

Application:

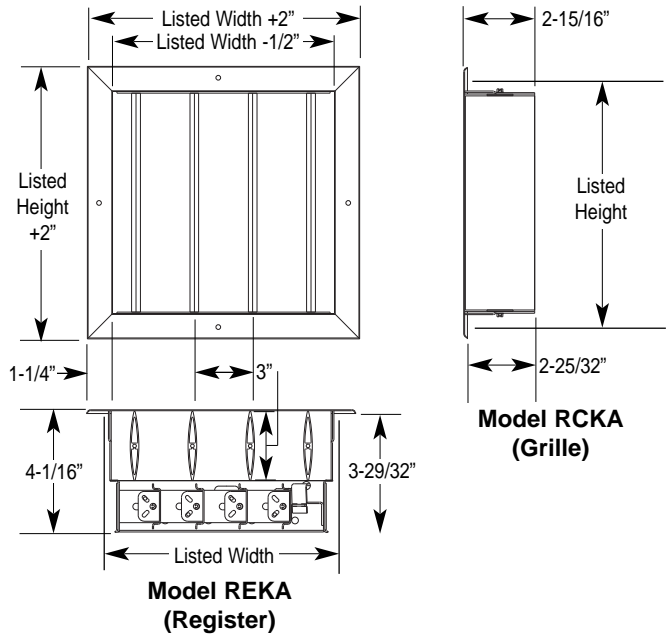
This model serves well in any area where the air volume is large, and durability and reduced pressure drop are important.

Standard Features:

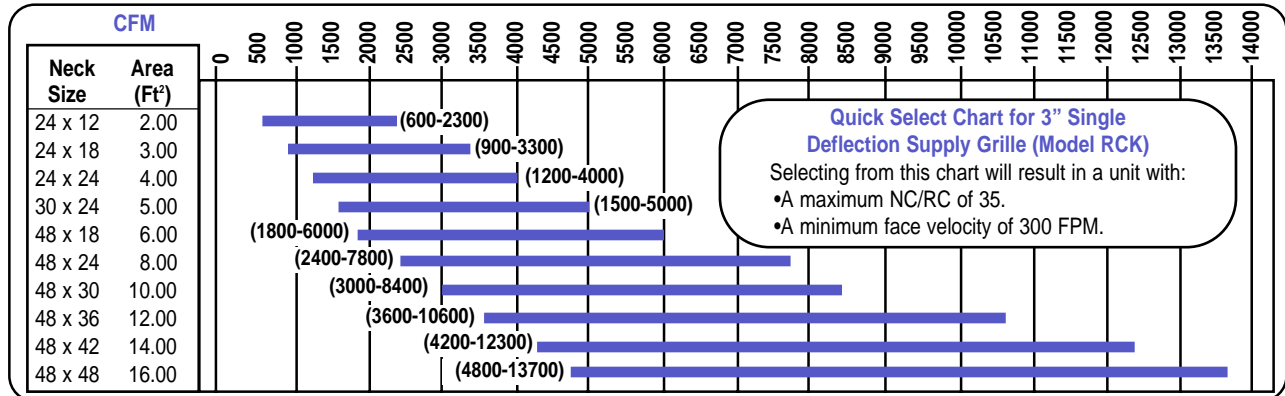
- Construction is of extruded aluminum blades with 20 gauge steel frame.
- Core is single deflection.
- Blades are 3" deep, on 3" centers, and can be aligned horizontally or vertically.
- Polyurethane foam gasket at edge of frame.
- Standard finish is electrocoat acrylic baked enamel. Other finishes are available on request.
- Standard color is #11 bright white. Other colors are available on request.
- Register model REK uses model RXEA opposed blade damper, which is adjustable from the face via flat blade screwdriver (p. A437).

Optional Features:

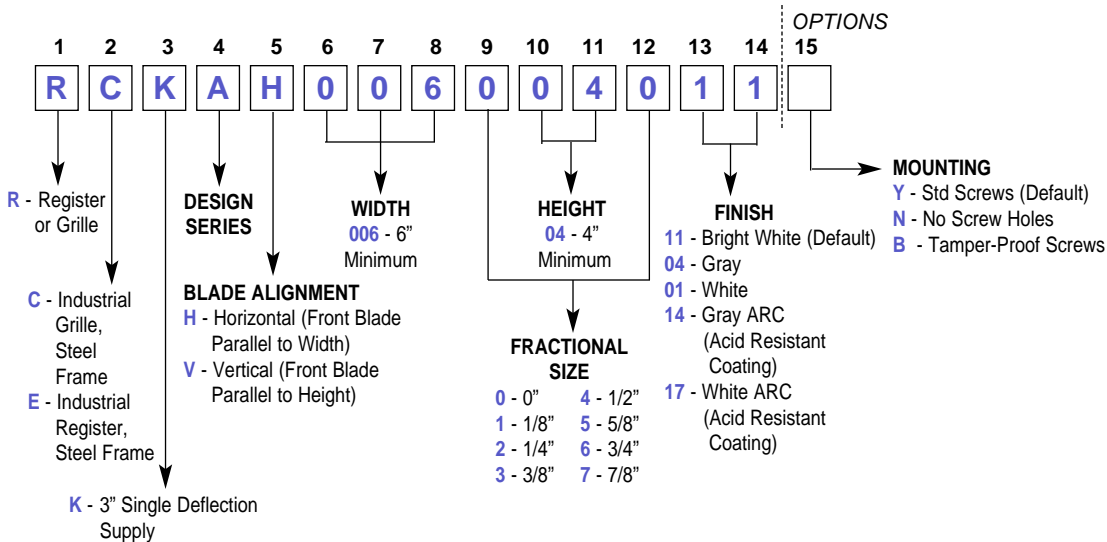
- "No screw holes" can be specified for custom installations.
- Holt-head #8 x 1-1/2" screws (Opt. B) can be specified to minimize tampering.
- Fusible link (p. A343).



Heavy Duty Registers & Grilles



Model Numbering System — Industrial R&G 3" Single Deflection Supply (Models RCK, REK)



