

## GENERAL PRODUCT OVERVIEW

### GRILLES AND REGISTERS

Quality Assured Products, unobtrusive clean lines for appearance, careful engineering and professional work-manship with the backing of an industry leader – these add up to true value; prime reasons for specifying Nailor Grilles and Registers.

Architectural excellence and engineering selections demand high quality products and shipping schedules demand service; all part of the package.

- Comprehensive range of models and styles to choose from.
- Versatile selection and sizing ensures the correct product for any specific application.
- Material choice of premium quality extruded aluminum, cost-effective steel or stainless steel. Unique in our manufacturing process is the exclusive use of corrosion-resistant coated steel as used in the auto industry. The material has superb forming qualities and outlasts painted cold-rolled steel and galvanized steel by up to three times.
- Various border/frame types, combinations and mounting options.
- Balancing accessories.
- Superior finishes.
- Performance data in accordance with current international test standards and the back-up of one of the finest 'in-house' testing laboratories in North America.

GRILLES AND REGISTERS

### LOUVERED FACE GRILLES AND REGISTERS

This series of grilles and registers are available in cost effective, corrosion-resistant steel, premium quality extruded aluminum or stainless steel construction. The blades are formed to a streamlined engineered contoured cross-section. Rigid, reinforced frames feature hairline-mitered corners. Optional opposed blade dampers have a screwdriver slot or lever operator for adjustment through the face of the register. As standard, the grilles and registers have countersunk screw holes in the frame, which make for an architecturally pleasing appearance.

#### LOUVERED FACE — SUPPLY AIR

##### 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. Blades are spaced on 3/4" (19) centers.

**Aluminum – Models 51DV, 51DH**

Page F14

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

**Steel – Models 61DV, 61DH**

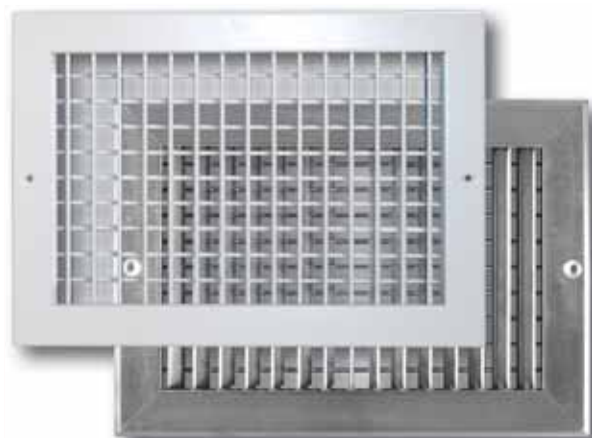
Page F16

Suffix '-O' adds a steel OBD

**Stainless Steel – Models 67DV, 67DH**

Page F18

Suffix '-O' adds a stainless steel OBD



Models 51DV, 67DV

##### 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. Blades are spaced on 3/4" (19) centers.

**Aluminum – Models 51SV, 51SH**

Page F15

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD

**Steel – Models 61SV, 61SH**

Page F17

Suffix '-O' adds a steel OBD

**Stainless Steel – Models 67SV, 67SH**

Page F19

Suffix '-O' adds a stainless steel OBD



Models 51SH, 67SV

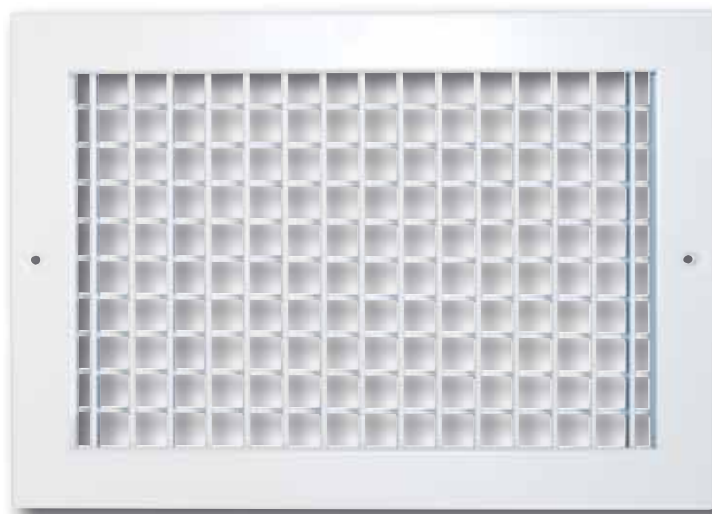
## ALUMINUM DOUBLE DEFLECTION GRILLES AND REGISTERS

- SUPPLY

### Models:

#### 51DV and 51DH

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 51DV

Models 51DV and 51DH Double Deflection Supply Grilles and Registers are recommended for application in systems requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern and therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined 'teardrop' shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

### STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.

NF Narrow frame with 1" (25) face border and a 3/4" (19) overlap margin. O.A. flange to flange dim. = listed size + 1 1/4" (32). Concealed mounting is optional.

- Rigid, heavy gauge extruded frames with reinforced mitered corners.
- Streamlined shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.

- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.

### CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.

### FINISH OPTIONS:

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

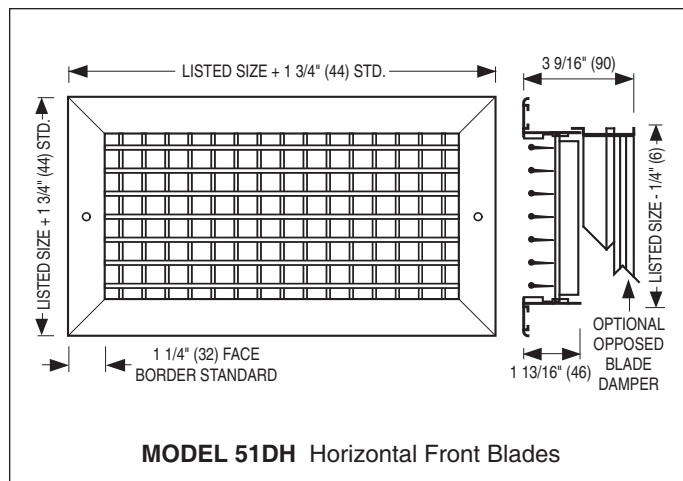
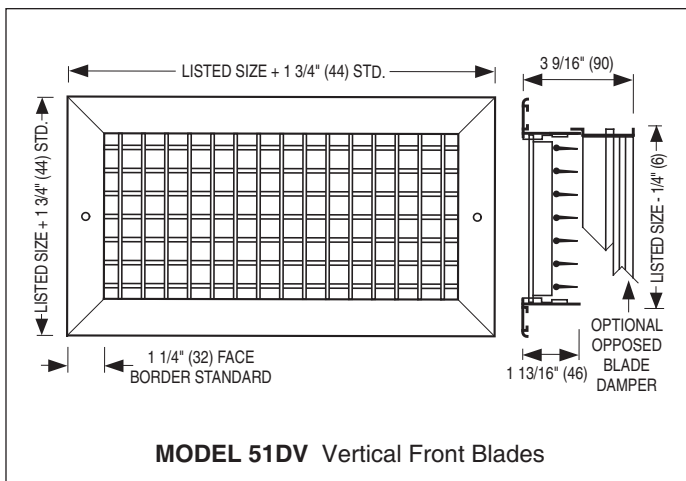
### FASTENING OPTIONS:

- Type A Screw Holes (default)
- Type C Concealed Mounting Straps
- Type D Concealed Screw Holes
- Type N None

### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



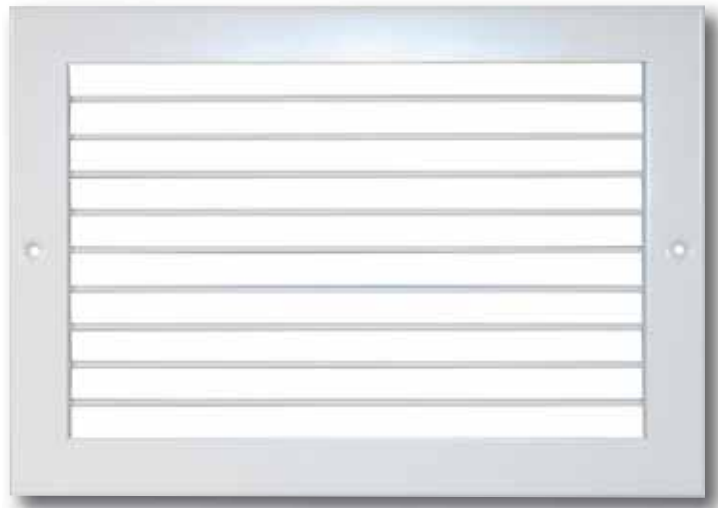
## ALUMINUM SINGLE DEFLECTION GRILLES AND REGISTERS

### SUPPLY

#### Models:

#### 51SV and 51SH

- Suffix '-O' adds a steel opposed blade damper
- Suffix '-OA' adds an aluminum opposed blade damper



Model 51SV

Models 51SV and 51SH Single Deflection Supply Grilles and Registers are recommended for applications requiring pattern adjustment in a single horizontal or vertical plane. They are generally used in a high side wall application where vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined 'teardrop' shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

#### STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws.

NF Narrow frame with 1" (25) face border and a 3/4" (19) overlap margin. O.A. flange to flange dim. = listed size + 1 1/4" (32). Concealed mounting is optional.

- Rigid, heavy gauge extruded frames with reinforced mitered corners.

Streamlined shaped extruded blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.

- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.

- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219) in single section construction. Multiple section assemblies are available.

#### CONSTRUCTION MATERIAL:

- High quality, extruded aluminum construction.
- Steel or aluminum integral dampers are opposed blade design with screwdriver slot operator.

#### FINISH OPTIONS:

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

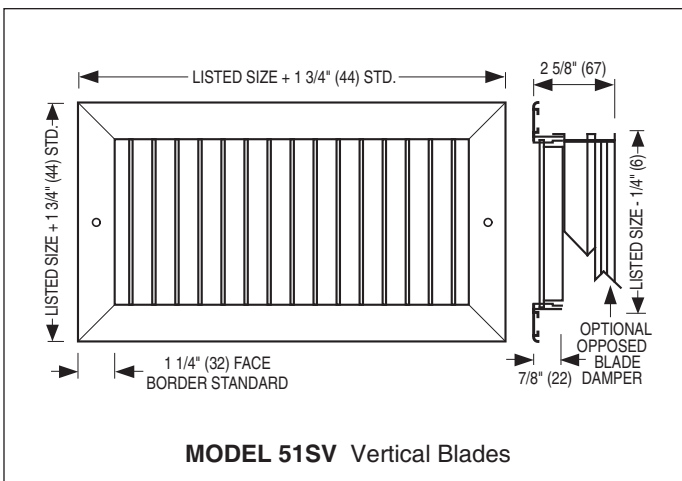
#### FASTENING OPTIONS:

- Type A Screw Holes (default)
- Type C Concealed Mounting Straps
- Type D Concealed Screw Holes
- Type N None

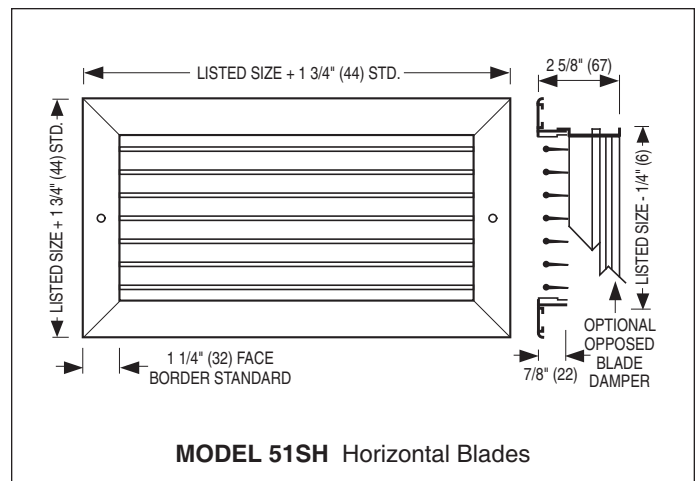
#### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



MODEL 51SV Vertical Blades



MODEL 51SH Horizontal Blades

## STEEL DOUBLE DEFLECTION GRILLES AND REGISTERS

- SUPPLY

### Models:

61DV and 61DH

- Suffix '-O' adds a steel opposed blade damper



Model 61DV

Models 61DV and 61DH Double Deflection Supply Grilles and Registers are recommended for application in systems requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern and therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined 'teardrop' shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

### STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Rigid, roll-formed frames with reinforced mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.

