Face

Furnish and install **Nailor Model 51PRC Perforated Face Curved Spiral Duct Supply or Return Grilles** of the type and size as shown on the plans and air distribution schedules. The perforated face shall have 3/16" (5) dia. holes on staggered 1/4" (6) centers providing 51% free area. The frame shall be made from a single piece aluminum design that is rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### 5145HC, 5155HC 45° Deflection

Furnish and install **Nailor Model** (select one) **5145HC** or **5155HC Fixed Blade 45° Deflection Curved Spiral Duct Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of roll formed blades on 3/4" (19) or 1/2" (13) centers. The frame shall be made from aluminum and rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## HOW TO ORDER

### MODEL SERIES: 6100C

### STEEL CURVED SPIRAL DUCT GRILLES

EXAMPLE: 61DVC - 12 x 6 - 12 - S - AW - A - DEX

**1. Models**

**Supply Double Deflection:**

- 61DVC Vertical Front Blades,  
3/4" (19) Spacing
- 61DHC Horizontal Front Blades,  
3/4" (19) Spacing

**Supply Single Deflection:**

- 61SVC Vertical Blades,  
3/4" (19) Spacing
- 61SHC Horizontal Blades,  
3/4" (19) Spacing

**Return:**

- 61PRC Perforated Face
- 6145HC 45° Deflection,  
3/4" (19) Spacing
- 6155HC 45° Deflection,  
1/2" (13) Spacing

**2. Nominal Width x Height**

inches (mm)

**3. Duct Diameter**

inches

06 through 36 (in 2" increments)

**4. Frame/Border Type**

S Surface Mount (default)

**5. Finish**

- AW Appliance White (default)
- AL Aluminum
- BK Black
- BW British White
- LBP Light Bronze Paint
- MBP Medium Bronze Paint
- DBP Dark Bronze Paint
- MI Mill
- PC Prime Coat
- SP Special Custom Color

**6. Fastening**

- A Screw Holes (default)
- N None

**7. Damper/Extractor**

- None (standard) (default)
- DEX Damper/Extractor

**Notes:**

1. Nailor recommends the selection of vertical front blades on supply models for the majority of applications.
2. Refer to "Available Sizes" table for grille height/duct diameter limitations.
3. Not available in fractional or metric sizes.
4. For a standard grille with no special requirements, the "default" will automatically be selected. For example, a double deflection grille with vertical front blades is Model 61DVC. Unit will be supplied with screw holes and AW Appliance White finish.

### Available Sizes

Grille Width Min. – Max.	Grille Height	Duct Diameter Min. – Max.
10 – 48 (254 – 1219)	3 (76)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	4 (102)	6 – 36 (152 – 914)
10 – 48 (254 – 1219)	6 (152)	8 – 36 (203 – 914)
10 – 48 (254 – 1219)	8 (203)	10 – 36 (254 – 914)
10 – 48 (254 – 1219)	10 (254)	12 – 36 (305 – 914)
12 – 36 (305 – 914)	12 (305)	14 – 36 (356 – 914)

## HOW TO SPECIFY

### MODEL SERIES: 6100C

### STEEL CURVED SPIRAL DUCT GRILLES

#### SUGGESTED SPECIFICATION:

##### 61DVC, 61DHC Double Deflection

Furnish and install **Nailor Model** (select one) **61DVC** or **61DHC Double Deflection Curved Spiral Duct Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a dual set of "teardrop" blades spaced on 3/4" (19) centers. The frame shall be corrosion-resistant steel and rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### 61SVC, 61SHC Single Deflection

Furnish and install **Nailor Model** (select one) **61SVC** or **61SHC Single Deflection Curved Spiral Duct Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of "teardrop" blades spaced on 3/4" (19) centers. The frame shall be corrosion-resistant steel and rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### 61PRC Perforated Face

Furnish and install **Nailor Model 61PRC Perforated Face Curved Spiral Duct Supply or Return Grilles** of the type and size as shown on the plans and air distribution schedules. The perforated face shall have 3/16" (5) dia. holes on staggered 1/4" (6) centers providing 51% free area. The frame shall be made from corrosion-resistant steel and rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

(Optional) Damper/Extractor (DEX), constructed of heavy gauge corrosion-resistant steel and operable from the face of the grille, shall be provided with all units.

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

##### 6145HC, 6155HC 45° Deflection

Furnish and install **Nailor Model** (select one) **6145HC** or **6155HC Fixed Blade 45° Deflection Curved Spiral Duct Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of roll formed blades on 3/4" (19) or 1/2" (13) centers. The frame shall be made from corrosion-resistant steel and rolled to match the specified radius. The finish shall be AW Appliance White (optional finishes are available).

The manufacturer shall provide published performance data for the grille, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 2006.

## PERFORMANCE DATA:

### STEEL HEAVY DUTY RETURN GRILLES AND REGISTERS • 45° DEFLECTION

#### MODELS: 6145H-HD, 6145V-HD

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure Neg. Static Pressure	100	200	300	400	500	600	700	800	900	1000
					.001 .005	.002 .021	.006 .046	.010 .082	.016 .129	.022 .185	.031 .252	.040 .330	.050 .417	.062 .515
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM	684	1368	2052	2736	3420	4104	4788	5472	6156	6840
				Noise Criteria	15	19	24	31	37	43	47	52	56	60
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM	769	1538	2307	3076	3845	4614	5383	6152	6921	7690
				Noise Criteria	16	20	25	31	37	43	48	52	56	60
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM	869	1738	2607	3476	4345	5214	6083	6952	7821	8690
				Noise Criteria	17	21	25	32	37	44	49	53	57	61
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM	970	1940	2910	3880	4850	5820	6790	7760	8730	9700
				Noise Criteria	17	22	26	32	38	44	49	53	57	61
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM	1077	2154	3231	4308	5385	6462	7539	8616	9693	10770
				Noise Criteria	17	22	27	33	39	45	51	54	59	63
42 x 42	44 x 40 48 x 36 46 x 38	11.89	10.92	CFM	1189	2378	3567	4756	5945	7134	8323	9512	10701	11890
				Noise Criteria	18	23	28	34	40	46	51	55	59	63
44 x 44	46 x 42	13.07	11.98	CFM	1307	2614	3921	5228	6535	7842	9149	10456	11763	13070
				Noise Criteria	18	23	28	34	40	46	51	55	59	63
46 x 46		14.30	13.10	CFM	1430	2860	4290	5720	7150	8580	10010	11440	12870	14300
				Noise Criteria	19	24	29	35	41	47	52	56	60	64
48 x 48		15.59	14.26	CFM	1559	3118	4677	6236	7795	9354	10913	12472	14031	15590
				Noise Criteria	19	24	29	35	41	47	52	56	60	64