Duct Velocity		300	400	500	600	700	800	1000	1200	1400	1600	
Velocity	Press.	0.006	0.010	0.016	0.022	0.031	0.040	0.062	0.090	0.122	0.160	
Nom. Size (in.)	Total	0°	0.008	0.014	0.022	0.032	0.045	0.058	0.091	0.131	0.238	
	Press.	22.5°	0.010	0.019	0.029	0.043	0.058	0.077	0.119	0.172	0.307	
	(w.g.)	45°	0.016	0.028	0.044	0.064	0.087	0.114	0.177	0.252	0.348	
6 x 6 25 ft²	Flow (CFM)	75	100	125	150	175	200	250	300	350	400	
	0°	Throw	6-10-15	8-12-17	10-14-19	11-15-21	12-17-23	13-17-24	15-19-27	16-21-30	17-22-32	18-24-34
	Sound	---/---	---/---	---/---	---/---	---/---	---/---	---/---	10/12H	14/13H	21/19N	24/25N
8 x 6 33 ft²	22.5°	Throw	5-8-12	6-9-14	8-11-16	9-12-17	9-13-19	10-14-19	12-16-22	12-17-24	13-18-26	15-19-27
	Sound	---/---	---/---	---/---	---/---	---/---	---/---	10/10H	14/14H	21/19H	26/26N	29/29N
	45°	Throw	3-5-7	4-6-8	5-7-9	5-7-10	6-8-11	6-8-12	7-9-13	7-10-14	8-11-15	9-12-16
10 x 6 42 ft²	Sound	---/---	---/---	---/---	13/13H	16/16H	20/20H	28/28N	33/33N	38/38N	43/43N	
	Flow (CFM)	100	133	167	200	233	267	333	400	467	533	
	0°	Throw	7-11-17	9-15-20	11-16-22	12-17-24	14-18-26	15-20-28	17-22-32	18-25-35	19-26-38	21-28-40
12 x 6 50 ft²	Sound	---/---	---/---	---/---	---/---	---/---	---/---	14/16H	19/18N	25/23N	29/30N	
	22.5°	Throw	5-9-14	7-12-16	9-12-18	9-14-19	11-15-21	12-16-23	13-18-26	15-20-28	16-21-30	17-23-32
	Sound	---/---	---/---	---/---	---/---	12/12H	16/15H	24/22H	30/30N	33/33N	38/38N	
12 x 8 67 ft²	45°	Throw	3-5-8	4-7-10	5-7-11	6-8-12	7-9-13	7-10-14	8-11-15	9-12-17	9-13-18	10-14-19
	Sound	---/---	---/---	10/11H	16/16H	20/20H	24/24H	32/32N	37/37N	42/42N	46/46N	
	Flow (CFM)	125	167	208	250	292	333	417	500	583	667	
12 x 10 83 ft²	0°	Throw	8-13-19	10-16-22	13-17-25	15-19-28	16-21-30	17-22-32	18-25-36	20-28-39	22-29-42	24-32-45
	Sound	---/---	---/---	---/---	---/---	---/---	10/10H	17/19H	23/23N	29/27N	33/34N	
	22.5°	Throw	6-10-16	8-12-18	10-14-20	12-16-23	12-17-24	13-18-26	15-20-29	16-23-31	18-23-33	19-26-36
12 x 12 1.00 ft²	Sound	---/---	---/---	---/---	11/11H	14/14H	19/19H	27/25N	33/33N	36/36N	40/40N	
	45°	Throw	4-6-9	5-7-11	6-8-12	7-9-14	7-10-14	8-11-15	9-12-17	10-14-19	11-14-20	12-15-21
	Sound	---/---	---/---	13/14H	19/19H	23/23H	27/27H	36/36N	40/40N	45/45N	49/49N	
18 x 10 1.25 ft²	Flow (CFM)	150	200	250	300	350	400	500	600	700	800	
	0°	Throw	8-14-21	11-17-24	14-19-27	16-21-30	17-23-33	18-24-35	20-27-39	22-30-43	24-32-46	26-35-49
	Sound	---/---	---/---	---/---	---/---	---/---	12/12H	19/21H	25/24N	31/29N	35/36N	
18 x 12 1.50 ft²	22.5°	Throw	6-11-17	9-14-19	11-16-22	12-17-24	14-19-26	15-19-28	16-22-31	18-24-34	19-26-37	21-28-39
	Sound	---/---	---/---	---/---	12/12H	16/16H	21/21H	29/27H	35/35N	38/38N	42/42N	
	45°	Throw	4-7-10	5-8-12	7-9-13	7-10-14	8-11-16	9-12-17	10-13-19	11-14-21	12-15-22	13-17-23
18 x 10 1.25 ft²	Sound	---/---	10/12H	16/17H	22/22H	26/26H	30/30H	38/38N	43/43N	47/47N	52/52N	
	Flow (CFM)	200	267	333	400	467	533	667	800	933	1067	
	0°	Throw	10-16-24	13-20-28	16-22-32	18-24-35	20-26-38	21-28-41	23-32-45	26-35-50	28-38-53	30-40-56
18 x 6 75 ft²	Sound	---/---	---/---	---/---	---/---	---/---	14/14H	21/22N	28/28N	34/34N	38/37N	
	22.5°	Throw	8-12-19	10-16-23	12-18-26	15-19-28	16-21-30	17-23-33	19-26-36	21-28-40	23-30-43	24-32-45
	Sound	---/---	---/---	---/---	14/12H	19/17H	24/22H	32/31N	37/37N	41/41N	45/45N	
18 x 10 83 ft²	45°	Throw	5-7-12	6-10-14	7-11-15	9-12-17	10-13-18	10-14-20	11-15-21	13-17-24	14-18-26	14-19-27
	Sound	---/---	13/11H	20/21H	26/26H	30/29H	34/34H	42/42N	46/46N	50/50N	55/55N	
	Flow (CFM)	225	300	375	450	525	600	750	900	1050	1200	
18 x 12 1.00 ft²	0°	Throw	10-17-26	14-21-30	17-23-34	19-26-37	21-28-40	22-30-43	25-34-48	28-37-52	29-40-56	32-43-60
	Sound	---/---	---/---	---/---	---/---	10/10H	15/15H	22/23N	29/29N	35/35N	39/38N	
	22.5°	Throw	8-13-21	11-17-24	14-19-27	16-21-30	17-23-32	18-24-34	20-27-38	23-30-42	23-32-45	26-34-48
18 x 10 1.25 ft²	Sound	---/---	---/---	---/---	14/12H	20/18H	25/23H	33/32H	38/38N	42/42N	46/46N	
	45°	Throw	5-8-13	7-10-14	8-11-16	9-13-18	10-14-19	11-14-21	12-16-23	14-18-25	14-19-27	15-21-29
	Sound	---/---	15/13H	21/22H	27/27H	32/31H	36/36H	43/43N	48/48N	51/51N	56/56N	
18 x 10 1.25 ft²	Flow (CFM)	250	333	417	500	583	667	833	1000	1167	1333	
	0°	Throw	11-17-27	15-22-32	17-25-36	20-27-39	22-30-42	23-32-46	26-36-51	29-39-55	31-42-59	34-45-63
	Sound	---/---	---/---	---/---	---/---	11/11H	16/17H	23/22N	30/29N	36/35N	39/39N	
18 x 10 1.25 ft²	22.5°	Throw	9-14-22	12-18-26	14-20-29	16-22-31	18-24-33	19-26-37	21-29-40	23-31-44	25-33-47	27-36-51
	Sound	---/---	---/---	10/7H	15/13H	20/18H	25/23H	34/33N	39/39N	43/43N	47/47N	
	45°	Throw	5-8-13	7-11-15	8-12-17	10-13-19	11-14-20	11-15-22	13-17-24	14-19-27	15-20-28	16-21-30
18 x 10 1.25 ft²	Sound	---/---	17/16H	22/21H	28/24H	33/32H	37/37H	43/43N	49/49N	52/52N	57/57N	
	Flow (CFM)	300	400	500	600	700	800	1000	1200	1400	1600	
	0°	Throw	12-19-30	16-24-35	19-27-39	22-30-43	24-33-47	26-35-50	29-39-55	32-43-60	34-46-65	37-49-69
18 x 10 1.25 ft²	Sound	---/---	---/---	---/---	---/---	13/13H	17/18H	25/24N	32/31N	37/36N	41/41N	
	22.5°	Throw	9-16-24	12-19-28	16-22-31	18-24-34	19-26-37	21-28-40	23-31-44	26-34-48	27-37-52	30-39-55
	Sound	---/---	---/---	11/8H	16/14H	22/20H	27/25H	36/35H	41/41N	44/44N	48/48N	
18 x 10 1.25 ft²	45°	Throw	6-9-14	7-12-17	9-13-19	11-14-21	12-16-22	13-17-24	14-19-27	15-21-29	16-22-31	18-23-33
	Sound	---/---	17/18H	24/23H	30/28H	34/34H	38/38H	45/45N	50/50N	54/54N	58/58N	
	Flow (CFM)	375	500	625	750	875	1000	1250	1500	1750	2000	
18 x 10 1.25 ft²	0°	Throw	13-21-34	17-27-39	22-31-44	25-34-48	27-36-52	29-39-55	32-44-62	36-49-67	38-52-73	42-54-78
	Sound	---/---	---/---	---/---	---/---	14/16H	18/19N	26/26N	34/34N	38/38N	42/42N	
	22.5°	Throw	10-17-27	14-22-31	18-25-35	20-27-38	22-29-41	23-31-44	26-35-50	29-39-54	30-41-58	33-44-62
18 x 10 1.25 ft²	Sound	---/---	---/---	12/13H	17/19H	23/24H	28/28N	37/37N	42/42N	46/46N	49/49N	
	45°	Throw	6-10-16	8-13-19	11-15-21	12-16-23	13-17-25	14-19-27	15-21-30	17-23-32	18-25-35	20-26-37
	Sound	---/---	19/20H	26/27N	32/31N	37/37N	40/40N	47/47N	52/52N	55/55N	59/59N	

Notes on

Performance Data:

- Performance data is based on tests conducted in accordance with ANSI/ASHRAE Standard 70-1991.
- Actual Performance in the field may vary.
- Testing was conducted in isothermal conditions.
- Sound level values are based on a room absorption of 10db re 10⁻¹² watts.
- A "----" indicates an NC value less than 10.