- Available in sizes from 4" x 4" to 48" x 36" (102 x 102 to 1219 x 914) in single section construction. Multiple section assemblies are available.

### CONSTRUCTION MATERIAL:

- Cost effective, corrosion-resistant steel construction.
- Integral dampers - roll-formed steel blades. Opposed blade design with screwdriver slot operator.

### FINISH OPTIONS:

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

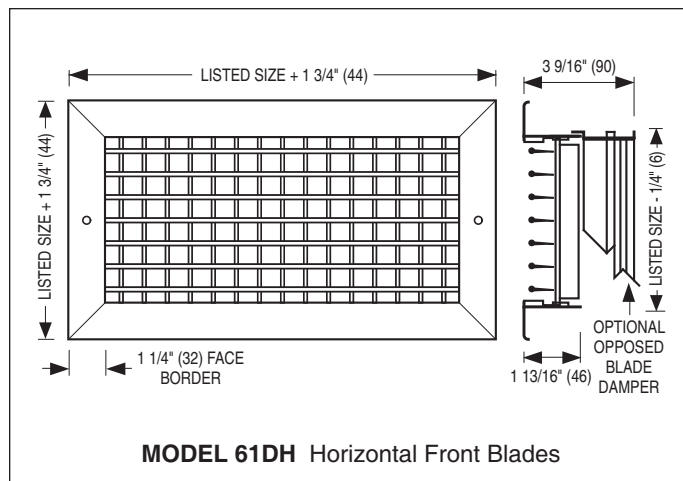
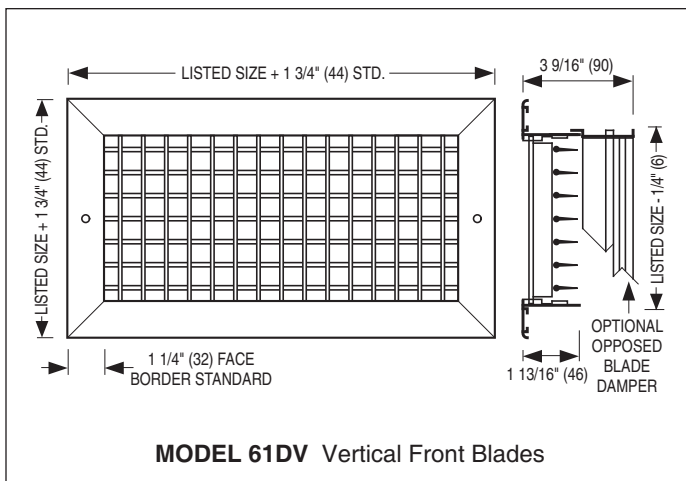
### FASTENING OPTIONS:

- Type A Screw Holes (default)
- Type C Concealed Mounting Straps
- Type D Concealed Screw Holes
- Type N None

### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



## STEEL SINGLE DEFLECTION GRILLES AND REGISTERS

### • SUPPLY

#### Models:

61SV and 61SH

- Suffix '-O' adds a steel opposed blade damper



Model 61SV

Models 61SV and 61SH Single Deflection Supply Grilles and Registers are recommended for applications requiring pattern adjustment in a single horizontal or vertical plane. They are generally used in a high side wall application where vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined 'teardrop' shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

#### STANDARD FEATURES:

- 1 1/4" (32) wide face border with a 1" (25) overlap margin standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Rigid, roll-formed frames with reinforced mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.

- Available in sizes from 4" x 4" to 48" x 36" (102 x 102 to 1219 x 914) in single section construction. Multiple section assemblies are available.

#### CONSTRUCTION MATERIAL:

- Cost effective, corrosion-resistant steel construction.
- Integral dampers - roll-formed steel blades. Opposed blade design with screwdriver slot operator.

#### FINISH OPTIONS:

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

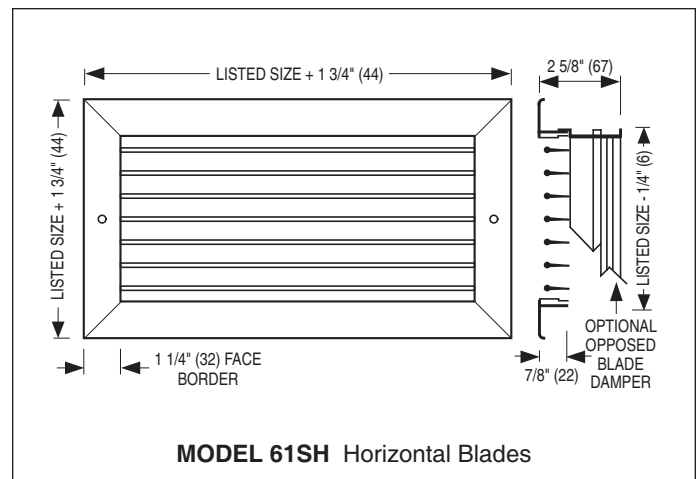
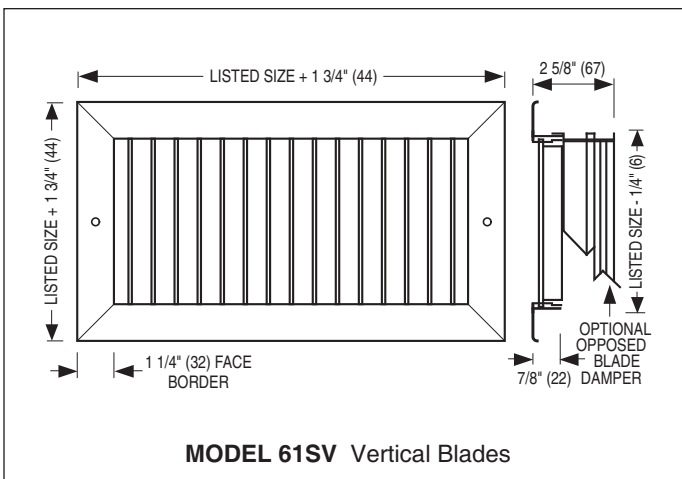
#### FASTENING OPTIONS:

- Type A Screw Holes (default)
- Type C Concealed Mounting Straps
- Type D Concealed Screw Holes
- Type N None

#### OPTIONS AND ACCESSORIES:

- IS Insect Screen
- PF Plaster Frame
- GK Foam Gasket
- EQT Earthquake Tabs

For additional options and accessories, see page F191.



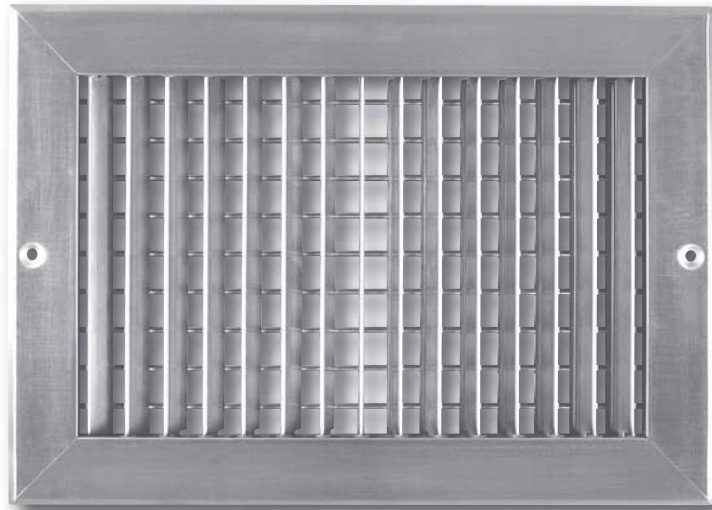
## STAINLESS STEEL DOUBLE DEFLECTION GRILLES AND REGISTERS

- SUPPLY

### Models:

67DV and 67DH

- Suffix '-O' adds a stainless steel opposed blade damper



Model 67DV

Models 67DV and 67DH Double Deflection Supply Grilles and Registers are recommended for application in systems requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern and therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern whereas horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

The combination of streamlined shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

### STANDARD FEATURES:

- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.

- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- Available in sizes from 4" x 4" to 48" x 48" (102 x 102 to 1219 x 1219).

### CONSTRUCTION MATERIAL:

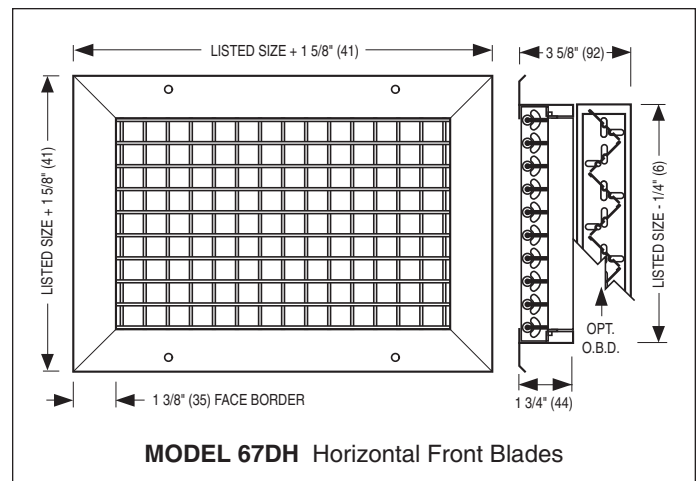
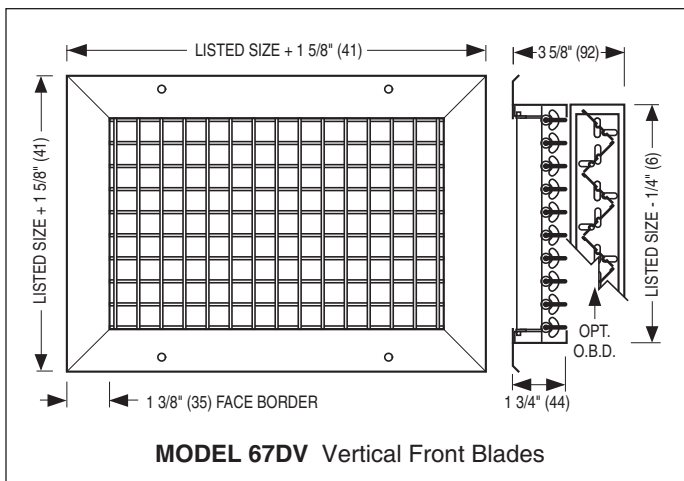
- Type 304 Stainless Steel construction.
- Integral dampers - roll-formed stainless steel blades. Opposed blade design with a screwdriver operator.

