

RETURN AIR

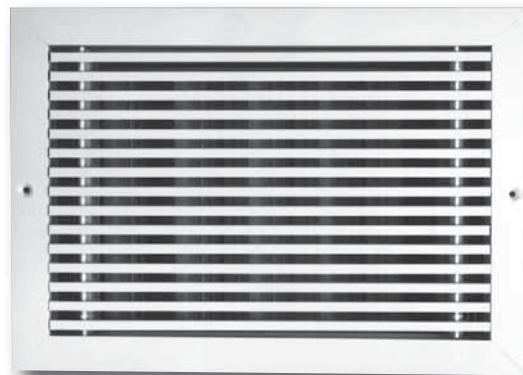
FIXED BARS

This return air grille has extruded aluminum fixed blades that are reinforced for strength.

Models 5130H-HD, 5130V-HD, 51FH-HD, 51FV-HD Page F144

Suffix '-O' adds a steel OBD

Suffix '-OA' adds an aluminum OBD



Model 5130H-HD

HEAVY DUTY STEEL GRILLES AND REGISTERS, GYMNASIUM STRENGTH

Nailor's Heavy Duty Steel Grilles and Registers are manufactured with 16 gauge steel frames and 14 gauge steel blades which gives them strength to stand up to abuse and high impacts that occur in schools, gymnasiums and other comparable applications.

SUPPLY AIR



Model 61SH-HD

ADJUSTABLE BLADES

The supply air grilles are offered with both single and double deflection blades. The adjustability of the blade is 0° — 40° deflection and they are spaced on 1/2" (13) centers. The double deflection rear blades are spaced on 3/4" (19) centers.

Double Deflection – Models 61DV-HD, 61DH-HD Page F150

Suffix '-O' adds a steel OBD

Single Deflection – Models 61SV-HD, 61SH-HD Page F150

Suffix '-O' adds a steel OBD

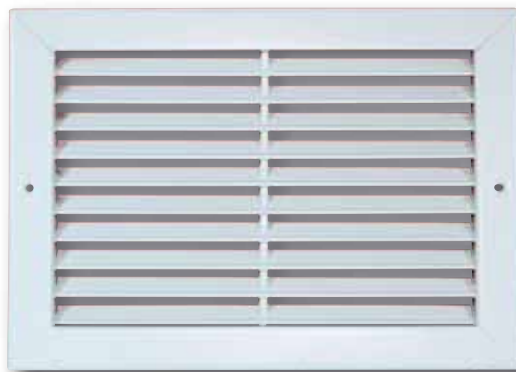
RETURN AIR

FIXED BLADES

Heavy gauge frame and blades and all welded construction make this series of grilles and registers extremely durable. These models are perfect for locations that require strong impact resistance. The blades are spaced on 1/2" (13) centers.

Models 6145H-HD, 6145V-HD, 61FH-HD, 61FV-HD Page F158

Suffix '-O' adds a steel OBD



Model 6145H-HD

ALUMINUM HEAVY DUTY BAR RETURN GRILLES

- GYMNASIUM

Models:

- 5130H-HD 30° Horizontal Blades
- 5130V-HD 30° Vertical Blades
- 51FH-HD 0° Horizontal Blades
- 51FV-HD 0° Vertical Blades

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



Model 5130H-HD

Nailor Model Series 5100-HD Heavy Duty Return Grilles and Registers are designed to combine heavy duty aluminum construction and pleasing architectural design. They are constructed to offer the strength and durability required to withstand abuse in applications such as schools, gymnasiums, stairwells, hotels and other locations requiring strong impact resistance.

The heavy duty extruded aluminum frame is staked and welded for maximum strength. Fixed front bars are reinforced and supported by a deep profile cross-bar on maximum 8" (203) centers.

STANDARD FEATURES:

- Fixed front bars on 1/2" (13) centers are available in 0° or 30° deflection.
- 0° models feature 1/8" (3) bars and the 30° model features 1/4" (6) bars.
- 1" (25) wide face border with a 3/4" (19) overlap margin is standard, furnished with countersunk screw holes and mounting screws. Concealed mounting is optional.
- Available in sizes from 6" x 4" to 48" x 48" (152 x 102 to 1219 x 1219) in single section construction.

CONSTRUCTION MATERIAL:

- High quality heavy duty extruded aluminum frame with reinforced mitered corners.
- Optional steel opposed blade damper has a screwdriver slot operator for adjustment through the face of the register.
- Optional aluminum opposed blade damper is available.

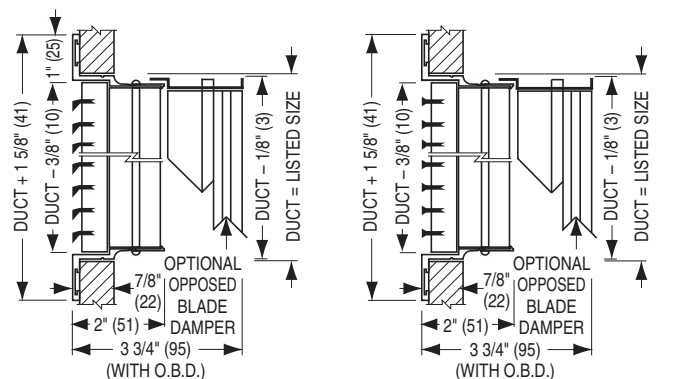
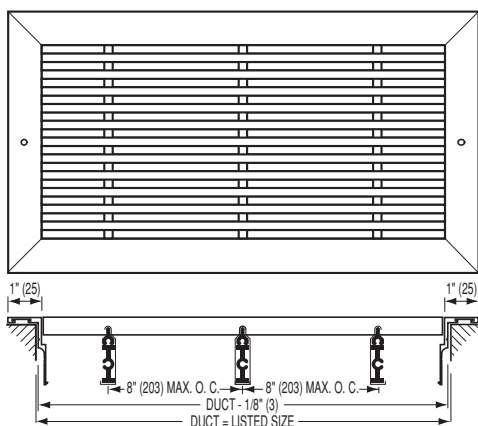
FINISH OPTIONS:

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

OPTIONS AND ACCESSORIES:

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

For additional options and accessories, see page F191.