Units of

Measure Used:

- Velocity is given in Feet per Minute (fpm).
- Pressure is given in inches of Water (w.g.)
- Flows are given in Cubic Feet per Minute (CFM).
- Throws are given in feet to terminal velocities of 150, 100 and 50 fpm, respectively.
- Sound data is given in both NC and RC. NC is first with RC second, separated by a slash.

Heavy Duty Registers & Grilles

Duct Velocity	Velocity Press.	300	400	500	600	700	800	1000	1200	1400	1600	
		0.006	0.010	0.016	0.022	0.031	0.040	0.062	0.090	0.122	0.160	
Nom. Size (in.)	Total	0°	0.008	0.014	0.022	0.032	0.045	0.058	0.091	0.131	0.182	0.238
	Press.	22.5°	0.010	0.019	0.029	0.043	0.058	0.077	0.119	0.172	0.236	0.307
	(w.g.)	45°	0.016	0.028	0.044	0.064	0.087	0.114	0.177	0.252	0.348	0.454
18 x 12 1.50 ft ²	Flow (CFM)		450	600	750	900	1050	1200	1500	1800	2100	2400
	0°	Throw	15-24-37	19-30-43	24-33-48	27-37-52	30-40-56	32-43-60	36-48-67	39-52-74	42-56-80	46-60-85
	Sound	--- / ---	--- / ---	--- / ---	--- / ---	16/18H	19/20N	28/28N	35/35N	40/40N	43/43N	
18 x 14 1.75 ft ²	Flow (CFM)		525	700	875	1050	1225	1400	1750	2100	2450	2800
	0°	Throw	16-26-40	20-33-46	26-36-52	30-40-56	32-43-61	34-47-65	38-52-73	42-57-80	45-60-86	49-65-91
	Sound	--- / ---	--- / ---	--- / ---	10/10H	17/19H	20/21N	29/29N	36/36N	41/41N	44/44N	
24 x 12 2.00 ft ²	Flow (CFM)		600	800	1000	1200	1400	1600	2000	2400	2800	3200
	0°	Throw	17-27-43	22-35-50	28-39-55	32-43-60	34-46-65	37-50-70	41-55-78	46-61-85	48-65-91	52-69-98
	Sound	--- / ---	--- / ---	--- / ---	11/11H	17/19H	21/22N	29/29N	37/37N	41/41N	45/45N	
18 x 18 2.25 ft ²	Flow (CFM)		675	900	1125	1350	1575	1800	2250	2700	3150	3600
	0°	Throw	17-29-46	23-37-52	29-41-58	34-45-64	37-49-69	39-52-74	44-58-82	48-64-89	52-68-97	55-74-104
	Sound	--- / ---	--- / ---	--- / ---	12/12H	18/20H	22/23N	30/30N	38/38N	42/42N	45/45N	
30 x 12 2.50 ft ²	Flow (CFM)		750	1000	1250	1500	1750	2000	2500	3000	3500	4000
	0°	Throw	18-31-48	25-39-55	31-43-62	36-48-67	39-52-73	41-55-78	46-62-87	51-68-94	53-72-103	58-77-110
	Sound	--- / ---	--- / ---	--- / ---	13/13H	19/21H	23/24N	31/31N	38/38N	42/42N	46/46N	
24 x 18 3.00 ft ²	Flow (CFM)		900	1200	1500	1800	2100	2400	3000	3600	4200	4800
	0°	Throw	20-34-52	27-43-60	34-48-68	39-52-74	42-56-80	45-60-86	50-68-94	55-74-104	58-79-112	64-85-120
	Sound	--- / ---	--- / ---	--- / ---	14/14H	20/22H	24/25N	32/32N	39/39N	43/43N	46/46N	
42 x 12 3.50 ft ²	Flow (CFM)		1050	1400	1750	2100	2450	2800	3500	4200	4900	5600
	0°	Throw	21-37-56	29-47-65	37-52-73	42-56-80	46-61-87	49-65-92	53-73-103	59-80-113	63-86-122	69-91-129
	Sound	--- / ---	--- / ---	--- / ---	15/15H	21/20H	25/24N	33/33N	40/38N	44/43N	47/47N	
30 x 18 3.75 ft ²	Flow (CFM)		1125	1500	1875	2250	2625	3000	3750	4500	5250	6000
	0°	Throw	22-38-58	30-48-68	38-52-76	44-58-83	47-63-89	50-68-96	55-76-106	61-84-116	65-88-124	71-94-134
	Sound	--- / ---	--- / ---	--- / ---	15/15H	21/20H	25/24N	33/33N	41/39N	45/44N	47/47N	
24 x 24 4.00 ft ²	Flow (CFM)		1200	1600	2000	2400	2800	3200	4000	4800	5600	6400
	0°	Throw	23-39-60	32-50-70	39-54-78	45-60-86	49-65-92	52-70-99	57-78-110	64-86-121	68-91-129	74-98-139
	Sound	--- / ---	--- / ---	--- / ---	16/16H	21/20H	26/25N	34/34N	41/39N	45/44N	47/47N	

Notes on

Performance Data:

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- Testing was conducted in isothermal conditions.
- Sound level values are based on a room absorption of 10db re 10⁻¹² watts.
- A "----" indicates an NC value less than 10.

Units of

Measure Used:

- Velocity is given in Feet per Minute (fpm).
- Pressure is given in inches of Water (w.g.)
- Flows are given in Cubic Feet per Minute (CFM).
- Throws are given in feet to terminal velocities of 150, 100 and 50 fpm, respectively.
- Sound data is given in both NC and RC. NC is first with RC second, separated by a slash.