### FINISH OPTIONS:

- #4 Brushed Satin Polished finish is standard. AW Appliance White finish is optional.

### OPTIONS AND ACCESSORIES:

- Type 316 Stainless Steel Construction
  - PFS Stainless Steel Plaster Frame
- For additional options and accessories, see page F191.



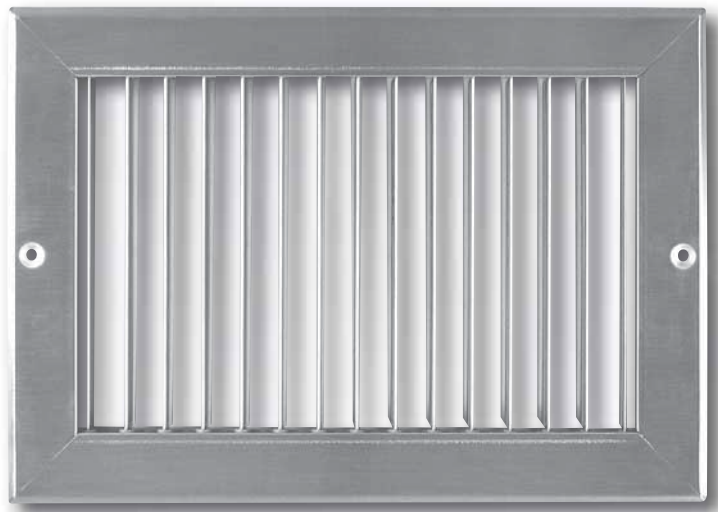
## STAINLESS STEEL SINGLE DEFLECTION GRILLES AND REGISTERS

### • SUPPLY

#### Models:

67SV and 67SH

- Suffix '-O' adds a stainless steel opposed blade damper



Model 67SV

Models 67SV and 67SH Single Deflection Supply Grilles and Registers are recommended for applications requiring pattern adjustment in a single horizontal or vertical plane. They are generally used in a high side wall application where vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

Stainless steel grilles and registers are well suited for applications involving corrosive environments, high humidity or frequent cleaning with strong chemicals. Typical projects include hospitals, clean rooms, laboratories, industrial and manufacturing facilities.

The combination of streamlined shaped blades and 3/4" (19) spacing maintains a high effective free area average capacity of 75%, which minimizes outlet velocity, reduces pressure drop and assures quiet operation.

#### STANDARD FEATURES:

- 1 3/8" (35) wide face border with a 1" (25) overlap margin standard, furnished with Type A countersunk screw holes and stainless steel mounting screws.
- Rigid, welded and reinforced frames with hairline mitered corners.
- Streamlined shaped roll-formed blades on 3/4" (19) centers. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.

- Available in sizes from 4" x 4" to 60" x 48" (102 x 102 to 1524 x 1219).

#### CONSTRUCTION MATERIAL:

- Type 304 Stainless Steel construction.
- Integral dampers - roll-formed stainless steel blades. Opposed blade design with a screwdriver operator.

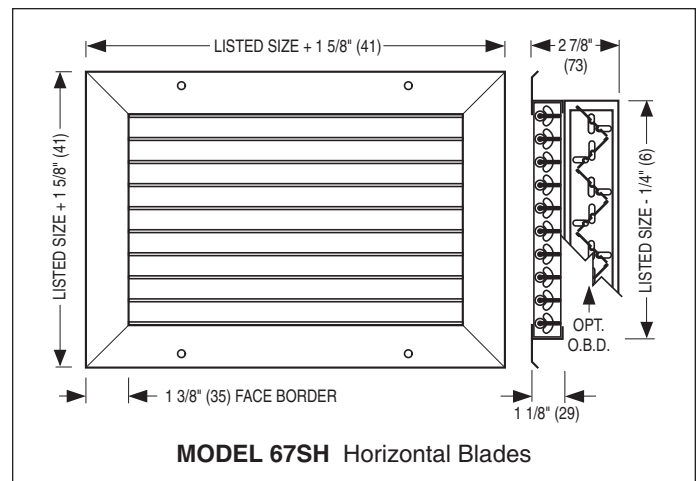
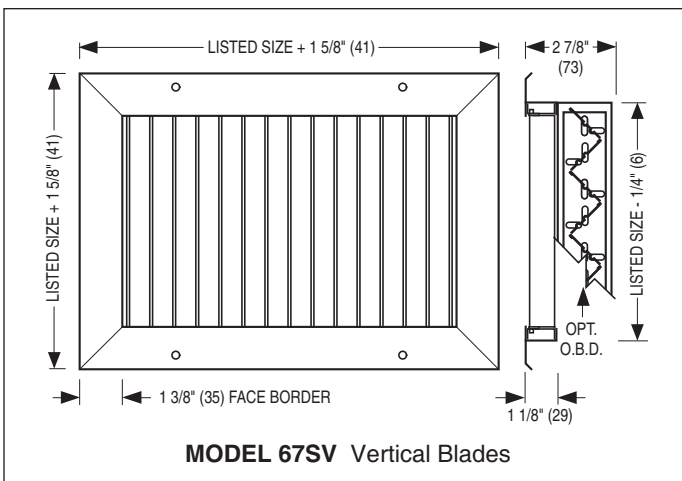
#### FINISH OPTIONS:

- #4 Brushed Satin Polished finish is standard. AW Appliance White finish is optional.

#### OPTIONS AND ACCESSORIES:

- Type 316 Stainless Steel Construction
- PFS Stainless Steel Plaster Frame

For additional options and accessories, see page F191.



## PERFORMANCE NOTES FOR SUPPLY GRILLES AND REGISTERS:

### MODEL SERIES: 5100, 6100 AND 6700

#### Throw, Spread and Drop

The isovel diagrams shown below, illustrate in plan view, the relationship of horizontal spread to throw for three standard vertical blade deflections and represent a typical high side wall supply outlet. The isovels (throw values) are for the cataloged terminal velocities of 150, 100 and 50 fpm.

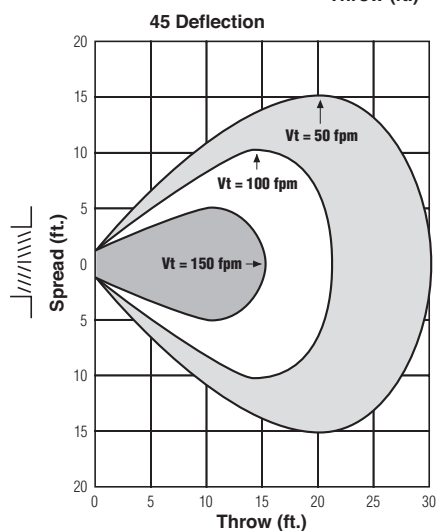
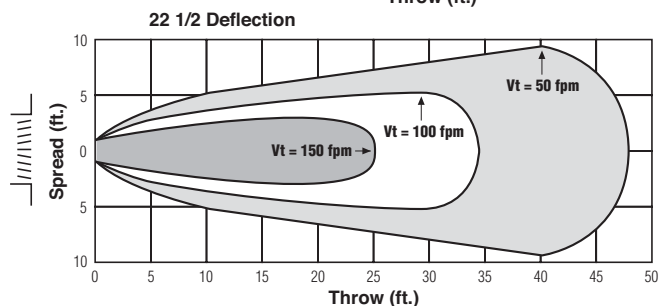
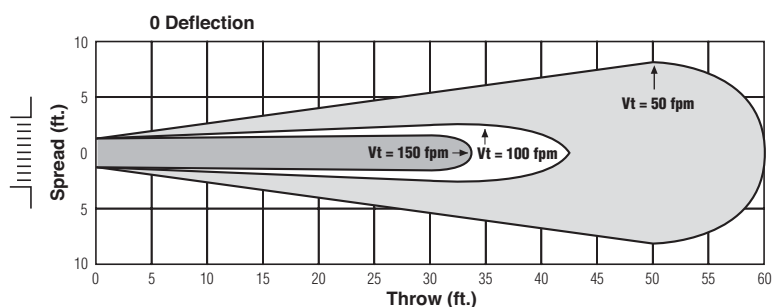
Cataloged data, in accordance with the test code, is with the grille mounted 9" (229) below the ceiling and benefiting from the ceiling coanda effect under isothermal conditions. Throw values without ceiling effect (greater than 24" (610) from a surface parallel to the airflow) may be approximated by multiplying the cataloged throw by x 0.7.

In order to offset potential draft problems caused by premature drop, it is recommended to set the blades with an upward deflection setting of 15 – 20° in free space conditions. The angle of spread and temperature differential between the supply air and room air ( $\Delta T$ ) also effects the drop of the airstream.

Under constant conditions of temperature, volume and core velocity, the wider the spread, the smaller the drop. Typical cold supply air (20°F  $\Delta T$ ) reduces horizontal throw by approximately 30%. Warm air will increase throw by approximately 30% and reduce drop.

For a full explanation of the effects of spread, throw, temperature and drop, refer to the engineering guide at the back of the catalog.

#### SPREAD CHARACTERISTICS WITH THREE DEFLECTION SETTINGS



#### NC Corrections for Blade Deflection (add)

Model Type	Damper	Blade Deflection		
		0°	22 1/2°	45°
Double Deflection	With	0	+ 2	+ 7
	Without	- 4	- 2	+ 3
Single Deflection	With	- 4	- 1	+ 4
	Without	- 8	- 6	+ 1

Note: Damper corrections are for wide open damper.