Model 5130H-HD
(Horizontal Shown)

Model 51FH-HD
(Horizontal Shown)

PERFORMANCE DATA:

ALUMINUM HEAVY DUTY BAR RETURN GRILLES • GYMNASIUM • 5100-HD SERIES

MODELS: 5130H-HD, 5130V-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 .004	.002 .016	.006 .037	.010 .065	.016 .102	.022 .146	.031 .199	.040 .260	.050 .330	.062 .407
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM Noise Criteria	20 -	40 15	60 21	80 27	100 31	120 35	140 37	160 40	180 44	200 49
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM Noise Criteria	28 -	56 15	84 21	112 27	140 32	168 36	196 38	224 41	252 45	280 50
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM Noise Criteria	35 -	70 16	105 22	140 28	175 33	210 37	245 39	280 42	315 46	350 51
8 x 8	14 x 5	0.38	0.40	CFM Noise Criteria	38 -	76 16	114 22	152 28	190 33	228 38	266 40	304 43	342 47	380 51
12 x 6	18 x 4	0.42	0.45	CFM Noise Criteria	42 -	84 17	126 23	168 29	210 34	252 38	294 41	336 44	378 48	420 52
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM Noise Criteria	58 -	116 17	174 23	232 29	290 34	348 38	406 41	464 45	522 49	580 53
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM Noise Criteria	61 -	122 18	183 24	244 29	305 34	366 38	427 41	488 46	549 49	610 54
18 x 6	14 x 8 30 x 4 28 x 4	0.65	0.67	CFM Noise Criteria	65 -	130 18	195 24	260 30	325 35	390 39	455 42	520 46	585 50	650 54
12 x 10	16 x 8 20 x 6 24 x 5	0.74	0.74	CFM Noise Criteria	74 -	148 18	222 25	296 30	370 35	444 40	518 43	592 47	666 51	740 54
12 x 12	14 x 10 24 x 6 18 x 8 38 x 4	0.90	0.89	CFM Noise Criteria	90 -	180 19	270 25	360 31	450 36	540 40	630 43	720 48	810 51	900 54
14 x 14	16 x 12 24 x 8 20 x 10 34 x 6	1.24	1.22	CFM Noise Criteria	124 -	248 20	372 26	496 31	620 36	744 41	868 44	992 48	1116 52	1240 55
18 x 12	16 x 14 28 x 8 22 x 10 38 x 6	1.37	1.34	CFM Noise Criteria	137 -	274 20	411 26	548 32	685 37	822 42	959 45	1096 50	1233 53	1370 56
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM Noise Criteria	152 15	304 21	456 26	608 32	760 37	912 42	1064 46	1216 51	1368 54	1520 57
16 x 16	18 x 14 30 x 8 22 x 12	1.64	1.58	CFM Noise Criteria	164 15	328 21	492 27	656 33	820 38	984 42	1148 46	1312 51	1476 54	1640 57
24 x 12	18 x 16 30 x 10 20 x 14 36 x 8	1.85	1.78	CFM Noise Criteria	185 15	370 21	555 27	740 33	925 38	1110 43	1295 46	1480 51	1665 54	1850 58
18 x 18	20 x 16 28 x 12 24 x 14 32 x 10	2.10	2.01	CFM Noise Criteria	210 16	420 22	630 27	840 33	1050 38	1260 43	1470 47	1680 52	1890 55	2100 58
30 x 12	20 x 18 26 x 14 22 x 16 36 x 10	2.32	2.23	CFM Noise Criteria	232 16	464 22	696 27	928 33	1160 38	1392 43	1624 47	1856 52	2088 55	2320 59
20 x 20	24 x 18 30 x 14 26 x 16 36 x 12	2.61	2.48	CFM Noise Criteria	261 17	522 22	783 27	1044 33	1305 38	1566 43	1827 47	2088 52	2349 55	2610 59
22 x 22	24 x 20 30 x 16 26 x 18 36 x 14	3.17	3.00	CFM Noise Criteria	317 17	634 23	951 28	1268 34	1585 39	1902 44	2219 48	2536 52	2853 55	3170 59
30 x 18	24 x 22 40 x 14 34 x 16	3.54	3.34	CFM Noise Criteria	354 18	708 24	1062 28	1416 34	1770 39	2124 44	2478 48	2832 53	3186 56	3540 60
24 x 24	26 x 22 32 x 18 28 x 20 36 x 16	3.79	3.56	CFM Noise Criteria	379 18	758 24	1137 28	1516 34	1895 39	2274 44	2653 49	3032 53	3411 56	3790 60
36 x 18	32 x 20 46 x 14 40 x 16	4.27	4.01	CFM Noise Criteria	427 18	854 24	1281 29	1708 36	2135 41	2562 45	2989 49	3416 54	3843 57	4270 61
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM Noise Criteria	447 19	894 25	1341 30	1788 36	2235 41	2682 45	3129 49	3576 54	4023 57	4470 61
30 x 24	28 x 26 36 x 20 32 x 22 40 x 18	4.77	4.46	CFM Noise Criteria	477 19	954 25	1431 30	1908 37	2385 42	2862 46	3339 50	3816 54	4293 58	4770 62
28 x 28	30 x 26 40 x 20 36 x 22	5.20	4.85	CFM Noise Criteria	520 19	1040 25	1560 30	2080 37	2600 42	3120 46	3640 50	4160 55	4680 58	5200 62
36 x 24	30 x 28 44 x 20 40 x 22	5.74	5.35	CFM Noise Criteria	574 19	1148 25	1722 30	2296 37	2870 42	3444 46	4018 50	4592 55	5166 59	5740 63
30 x 30	34 x 26 48 x 20 38 x 24	5.99	5.57	CFM Noise Criteria	599 20	1198 26	1797 31	2396 37	2995 42	3594 47	4193 51	4792 55	5391 59	5990 63

For performance data notes, see F146.

PERFORMANCE DATA:

ALUMINUM HEAVY DUTY BAR RETURN GRILLES • GYMNASIUM • 5100-HD SERIES

MODELS: 5130H-HD, 5130V-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 .004	.002 .016	.006 .037	.010 .065	.016 .102	.022 .146	.031 .199	.040 .260	.050 .330	.062 .407
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	20	26	31	37	43	47	51	56	60	64
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	21	26	31	37	43	48	52	56	60	64
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	21	27	32	38	43	48	53	57	61	65
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	22	27	33	38	44	49	53	57	61	65
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	22	27	33	39	45	49	54	57	62	66
42 x 42	44 x 40 48 x 36 46 x 36	11.89	10.92	CFM	1189	2378	3567	4756	5945	7134	8323	9512	10701	11890
				Noise Criteria	22	27	33	39	45	50	54	58	62	66
44 x 44	46 x 42	13.07	11.98	CFM	1307	2614	3921	5228	6535	7842	9149	10456	11763	13070
				Noise Criteria	22	28	34	39	45	50	54	58	62	66
46 x 46		14.30	13.10	CFM	1430	2860	4290	5720	7150	8580	10010	11440	12870	14300
				Noise Criteria	23	29	34	40	46	51	55	59	63	67
48 x 48		15.59	14.26	CFM	1559	3118	4677	6236	7795	9354	10913	12472	14031	15590
				Noise Criteria	23	29	35	40	46	51	55	59	63	67

Performance Notes:

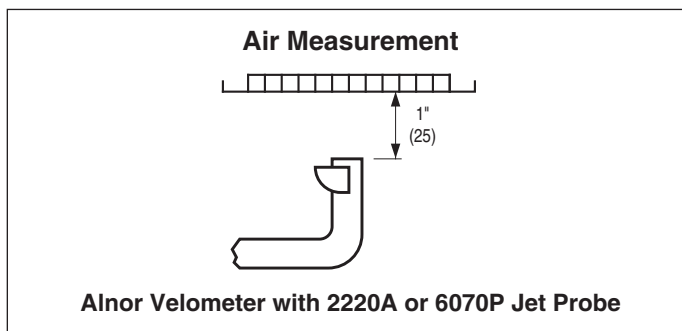
- All pressures are in inches w.g..
- Core Velocity is in feet per minute.
- Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. Static Pressure Listed Value x 0.91.