Duct Velocity	Velocity Press.	300	400	500	600	700	800	1000	1200	1400	1600	
		0.006	0.010	0.016	0.022	0.031	0.040	0.062	0.090	0.122	0.160	
Nom. Size (in.)	Total	0°	0.008	0.014	0.022	0.032	0.045	0.058	0.091	0.131	0.238	
	Press.	22.5°	0.010	0.019	0.029	0.043	0.058	0.077	0.119	0.172	0.307	
	(w.g.)	45°	0.016	0.028	0.044	0.064	0.087	0.114	0.177	0.252	0.454	
36 x 18 4.50 ft ²	Flow (CFM)		1350	1800	2250	2700	3150	3600	4500	5400	6300	7200
	0°	Throw	24-42-64	33-52-74	42-57-83	48-64-91	52-68-98	54-74-105	61-83-117	67-90-127	72-96-138	78-104-147
		Sound	--- / ---	--- / ---	--- / ---	16/16H	22/21N	26/25N	35/34N	42/40N	45/44N	48/48N
22.5°	Throw	19-33-51	26-42-59	33-46-66	38-51-73	41-54-79	44-59-84	49-66-93	54-72-102	58-77-110	62-83-117	
	Sound	--- / ---	12/12H	16/18H	22/23H	29/28N	34/34N	43/43N	48/48N	52/52N	55/55N	
	45°	Throw	12-20-31	16-25-35	20-28-40	23-31-44	25-33-47	26-35-50	29-40-56	32-43-61	35-46-66	37-50-70
	Sound	17/17H	26/27N	34/33N	39/39N	44/44N	47/47N	54/54N	59/59N	62/62N	66/66N	
30 x 24 5.00 ft ²	Flow (CFM)		1500	2000	2500	3000	3500	4000	5000	6000	7000	8000
	0°	Throw	26-44-67	35-55-78	44-61-87	51-67-95	54-73-103	57-78-110	64-87-122	71-96-134	75-101-144	83-109-155
		Sound	--- / ---	--- / ---	--- / ---	17/17H	23/22N	27/26N	35/34N	42/40N	46/45N	49/49N
22.5°	Throw	21-35-54	28-44-62	35-49-70	40-54-76	44-58-82	46-62-88	51-70-98	57-77-107	60-81-115	66-87-124	
	Sound	--- / ---	12/12H	16/18H	23/24N	29/28N	34/34N	44/44N	48/48N	52/52N	56/56N	
	45°	Throw	13-21-32	17-27-37	21-29-42	24-32-46	26-35-49	28-37-53	31-42-59	34-46-64	36-49-69	40-52-74
	Sound	17/17H	26/27N	35/34N	40/40N	44/44N	48/48N	55/55N	59/59N	63/63N	66/66N	
42 x 18 5.25 ft ²	Flow (CFM)		1575	2100	2625	3150	3675	4200	5250	6300	7350	8400
	0°	Throw	26-45-69	36-56-81	45-62-89	52-69-98	55-74-105	58-80-114	66-89-125	73-98-138	78-104-149	85-112-158
		Sound	--- / ---	--- / ---	--- / ---	17/17H	23/22N	27/26N	35/34N	42/40N	46/45N	49/49N
22.5°	Throw	21-36-55	29-45-65	36-50-72	41-55-79	44-59-84	47-64-91	53-72-100	58-79-110	62-83-119	68-89-127	
	Sound	--- / ---	13/13H	17/19H	23/24N	29/28N	34/34N	44/44N	48/48N	52/52N	56/56N	
	45°	Throw	13-21-33	17-27-39	21-30-43	25-33-47	27-35-50	28-38-55	32-43-60	35-47-66	37-50-71	41-54-76
	Sound	18/18H	26/27N	35/34N	40/40N	44/44N	48/48N	55/55N	59/59N	63/63N	66/66N	
48 x 18 6.00 ft ²	Flow (CFM)		1800	2400	3000	3600	4200	4800	6000	7200	8400	9600
	0°	Throw	28-48-74	39-60-86	48-66-95	54-75-105	59-80-113	63-86-121	70-95-134	78-105-147	83-112-158	90-120-169
		Sound	--- / ---	--- / ---	--- / ---	18/18H	24/23N	28/25N	36/35N	43/41N	47/46N	49/49N
22.5°	Throw	23-38-59	31-48-68	38-53-76	44-59-84	47-64-90	51-68-96	56-76-107	62-84-117	66-89-127	72-96-135	
	Sound	--- / ---	13/13H	17/19H	23/24N	29/28N	35/35N	44/44N	49/49N	53/53N	57/57N	
	45°	Throw	14-23-35	19-29-41	23-32-46	26-35-50	28-38-54	30-41-58	34-46-64	37-50-70	40-54-76	43-57-81
	Sound	18/18H	27/28N	36/35N	40/40N	45/45N	48/48N	56/56N	60/60N	64/64N	67/67N	
30 x 30 6.25 ft ²	Flow (CFM)		1875	2500	3125	3750	4375	5000	6250	7500	8750	10000
	0°	Throw	29-50-76	40-62-87	50-68-98	56-75-108	61-82-115	64-87-123	72-97-137	80-107-151	85-115-162	92-122-173
		Sound	--- / ---	--- / ---	--- / ---	18/18H	24/23N	29/28N	36/35N	43/41N	47/46N	50/50N
22.5°	Throw	23-40-61	32-50-70	40-54-79	45-60-86	49-65-92	51-70-99	58-78-110	64-86-121	68-92-130	74-98-138	
	Sound	--- / ---	13/13H	17/19H	24/25N	30/29N	35/35N	44/44N	49/49N	53/53N	57/57N	
	45°	Throw	14-24-36	19-30-42	24-33-47	27-36-52	29-39-55	31-42-59	35-47-66	38-51-72	41-55-78	44-59-83
	Sound	18/18H	27/28N	36/35N	41/41N	45/45N	48/48N	56/56N	60/60N	64/64N	67/67N	
42 x 24 7.00 ft ²	Flow (CFM)		2100	2800	3500	4200	4900	5600	7000	8400	9800	11200
	0°	Throw	31-52-80	42-65-92	52-72-104	59-80-113	64-86-122	68-92-130	76-103-145	84-113-158	89-121-172	97-129-183
		Sound	--- / ---	--- / ---	--- / ---	19/19H	25/25N	29/29N	37/36N	44/42N	47/46N	50/50N
22.5°	Throw	25-41-64	33-52-74	41-58-83	47-64-90	51-68-97	54-74-104	61-82-116	67-90-127	72-96-138	78-103-146	
	Sound	--- / ---	13/13H	17/19H	24/25N	30/29N	35/35N	45/45N	49/49N	54/54N	57/57N	
	45°	Throw	15-25-38	20-31-44	25-35-50	28-38-54	31-41-58	33-44-63	36-49-70	40-54-76	43-58-83	47-62-88
	Sound	19/19H	28/29N	36/35N	41/41N	45/45N	49/49N	56/56N	61/61N	64/64N	68/68N	
36 x 30 7.50 ft ²	Flow (CFM)		2250	3000	3750	4500	5250	6000	7500	9000	10500	12000
	0°	Throw	32-53-83	44-67-96	53-75-107	61-82-117	67-88-126	71-95-135	79-107-150	87-118-164	92-124-178	101-133-190
		Sound	--- / ---	--- / ---	--- / ---	19/19H	25/25N	30/30N	37/36N	44/42N	47/46N	50/50N
22.5°	Throw	26-43-66	35-54-77	43-60-86	49-65-93	54-71-101	57-76-108	63-86-120	70-94-131	74-100-142	81-107-152	
	Sound	--- / ---	13/13H	18/20H	24/25N	30/29N	36/36N	45/45N	50/50N	54/54N	57/57N	
	45°	Throw	15-26-40	21-32-46	26-36-51	29-39-56	32-42-61	34-46-65	38-51-72	42-56-79	44-60	85-49-64-91
	Sound	19/19H	28/29N	37/36N	41/41N	45/45N	49/49N	56/56N	61/61N	64/64N	68/68N	
48 x 24 8.00 ft ²	Flow (CFM)		2400	3200	4000	4800	5600	6400	8000	9600	11200	12800
	0°	Throw	33-55-86	45-69-98	55-77-110	63-85-121	69-91-129	73-99-139	82-110-155	89-122-169	95-129-184	104-138-196
		Sound	--- / ---	--- / ---	--- / ---	20/20H	26/26N	30/30N	38/37N	45/43N	48/47N	51/51N
22.5°	Throw	26-44-68	36-55-79	44-61-88	51-68-96	55-73-103	58-79-111	65-88-124	72-97-135	76-103-147	83-110-157	
	Sound	--- / ---	14/14H	18/20H	24/25N	30/29N	36/36N	45/45N	50/50N	54/54N	58/58N	
	45°	Throw	16-27-41	21-33-47	27-37-53	30-41-58	33-44-62	35-48-67	39-53-74	43-58-81	46-62-88	50-66-94
	Sound	19/19H	28/27N	37/36N	42/42N	46/46N	49/49N	57/57N	61/61N	65/65N	68/68N	
42 x 30 8.75 ft ²	Flow (CFM)		2625	3500	4375	5250	6125	7000	8750	10500	12250	14000
	0°	Throw	34-58-89	47-73-103	58-81-115	67-88-125	72-96-136	77-103-146	86-116-162	94-127-178	100-135-191	109-145-206
		Sound	--- / ---	--- / ---	--- / ---	20/20H	26/26N	31/31N	38/37N	45/43N	48/47N	51/51N
22.5°	Throw	27-47-72	37-58-82	47-65-92	54-71-100	58-77-109	61-82-117	68-93-130	75-102-142	80-108-153	87-116-165	
	Sound	--- / ---	14/14H	18/20H	25/26N	31/30N	36/36N	46/46N	50/50N	55/55N	58/58N	
	45°	Throw	16-28-43	22-35-49	28-39-55	32-42-60	35-46-65	37-49-70	41-56-78	45-61-85	48-65-92	52-70-99
	Sound	20/20H	29/30N	37/36N	42/42N	46/48N	49/49N	57/57N	62/62N	65/65N	68/68N	

Notes on Performance Data:

- Performance data is based on tests conducted in accordance with ANSI/ASHRAE Standard 70-1991.
- Actual Performance in the field may vary.
- Testing was conducted in isothermal conditions.
- Sound level values are based on a room absorption of 10db re 10⁻¹² watts.
- A "----" indicates an NC value less than 10.

Units of Measure Used:

- Velocity is given in Feet per Minute (fpm).
- Pressure is given in inches of Water (w.g.)
- Flows are given in Cubic Feet per Minute (CFM).
- Throws are given in feet to terminal velocities of 150, 100 and 50 fpm, respectively.
- Sound data is given in both NC and RC. NC is first with RC second, separated by a slash.