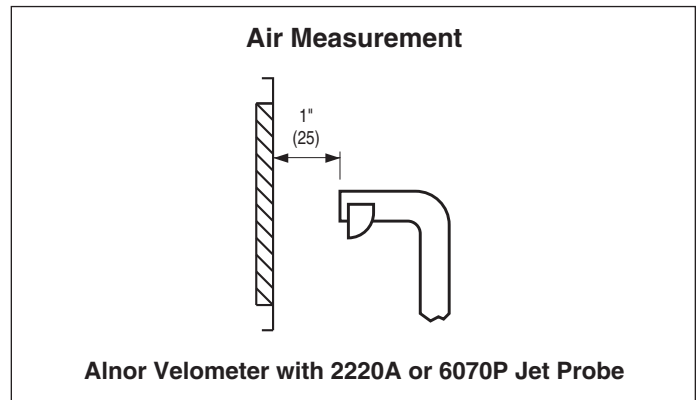
#### Performance Notes:

1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

**Neg. Static Pressure** Listed Value x 0.91.

**Noise Criteria** Listed value – 4.

4. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (-) in space indicates an Noise Criteria of less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.



#### Airflow Measurements

1. Balancing factors are applicable with or without dampers, providing uniform airflow exists into grille or register.
2. Take velocity readings at a number of locations on the inlet face (a minimum of 4), while positioning probe as shown above, one inch out from the face.
3. Total the various velocity readings and divide by the number of readings taken to arrive at an average inlet velocity (V<sub>k</sub> in FPM).
4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.  
Airflow (CFM) = Average velocity (V<sub>k</sub>) x Ak.

## PRODUCT OVERVIEW OPTIONS AND ACCESSORIES FOR GRILLES AND REGISTERS

### MOUNTING FRAMES

- Up to four methods of fastening available for most models.
- Sub-frame available for professionally finished openings.
- Surface mount adapter frame for plaster and sheet rock ceilings are available in steel and aluminum. They simplify installation, save time and allow ceiling plenum access.
- Panel mounting available to suit architectural ceiling systems.

### OPTIONS

- A selection of optional items that are available on grilles and registers.
- Information on custom sizing for special applications.

### FINISHES

- Selection of standard and non-standard finishes to choose from.
- Anodizing of aluminum products.

### AIR BALANCING DEVICES

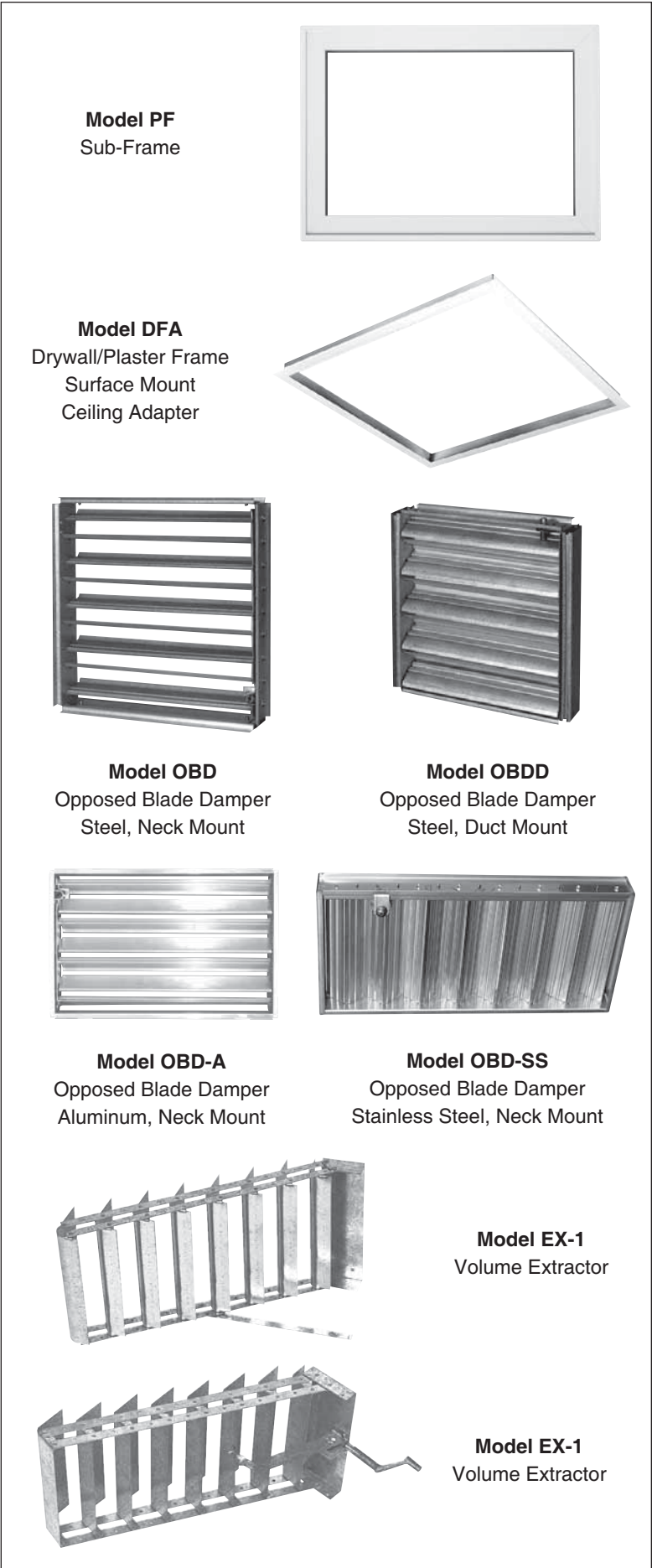
- Opposed blade dampers for every application.
- Volume extractors.

Effective air balancing of an HVAC System requires the correct selection, specification and installation of the right product to suit the system design.

Nailor offers a comprehensive range of models and options to cover all applications.

Nailor balancing devices are:

- Easy to select and specify. Many items can be supplied as factory mounted or packaged accessories on grilles and registers.
- Designed to offer a smooth, accurate and predictable response during adjustment for precise air metering.
- Designed to provide quick access and adjustment.
- Engineered with attention to optimizing airflow, in order to minimize noise, turbulence and pressure drop.