Noise Criteria Listed value – 4.

- Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10⁻¹² watts. Dash (—) in space denotes a Noise Criteria level of less than 15.

5. 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_k in FPM).
- Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
Airflow (CFM) = Average velocity (V_k) x Ak.

PERFORMANCE DATA:

ALUMINUM HEAVY DUTY BAR RETURN GRILLES • GYMNASIUM • 5100-HD SERIES

MODELS: 51FH-HD, 51FV-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 .003	.002 .010	.006 .023	.010 .041	.016 .065	.022 093	.031 .127	.040 .166	.050 .210	.062 .259
6 x 6	8 x 4 10 x 4	0.20	0.23	CFM Noise Criteria	20 -	40 -	60 -	80 15	100 19	120 23	140 25	160 28	180 32	200 37
8 x 6	10 x 5 12 x 4	0.28	0.30	CFM Noise Criteria	28 -	56 -	84 -	112 15	140 20	168 24	196 26	224 29	252 33	280 38
10 x 6	12 x 5 16 x 4	0.35	0.37	CFM Noise Criteria	35 -	70 -	105 -	140 16	175 21	210 25	245 27	280 30	315 34	350 39
8 x 8	14 x 5	0.38	0.40	CFM Noise Criteria	38 -	76 -	114 -	152 -	190 21	228 26	266 28	304 31	342 35	380 39
12 x 6	18 x 4	0.42	0.45	CFM Noise Criteria	42 -	84 -	126 -	168 -	210 22	252 26	294 29	336 32	378 36	420 40
12 x 8	16 x 6 24 x 4	0.58	0.59	CFM Noise Criteria	58 -	116 -	174 -	232 -	290 22	348 26	406 29	464 33	522 37	580 41
10 x 10	14 x 7 26 x 4	0.61	0.62	CFM Noise Criteria	61 -	122 -	183 -	244 -	305 22	366 26	427 29	488 34	549 37	610 42
18 x 6	14 x 8 28 x 4	0.65	0.67	CFM Noise Criteria	65 -	130 -	195 -	260 18	325 23	390 27	455 30	520 34	585 38	650 42
12 x 10	16 x 8 24 x 5	0.74	0.74	CFM Noise Criteria	74 -	148 -	222 -	296 18	370 23	444 28	518 31	592 35	666 39	740 42
12 x 12	14 x 10 18 x 8 24 x 6 38 x 4	0.90	0.89	CFM Noise Criteria	90 -	180 -	270 -	360 19	450 24	540 28	630 31	720 36	810 39	900 42
14 x 14	16 x 12 20 x 10 24 x 8 34 x 6	1.24	1.22	CFM Noise Criteria	124 -	248 -	372 -	496 19	620 24	744 29	868 32	992 36	1116 40	1240 43
18 x 12	16 x 14 22 x 10 28 x 8 38 x 6	1.37	1.34	CFM Noise Criteria	137 -	274 -	411 -	548 20	685 25	822 30	959 33	1096 38	1233 41	1370 44
24 x 10	20 x 12 30 x 8	1.52	1.49	CFM Noise Criteria	152 -	304 -	456 -	608 20	760 25	912 30	1064 34	1216 39	1368 42	1520 45
16 x 16	18 x 14 22 x 12 30 x 8	1.64	1.58	CFM Noise Criteria	164 -	328 -	492 15	656 21	820 26	984 31	1148 34	1312 39	1476 42	1640 45
24 x 12	18 x 16 20 x 14 30 x 10 36 x 8	1.85	1.78	CFM Noise Criteria	185 -	370 -	555 15	740 21	925 26	1110 31	1295 34	1480 39	1665 42	1850 46
18 x 18	20 x 16 24 x 14 28 x 12 32 x 10	2.10	2.01	CFM Noise Criteria	210 -	420 -	630 15	840 21	1050 26	1260 31	1470 35	1680 40	1890 43	2100 46
30 x 12	20 x 18 22 x 16 26 x 14 36 x 10	2.32	2.23	CFM Noise Criteria	232 -	464 -	696 15	928 21	1160 26	1392 31	1624 35	1856 40	2088 43	2320 47
20 x 20	24 x 18 26 x 16 30 x 14 36 x 12	2.61	2.48	CFM Noise Criteria	261 -	522 -	783 15	1044 21	1305 26	1566 31	1827 35	2088 40	2349 43	2610 47
22 x 22	24 x 20 26 x 18 30 x 16 36 x 14	3.17	3.00	CFM Noise Criteria	317 -	634 -	951 15	1268 22	1585 27	1902 32	2219 36	2536 40	2853 43	3170 47
30 x 18	24 x 22 34 x 16 40 x 14	3.54	3.34	CFM Noise Criteria	354 -	708 -	1062 16	1416 22	1770 27	2124 32	2478 36	2832 41	3186 44	3540 48
24 x 24	26 x 22 28 x 20 32 x 18 36 x 16	3.79	3.56	CFM Noise Criteria	379 -	758 -	1137 16	1516 22	1895 27	2274 32	2653 37	3032 41	3411 44	3790 48
36 x 18	32 x 20 40 x 16 46 x 14	4.27	4.01	CFM Noise Criteria	427 -	854 -	1281 17	1708 24	2135 29	2562 33	2989 37	3416 42	3843 45	4270 49
26 x 26	28 x 24 48 x 14	4.47	4.19	CFM Noise Criteria	447 -	894 -	1341 18	1788 24	2235 29	2682 33	3129 37	3576 42	4023 45	4470 49
30 x 24	28 x 26 32 x 22 36 x 20 40 x 18	4.77	4.46	CFM Noise Criteria	477 -	954 -	1431 18	1908 25	2385 30	2862 34	3339 38	3816 42	4293 46	4770 50
28 x 28	30 x 26 36 x 22 40 x 20	5.20	4.85	CFM Noise Criteria	520 -	1040 -	1560 18	2080 25	2600 30	3120 34	3640 38	4160 43	4680 46	5200 50
36 x 24	30 x 28 40 x 22 44 x 20	5.74	5.35	CFM Noise Criteria	574 -	1148 -	1722 18	2296 25	2870 30	3444 34	4018 38	4592 43	5166 47	5740 51
30 x 30	34 x 26 38 x 24 48 x 20	5.99	5.57	CFM Noise Criteria	599 -	1198 -	1797 19	2396 25	2995 30	3594 35	4193 39	4792 43	5391 47	5990 51

GRILLES AND REGISTERS

F

For performance data notes, see F148.