Duct Velocity		300	400	500	600	700	800	1000	1200	1400	1600	
Velocity	Press.	0.006	0.010	0.016	0.022	0.031	0.040	0.062	0.090	0.122	0.160	
Nom. Size (in.)	Total	0°	0.008	0.014	0.022	0.032	0.045	0.058	0.091	0.131	0.238	
	Press.	22.5°	0.010	0.019	0.029	0.043	0.058	0.077	0.119	0.172	0.307	
	(w.g.)	45°	0.016	0.028	0.044	0.064	0.087	0.114	0.177	0.252	0.454	
Flow (CFM)			2700	3600	4500	5400	6300	7200	9000	10800	14400	
36 x 36 9.00 ft ²	0°	Throw	35-59-90	48-74-105	59-82-117	67-89-128	73-97-138	78-105-148	87-118-165	95-128-180	101-137-195	110-147-208
		Sound	--- / ---	--- / ---	--- / ---	20/20H	26/26N	31/31N	38/37N	45/43N	48/47N	51/51N
	22.5°	Throw	28-47-72	38-59-84	47-65-93	54-72-103	58-78-110	62-84-118	69-94-13	76-103-144	81-110-156	88-117-166
		Sound	--- / ---	14/14H	18/20H	25/26N	31/30N	36/36N	46/46N	50/50N	55/55N	59/59N
	45°	Throw	17-28-43	23-35-50	28-39-56	32-43-62	35-47-66	37-50-71	42-46-79	46-62-86	49-66-94	53-70-100
		Sound	20/20H	29/30N	37/36N	42/42N	46/46N	50/50N	57/57N	62/62N	65/65N	68/68N
Flow (CFM)			3000	4000	5000	6000	7000	8000	1000	12000	14000	
48 x 30 10.00 ft ²	0°	Throw	37-62-95	50-78-111	62-86-123	71-95-134	77-102-146	82-110-156	91-123-173	100-135-191	107-144-205	117-154-220
		Sound	--- / ---	--- / ---	--- / ---	21/21H	27/26N	32/31N	39/38N	46/44N	49/48N	52/52N
	22.5°	Throw	30-50-76	40-62-89	50-68-99	57-76-107	61-82-117	65-88-125	73-99-138	80-108-152	86-115-164	93-123-176
		Sound	--- / ---	14/14H	19/21H	25/26N	31/30N	36/36N	46/46N	51/51N	55/55N	59/59N
	45°	Throw	18-30-46	24-37-53	30-41-59	34-46-64	37-49-70	39-53-75	44-59-83	48-65-91	51-69-98	56-74-105
		Sound	20/20H	29/30N	38/37N	42/42N	46/46N	50/50N	57/57N	62/62N	66/66N	69/69N
Flow (CFM)			3150	4200	5250	6300	7350	8400	10500	12600	16800	
42 x 36 10.50 ft ²	0°	Throw	38-63-97	52-80-113	63-87-126	73-97-138	79-105-150	84-114-160	93-126-177	103-139-195	110-148-211	120-158-225
		Sound	--- / ---	--- / ---	--- / ---	21/21H	27/26N	32/31N	39/38N	46/44N	49/48N	52/52N
	22.5°	Throw	30-51-78	41-64-90	51-70-101	58-78-110	63-84-120	67-91-128	75-101-142	82-111-156	88-118-169	96-127-180
		Sound	--- / ---	14/14H	19/21H	25/26N	31/30N	36/36N	46/46N	51/51N	55/55N	59/59N
	45°	Throw	18-30-47	25-38-54	30-42-61	35-47-66	38-50-72	40-55-77	45-61-85	49-67-94	53-71-101	57-76-108
		Sound	20/20H	29/30N	38/37N	42/42N	46/46N	50/50N	58/58N	62/62N	66/68N	69/69N
Flow (CFM)			3333	4444	5556	6667	7778	8889	11111	13333	15556	
40 x 40 11.11 ft ²	0°	Throw	39-65-100	52-82-117	65-90-130	75-100-143	81-109-155	86-117-165	96-130-182	106-144-201	114-153-216	123-162-230
		Sound	--- / ---	--- / ---	--- / ---	21/21H	28/27N	32/31N	39/38N	46/44N	49/48N	52/52N
	22.5°	Throw	31-52-80	42-65-93	52-72-104	60-80-114	65-87-124	68-93-132	77-104-145	85-115-161	91-122-173	99-130-184
		Sound	--- / ---	14/14H	19/21H	25/26N	31/30N	36/36N	47/47N	51/51N	56/56N	59/59N
	45°	Throw	19-31-48	25-39-56	31-43-63	36-48-69	39-52-74	41-56-79	46-63-87	51-69-97	55-73-104	59-78-111
		Sound	20/20H	30/31N	38/37N	43/43N	46/46N	50/50N	58/58N	63/63N	66/66N	69/69N
Flow (CFM)			3600	4800	6000	7200	8400	9600	12000	14400	19200	
48 x 36 12.00 ft ²	0°	Throw	41-68-104	54-86-121	68-94-135	78-104-148	85-113-159	89-121-171	100-135-190	111-149-208	118-158-225	127-169-240
		Sound	--- / ---	--- / ---	--- / ---	22/22H	28/27N	33/32N	40/39N	47/45N	49/48N	53/53N
	22.5°	Throw	33-54-83	44-68-96	54-75-108	62-83-118	68-90-128	72-96-137	80-108-152	89-119-166	94-127-180	102-135-192
		Sound	--- / ---	15/15H	19/21H	26/27N	31/30N	37/37N	47/47N	51/51N	56/56N	60/60N
	45°	Throw	20-33-50	26-41-58	33-45-65	37-50-71	41-54-77	43-58-82	48-65-91	53-71-100	56-76-108	61-81-115
		Sound	21/21H	30/31N	38/37N	43/43N	47/47N	51/51N	58/58N	63/63N	66/66N	70/70N
Flow (CFM)			3675	4900	6125	7350	8575	9800	12250	14700	19600	
42 x 42 12.25 ft ²	0°	Throw	41-69-105	55-87-122	69-95-137	79-105-149	86-114-161	90-123-173	101-138-191	112-151-210	120-160-226	129-172-242
		Sound	--- / ---	--- / ---	--- / ---	22/22H	28/27N	33/32N	40/39N	47/45N	49/48N	53/53N
	22.5°	Throw	33-55-84	44-69-97	55-76-110	63-84-119	68-91-129	72-99-138	81-110-153	89-121-168	92-128-181	103-138-194
		Sound	--- / ---	15/15H	19/21H	26/27N	31/30N	37/37N	47/47N	51/51N	56/56N	60/60N
	45°	Throw	20-33-50	27-42-58	33-46-66	38-50-71	41-55-77	43-59-83	49-66-92	54-72-101	57-77-109	62-83-116
		Sound	21/21H	30/31N	38/37N	43/43N	47/47N	51/51N	58/58N	63/63N	66/66N	70/70N
Flow (CFM)			4200	5600	7000	8400	9800	11200	1400	16800	19600	
48 x 42 14.00 ft ²	0°	Throw	44-74-113	59-92-130	74-102-146	85-113-159	91-122-173	97-130-185	108-146-205	120-160-225	126-171-242	138-183-260
		Sound	--- / ---	--- / ---	--- / ---	23/23H	29/28N	33/32N	41/40N	47/45N	50/49N	54/54N
	22.5°	Throw	35-59-90	47-74-104	59-82-117	68-90-128	73-97-138	78-104-148	86-117-164	96-128-180	101-137-194	110-146-208
		Sound	--- / ---	15/15H	19/21H	26/27N	32/31N	37/37N	47/47N	52/52N	57/57N	60/60N
	45°	Throw	21-35-54	28-44-63	35-49-70	41-54-77	44-58-83	47-63-89	52-70-98	57-77-108	61-82-116	66-88-125
		Sound	21/21H	30/31N	39/38N	43/43N	47/47N	51/51N	59/59N	64/64N	67/67N	70/70N
Flow (CFM)			4600	6133	7667	9200	10733	12267	15333	18400	24533	
48 x 46 15.33 ft ²	0°	Throw	46-77-119	62-97-137	77-107-154	88-118-167	95-127-181	101-137-192	113-154-214	124-168-234	132-179-254	144-191-271
		Sound	--- / ---	--- / ---	--- / ---	23/23H	30/29N	34/33N	41/40N	48/46N	50/49N	54/54N
	22.5°	Throw	37-61-95	50-78-110	61-86-123	71-94-134	76-102-145	81-110-154	90-123-171	100-135-187	106-143-203	115-153-217
		Sound	--- / ---	15/15H	20/22H	26/27N	32/31N	37/37N	48/48N	52/52N	57/57N	61/61N
	45°	Throw	22-37-57	30-47-66	37-51-74	42-56-80	46-61-87	49-66-92	54-74-103	60-81-112	63-86-122	69-92-130
		Sound	21/21H	31/32N	39/38N	43/43N	47/47N	51/51N	59/59N	64/64N	68/68N	71/71N
Flow (CFM)			4800	6400	8000	9600	11200	12800	16000	19200	25600	
48 x 48 16.00 ft ²	0°	Throw	47-79-121	63-98-139	79-109-156	89-121-170	97-130-185	103-140-197	115-156-219	127-172-239	135-183-259	148-195-278
		Sound	--- / ---	--- / ---	--- / ---	24/24H	30/29N	34/33N	41/40N	48/46N	50/49N	54/54N
	22.5°	Throw	37-63-96	51-79-111	63-87-124	72-96-136	78-104-148	82-112-158	92-125-175	102-138-191	108-146-207	118-156-222
		Sound	--- / ---	15/15H	20/22H	26/27N	32/31N	38/38N	48/48N	52/52N	57/57N	61/61N
	45°	Throw	22-38-58	30-47-67	38-52-75	43-58-82	47-63-89	49-67-95	55-75-105	61-83-115	65-88-124	71-94-133
		Sound	22/22H	31/32N	39/38N	44/44N	47/47N	52/52N	59/59N	65/65N	68/68N	71/71N