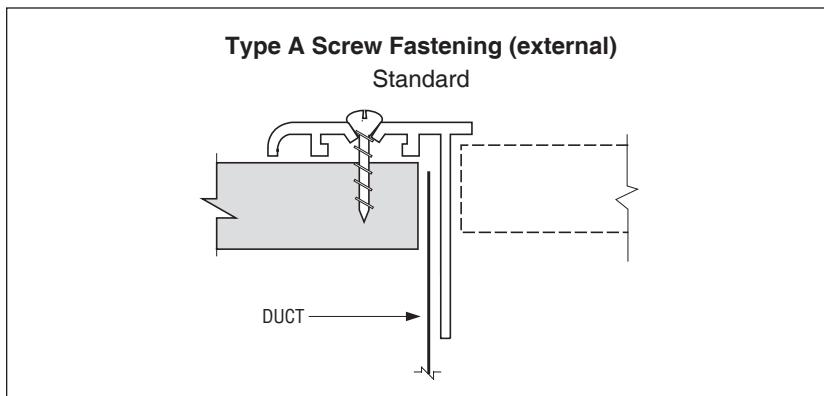


## Fastening and Border Frames

### Type A Screw Fastening (External)

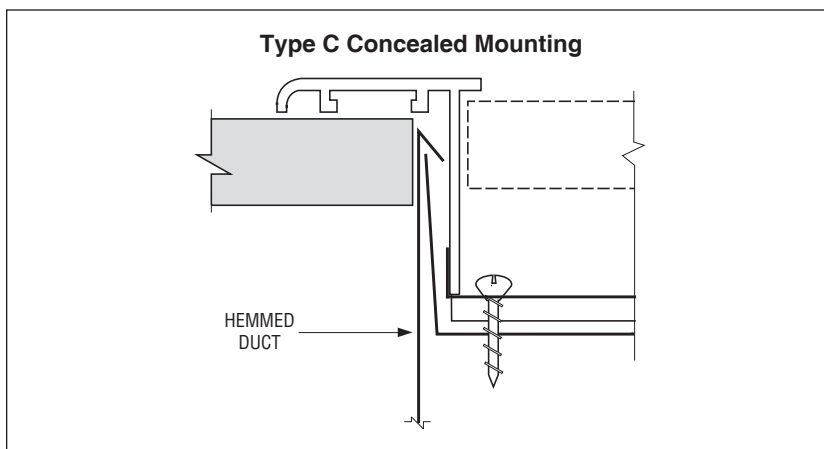
Standard method of fastening for all Nailor grilles and registers in surface mount applications. All Nailor grilles and registers are supplied this way unless specified otherwise. Universal application for all models and cost effective installation.

Screw holes are countersunk in the frame for most models to provide an aesthetically pleasing appearance and are sized for #8 x 1 1/2" (38) oval-head screws which are supplied from the factory packed with each grille or register and are painted to match the specified finish.



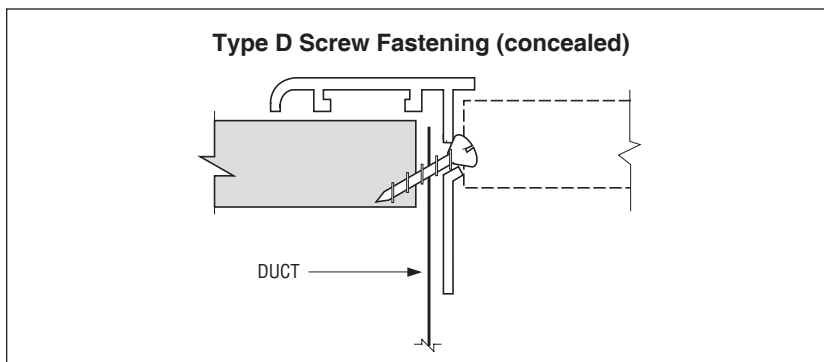
### Type C Concealed Mounting

Grilles and registers are supplied with concealed mounting straps (at additional cost) which permit surface mounting with concealed screws, allowing a clean frame appearance. The bracket is shipped loose for installation in the field (by others). The bracket attaches to the back of the grille screws to an adjustable mounting strap which can either be secured directly to the duct wall or hooked into a hem formed in the end of the duct. Not available on return air grilles with 1/2" (13) spacing and a fixed angled blade deflection. Maximum size: 36" x 36" (914 x 914).



### Type D Screw Fastening (Concealed)

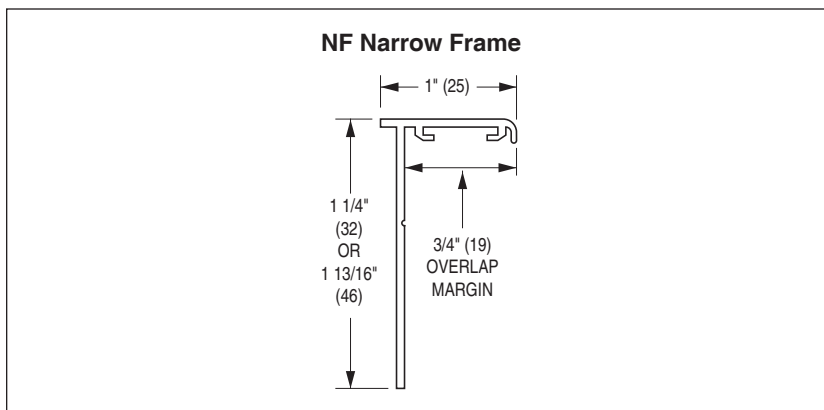
Screw holes are provided in the neck of the grille or register frame. Screws are field installed at an angle through the grille frame and into the ductwork, providing a clean frame appearance. Installation is more difficult than Type A due to the space constriction between the grille blades. Care must be taken not to bend or scratch the grille. Not recommended on return air grilles with a fixed angled blade deflection as accessibility to screw holes is greatly restricted.



### Type NF Narrow Frame

An optional reduced 1" (25) wide narrow border frame is available on most aluminum models to satisfy architectural considerations.

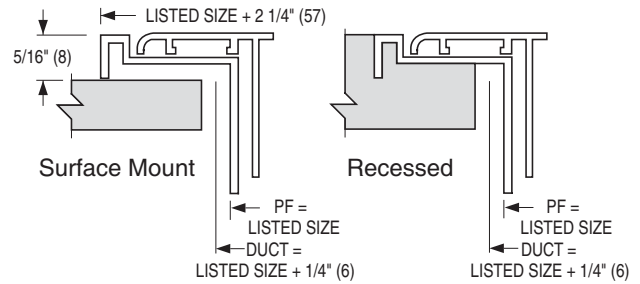
See individual models for availability.



## Mounting Frames

### PF Plaster/Mounting Frame

Available (at additional cost) with most standard steel and aluminum grilles and registers. The Model PF Plaster Frame is constructed from extruded aluminum and provides a convenient and professional way for finishing off the grille or register opening. It provides a stable anchor for attachment, while enabling the grille or register to be detached and replaced readily without disturbing the finished surface of the wall or ceiling opening. It may be used for surface mounting on various materials or recess mounted in wet plaster.