PERFORMANCE DATA:

ALUMINUM HEAVY DUTY BAR RETURN GRILLES • GYMNASIUM • 5100-HD SERIES

MODELS: 51FH-HD, 51FV-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 .003	.002 .010	.006 .023	.010 .041	.016 .065	.022 .093	.031 .127	.040 .166	.050 .210	.062 .259
32 x 32	36 x 30 46 x 22 38 x 28	6.84	6.34	CFM Noise Criteria	684 -	1368 -	2052 19	2736 25	3420 31	4104 35	4788 39	5472 44	6156 48	6840 52
48 x 24	34 x 34 38 x 30 36 x 32 48 x 28	7.69	7.13	CFM Noise Criteria	769 -	1538 -	2307 19	3076 25	3845 31	4614 36	5383 40	6152 44	6921 48	7690 52
36 x 36	38 x 34 46 x 28 42 x 30 48 x 26	8.69	8.02	CFM Noise Criteria	869 -	1738 -	2607 20	3476 26	4345 31	5214 36	6083 41	6952 45	7821 49	8690 53
38 x 38	42 x 34 48 x 30 44 x 34	9.70	8.94	CFM Noise Criteria	970 -	1940 15	2910 21	3880 26	4850 32	5820 37	6790 41	7760 45	8730 49	9700 53
40 x 40	42 x 36 48 x 32 46 x 34	10.77	9.90	CFM Noise Criteria	1077 -	2154 15	3231 21	4308 27	5385 33	6462 37	7539 42	8616 45	9693 50	10770 54
42 x 42	46 x 42 48 x 36 46 x 38	11.89	10.92	CFM Noise Criteria	1189 -	2378 15	3567 21	4756 27	5945 33	7134 38	8323 42	9512 46	10701 50	11890 54
44 x 44	46 x 42	13.07	11.98	CFM Noise Criteria	1307 -	2614 16	3921 22	5228 27	6535 33	7842 38	9149 42	10456 46	11763 50	13070 54
46 x 46		14.30	13.10	CFM Noise Criteria	1430 -	2860 17	4290 22	5720 28	7150 34	8580 39	10010 43	11440 47	12870 51	14300 55
48 x 48		15.59	14.26	CFM Noise Criteria	1559 -	3118 17	4677 23	6236 28	7795 34	9354 39	10913 43	12472 47	14031 51	15590 55

Performance Notes:

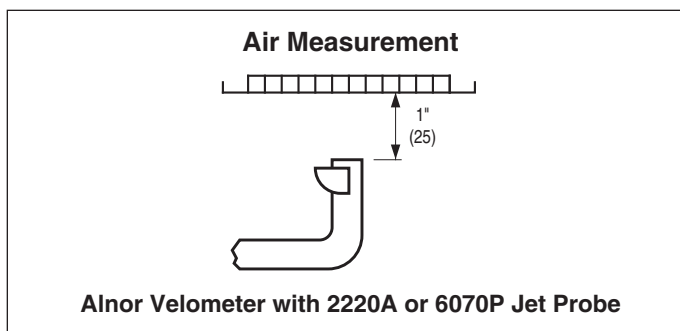
1. All pressures are in inches w.g..
2. Core Velocity is in feet per minute.
3. Performance data is for grille with opposed blade damper. Apply the following correction factors for grille without damper.

Neg. Static Pressure Listed Value x 0.91.

Noise Criteria Listed value - 4.

4. Noise Criteria (NC) values are based on a room absorption of 10 dB, re 10⁻¹² watts. Dash (-) in space denotes a Noise Criteria level 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 (Vk in FPM).
 4. Calculate the airflow (CFM) by multiplying the average velocity by the appropriate Ak factor.
- Airflow (CFM) = Average velocity (Vk) x Ak.

HOW TO ORDER

MODEL SERIES: 5100-HD

HEAVY DUTY BAR RETURN GRILLES AND REGISTERS • ALUMINUM • GYMNASIUM

EXAMPLE: 5130H - HD - O - 24 x 12 - S - AW - DMI - A - —

1. Models

Horizontal/Long Dimension Blades:

- 51FH-HD Fixed 0° Deflection
- 5130H-HD Fixed 30° Deflection

Vertical/Short Dimension Blades:

- 51FV-HD Fixed 0° Deflection
- 5130V-HD Fixed 30° Deflection

2. Damper (OBD)

- O Steel
- OA Aluminum
- No Damper

3. Nominal Width x Height

inches (mm)

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
- SA Satin (Clear) Anodized
- 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
- N None

OPTIONS & ACCESSORIES:

- None (default)

8. Plaster Sub-Frame

- PF Plaster Sub-Frame

9. Insect Screen

- IS Insect Screen

10. Gaskets

- GK Foam Gasket

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 be selected. For example, an aluminum 30° deflection register, horizontal blade direction and steel damper, is Model 5130H-HD-O. Unit will be supplied with screw holes and AW Appliance White finish.

2. The larger dimension must always be specified first; for example, 24" x 12" (610 x 305), not 12" x 24" (305 x 610).

HOW TO SPECIFY

MODEL SERIES: 5100-HD

HEAVY DUTY BAR RETURN GRILLES AND REGISTERS • ALUMINUM • GYMNASIUM

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **5130H-HD, 5130V-HD, 51FH-HD** or **51FV-HD Aluminum Heavy Duty Bar Return Grilles** of the type and size as shown on the plans and air distribution schedules. The grille shall have extruded aluminum reinforced fixed blades and welded frame with 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.

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

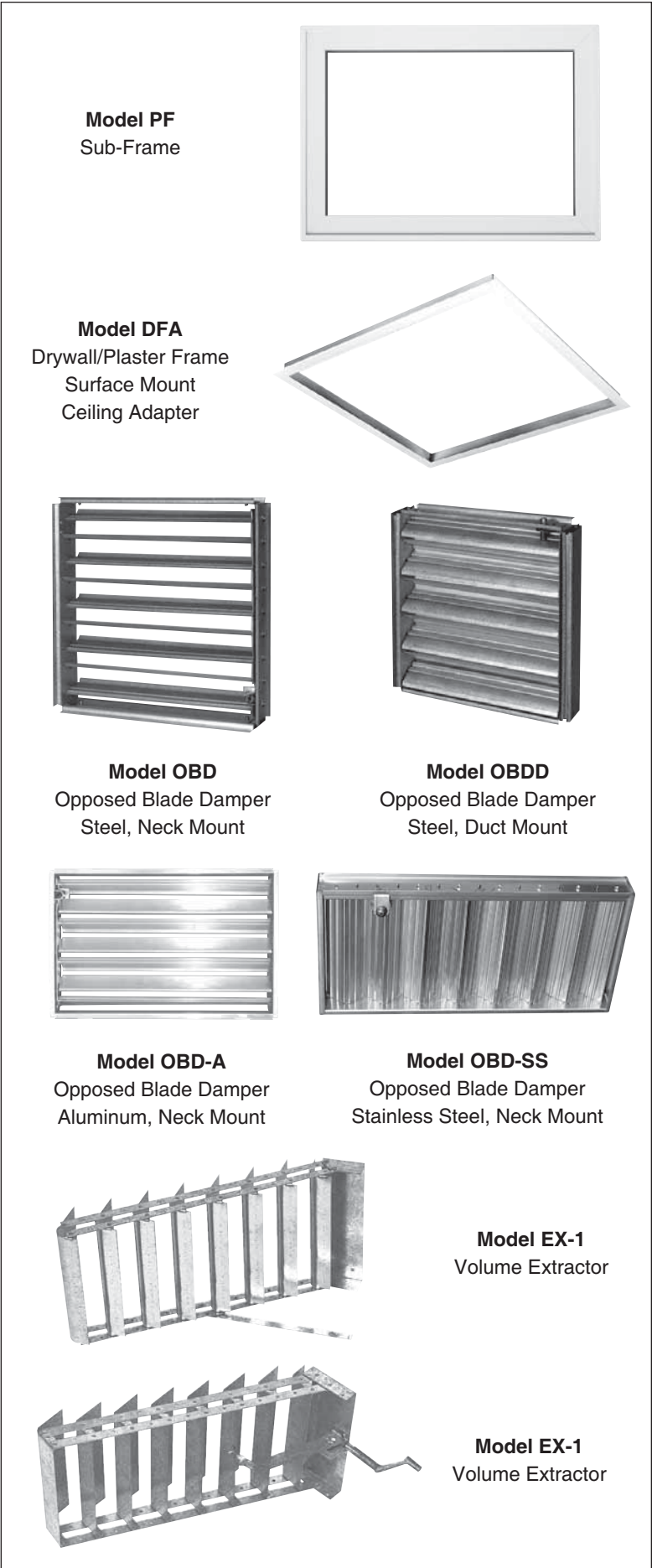
- Opposed blade dampers for every application.
- Volume extractors.