Notes on

Performance Data:

- Performance data is based on tests conducted in accordance with ANSI/ASHRAE Standard 70-1991.
- Actual Performance in the field may vary.
- Testing was conducted in isothermal conditions.
- Sound level values are based on a room absorption of 10db re 10⁻¹² watts.
- A "----" indicates an NC value less than 10.

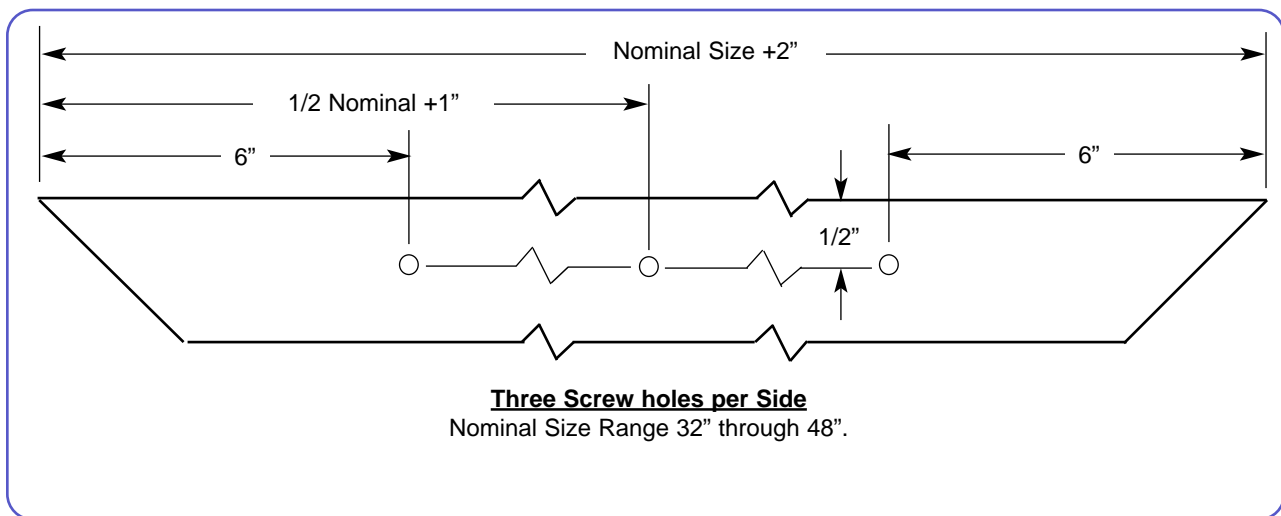
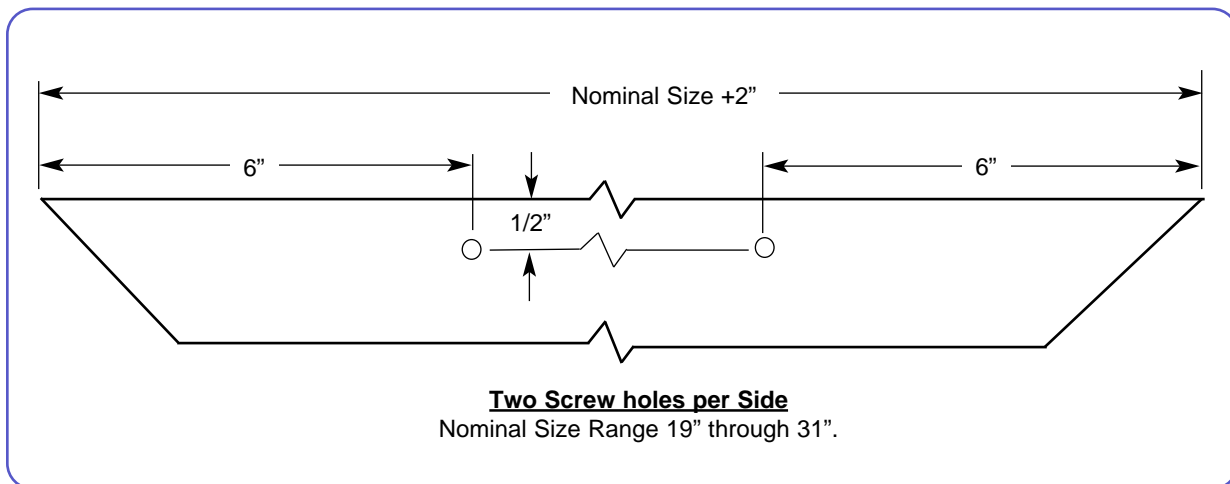
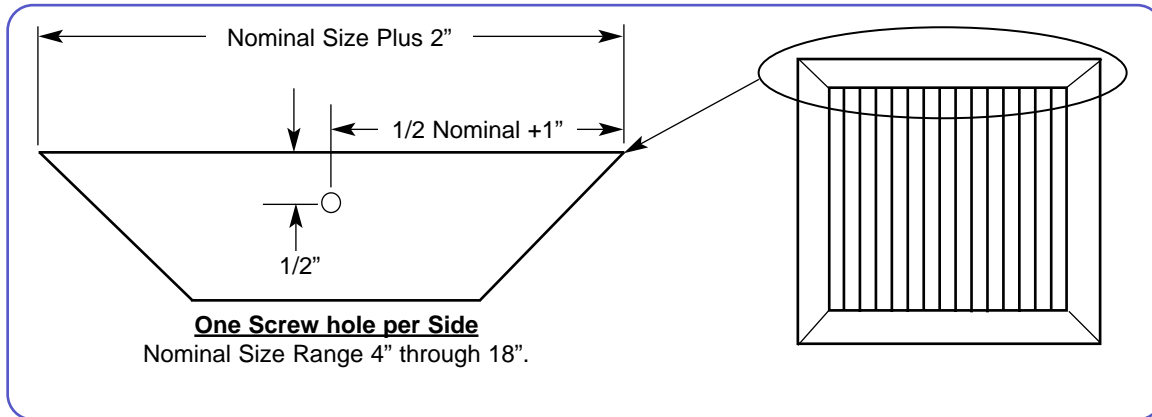
Units of

Measure Used:

- Velocity is given in Feet per Minute (fpm).
- Pressure is given in inches of Water (w.g.)
- Flows are given in Cubic Feet per Minute (CFM).
- Throws are given in feet to terminal velocities of 150, 100 and 50 fpm, respectively.
- Sound data is given in both NC and RC. NC is first with RC second, separated by a slash.