Model PF Plaster Frame

### DFS (Steel), DFA (Aluminum) Drywall/Plaster Frame

The DF Series are for mounting in finished drywall or plaster ceilings to accept any standard lay-in type grille, register, diffuser or other ceiling component. Installation of the air outlet is as simple as inserting them in a standard lay-in T-Bar type ceiling system.

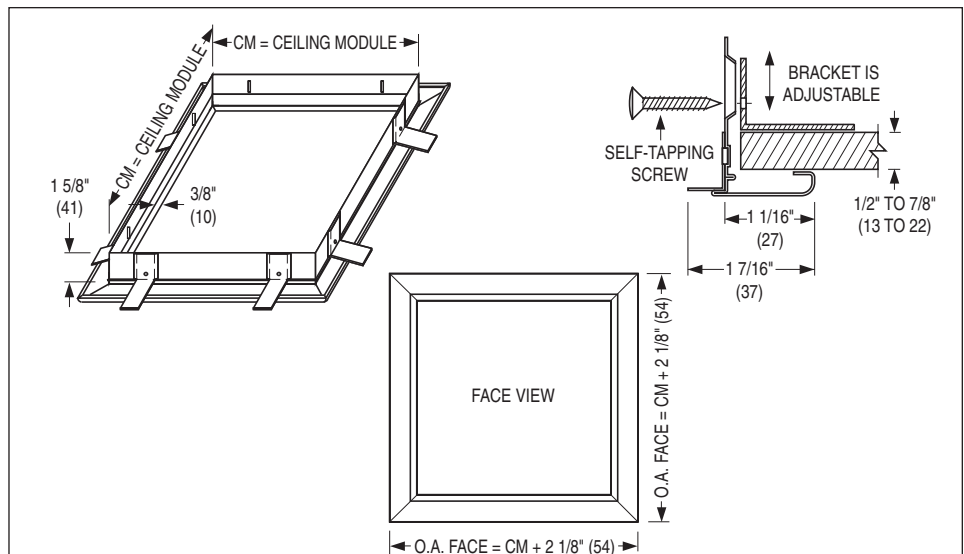
The DF Series simplifies and reduces installation time compared with surface mount type diffusers. This is especially true where flexible duct is utilized. A major benefit is that the DF Series allows access to the ceiling plenum space above for maintenance purposes without the need for separate access doors. The finished appearance is professional and aesthetically pleasing.

**Standard Finish:** AW Appliance White. Other finishes are available.

**Model DFS** is installed quickly and easily using adjustable fastening angle brackets which adapt to various ceiling thicknesses. Frames are roll-formed corrosion-resistant steel with staked and mitered corners.

IMPERIAL MODULES		METRIC MODULES
Imperial Units (inches)	S.I. Units (mm)	S.I. Units (mm)
12 x 12	305 x 305	300 x 300
16 x 16	406 x 406	400 x 400
20 x 20	508 x 508	500 x 500
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600

Ceiling opening = CM + 1/4" (6)

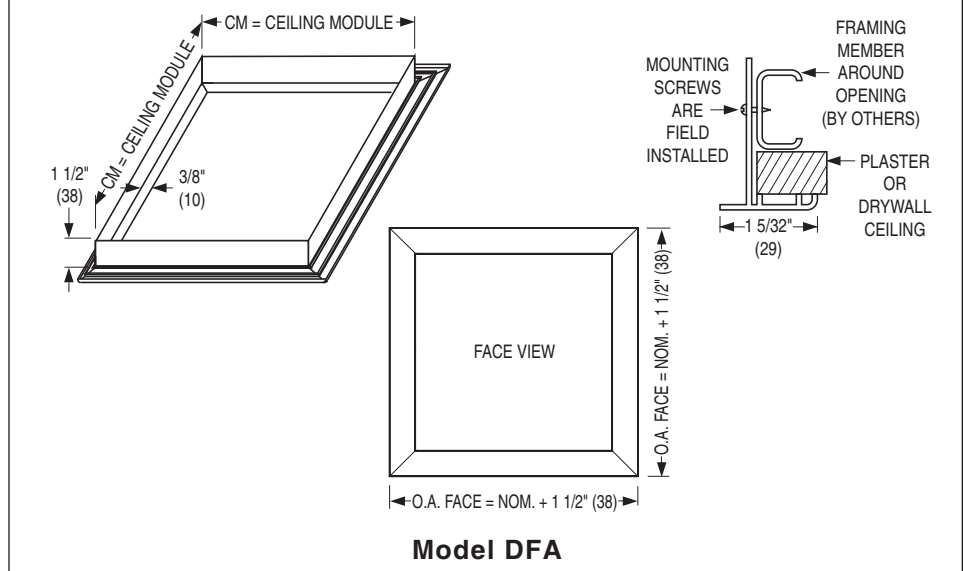


Model DFS

**Model DFA** requires framing of the ceiling opening with 'C' channel or wood studs for attachment with mounting screws (by others).

IMPERIAL MODULES		METRIC MODULES
Imperial Units (inches)	S.I. Units (mm)	S.I. Units (mm)
12 x 12	305 x 305	300 x 300
16 x 16	406 x 406	400 x 400
20 x 20	508 x 508	500 x 500
24 x 12	610 x 305	600 x 300
24 x 24	610 x 610	600 x 600
36 x 24	914 x 610	900 x 600
48 x 12	1219 x 305	1200 x 300
48 x 24	1219 x 1219	1200 x 600
60 x 12	1524 x 305	1500 x 300

Ceiling opening = CM + 1/4" (6)



Model DFA



## Panel Mounting/Ceiling Modules

A panel can be added to the majority of Nailor's steel and aluminum return grilles to suit many special architectural ceiling designs and ceiling module sizes. These panel mount grilles are available in corrosion-resistant steel for the 6100 series steel grilles and both aluminum and corrosion-resistant steel for the 5100 and 7100 series aluminum grilles.

To specify a steel panel; add the suffix S to the end of the selected panel variant. To specify an aluminum panel; add the suffix A to the end of the selected panel variant. e.g. If a steel panel is required with a Spline Type ceiling module, the variant code will become SPS.

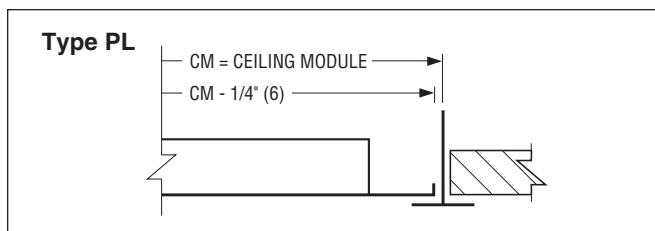
The maximum grille neck sizes available for panel mounting will be the ceiling module size selected - 3" (76).