#### TP Correction Factors for Grilles Without Damper (multiply)

Blade Deflection	0°	22 1/2°	45°
Double Deflection Factor	x .80	x .83	x .89
Single Deflection Factor	x .73	x .76	x .85

#### NC Corrections for Throttling Damper (add)

Additional Pressure Drop (in. w.g.)	.05"	.15"	.25"
Approx. Damper Opening	75%	67%	50%
NC add	+ 6	+ 11	+ 18



## PERFORMANCE DATA: SUPPLY GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES MODELS: 51DV, 51DH, 51SV, 51SH, 61DV, 61DH, 61SV, 61SH, 67DV, 67DH, 67SV, 67SH

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		300	400	500	600	700	800	1000	1200	1400
				Velocity Pressure		.006	.010	.016	.022	.031	.040	.062	.090	.122
				Total Pressure	0°	.015	.026	.041	.059	.081	.106	.165	.238	.324
6 x 6	8 x 4 10 x 4	0.20		CFM	0°	60	80	100	120	140	160	200	240	280
				Noise Criteria	22 1/2°	—	—	—	—	19	23	29	35	40
				Throw	45°	5-7-13	7-9-16	8-12-18	10-14-20	11-15-21	12-16-23	15-18-25	16-20-27	17-21-30
8 x 6	10 x 5 12 x 4	0.27		CFM	0°	81	108	135	162	189	216	270	324	378
				Noise Criteria	22 1/2°	—	—	—	15	20	24	30	36	41
				Throw	45°	5-8-15	8-12-18	10-14-20	11-16-23	13-18-25	15-19-27	17-21-30	18-23-32	19-24-35
10 x 6	12 x 5 16 x 4	0.35		CFM	0°	105	140	175	210	245	280	350	420	490
				Noise Criteria	22 1/2°	—	—	—	16	21	25	31	37	42
				Throw	45°	6-9-18	9-13-21	10-16-24	12-19-26	15-20-28	17-21-30	20-23-33	21-25-36	22-27-39
8 x 8	14 x 5	0.38		CFM	0°	114	152	190	228	266	304	380	456	532
				Noise Criteria	22 1/2°	—	—	—	17	22	26	32	38	43
				Throw	45°	6-9-19	9-14-22	11-16-25	13-19-27	16-21-29	18-22-32	19-24-34	21-26-37	23-28-40
12 x 6	18 x 4	0.42		CFM	0°	126	168	210	252	294	336	420	504	588
				Noise Criteria	22 1/2°	—	—	—	17	22	26	32	38	43
				Throw	45°	6-9-19	9-14-22	11-16-25	13-19-27	16-21-29	18-22-32	19-24-34	21-26-37	23-28-40
14 x 6	10 x 8	0.50		CFM	0°	150	200	250	300	350	400	500	600	700
				Noise Criteria	22 1/2°	—	—	—	18	23	27	33	39	44
				Throw	45°	6-11-20	10-15-23	12-18-25	15-20-28	16-22-31	19-23-33	21-25-36	23-28-40	25-31-43
12 x 8	16 x 6 24 x 4	0.58		CFM	0°	174	232	290	348	406	464	580	696	812
				Noise Criteria	22 1/2°	—	—	—	19	24	28	34	40	45
				Throw	45°	7-11-21	10-15-24	12-19-27	15-21-30	17-23-32	20-24-34	22-27-38	24-30-42	26-32-45
10 x 10	14 x 7 26 x 4	0.61		CFM	0°	183	244	305	366	427	488	610	732	854
				Noise Criteria	22 1/2°	—	—	—	19	24	28	34	40	45
				Throw	45°	7-11-21	10-16-24	13-19-28	16-21-30	17-23-32	20-24-35	23-28-39	24-30-42	27-32-46
18 x 6	14 x 8 28 x 4 30 x 4	0.65		CFM	0°	195	260	325	390	455	520	650	780	910
				Noise Criteria	22 1/2°	—	—	15	20	25	29	35	41	46
				Throw	45°	7-12-22	11-16-25	13-20-29	16-22-32	18-24-34	21-25-36	24-29-40	25-32-45	28-34-48
12 x 10	20 x 6 24 x 5	0.74		CFM	0°	222	296	370	444	518	592	740	888	1036
				Noise Criteria	22 1/2°	—	—	15	20	25	29	35	41	46
				Throw	45°	8-13-24	11-17-27	14-21-31	17-24-33	20-26-36	22-27-39	25-31-43	27-33-48	30-36-51
22 x 6	16 x 8 28 x 5 36 x 4	0.80		CFM	0°	240	320	400	480	560	640	800	960	1120
				Noise Criteria	22 1/2°	—	—	16	21	26	30	36	42	47
				Throw	45°	8-13-25	11-18-28	15-22-32	18-25-35	20-27-38	23-28-41	26-32-45	28-35-50	31-38-53
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90		CFM	0°	270	360	450	540	630	720	900	1080	1260
				Noise Criteria	22 1/2°	—	—	16	21	26	30	36	42	47
				Throw	45°	9-14-26	12-18-29	15-23-33	18-26-36	21-27-39	24-29-42	27-33-47	29-36-51	32-39-56
18 x 10	30 x 6	1.13		CFM	0°	339	452	565	678	791	904	1130	1356	1582
				Noise Criteria	22 1/2°	—	—	17	22	27	31	37	43	48
				Throw	45°	9-15-29	14-20-33	17-25-36	20-29-40	24-30-43	27-33-46	30-36-51	33-40-57	35-43-61

GRILLES AND REGISTERS

F

For performance data notes, see F24.

## PERFORMANCE DATA: SUPPLY GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES MODELS: 51DV, 51DH, 51SV, 51SH, 61DV, 61DH, 61SV, 61SH, 67DV, 67DH, 67SV, 67SH

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity Velocity Pressure	300 400 500 600 700 800 1000 1200 1400														
					CFM	Noise Criteria	0°	22 1/2°	45°	372	496	620	744	868	992	1240	1488	1736	
																			Throw
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24			CFM	Noise Criteria	0°	22 1/2°	45°	372	496	620	744	868	992	1240	1488	1736	
																			Throw
																			.84
																			.73
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37			CFM	Noise Criteria	0°	22 1/2°	45°	411	548	685	822	959	1096	1370	1644	1918	
																			Throw
																			.93
																			.81
24 x 10	20 x 12 30 x 8	1.52			CFM	Noise Criteria	0°	22 1/2°	45°	456	608	760	912	1064	1216	1520	1824	2128	
																			Throw
																			1.03
																			.90
16 x 16	18 x 14 22 x 12 30 x 8	1.64			CFM	Noise Criteria	0°	22 1/2°	45°	492	656	820	984	1148	1312	1640	1968	2296	
																			Throw
																			1.12
																			.97
24 x 12	18 x 16 20 x 14 30 x 10 36 x 8	1.85			CFM	Noise Criteria	0°	22 1/2°	45°	555	740	925	1110	1295	1480	1850	2220	2590	
																			Throw
																			1.26
																			1.09
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10			CFM	Noise Criteria	0°	22 1/2°	45°	630	840	1050	1260	1470	1680	2100	2520	2940	
																			Throw
																			1.43
																			1.24
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32			CFM	Noise Criteria	0°	22 1/2°	45°	696	928	1160	1392	1624	1856	2320	2784	3248	
																			Throw
																			1.58
																			1.37
24 x 16	32 x 12	2.50			CFM	Noise Criteria	0°	22 1/2°	45°	750	1000	1250	1500	1750	2000	2500	3000	3500	
																			Throw
																			1.70
																			1.48
20 x 20	22 x 18	2.61			CFM	Noise Criteria	0°	22 1/2°	45°	783	1044	1305	1566	1827	2088	2610	3132	3654	
																			Throw
																			1.77
																			1.54
36 x 12	22 x 20 24 x 18 26 x 16 30 x 14	2.79			CFM	Noise Criteria	0°	22 1/2°	45°	837	1116	1395	1674	1953	2232	2790	3348	3906	
																			Throw
																			1.90
																			1.65
22 x 22	24 x 20 26 x 18 30 x 16 40 x 12	3.17			CFM	Noise Criteria	0°	22 1/2°	45°	951	1268	1585	1902	2219	2536	3170	3804	4438	
																			Throw
																			2.16
																			1.87
42 x 12	36 x 14	3.27			CFM	Noise Criteria	0°	22 1/2°	45°	981	1308	1635	1962	2289	2616	3270	3924	4578	
																			Throw
																			2.22
																			1.93
30 x 18	24 x 22 34 x 16 40 x 14	3.54			CFM	Noise Criteria	0°	22 1/2°	45°	1062	1416	1770	2124	2478	2832	3540	4248	4956	
																			Throw
																			2.41
																			2.09

For performance data notes, see F24.

## PERFORMANCE DATA: SUPPLY GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES MODELS: 51DV, 51DH, 51SV, 51SH, 61DV, 61DH, 61SV, 61SH, 67DV, 67DH, 67SV, 67SH

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		300	400	500	600	700	800	1000	1200	1400
				Velocity	Pressure	.006	.010	.016	.022	.031	.040	.062	.090	.122
24 x 24	26 x 22 28 x 20 32 x 18 36 x 16	3.79		CFM		1137	1516	1895	2274	2653	3032	3790	4548	5306
				Noise Criteria		-	-	21	26	31	35	41	47	52
				Throw	0°	18-29-55	29-36-62	33-48-70	39-55-77	45-59-83	51-62-89	57-70-99	62-77-108	68-83-117
36 x 18	32 x 20 40 x 16 46 x 14	4.29		CFM		1287	1716	2145	2574	3003	3432	4290	5148	6006
				Noise Criteria		-	15	22	27	32	36	42	48	53
				Throw	0°	19-31-58	28-42-68	35-52-75	2-58-83	48-63-89	55-68-95	61-75-106	68-83-117	73-89-125
26 x 26	28 x 24 48 x 14	4.47		CFM		1341	1788	2235	2682	3129	3576	4470	5364	6258
				Noise Criteria		-	15	22	27	32	36	42	48	53
				Throw	0°	19-32-59	28-43-69	35-53-77	43-59-85	49-65-91	56-69-98	63-77-109	69-85-120	75-91-129
30 x 24	32 x 22 36 x 20 40 x 18	4.77		CFM		1431	1908	2385	2862	3339	3816	4770	5724	6678
				Noise Criteria		-	15	22	27	32	36	42	48	53
				Throw	0°	20-33-61	29-44-71	36-54-79	44-61-87	51-67-94	58-71-101	65-79-112	71-87-123	77-94-133
42 x 18	28 x 26	4.99		CFM		1497	1997	2495	2994	3493	3992	4990	5988	6986
				Noise Criteria		-	16	23	28	33	37	43	49	54
				Throw	0°	20-33-62	30-44-72	37-55-80	44-62-88	52-67-95	59-72-102	66-80-114	72-88-125	77-95-135
28 x 28	30 x 26 36 x 22 40 x 20	5.20		CFM		1560	2080	2600	3120	3640	4160	5200	6240	7280
				Noise Criteria		-	16	23	28	33	37	43	49	54
				Throw	0°	21-34-63	30-45-74	38-56-82	45-63-90	53-69-97	60-74-104	67-82-116	74-90-128	79-97-137
42 x 20	30 x 28	5.57		CFM		1671	2228	2785	3342	3899	4456	5570	6684	7798
				Noise Criteria		-	16	23	28	33	37	43	49	54
				Throw	0°	22-35-66	31-47-76	39-58-84	47-66-93	55-71-101	62-76-107	70-84-120	76-93-131	82-100-142
36 x 24	40 x 22 44 x 20	5.74		CFM		1722	2296	2870	3444	4018	4592	5740	6888	8036
				Noise Criteria		-	16	23	28	33	37	43	49	54
				Throw	0°	23-36-68	32-49-78	41-60-88	49-68-96	57-74-104	64-78-112	72-88-124	78-96-137	85-104-148
30 x 30	34 x 26 38 x 24 48 x 20	5.99		CFM		1797	2396	2995	3594	4193	4792	5990	7188	8386
				Noise Criteria		-	16	23	28	33	37	43	49	54
				Throw	0°	23-36-69	33-49-80	41-61-89	49-69-98	57-75-106	65-80-113	73-89-126	80-98-138	86-106-150
42 x 24	36 x 28 42 x 24 46 x 22	6.72		CFM		2016	2688	3360	4032	4704	5376	6720	8064	9408
				Noise Criteria		-	17	24	29	34	38	44	50	55
				Throw	0°	24-39-72	34-51-84	43-64-93	51-72-102	60-78-111	68-84-118	77-93-132	84-102-144	90-111-157
32 x 32	40 x 26	6.84		CFM		2052	2736	3420	4104	4788	5472	6840	8208	9576
				Noise Criteria		-	17	24	29	34	38	44	50	55
				Throw	0°	24-39-73	34-52-84	43-65-94	52-73-103	61-79-112	69-84-119	77-94-133	84-103-146	91-112-158
36 x 30	38 x 28	7.22		CFM		2166	2888	3610	4332	5054	5776	7220	8664	10108
				Noise Criteria		-	17	24	29	34	38	44	50	55
				Throw	0°	25-40-76	36-54-87	45-68-98	54-76-108	63-82-116	71-87-124	80-98-139	87-108-151	94-116-164
48 x 24	34 x 34 36 x 32 38 x 30 42 x 28	7.69		CFM		2307	3076	3845	4614	5383	6152	7690	9228	10766
				Noise Criteria		-	18	25	30	35	39	45	51	56
				Throw	0°	26-41-77	37-55-90	46-69-100	55-77-109	64-84-118	73-90-127	82-100-142	90-109-155	97-118-167

For performance data notes, see F24.

## PERFORMANCE DATA: SUPPLY GRILLES AND REGISTERS • 5100, 6100 AND 6700 SERIES MODELS: 51DV, 51DH, 51SV, 51SH, 61DV, 61DH, 61SV, 61SH, 67DV, 67DH, 67SV, 67SH

Listed Duct Size (inches)	Alternate Sizes (inches)	Core Area (sq. ft.)	Ak Factor	Core Velocity		300	400	500	600	700	800	1000	1200	1400
				Velocity Pressure		.006	.010	.016	.022	.031	.040	.062	.090	.122
				Total Pressure	0°	.015	.026	.041	.059	.081	.106	.165	.238	.324
36 x 34	38 x 32 40 x 30 48 x 26	8.20	5.58 4.84 4.22	CFM	0°	2460	3280	4100	4920	5740	6560	8200	9840	11480
				Noise Criteria	22 1/2°	-	18	25	30	35	39	45	51	56
				Throw	45°	26-42-79	37-57-91	47-70-102	57-79-111	65-85-121	75-91-129	84-102-144	91-111-158	98-121-171
36 x 36	38 x 34 42 x 30 46 x 28	8.69	5.91 5.13 4.48	CFM	0°	2607	3476	4345	5214	6083	6952	8690	10428	12166
				Noise Criteria	22 1/2°	-	18	25	30	35	39	45	51	56
				Throw	45°	28-45-84	36-60-96	49-74-108	60-84-117	69-90-127	78-96-136	88-108-152	96-117-166	104-127-180
38 x 38	42 x 34	9.70	6.60 5.72 5.00	CFM	0°	2910	3880	4850	5820	6790	7760	9700	11640	13580
				Noise Criteria	22 1/2°	-	19	26	31	36	40	46	52	57
				Throw	45°	28-47-88	42-62-101	53-78-114	62-88-125	73-95-134	83-101-143	93-114-161	101-125-176	109-134-190
42 x 36	44 x 34 48 x 30	10.16	6.91 5.99 5.23	CFM	0°	3048	4064	5080	6096	7112	8128	10160	12192	14224
				Noise Criteria	22 1/2°	-	19	26	31	36	40	46	52	57
				Throw	45°	29-48-90	43-64-104	53-80-117	64-90-127	75-97-138	85-104-147	95-117-165	104-127-180	112-138-195
40 x 40	42 x 38 46 x 34 48 x 32	10.77	7.32 6.35 5.55	CFM	0°	3231	4308	5385	6462	7539	8616	10770	12924	15078
				Noise Criteria	22 1/2°	-	19	26	31	36	40	46	52	57
				Throw	45°	31-50-94	44-67-108	56-84-121	67-94-132	77-102-143	88-108-153	99-121-171	108-132-187	117-143-203
42 x 42	44 x 40 46 x 38 48 x 36	11.89	8.09 7.02 6.12	CFM	0°	3567	4756	5945	7134	8323	9512	11890	14268	16646
				Noise Criteria	22 1/2°	-	20	27	32	37	41	47	53	58
				Throw	45°	32-52-97	46-69-112	58-86-125	69-97-138	81-105-149	92-112-159	102-125-178	112-138-195	122-145-210
44 x 44	46 x 42	13.07	8.89 7.71 6.73	CFM	0°	3921	5228	6535	7842	9149	10456	13070	15684	18298
				Noise Criteria	22 1/2°	-	20	27	32	37	41	47	53	58
				Throw	45°	34-55-104	49-74-120	61-92-133	74-104-146	86-112-158	97-120-168	109-133-189	120-146-207	129-158-223
46 x 46	14.30	9.72 8.44 7.36	CFM	0°	4290	5720	7150	8580	10010	11440	14300	17160	20020	
			Noise Criteria	22 1/2°	-	20	27	32	37	41	47	53	58	
			Throw	45°	35-57-107	51-76-124	63-95-138	76-107-151	89-116-163	101-124-174	113-138-195	124-151-214	134-163-231	
48 x 48	15.59	10.60 9.20 8.03	CFM	0°	4677	6236	7795	9354	10913	12472	15590	18708	21826	
			Noise Criteria	22 1/2°	-	21	28	33	38	42	48	54	59	
			Throw	45°	37-60-113	53-80-131	67-100-146	80-113-159	94-122-173	106-131-185	119-146-206	131-159-226	140-173-244	

### Performance Notes:

- All pressures are in inches w.g..
- Core Velocity is in feet per minute.
- Performance data is based on double deflection grille with opposed blade damper (register).
- 0°, 22 1/2° and 45° represent vertical blade deflection angles and horizontal spread.
- Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions.
- Additional performance notes and correction factors for various models and settings may be found on page F20.
- Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts @ 0° deflection. Dash (-) in space indicates a Noise Criteria of less than 15.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

GRILLES AND REGISTERS

F

## HOW TO ORDER OR TO SPECIFY

### MODEL SERIES: 5100

### ALUMINUM SUPPLY GRILLES AND REGISTERS

EXAMPLE: 51DV - O - 24 x 12 - S - AW - DMI - A - —

- |   |   |   |
|---|---|---|
| <p><b>1. Models</b></p> <p><b>Double Deflection:</b><br/>                     51DV Vertical Front Blades<br/>                     51DH Horizontal Front Blades</p> <p><b>Single Deflection:</b><br/>                     51SV Vertical Blades<br/>                     51SH Horizontal Blades</p> <p><b>2. Damper (OBD)</b><br/>                     (model suffix)<br/>                     O Steel<br/>                     OA Aluminum<br/>                     — None</p> <p><b>3. Nominal Width x Height</b><br/>                     inches (mm)</p> <p><b>4. Frame/Border Type</b><br/>                     S Surface Mount<br/>                     Border 1 1/4" (32) (default)<br/>                     NF Narrow Frame<br/>                     Border 1" (25)</p> | <p><b>5. Finish</b><br/>                     AW Appliance White (default)<br/>                     AL Aluminum<br/>                     BK Black<br/>                     BW British White<br/>                     LBP Light Bronze Paint<br/>                     MBP Medium Bronze Paint<br/>                     DBP Dark Bronze Paint<br/>                     MI Mill<br/>                     PC Prime Coat<br/>                     SA Satin Anodized (clear)<br/>                     SP Special Custom Color</p> <p><b>6. Opposed Blade Damper Finish</b><br/>                     DMI Mill (default)<br/>                     DBK Painted Black</p> <p><b>7. Fastening</b><br/>                     A Screw Holes (default)<br/>                     C Concealed Mounting Straps<br/>                     D Concealed Screw Holes in Neck<br/>                     N None</p> <p><b>OPTIONS &amp; ACCESSORIES:</b><br/>                     — None (default)</p> | <p><b>8. Insect Screen</b><br/>                     IS Insect Screen</p> <p><b>9. Plaster Sub-Frame</b><br/>                     PF Plaster Sub-Frame</p> <p><b>10. Gaskets</b><br/>                     GK Foam Gasket</p> <p><b>11. Earthquake Tabs</b><br/>                     EQT Earthquake Tabs</p> <p><b>Notes:</b></p> <p>1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically select "standard". For example, an aluminum double deflection register, front blades vertical and steel damper, is <b>Model 51DV-O</b>. Unit will be supplied with screw holes and AW Appliance White finish.</p> <p>2. Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.</p> <p>3. The larger dimension must always be specified first; for example 24" x 12" (610 x 305), not 12" x 24" (305 x 610).</p> |
|---|---|---|

GRILLES AND REGISTERS



### MODEL SERIES: 5100

### ALUMINUM SUPPLY GRILLES AND REGISTERS

**SUGGESTED SPECIFICATION:**

**51DV, 51DH Double Deflection**  
 Furnish and install **Nailor Model** (select one) **51DV** or **51DH Double Deflection 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 adjustable blades that are streamlined shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum and have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).  
 (Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) 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.

**51SV, 51SH Single Deflection**  
 Furnish and install **Nailor Model** (select one) **51SV** or **51SH Single Deflection 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 adjustable blades that are streamlined shaped and spaced on 3/4" (19) centers. The frame is to be constructed from heavy gauge extruded aluminum and have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).  
 (Optional) An opposed blade damper, constructed of heavy gauge corrosion-resistant steel (aluminum is optional) 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.

## HOW TO ORDER OR TO SPECIFY

### MODEL SERIES: 6100

### STEEL SUPPLY GRILLES AND REGISTERS

EXAMPLE: 61DV - O - 24 x 12 - S - AW - DMI - A - —

1. **Models**
  - Double Deflection:**
  - 61DV Vertical Front Blades
  - 61DH Horizontal Front Blades
  - Single Deflection:**
  - 61SV Vertical Blades
  - 61SH Horizontal Blades
2. **Damper (OBD)**  
(model suffix)
  - O Steel
  - None
3. **Nominal Width x Height**  
inches (mm)
4. **Frame/Border Type**
  - S Surface Mount
  - Border 1 1/4" (32) (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. **Opposed Blade Damper Finish**
  - DMI Mill (default)
  - DBK Painted Black
7. **Fastening**
  - A Screw Holes (default)
  - C Concealed Mounting Straps
  - D Concealed Screw Holes in Neck
  - N None

11. **Earthquake Tabs**
  - EQT Earthquake Tabs

**Notes:**

1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically select "standard". For example, a steel double deflection register, front blades vertical and steel damper, is **Model 61DV-O**. Unit will be supplied with screw holes and AW Appliance White finish.
2. Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.
3. The larger dimension must always be specified first; for example 24" x 12" (610 x 305), not 12" x 24" (305 x 610).

**OPTIONS & ACCESSORIES:**

- None (default)
- 8. **Insect Screen**
  - IS Insect Screen
- 9. **Plaster Sub-Frame**
  - PF Plaster Sub-Frame
- 10. **Gaskets**
  - GK Foam Gasket

### MODEL SERIES: 6100

### STEEL SUPPLY GRILLES AND REGISTERS

**SUGGESTED SPECIFICATION:**

**61DV, 61DH Double Deflection**

Furnish and install **Nailor Model** (select one) **61DV** or **61DH Double Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a dual set of streamlined shaped, roll-formed, corrosion-resistant steel blades that are adjustable, and spaced on 3/4" (19) centers. The frame is to be constructed from roll-formed, corrosion-resistant steel and have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, 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.

**61SV, 61SH Single Deflection**

Furnish and install **Nailor Model** (select one) **61SV** or **61SH Single Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall have a single set of streamlined shaped, roll-formed, corrosion-resistant steel blades that are adjustable, and spaced on 3/4" (19) centers. The frame is to be constructed from roll-formed, corrosion-resistant steel and have reinforced mitered corners. The finish shall be AW Appliance White (optional finishes are available).

(Optional) An opposed blade damper, 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.

## HOW TO ORDER OR TO SPECIFY

### MODEL SERIES: 6700 STAINLESS STEEL SUPPLY GRILLES AND REGISTERS

EXAMPLE: 67DV - O - 24 x 12 - S - #4 - A - 304 - PFS

- |   |  |  |
|---|--|--|
| <p>1. <b>Models</b></p> <p><b>Double Deflection:</b><br/>67DV Vertical Front Blades<br/>67DH Horizontal Front Blades</p> <p><b>Single Deflection:</b><br/>67SV Vertical Blades<br/>67SH Horizontal Blades</p> <p>2. <b>Damper (OBD)</b><br/>(model suffix)<br/>— None<br/>O Stainless Steel</p> <p>3. <b>Nominal Width x Height</b><br/>inches (mm)</p> <p>4. <b>Frame/Border Type</b><br/>S Surface Mount<br/>Border 1 3/8" (35) (default)</p> | <p>5. <b>Finish</b><br/>#4 Brushed Satin Polished (default)<br/>AW Appliance White</p> <p>6. <b>Fastening</b><br/>A Screw Holes (default)<br/>N None</p> <p><b>OPTIONS &amp; ACCESSORIES:</b></p> <p>7. <b>Construction</b><br/>304 Type 304 Stainless Steel (default)<br/>316 Type 316 Stainless Steel</p> <p>8. <b>Stainless Steel Plaster Sub-Frame</b><br/>PFS Stainless Steel Plaster Sub-frame</p> |  |
|---|--|--|

**Notes:**

1. For a standard grille with no special requirements, specification is only required as far as the damper selection.  
  
The "default" will automatically select "standard". For example, a 304 stainless steel double deflection register, front blades vertical and stainless steel damper, is **Model 67DV-O**. Unit will be supplied with screw holes and #4 Brushed Satin Polished finish.
2. Nailor recommends the selection of vertical front blades on supply models for the majority of commercial applications.
3. The larger dimension must always be specified first; for example 24" x 12" (610 x 305), not 12" x 24" (305 x 610).

GRILLES AND REGISTERS



### MODEL SERIES: 6700 STAINLESS STEEL SUPPLY GRILLES AND REGISTERS

**SUGGESTED SPECIFICATION:**

**67DV, 67DH Double Deflection**  
Furnish and install **Nailor Model** (select one) **67DV** or **67DH Double Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional), and have a dual set of streamlined shaped roll-formed adjustable blades that are spaced on 3/4" (19) centers. The frames shall be constructed of heavy gauge stainless steel and have reinforced mitered corners. All exposed surfaces shall have a #4 Brushed Satin Polished finish.  
(Optional) A stainless steel opposed blade damper adjustable 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.

**67SV, 67SH Single Deflection**  
Furnish and install **Nailor Model** (select one) **67SV** or **67SH Single Deflection Supply Grilles** of the type and size as shown on the plans and air distribution schedules. The grilles shall be constructed entirely from 304 stainless steel (316 optional), and have a single set of streamlined shaped roll-formed adjustable blades that are spaced on 3/4" (19) centers. The frames shall be constructed of heavy gauge stainless steel and have reinforced mitered corners. All exposed surfaces shall have a #4 Brushed Satin Polished finish.  
(Optional) A stainless steel opposed blade damper adjustable 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.

## 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

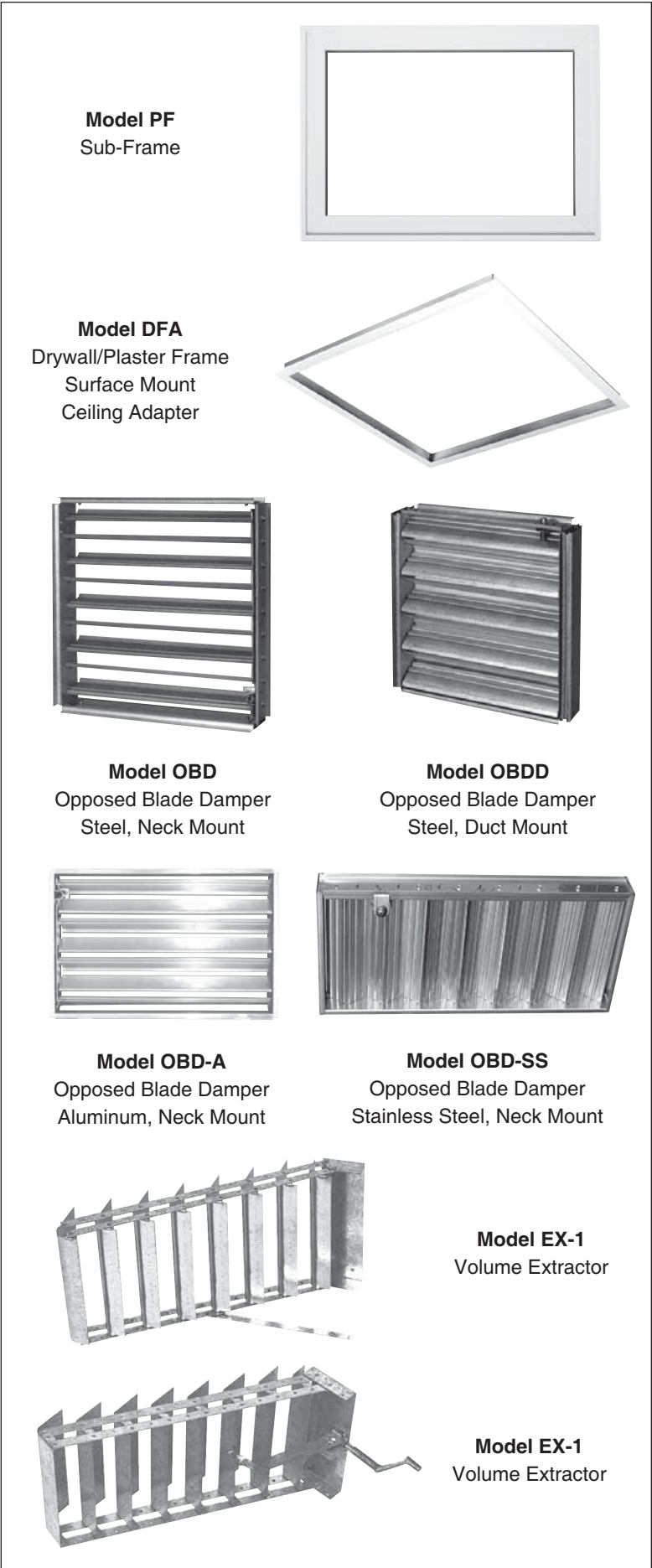
- Opposed blade dampers for every application.
- Volume extractors.

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.



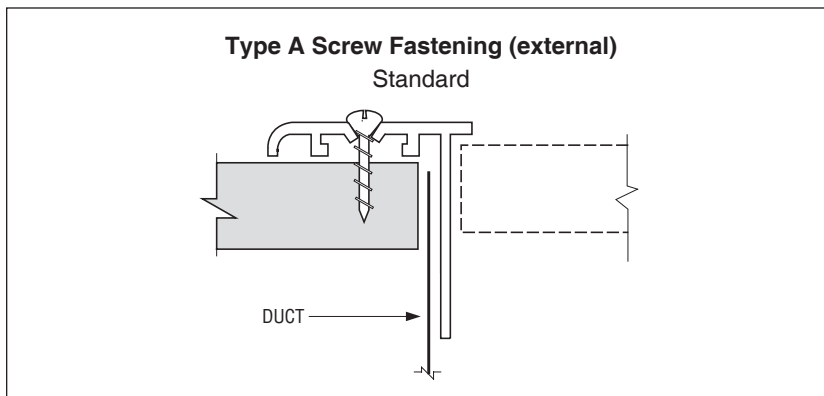


## Fastening and Border Frames

### Type A Screw Fastening (External)

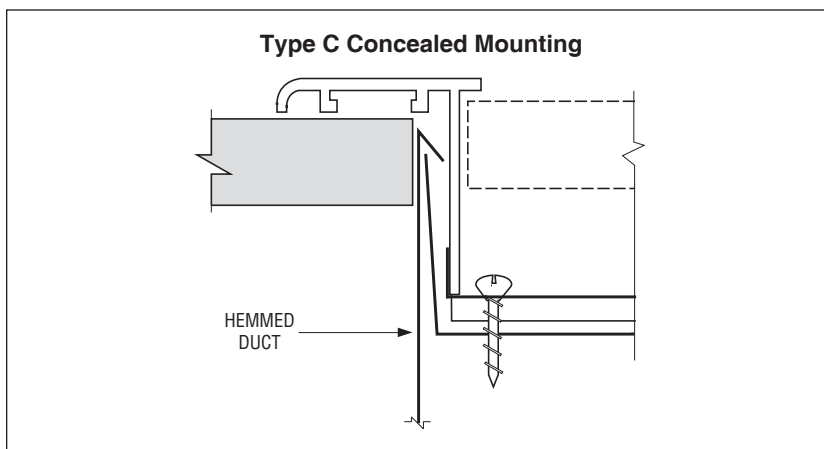
Standard method of fastening for all Nailor grilles and registers in surface mount applications. All Nailor grilles and registers are supplied this way unless specified otherwise. Universal application for all models and cost effective installation.

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.



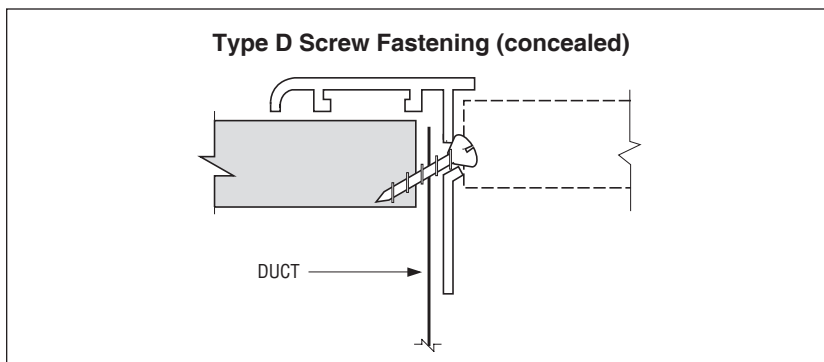
### Type C Concealed Mounting

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)

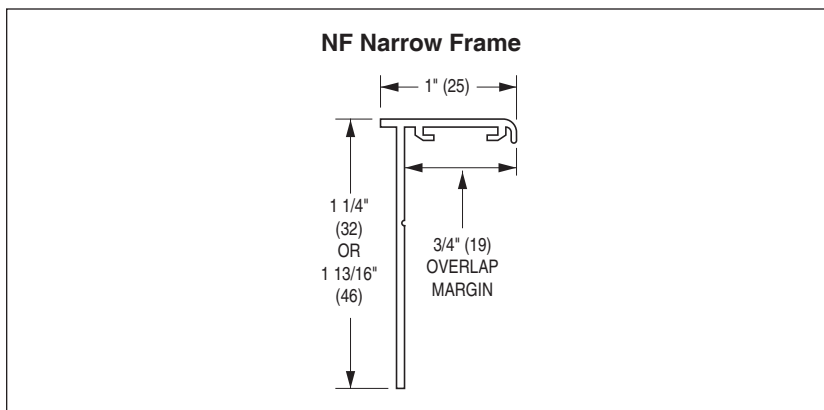
Screw holes are provided in the neck of the grille or register frame. Screws are field installed at an angle through the grille frame and into the ductwork, providing a clean frame appearance. Installation is more difficult than Type A due to the space constriction between the grille blades. Care must 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.

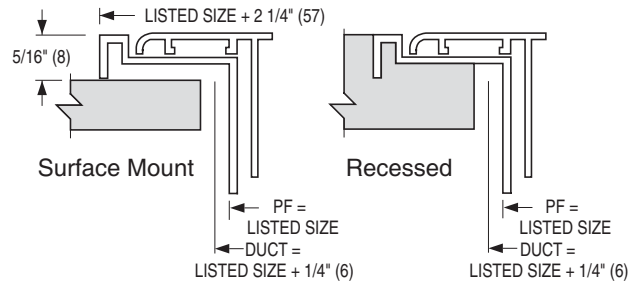
See individual models for availability.



## 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.

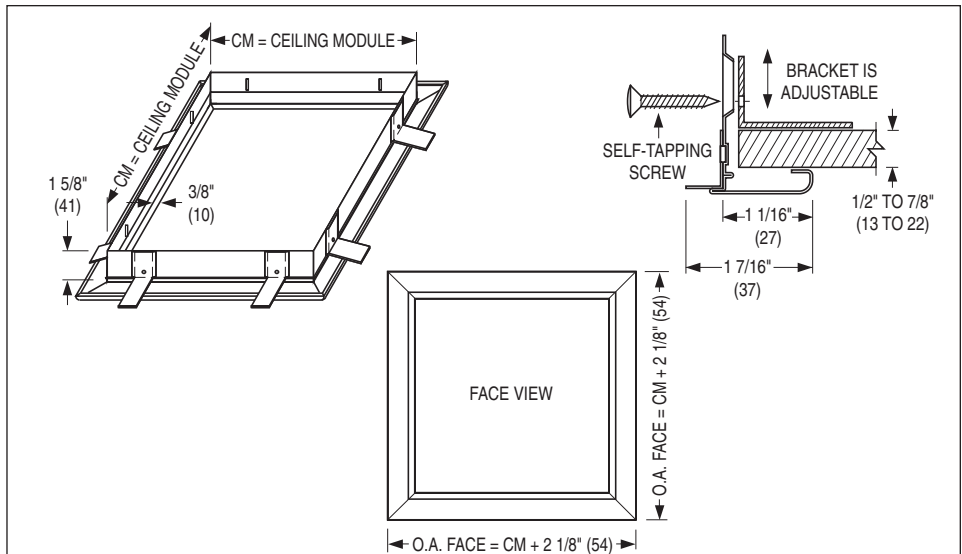
The DF Series simplifies and reduces installation time compared with surface mount type diffusers. This is especially true where flexible duct is utilized. A major benefit is that the DF Series allows access to the ceiling plenum space above for maintenance purposes without the need for separate access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

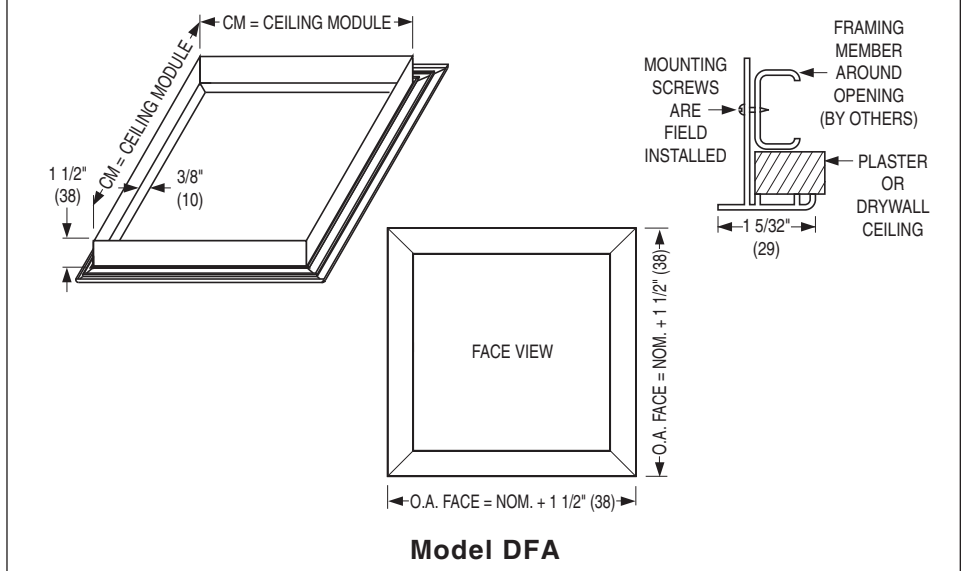


Model DFS

**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.

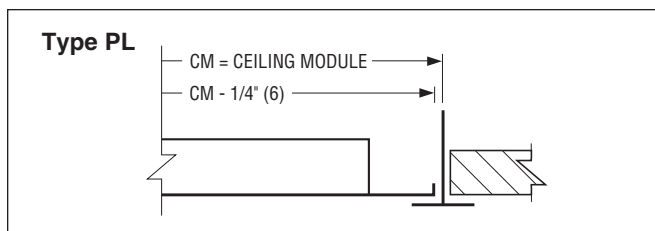
The maximum grille neck sizes available for panel mounting will be the ceiling module size selected - 3" (76).

### 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

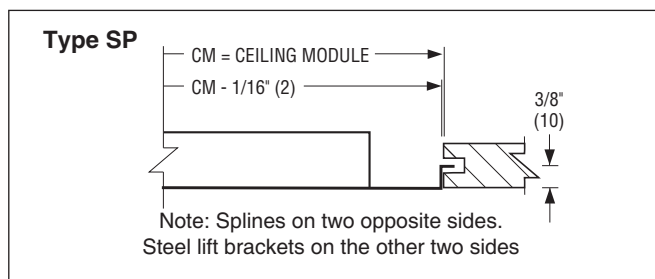
### Border Type PL: Lay-in T-Bar

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



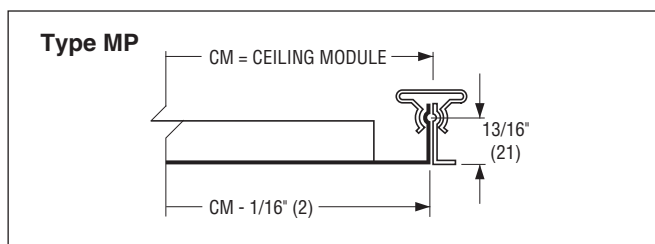
### Border Type SP: Spline

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



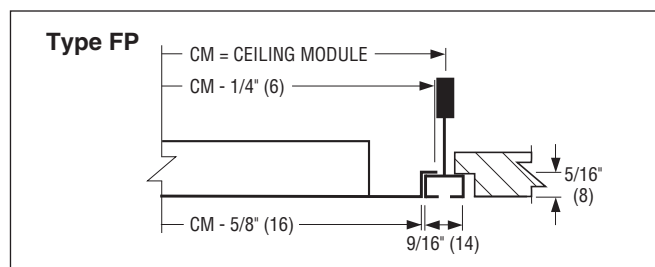
### Border Type MP: Metal Pan/Snap-in

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



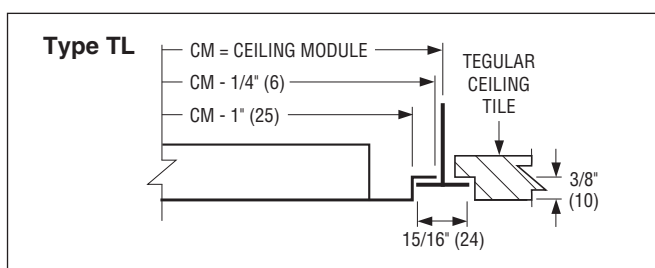
### Border Type FP: Narrow Regressed T-Bar (Fineline®)

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

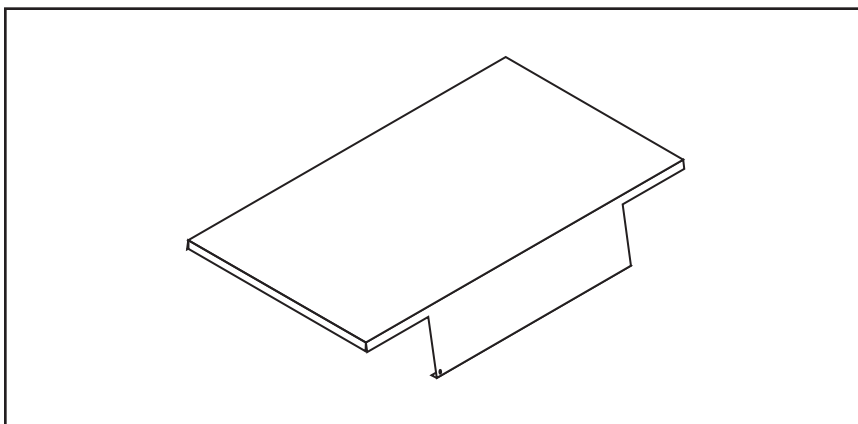
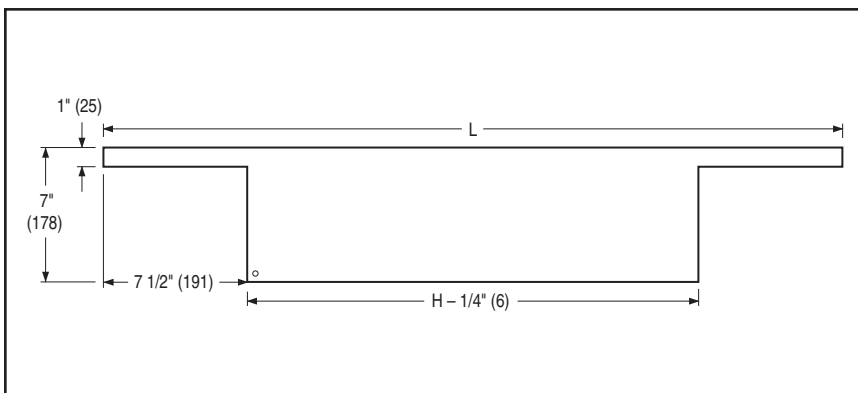
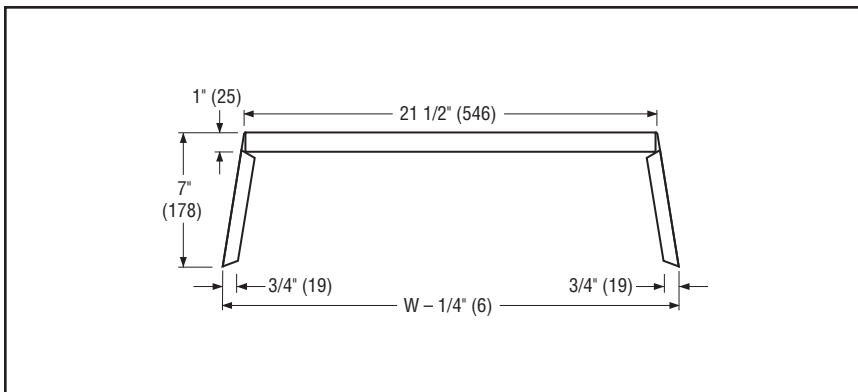
Nailor Model RACA Return Air Crosstalk Attenuator is designed to greatly reduce the amount of sound transferred from the return air plenum through open vents or return grilles, into the adjoining space. For use with non-ducted return grilles in Lay-in T-Bar applications, the RACA allows return air to 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**

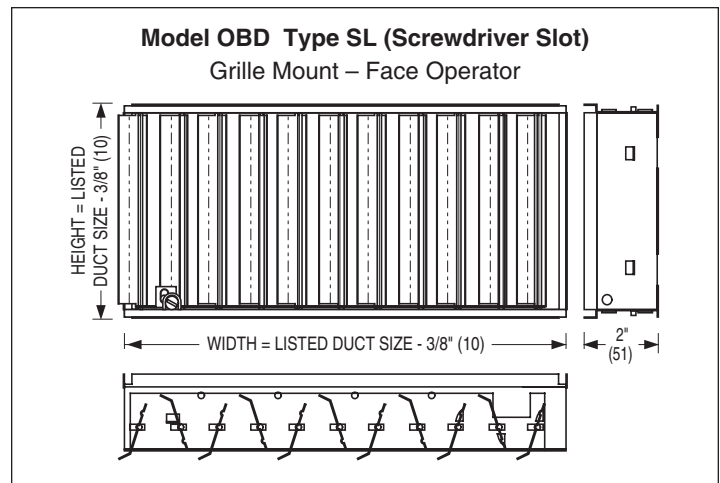
This style of damper mounts directly on the neck of the grille and is sized to fit most Nailor grilles. Uses steel barbed S-clips for easy field mounting or removal when ordered separately. Supplied as standard with a screwdriver slot operator (Type SL) on supply registers and a screwdriver pivot lever 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).

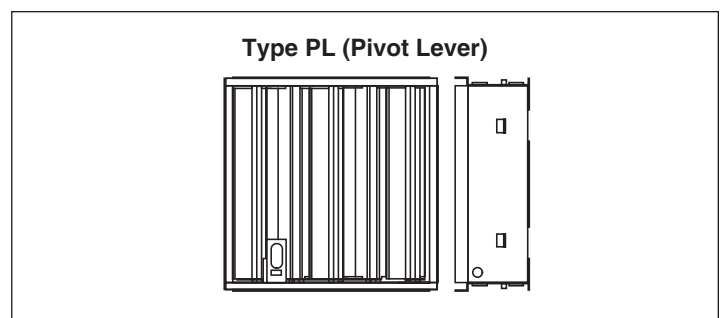
#### Type SL Operator

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.



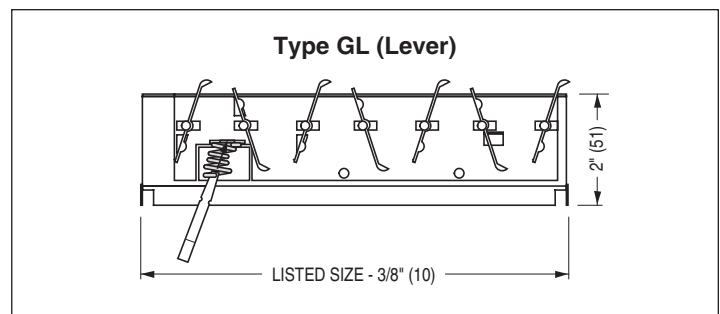
#### Type PL Operator

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**

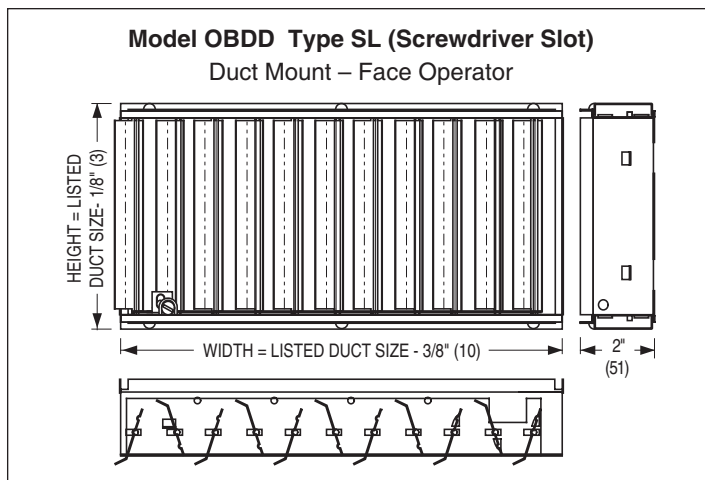
**OBDD-A Aluminum**

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)

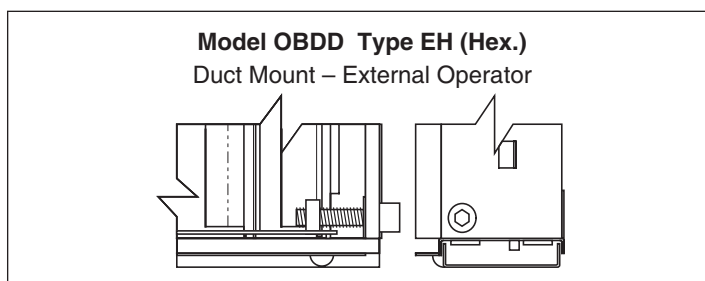
### Type SL Operator

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



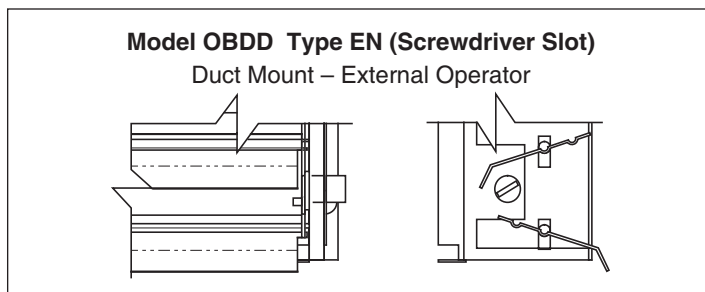
### Type EH Operator

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.



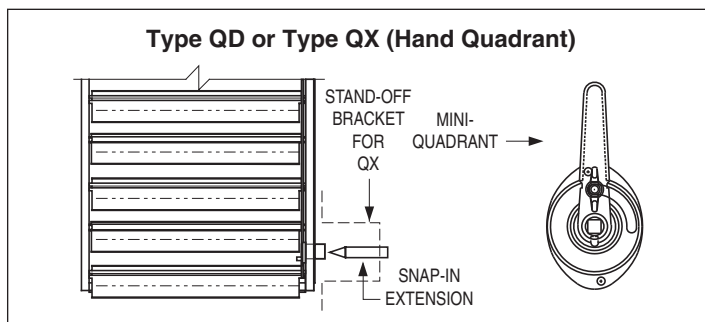
### Type QD Operator \*

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.

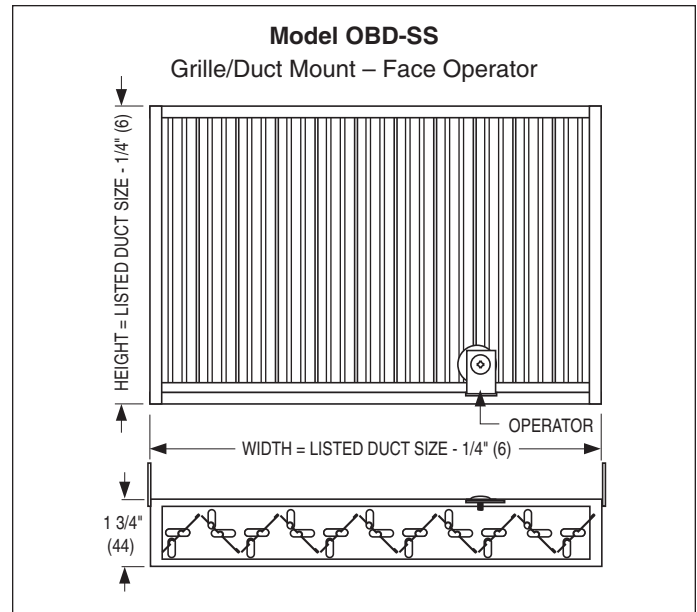
The gang operated multi-blade design with blades closing at 45 degrees permits fine volume control for accurate balancing with minimum disturbance to the airflow pattern. Blades are individually pivoted on 1" (25) centers.

#### 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.

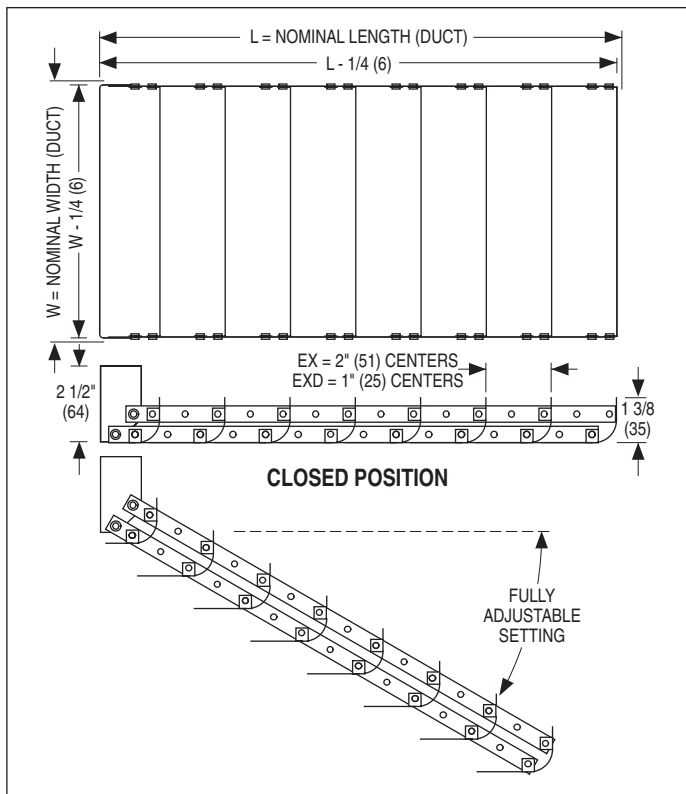
Specify or order: Length x Width. (Length is first dimension. Blades are parallel to width, second dimension).

### 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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