Screw Hole Location on Steel Registers and Grilles

- Screw holes on the face are standard on Registers and Grilles.
- Steel R&G can be ordered without screw holes, for use with concealed hangers.
- The screw hole is 5/32" in diameter, counter sunk.
- Each Register or Grille is provided with the appropriate number of screws as standard.
- The standard screw is a #8 x 1-1/4" counter sunk screw, with a flat blade head.
- Tamper-proof screws are available as an option.

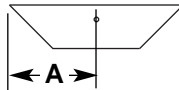


Screw Hole Location for the following Registers & Grilles

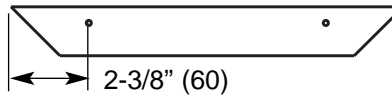
40° Return RSHA, RTHA
 0° Return RSEA, RTEA

Hole location for long side (if grille is rectangular) or opposite sides (if grille is square).

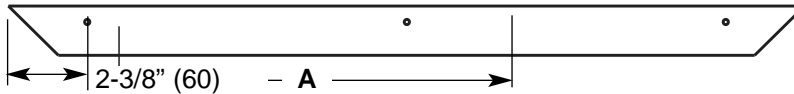
Nominal Size ->	4" (102)	6" (152)	8" (203)
Dim. "A" ->	3" (76)	4" (102)	5" (127)



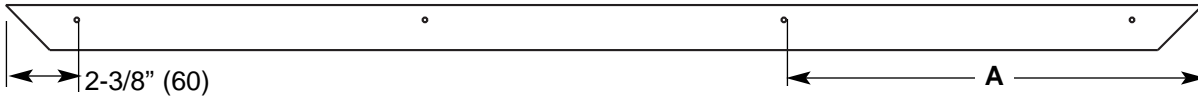
Nominal Size ->	10" (254)	12" (305)	14" (356)	16" (406)	18" (457)	20" (508)
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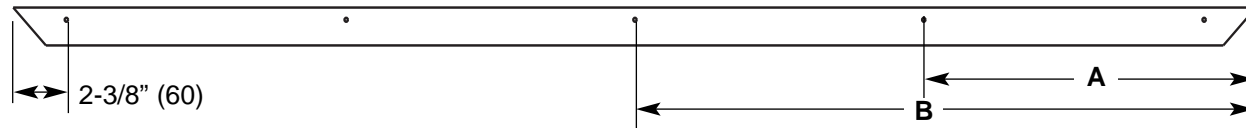
Nominal Size ->	22" (559)	24" (610)	26" (660)	28" (711)	30" (762)	32" (813)	34" (864)	36" (914)
Dim. "A" ->	12" (305)	13" (330)	14" (356)	15" (381)	16" (406)	17" (432)	18" (457)	19" (483)



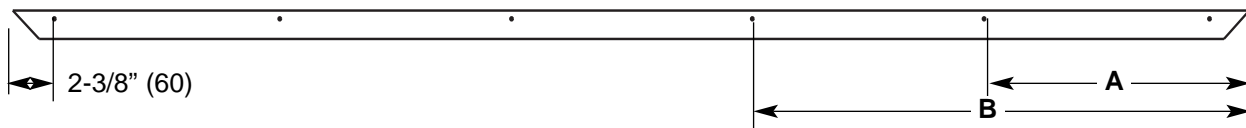
Nominal Size ->	38" (965)	40" (1016)	42" (1067)	44" (1118)	46" (1168)	48" (1219)	50" (1270)	52" (1321)
Dim. "A" ->	14" (356)	15" (381)	15 1/2" (394)	16" (406)	17" (432)	17 1/2" (445)	18" (457)	19" (483)



Nominal Size ->	54" (1372)	56" (1422)	58" (1473)	60" (1524)	62" (1575)	64" (1626)	66" (1676)	68" (1727)
Dim. "A" ->	15" (381)	15 1/2" (394)	16" (406)	16 1/2" (419)	17" (432)	17 1/2" (445)	18" (457)	18 1/2" (470)
Dim. "B" ->	28" (711)	29" (737)	30" (762)	31" (787)	32" (813)	33" (838)	34" (864)	35" (889)



Nominal Size ->	70" (1778)	72" (1829)
Dim. "A" ->	15 1/2" (394)	16" (406)
Dim. "B" ->	29" (737)	30" (762)

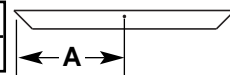


Hole Location for other sides.

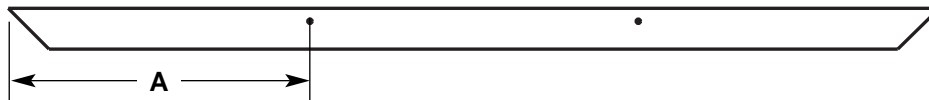
Nominal Size ->	4" (102)	6" (152)	8" (203)	10" (254)	12" (305)	14" (356)
	No Screw Holes					



Nominal Size ->	16" (406)	18" (457)	20" (508)	22" (559)	24" (610)	26" (660)	28" (711)	30" (762)
Dim. "A" ->	9" (229)	10" (254)	11" (279)	12" (305)	13" (330)	14" (356)	15" (381)	16" (406)



Nominal Size ->	32" (813)	34" (864)	36" (914)	38" (965)	40" (1016)	42" (1067)	44" (1118)	46" (1168)	48" (1219)
Dim. "A" ->	11" (279)	12" (305)	13" (330)	13" (330)	14" (356)	15" (381)	16" (406)	16" (406)	17" (432)



Notes:

- Standard screws are #8 x 1-1/4" (32) Phillips head sheet metal screws.
- Holes are countersunk for flush appearance.
- Hole center is placed 1/2" (13) in from outside edge.
- Metric (SI) dimensions are given in millimeters.

Panel for T-bar Ceiling (Option T)

Application

This option is used when the grille is to mount in a suspended ceiling, but is too small to lay in by itself. The grille is set in a panel that will lay into the appropriate size and type of ceiling.

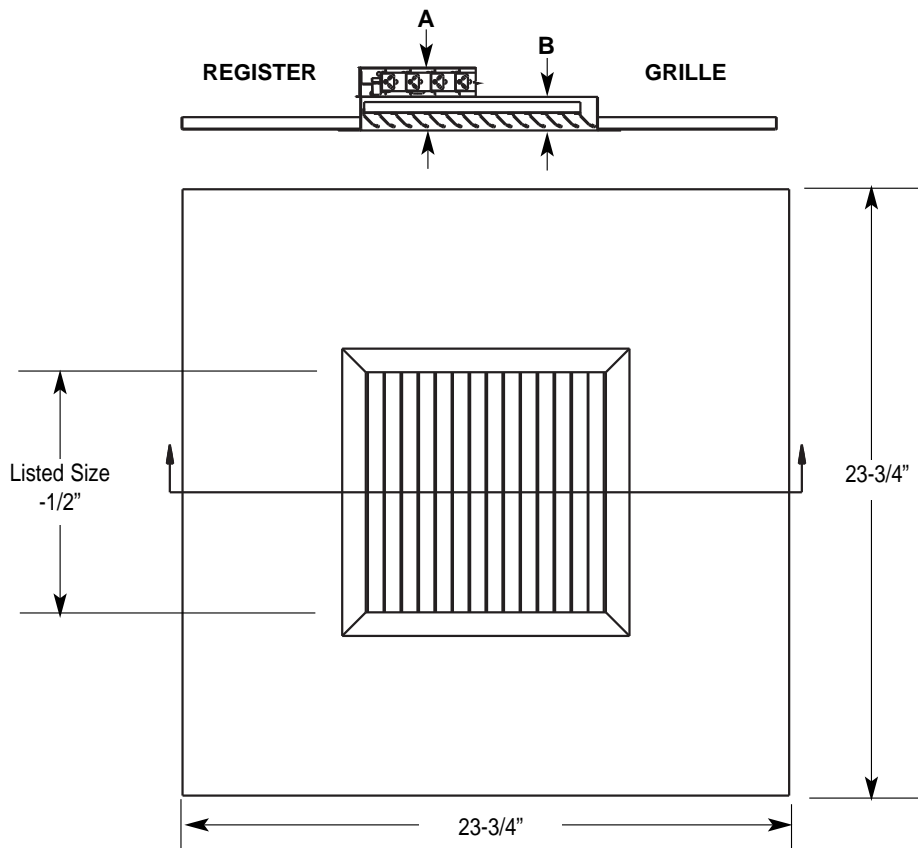
Features

The largest grille in this catalog that will fit in the following T-bar grid sizes is as follows:

T-bar Grid	Maximum Grille Nominal Size
12" x 12"	8" x 8"
12" x 24"	8" x 20"
24" x 24"	20" x 20"
24" x 48"	20" x 44" (Louvered and Perforated Face Returns)
24" x 48"	20" x 36" (Single and Double Deflection Supplies, and 0° and 45° Returns)

Sizing Note:

Carnes offers all steel, stainless steel and B-series aluminum grilles in a nominal 21-3/4" x 21-3/4" size that lays into standard 15/16" flat face T-bar with no need for Option T.