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.

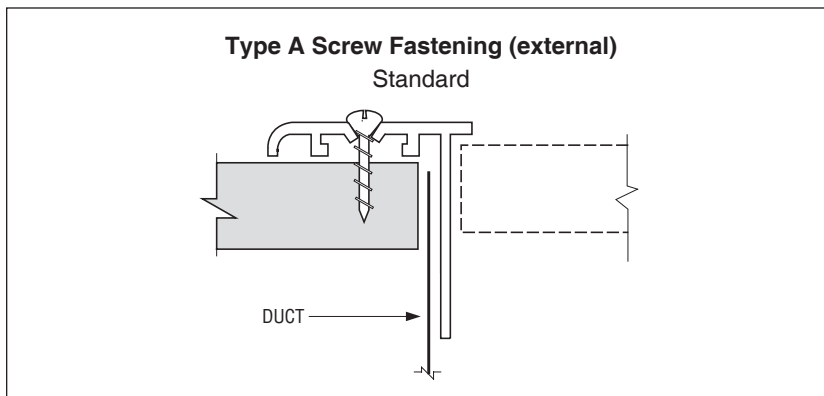


Fastening and Border Frames

Type A Screw Fastening (External)

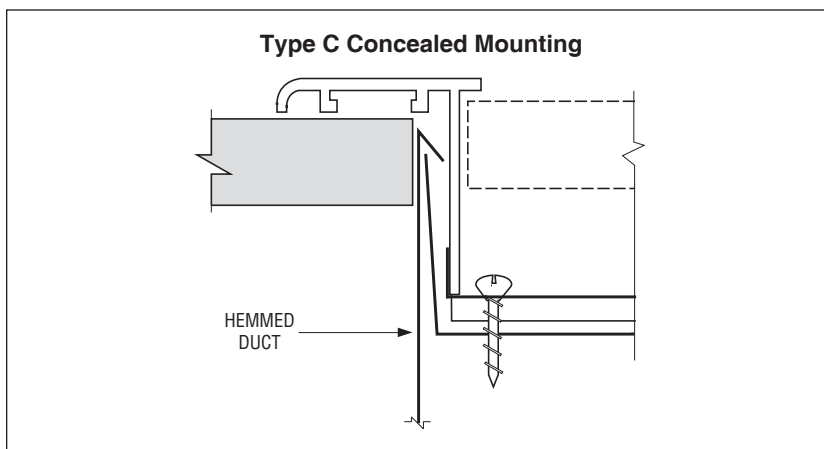
Standard method of fastening for all Nailor grilles and registers in surface mount applications. All Nailor grilles and registers are supplied this way unless specified otherwise. Universal application for all models and cost effective installation.

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.



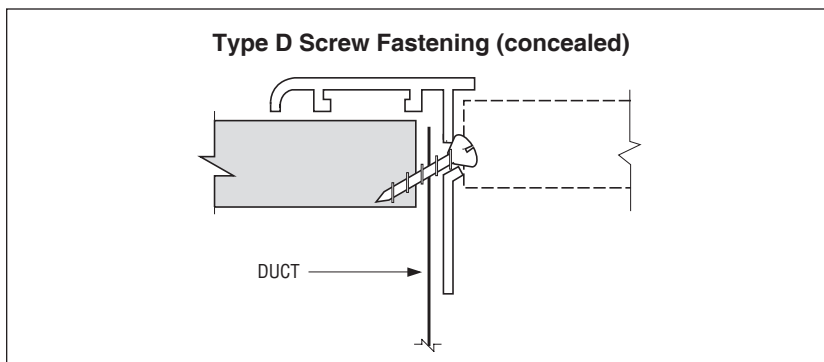
Type C Concealed Mounting

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)

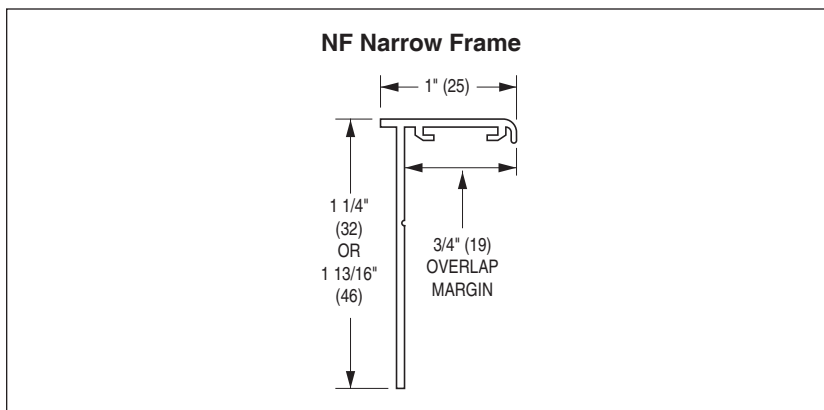
Screw holes are provided in the neck of the grille or register frame. Screws are field installed at an angle through the grille frame and into the ductwork, providing a clean frame appearance. Installation is more difficult than Type A due to the space constriction between the grille blades. Care must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

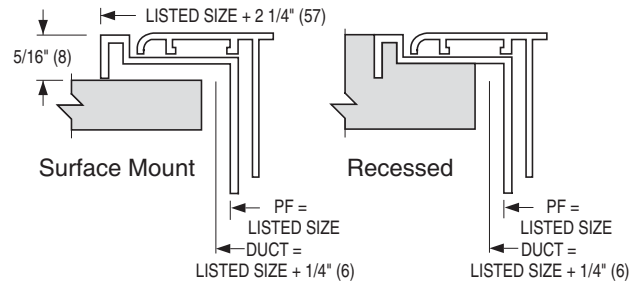
See individual models for availability.



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.

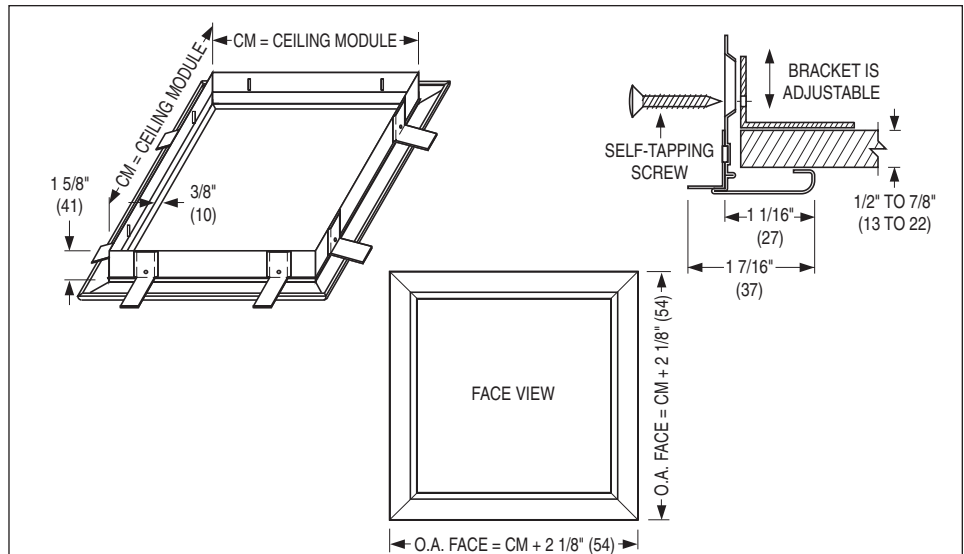
The DF Series simplifies and reduces installation time compared with surface mount type diffusers. This is especially true where flexible duct is utilized. A major benefit is that the DF Series allows access to the ceiling plenum space above for maintenance purposes without the need for separate access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

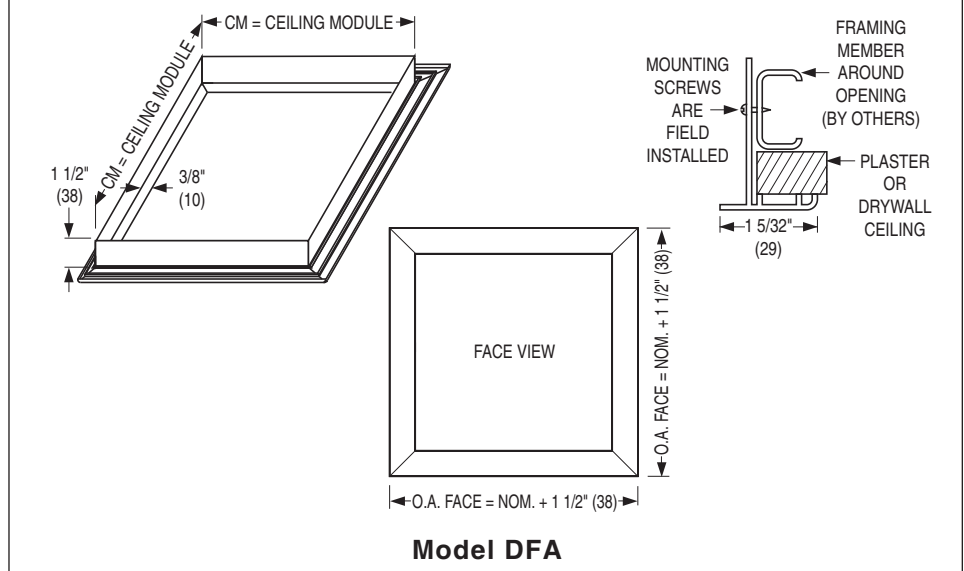


Model DFS

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.

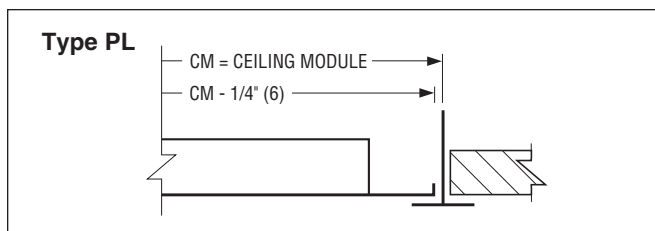
The maximum grille neck sizes available for panel mounting will be the ceiling module size selected - 3" (76).

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

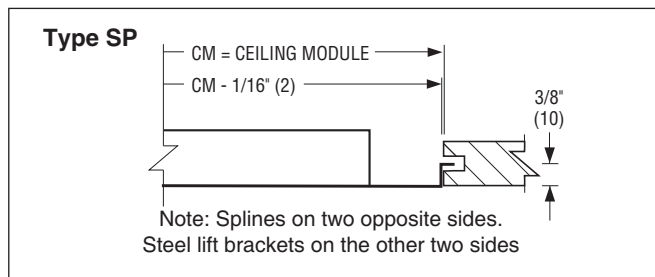
Border Type PL: Lay-in T-Bar

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



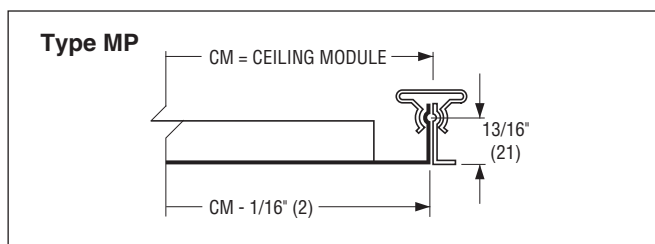
Border Type SP: Spline

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



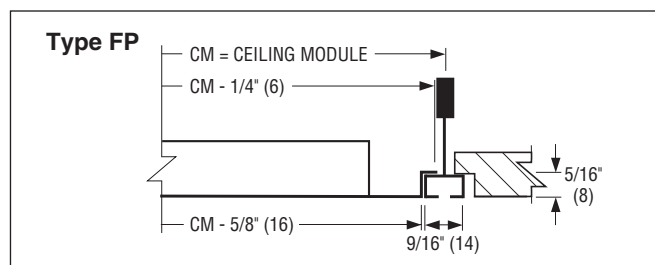
Border Type MP: Metal Pan/Snap-in

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



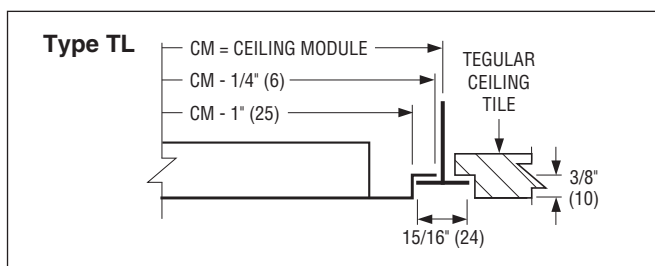
Border Type FP: Narrow Regressed T-Bar (Fineline®)

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

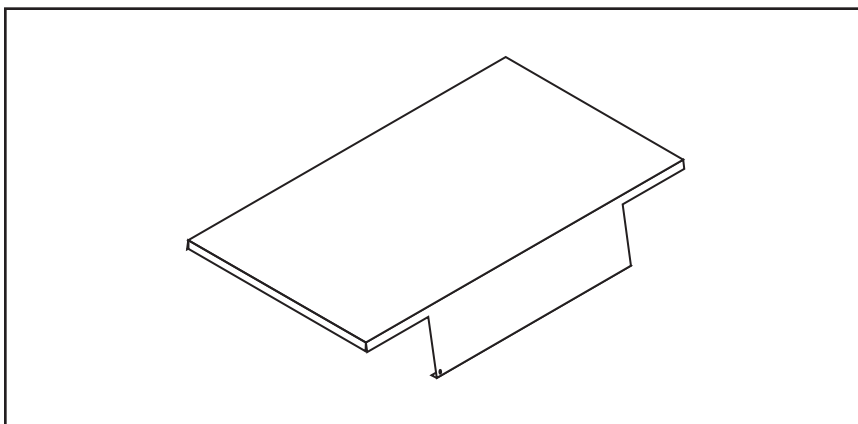
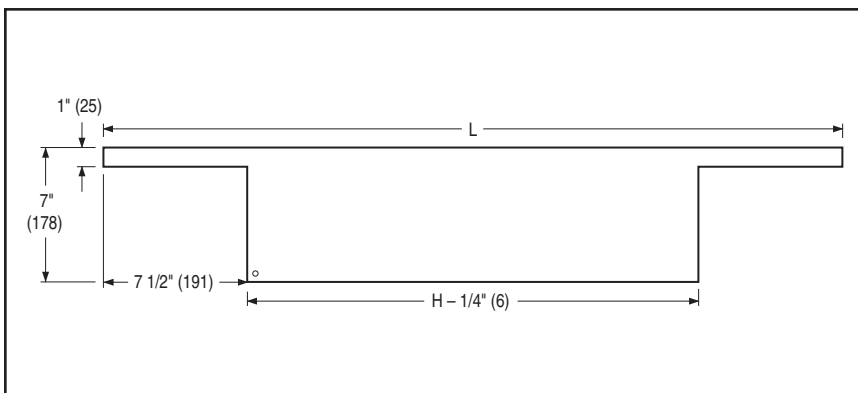
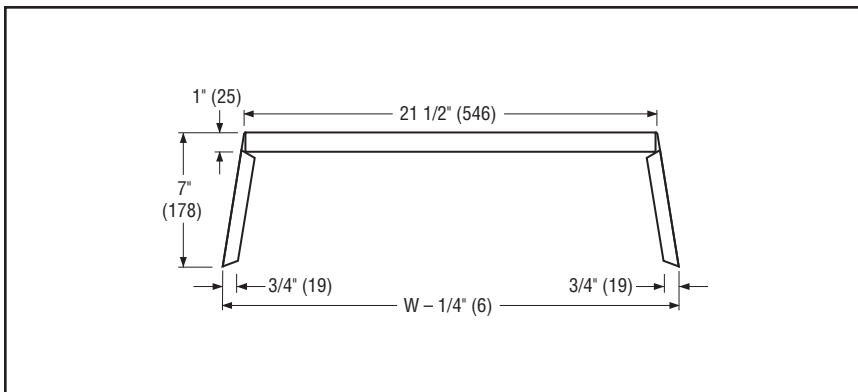
Nailor Model RACA Return Air Crosstalk Attenuator is designed to greatly reduce the amount of sound transferred from the return air plenum through open vents or return grilles, into the adjoining space. For use with non-ducted return grilles in Lay-in T-Bar applications, the RACA allows return air to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

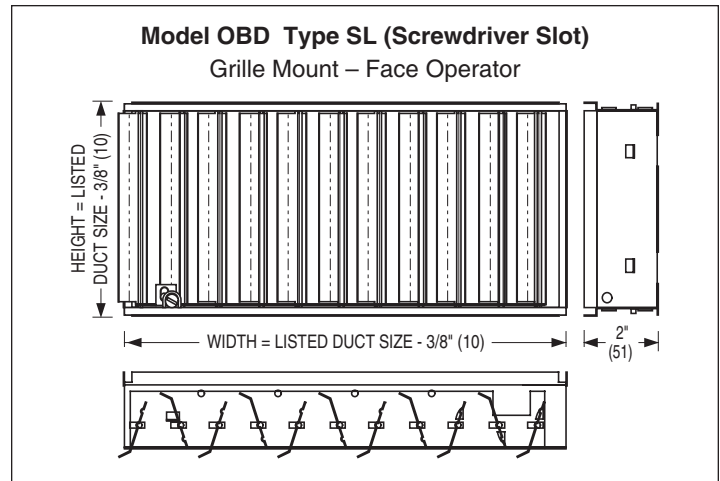
OBD-A Aluminum

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).

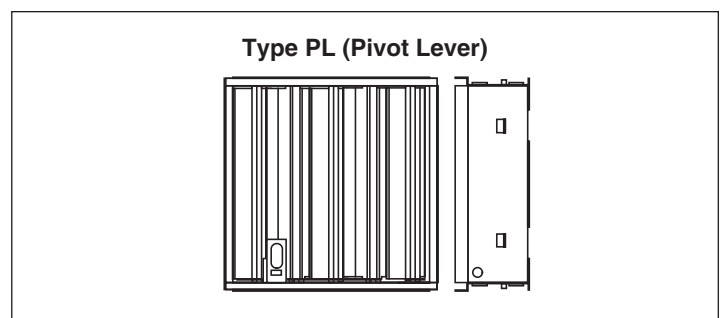
Type SL Operator

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.



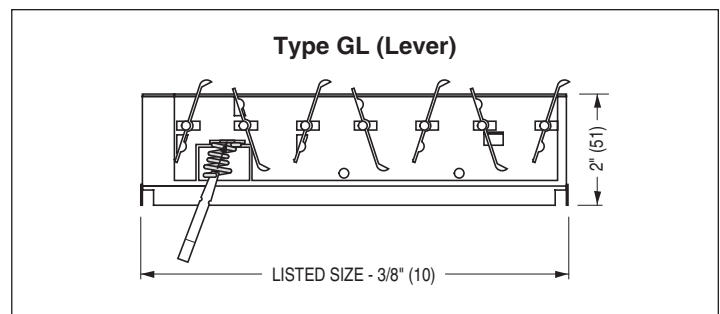
Type PL Operator

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

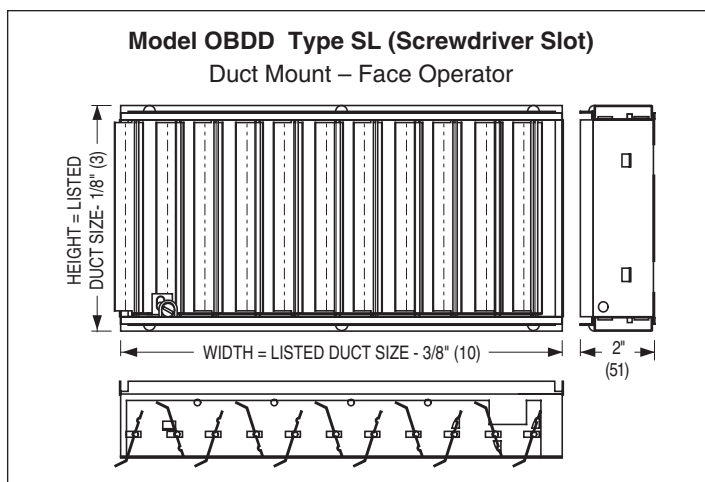
OBDD-A Aluminum

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)

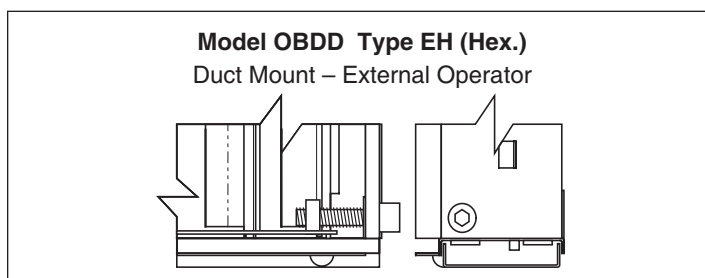
Type SL Operator

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



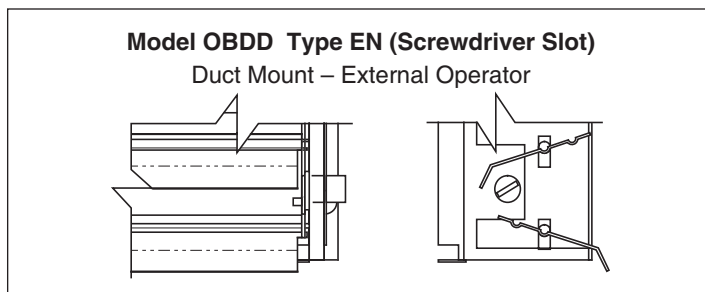
Type EH Operator

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.



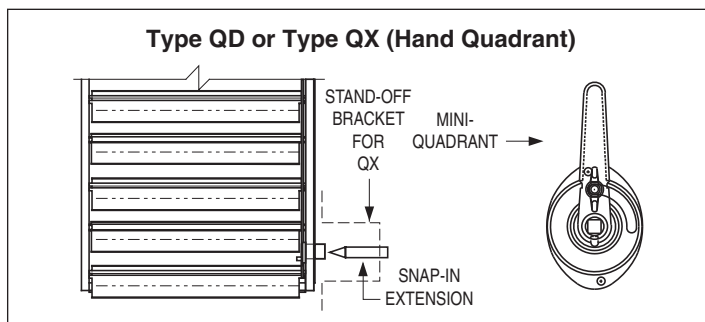
Type QD Operator *

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.

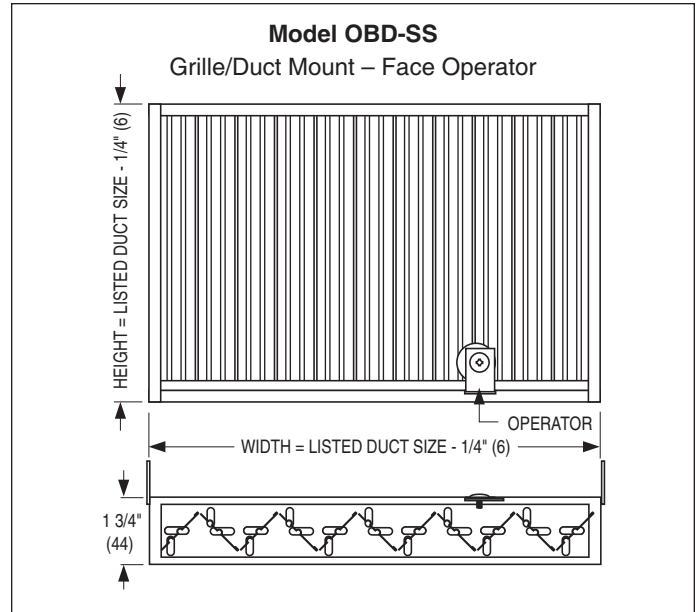
The gang operated multi-blade design with blades closing at 45 degrees permits fine volume control for accurate balancing with minimum disturbance to the airflow pattern. Blades are individually pivoted on 1" (25) centers.

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.

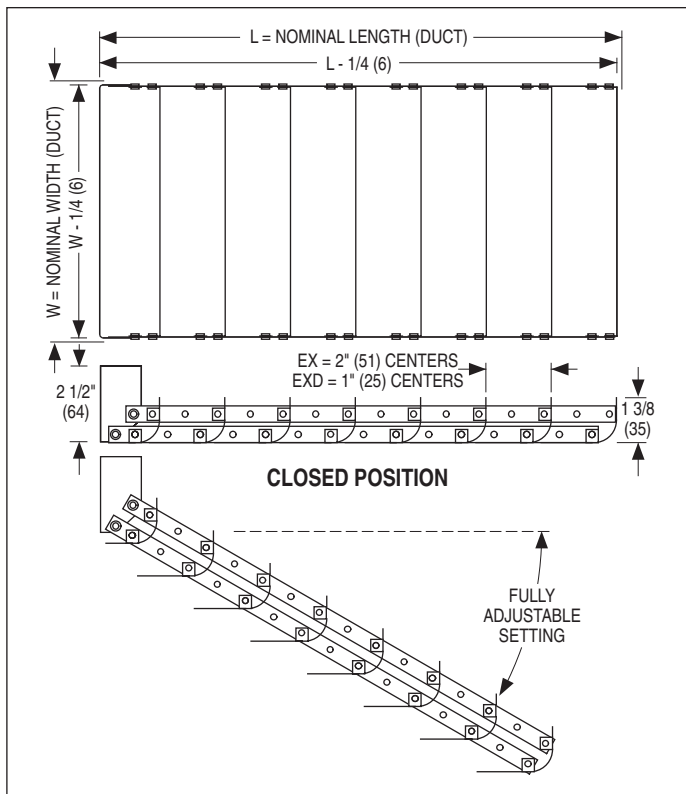
Specify or order: Length x Width. (Length is first dimension. Blades are parallel to width, second dimension).

FEATURES:

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

Operator Types

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



Optional Accessories

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