### Available Ceiling Module Sizes

Ceiling Module	
Imperial Units (in.)	Metric Units (mm)
12 x 12	300 x 300
24 x 12	600 x 300
36 x 12	900 x 300
48 x 12	1200 x 300
20 x 20	500 x 500
24 x 24	600 x 600
36 x 24	900 x 600
48 x 24	1200 x 600

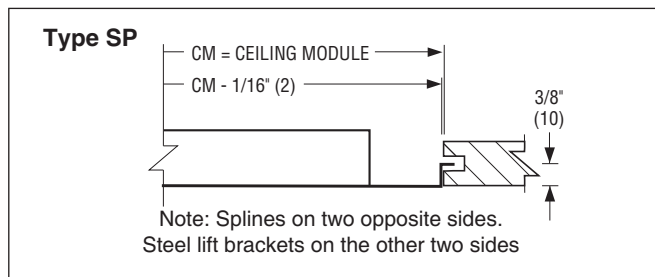
### Border Type PL: Lay-in T-Bar

Grille or register is mounted in an extended panel to suit standard T-Bar Lay-in Type ceilings.



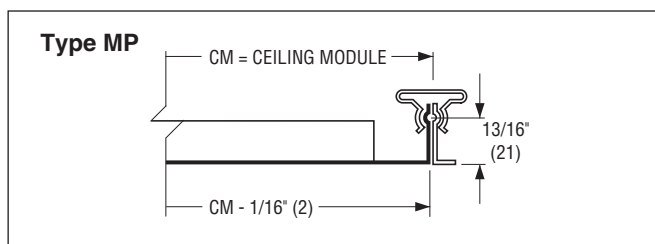
### Border Type SP: Spline

The grille or register is mounted in an extended panel to suit spline type ceiling modules.



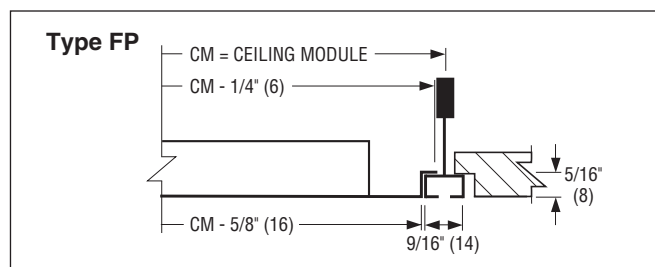
### Border Type MP: Metal Pan/Snap-in

The grille or register is mounted in an extended panel to suit metal pan ceilings that have snap-in type ceiling modules.



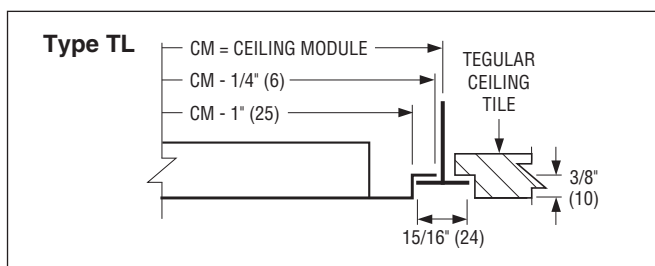
### Border Type FP: Narrow Regressed T-Bar (Fineline®)

The grille or register is mounted in an extended panel that will fit a narrow regressed T-Bar ceiling grid.



### Border Type TL: Tegular Type T-Bar

The grille or register is mounted in a panel that will extend below the T-Bar ceiling grid.



## Options, Custom Sizing and Finishes

### OPTIONS:

#### **RACA Return Air Crosstalk Attenuator**

Return Air Crosstalk Attenuator is designed to greatly reduce the amount of sound transferred from the return air plenum through open vents or return grilles, into the adjoining space.

#### **EQT Earthquake Tabs**

Earthquake (seismic) retaining safety tabs are available; factory installed on grilles or registers when required by local building code that units be independently restrained and safety wired to supporting structure.

#### **GK Foam Gaskets**

An optional foam gasket is available factory installed on the rear of all Type S corrosion-resistant steel and aluminum surface mount grilles and registers.

Eliminates air leakage and the possibility of dirt streaking and smudging from entrainment, particularly when installed on unevenly finished surfaces such as stucco.

#### **IS Insect Screen**

1/16" (2) galvanized steel mesh, factory installed.

### CUSTOM SIZING:

#### **Oversized Units**

For specialized applications and architectural considerations; certain grilles and registers can be manufactured in single sections larger than the standard published maximum size at additional cost. Aspect ratio, tolerances, manufacturing capability and weight have all to be considered by the factory prior to acceptance. Consult your Nailor representative for specific applications.

#### **Fractional/Hard Metric Sizes**

Nailor grilles and registers have been designed and are manufactured to suit HVAC systems where the duct design has been done using Imperial Units of measurement (i.e. feet and inches). The majority of Nailor grilles and registers are fabricated as standard in 1" (25) nominal incremental units, giving the designer great flexibility during sizing selection.

At additional cost, the majority of Nailor grilles and registers can be custom fabricated in fractional sizes for special applications and in Hard Metric (S.I. Units) when the HVAC duct design has been done using the Metric System.

Consult your Nailor representative for availability on specific project applications.

### FINISHES:

#### **POWDER COAT**

##### **AW Appliance White (standard)**

A white finish that is currently the industry standard. Closely matches standard finishes supplied by the majority of T-Bar ceiling system manufacturers. (No additional cost).

##### **AL Aluminum**

Contains suspended metal particles to give the appearance of a silver grey metallic or anodized finish. (No additional cost).

##### **WH Off-White**

Has a creamy appearance. (Additional cost)

##### **BW British White**

Matches most white ceiling tiles. (No additional cost)

##### **LBP Light Bronze Paint**

An economical alternative that closely matches industry standard anodizing in color, sheen and appearance. (Additional cost)

##### **MBP Medium Bronze Paint**

An economical alternative that closely matches industry standard anodizing in color, sheen and appearance. (Additional cost)

##### **DBP Dark Bronze Paint**

An economical alternative that closely matches industry standard anodizing in color, sheen and appearance. (Additional cost)

##### **BK Black**

This black has a matte finish. (Additional cost)

##### **SP Special**

The Nailor range of diffusers are available in any color for special architectural consideration. Custom colors are individually mixed to match customer supplied samples. (Additional cost)

### ALUMINUM PRODUCT FINISHES:

##### **SA Satin (Clear) Anodized**

Adds a smooth satin finish to further protect the aluminum from corrosion (clear). (Additional cost)

### STAINLESS STEEL PRODUCT FINISH ONLY:

##### **#4 Brushed Satin Polished**

Stainless Steel models only. (No additional cost)

### ALSO AVAILABLE:

##### **MI Mill Finish**

(No additional cost).

##### **PPA Paint Prepared Aluminum (Washed only)**

(No additional cost).

##### **PC Prime Coat Paint**

Color will vary (Additional cost).

## Sound Reduction for Return Air Grilles

### RETURN AIR CROSSTALK ATTENUATOR – STEEL – RETURN AIR GRILLES

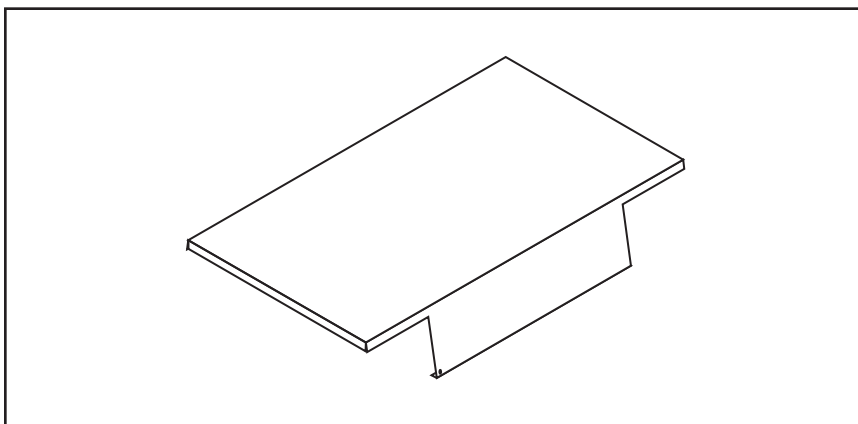
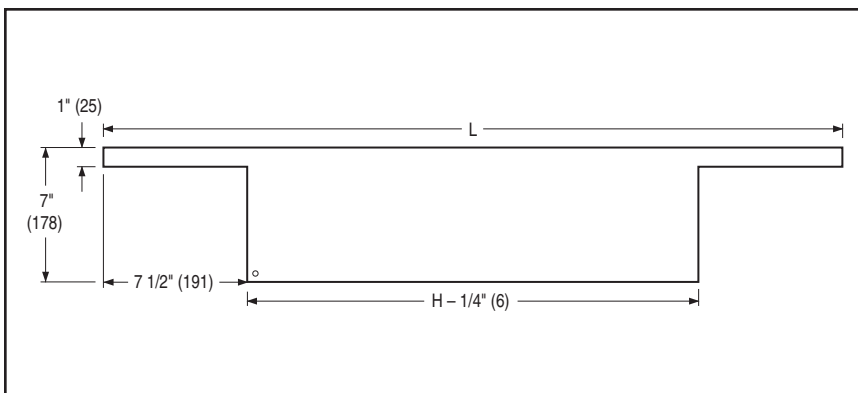
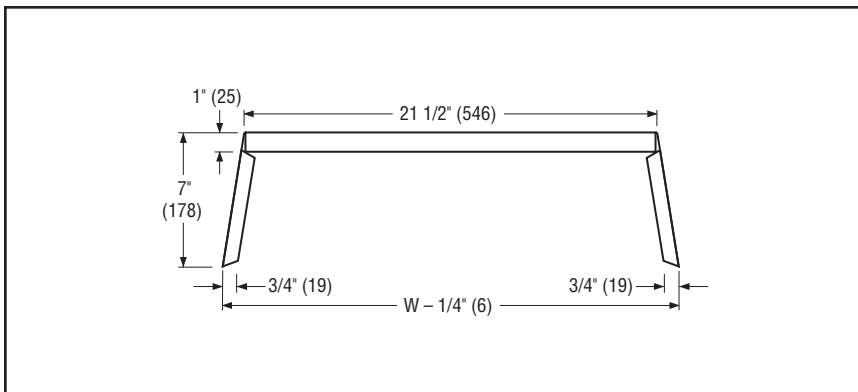
Nailor Model RACA Return Air Crosstalk Attenuator is designed to greatly reduce the amount of sound transferred from the return air plenum through open vents or return grilles, into the adjoining space. For use with non-ducted return grilles in Lay-in T-Bar applications, the RACA allows return air to flow through with minimal pressure drop, while reducing the sound transmission by 7 – 10 NC. Constructed of 22 gauge galvanized steel, the compact, light weight design takes up minimal space in the return plenum, rests on the ceiling grid for easy installation and works effectively as a light shield. Available with 1" (25) fiberglass insulation as standard or optional 1" (25) fiber-free closed cell foam insulation. The RACA fits standard grille sizes and is ideal for interior offices, conference rooms, hotel rooms as well as recording studios.

#### FEATURES:

- Economical and light- weight design.
- Fits standard grille sizes.
- Easy installation sits on ceiling grid.
- Compact design takes up minimal space in return plenum.
- 1" (25) fiberglass insulation (standard).

#### DIMENSIONAL DATA:

CM Ceiling Module	W	H	L
12" x 12" (305 x 305)	12" (305)	12" (305)	26 1/2" (673)
24" x 12" (610 x 305)	24" (610)	12" (305)	26 1/2" (673)
20" x 20" (508 x 508)	20" (508)	20" (508)	34 1/2" (876)
24" x 24" (610 x 610)	24" (610)	24" (610)	38 1/2" (978)
30" x 30" (762 x 762)	30" (762)	30" (762)	44 1/2" (1130)
48" x 24" (1219 x 610)	48" (1219)	24" (610)	38 1/2" (978)



## Air Balancing Devices

### OPPOSED BLADE DAMPERS — STEEL AND ALUMINUM

Nailor Opposed Blade Dampers are manufactured from heavy gauge, roll-formed, corrosion-resistant steel or extruded aluminum blades and frame with miscellaneous steel components.

The gang operated multi-blade design with blades closing at 45 degrees permits fine volume control for accurate balancing with minimum disturbance to the airflow pattern. Blades are individually pivoted on 1" (25) centers.

#### GRILLE MOUNT MODELS:

**OBD Steel**

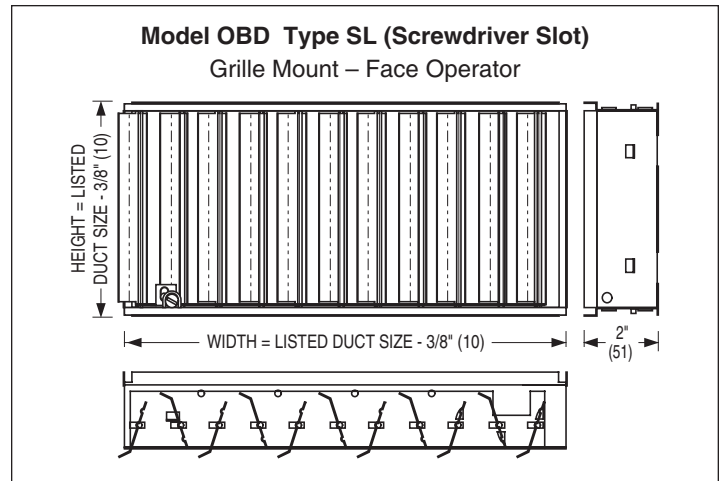
**OBD-A Aluminum**

This style of damper mounts directly on the neck of the grille and is sized to fit most Nailor grilles. Uses steel barbed S-clips for easy field mounting or removal when ordered separately. Supplied as standard with a screwdriver slot operator (Type SL) on supply registers and a screwdriver pivot lever operator (Type PL) on fixed, angled deflection return registers. Type SL operator is standard if damper is ordered separately from grille. A lever operator (Type GL) is available as an option on fixed, angled deflection return registers. Can be specified as an integral part of the grille (register) by adding a - O (steel) or - OA (aluminum) suffix to the grille model.

Min. Size = 4" x 2 1/2" (102 x 64) Max. Size = 24" x 24" (610 x 610).

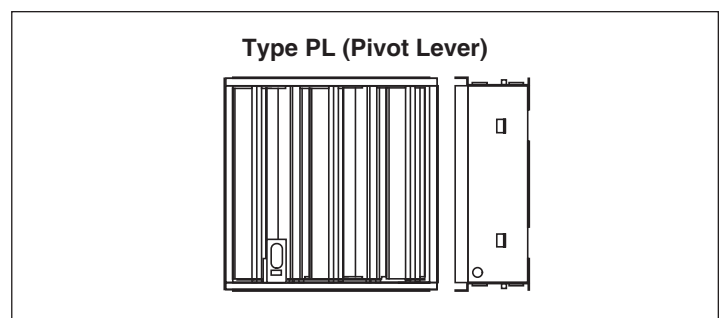
#### Type SL Operator

The SL Operator incorporates a screwdriver slot, which adjusts from the face of the register. This operator is the standard supplied with supply air registers such as the single and double deflection adjustable blade.



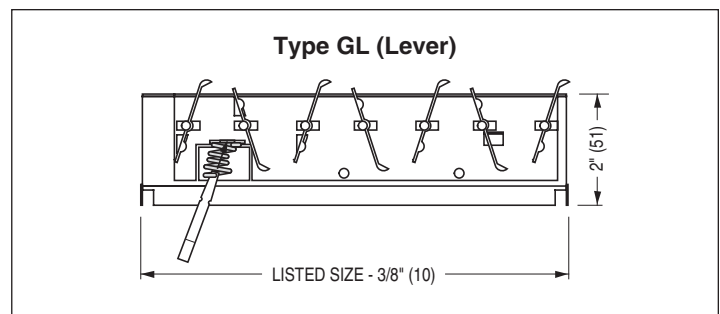
#### Type PL Operator

The PL Operator is a concealed pivot lever, which is adjusted from the face of the register using a screwdriver. This operator is for use only on fixed blade, angled deflection, return air grilles. When specifying, the blade orientation of the damper must be opposite of the grille.



#### Type GL Operator

The GL Operator incorporates a lever that adjusts without the use of tools. The lever operator extends through the grille face and is an alternative for fixed blade, angled deflection, return air grilles. When specifying, the blade orientation of the damper must be opposite of the grille being used and the grille model must be specified.



## Air Balancing Devices

### DUCT MOUNT MODELS:

**OBDD Steel**

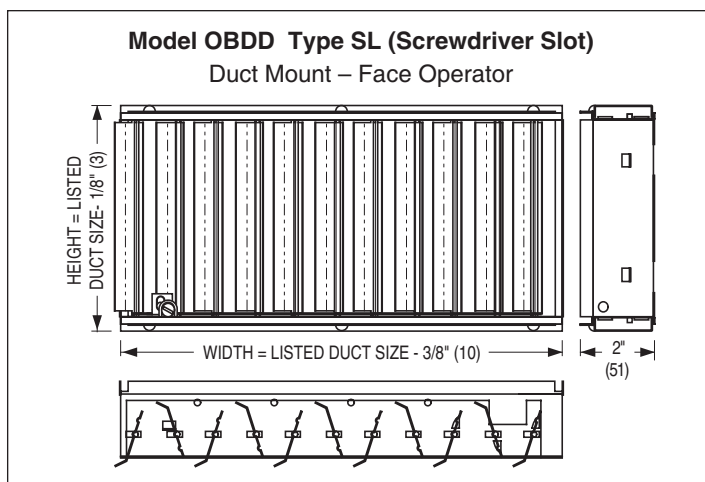
**OBDD-A Aluminum**

Designed for field installation, this damper mounts independently in the duct, separate from and behind the grille. Sized to suit and offer a friction fit in nominally sized ducts. Secure the dampers with 1/2" (13) long sheet metal screws (by others) through the double walled sub-frame. Supplied as standard with a screwdriver slot operator (Type SL).

Min. Size = 4" x 2 1/2" (102 x 64) Max. Size = 24" x 24" (610 x 610)

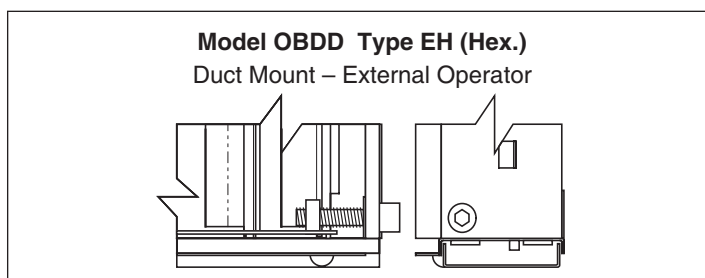
### Type SL Operator

These models are supplied with a screwdriver slot face operator that is accessed from inside the duct by removing the grille.



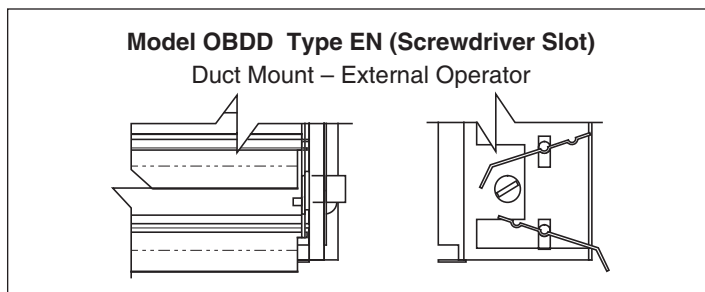
### Type EH Operator

The EH Operator incorporates an external hex device that penetrates the duct wall to provide control. For use with 3/16" (5) Allen key wrench (by others).



### Type EN Operator

The EN Operator incorporates an external (nylon) screwdriver slot device. This device is controlled externally through the duct.



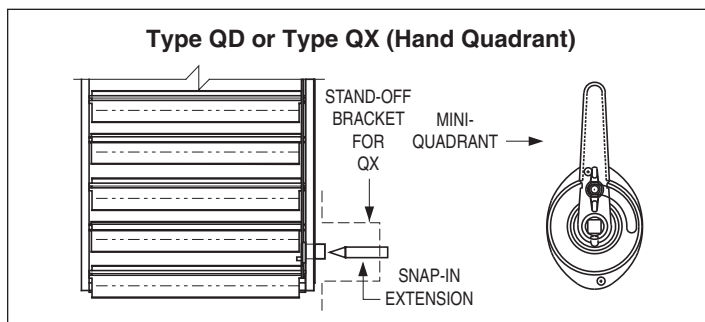
### Type QD Operator \*

The QD Operator includes a nylon snap-in extension that fits an external (nylon) operator. This device also includes a hand locking quadrant operator for control and position indication.

### Type QX Operator \*

The QX Operator includes a nylon snap-in extension that fits an external (nylon) operator. This device also includes a 2" (51) stand-off bracket and hand locking quadrant for control and position indication. To ensure quadrant is located on vertical side of duct, specify damper with blades parallel to the horizontal duct dimension.

\*Not available on Model OBDD-A



## Air Balancing Devices

### OPPOSED BLADE DAMPERS — STAINLESS STEEL

Nailor Stainless Steel Opposed Blade Dampers feature heavy gauge, roll-formed blades and a heavy duty frame in all stainless steel construction. Type 304 stainless steel is standard with Type 316 as an available option.

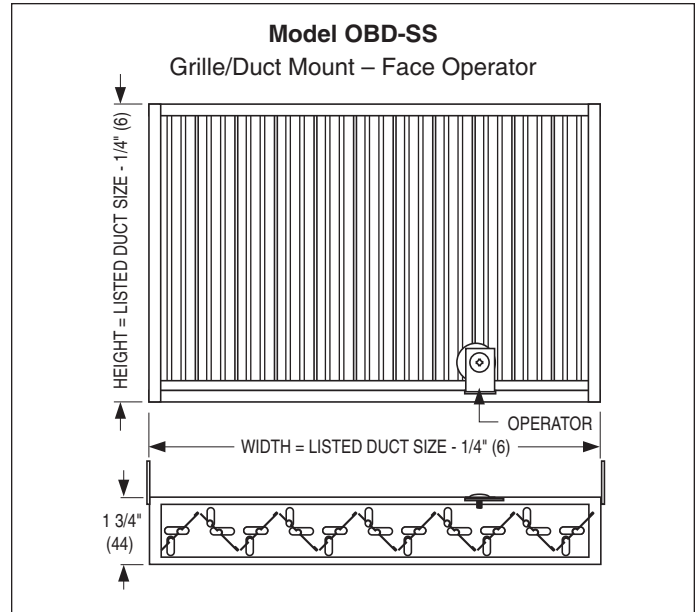
The gang operated multi-blade design with blades closing at 45 degrees permits fine volume control for accurate balancing with minimum disturbance to the airflow pattern. Blades are individually pivoted on 1" (25) centers.

#### GRILLE/DUCT MOUNT MODELS:

##### OBD-SS Stainless Steel

When ordered as part of the stainless steel grille, (using the suffix '-O' on the model number), the dampers are factory welded to the grille frame to provide a secure non-removable connection. If the dampers are ordered separately, they are supplied with mounting tabs. The tabs allow the dampers to be field installed onto a grille or to be mounted independently in the duct, separate from and behind the grille.

All Nailor stainless steel dampers feature a Philip's head screwdriver operator that is accessed through the face of the grille.



## Volume Extractors

### MODEL SERIES

**EX** Blades on 2" centers

**EXD** Blades on 1" centers

The **Model Series EX Volume Extractors** uniformly divert air from the main duct into the branch take-off and across the face of a grille or diffuser. Gang-operated parallel blades available on 2" (51) or 1" (25) centers pivot from full open to full closed with blades overlapping for shut-off. The curved blade design improves airflow by reducing turbulence, thereby reducing noise and pressure drop.

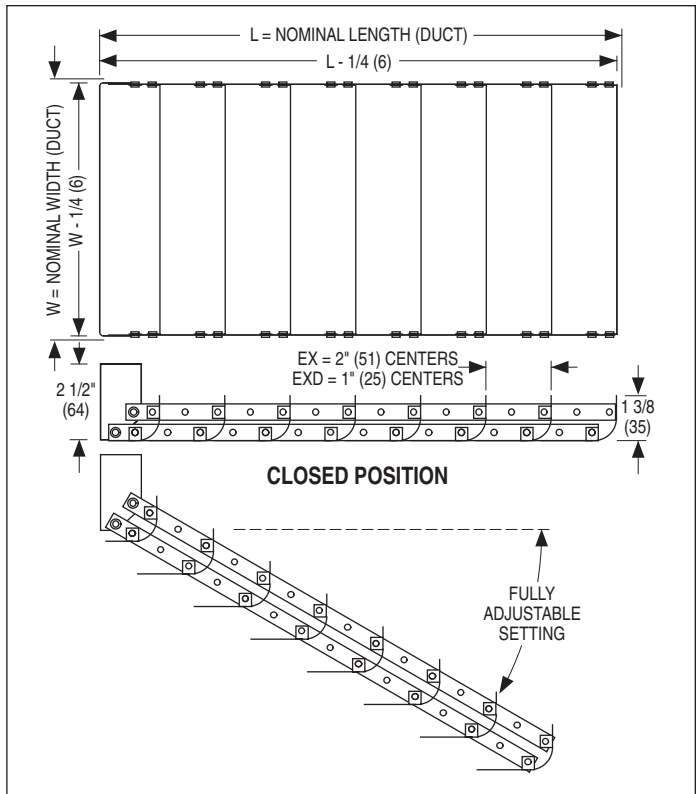
Specify or order: Length x Width. (Length is first dimension. Blades are parallel to width, second dimension).

### FEATURES:

- Material: Galvanized steel.
- Minimum size: 6" x 4" (152 x 102).
- Maximum size: 36" x 36" (914 x 914).

### Operator Types

<p><b>EX/EXD-1</b> Standard unit with adjusting strap.</p>	
<p><b>EX/EXD-1-R</b> Rod operator for external operation.</p>	
<p><b>EX/EXD-2</b> Linkage with 7/16" (11) square hole (2 per unit). Remote operator (eg. Young Regulator #1) by others.</p>	
<p><b>EX/EXD-3</b> Screw gear operator. Adjusts with 3/16" (48) wrench (by others).</p>	



### Optional Accessories

<p><b>RLD</b> Locking device for Models <b>EX/EXD-1-R</b>.</p>	
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