Sheared Frame for T-bar (Option S)

Application

This option is used when the grille is sized to lay into a suspended ceiling, and the design requires the largest possible grille for the opening.

Features

When this option is specified on the following sizes, Carnes shears the grille frame down to the following face outside diameters for layin ceilings.

Grille Nominal Size	Normal Face O. D.	Sheared Face O. D.
10" x 10"	12" x 12"	11-3/4" x 11-3/4"
10" x 22"	12" x 24"	11-3/4" x 23-3/4"
22" x 22"	24" x 24"	23-3/4" x 23-3/4"
22" x 46"	24" x 48"	23-3/4" x 47-3/4"

(Note: This size is only available on steel and B-series aluminum louvered and perforated face returns)

Sizing Note:

Carnes offers all steel, stainless steel and B-series aluminum grilles in a nominal 21-3/4" x 21-3/4" size that lays into standard 15/16" flat face T-bar with no need for Option S.

Heavy Duty Registers & Grilles

No Screw Holes (Option N)

Application

This option is used when the grille is sized to lay into a suspended ceiling, and screw holes are therefore not needed, or when the installation requires custom placement of the screw holes.

Features

When this option is specified, Carnes manufactures the grille with no screw holes in the face.

Tamper-Proof Screws (Option B)

Application

This option is used to prevent casual access to the duct.

Features

- The screw used is Holt-Head Type A tamper-proof screw, size #8 x 1-1/4".
- Hand drivers, service drivers and power driver tips are available from Carnes.

Z-Clips for Spline Ceiling (Option Z)

Application

This is used to mount certain grille sizes in concealed spline ceilings.

Features

The option is applied to any of the steel, stainless steel and B-series aluminum grilles in the following nominal sizes to mount in the following concealed spline ceiling sizes:

<u>Grille Nominal Size</u>	<u>Spline Ceiling Size</u>
10" x 10"	12" x 12"
10" x 22"	12" x 24"
22" x 22"	24" x 24"

Sizing Note:

- Screw holes are automatically deleted when Option Z is specified.
- For grille sizes smaller than shown, custom mounting panels are available on request.

W-Clips for Snap-in Metal Pan Ceiling (Option U)

Application

This option is used to mount certain grille sizes in snap-in metal pan ceilings.

Features

This option is applied to any of the steel, stainless steel and B-series aluminum grilles in the following nominal sizes to mount in the following snap-in metal pan ceilings.

<u>Grille Nominal Size</u>	<u>Snap-in Metal Pan Ceiling Size</u>
22" x 22"	24" x 24"
10" x 22"	12" x 24"

- Screw holes are automatically deleted when Option U is specified.
- For grille sizes smaller than shown, custom mounting panels are available on request.

NOTES:

Debris Screen (Option 1)

Application

This option is used to prevent insects from getting through the grille, either into the duct or into the room.

Features

- The material used is 1814 insect screen.
- This option is available on both grilles and registers.

Concealed Hangers (Option C)

Application

This option is used to provide concealed mounting and tools-free duct access.

Features

- It requires that the duct be made 1" larger than the nominal grille size.
- If the duct is already installed, as in retro-fits, sizing the grille down by 1" will accomplish the same thing.
- Screw holes are automatically deleted when Option C is specified.
- A spring is factory-mounted on the back of the flange, and this spring snaps into a mounting bracket that is field mounted in the duct opening.

Pull Cord Damper Operator (Options P and A)

Application

This option allows balancing when the damper is mounted upstream of the grille, and the only access to the damper is through the grille.

Features

- Heavy duty cord is permanently mounted to damper.
- Cord ends are tucked behind grille face after balancing.
- Option P is used when the damper is mounted parallel to the floor.
- Option A is used when the damper is mounted perpendicular to the floor.

Lever Operator (Option V)

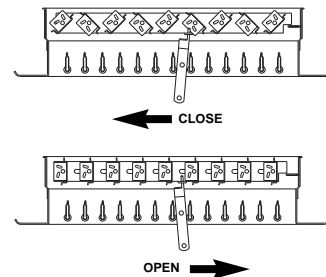
Application

This option allows tools-free balancing from the face of the register.

Features

- Lever is permanently mounted to register.
- Option V is available on these models:

	<u>Steel</u>	<u>Aluminum</u>	<u>Stainless Steel</u>
Single Deflection Supply	RTSB	RNSM	RMSB
Double Deflection Supply	RTDB	RNDM	RMDB
0° Fixed Return	RTRB	RNRM	RMRB
45° Fixed Return	RTAB	RNAM	RMAB



Fusible Link for Register (Option F)

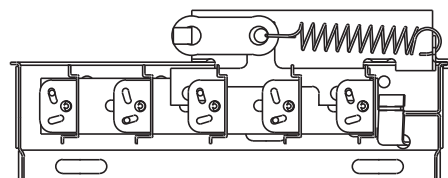
Application

Fusible links are general used in hazardous locations to prevent the possible spread of fire or reduce updrafts in case of fire. They are not UL-listed as fire dampers.

Features

- The link melts at approximately 160° Fahrenheit, activating a spring which pulls the damper closed.
- A link is mounted to each damper in a multi-damper assembly.
- The link does not interfere with the normal setting of the damper, but requires one inch of added depth in the duct.

Square/Rectangular Damper Model RXEA shown with Fusible Link installed.



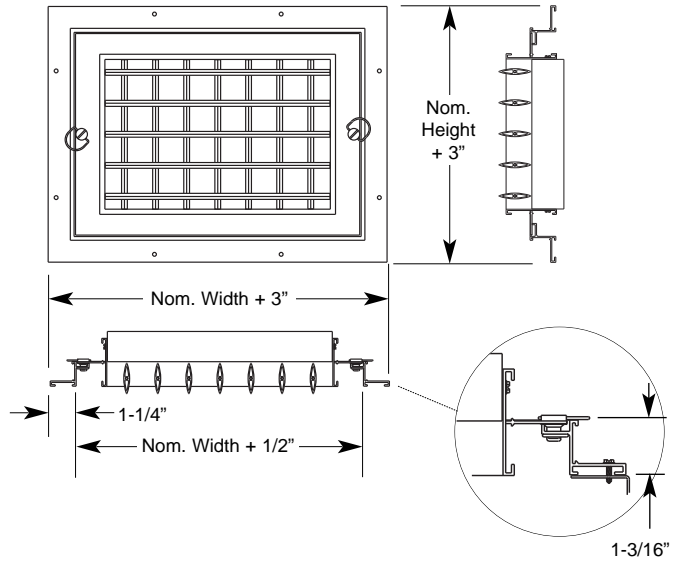
Option "M" for 1-1/2" Double Deflection
Supply Grille Model R&G

Application:

Use with the Double Deflection 1-1/2" Supply Grille when frequent or regular removal is required, either for cleaning or periodic alteration of the discharge.

Standard Features:

- All extruded aluminum construction
- Grille is held to frame by 1/4-turn fasteners.
- Standard finish is #20 mill finish.



NOTES: