Registers for spiral ducts RGS-3

General

Supply or exhaust registers shall be Lindab's RGS-3 for direct mounting on spiral ducts of sizes shown on the plans or outlet schedule.

The register is to be mounted without the use of a rectangular register tap. The top and bottom flanges are to meet flush with the spiral duct wall regardless of duct diameter. End caps shall be provided that conform to the varying duct diameter.

Materials

The register shall be manufactured of 22 gauge galvanized steel without further surface treatment. Welds or other surface discolorations on the register are unacceptable.

Construction

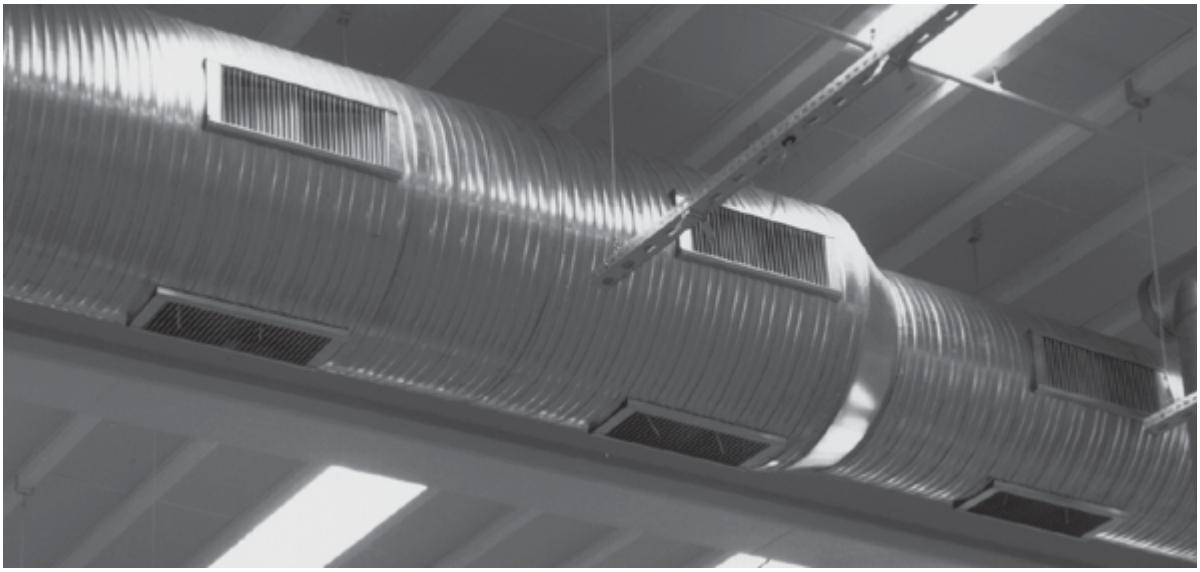
The register shall have double deflection adjustable blades with the front blades parallel to the short dimension of the register. Blades shall be placed on 3/4" centers and shall have steel friction pivots on both ends to allow for individual blade adjustment without loosening or rattling. Screw holes shall be countersunk for a flush, neat appearance.

Damper

The volume damper shall be of the single blade type manufactured from 22 gauge electro-galvanized steel. Volume damper shall be operable from the face of the register via a volume control rod. Notched rod shall be fixed in place by a tension lock located at the front of the register.

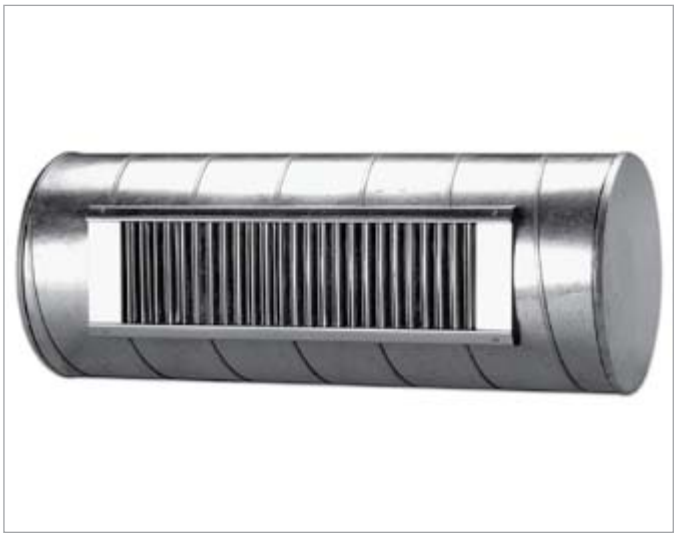
Performance

Performance of register shall be as per manufacturer's cataloged data. Manufacturers whose registers utilize a rectangular register tap to adapt to use with spiral duct shall submit correction factors for their cataloged data.



Registers for spiral ducts

RGS-3



Description

The RGS-3 is a supply/return register with adjustable double deflection blades and a volume damper designed specifically for direct mounting on a spiral duct. The use of rectangular register taps are not required.

The register is designed in such a way that the flanges always meet flush to the duct regardless of the duct diameter. The RGS-3 comes equipped with end caps and gasketing material around the neck of the register. This prevents air leakage. The RGS-3 is manufactured from galvanized sheet steel and is assembled without the use of welding. This allows the register to be used without further surface treatment and gives it the same finish as the duct.

Materials and finish

Register: galvanized sheet steel
Damper: electro-galvanized sheet steel

Maintenance

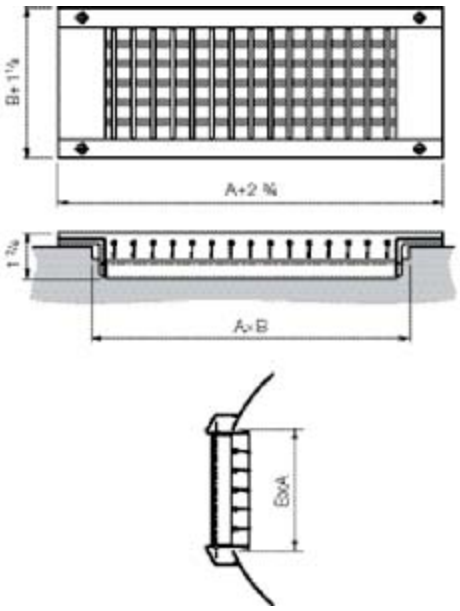
The grille should be removed to gain access to the duct.

Order example

RGS-3 13 3

Product
Length (A)
Width (B)

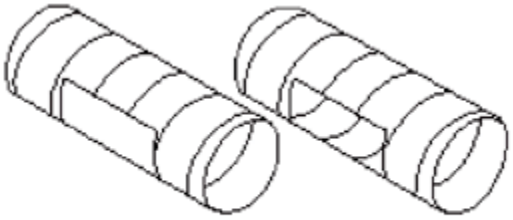
Dimensions



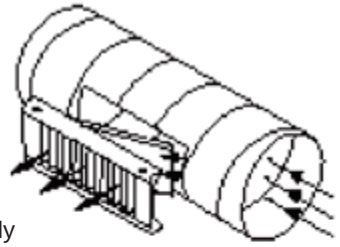
Register nom. size (in)	Min. duct diameter (in)	Free area (ft^2)	Duct opening A x B (in)	Weight (lb)
13 ×3	6	0.18	12 3/4 × 3	2.4
17 ×3	6	0.25	16 3/4 × 3	3.1
21 ×3	6	0.30	20 5/8 × 3	3.7
25 ×3	6	0.36	24 5/8 × 3	4.2
33 ×3	6	0.48	32 1/2 × 3	5.3
41 ×3	8	0.60	40 3/8 × 3	6.4
49 ×3	8	0.73	48 1/4 × 3	7.1
13 ×6	12	0.36	12 3/4 × 6	3.1
17 ×6	12	0.48	16 3/4 × 6	4.2
21 ×6	12	0.60	20 5/8 × 6	5.1
25 ×6	12	0.73	24 5/8 × 6	5.7
33 ×6	12	1.00	32 1/2 × 6	7.7
41 ×6	12	1.20	40 3/8 × 6	8.6
49 ×6	12	1.46	48 1/4 × 6	9.7
13 ×9	20	0.60	12 3/4 × 8 7/8	4.8
17 ×9	20	0.80	16 3/4 × 8 7/8	6.6
21 ×9	20	1.00	20 5/8 × 8 7/8	7.5
25 ×9	20	1.20	24 5/8 × 8 7/8	8.2
33 ×9	20	1.60	32 1/2 × 8 7/8	11.2
41 ×9	20	2.00	40 3/8 × 8 7/8	12.8
49 ×9	20	2.41	48 1/4 × 8 7/8	13.9

Registers for spiral ducts RGS-3

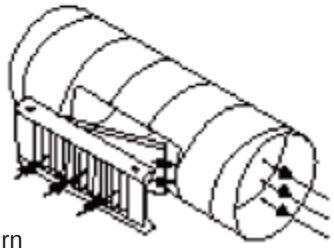
Mounting



Remove the protective backing from template. Position the template on the duct and press firmly. Cut along the edges of the template, following the edges as closely as possible and remove the ”cut-out”.

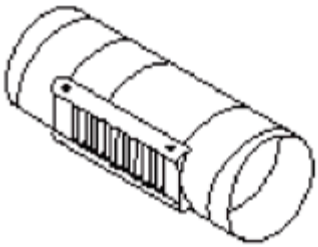


Supply



Return

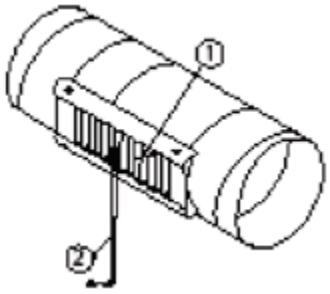
Insert the air extractor control rod through the tension lock on the face of the register. Position the RGS-3 register in the opening, making certain that the gasket material remains in place. Check that register has been installed correctly in relation to the direction of air flow.



Secure the RGS-3 with screws (provided). Adjust vanes as necessary.

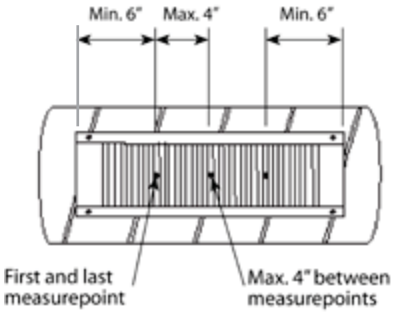
Balancing

① Air control extractor rod
② Probe



Mean velocity, V_o
Measure velocity (V_n) in n number of points. First and last measurements is taken 6” from end of register.
Measurements are spread equally between first and last measurement.

Flowrate [cfm] = F x V_o
V_o Mean velocity [fpm]
F Flow factor



n = number of measurepoints

$$V_0 = \frac{\sum_{n=1}^{n} V_n}{n}$$

Dim. A	n
13"	2
17"	3
21"	3
25"	4
33"	5
41"	7
49"	7

Dim. A (in)	Dim. B					
	3”		6”		9”	
	Sup.	Ret.	Sup.	Ret.	Sup.	Ret.
13	0.18	0.135	0.36	0.27	0.60	0.45
17	0.25	0.19	0.48	0.36	0.80	0.60
21	0.30	0.23	0.60	0.45	1.00	0.75
25	0.36	0.27	0.73	0.55	1.20	0.90
33	0.48	0.36	1.00	0.75	1.60	1.20
41	0.60	0.48	1.20	0.90	2.00	1.50
49	0.73	0.55	1.46	1.10	2.41	1.18

Registers for spiral ducts RGS-3

SELECTION CHART SUPPLY AND RETURN

Core velocity (fpm)			300	400	500	600	700	800	1000	1200
Velocity Pressure			0.006	0.010	0.016	0.023	0.031	0.040	0.063	0.090
Total Pressure		0°	0.011	0.019	0.028	0.039	0.052	0.067	0.101	0.141
		22.5°	0.012	0.021	0.032	0.044	0.059	0.075	0.114	0.159
Size		45°	0.019	0.033	0.049	0.069	0.092	0.117	0.177	0.248
A_c 0.18 (ft^2)	cfm		54	72	90	108	126	144	180	216
13 x 3	NC	0°	-	-	-	14	20	25	33	40
	Throw ft	0°	3 4 7	6 7 12	8 9 18	10 12 23	12 14 27	14 17 32	17 21 40	19 25 47
		22.5°	3 2 5	5 5 10	6 7 14	8 10 18	10 11 22	11 13 25	13 17 32	15 20 37
		45°	2 2 3	3 3 6	4 5 9	5 6 11	6 7 14	7 8 16	8 10 20	9 12 23
A_c 0.24 (ft^2)	cfm		72	96	120	144	168	192	240	288
17 x 3	NC	0°	-	-	12	18	24	29	37	44
	Throw ft	0°	3 5 9	6 8 15	8 11 20	10 13 25	12 16 30	14 18 34	17 22 42	19 26 49
		22.5°	3 4 7	5 6 12	7 8 16	8 11 20	10 13 24	11 14 27	14 18 34	15 21 39
		45°	2 2 5	3 4 7	4 5 10	5 7 13	6 8 15	7 9 17	8 11 21	10 13 25
A_c 0.30 (ft^2)	cfm		90	120	150	180	210	240	300	360
21 x 3	NC	0°	-	-	14	21	26	31	39	46
	Throw ft	0°	3 6 11	6 9 17	8 12 22	11 14 27	12 17 32	14 19 36	17 23 44	19 27 51
		22.5°	3 5 9	5 7 13	7 9 17	8 11 21	10 13 25	11 15 29	14 18 35	15 21 41
		45°	2 3 6	3 4 8	4 6 11	5 7 13	6 8 16	7 9 18	9 12 22	10 13 25
A_c 0.36 (ft^2)	cfm		108	144	180	216	252	288	360	432
25 x 3,	NC	0°	-	-	14	21	26	31	39	46
13 x 6	Throw ft	0°	4 7 13	6 10 19	9 13 24	11 15 29	13 18 33	14 20 38	17 24 46	19 28 53
		22.5°	3 5 10	5 8 15	7 10 19	9 12 23	10 14 27	12 16 30	14 19 37	16 22 42
		45°	2 3 6	3 5 9	4 6 12	5 8 14	6 9 17	7 10 19	9 12 23	10 14 26
A_c 0.48 (ft^2)	cfm		144	192	240	288	336	384	480	576
33 x 3,	NC	0°	-	12	20	27	32	37	45	52
17 x 6	Throw ft	0°	4 9 16	7 12 22	9 14 27	11 17 32	13 19 37	15 22 41	18 26 49	20 30 56
		22.5°	3 7 13	5 9 17	7 11 22	9 14 26	10 15 29	12 17 33	14 21 39	16 24 45
		45°	2 4 8	3 6 11	4 7 14	6 8 16	7 10 18	7 11 21	9 13 25	10 15 28
A_c 0.60 (ft^2)	cfm		180	240	300	360	420	480	600	720
41 x 3,	NC	0°	-	15	23	29	35	40	48	54
21 x 6,	Throw ft	0°	4 10 19	7 13 25	9 16 30	12 18 35	13 21 40	15 23 44	18 27 52	20 31 59
13 x 9		22.5°	4 8 15	6 10 20	8 13 24	9 15 28	11 17 32	12 19 35	14 22 42	16 25 47
		45°	2 5 10	4 6 12	5 8 15	6 9 17	7 10 20	8 12 22	9 14 26	10 16 29
A_c 0.73 (ft^2)	cfm		219	292	365	438	511	584	730	876
49 x 3,	NC	0°	-	15	23	29	35	40	48	54
25 x 6	Throw ft	0°	4 10 19	7 13 25	9 16 30	12 18 35	13 21 40	15 23 44	18 27 52	20 31 59
		22.5°	4 8 15	6 10 20	8 13 24	9 15 28	11 17 32	12 19 35	14 22 42	16 25 47
		45°	2 5 10	4 6 12	5 8 15	6 9 17	7 10 20	8 12 22	9 14 26	10 16 29
A_c 0.80 (ft^2)	cfm		240	320	400	480	560	640	800	960
17 x 9	NC	0°	-	18	26	33	38	43	51	58
	Throw ft	0°	5 12 22	8 15 28	10 17 3	12 20 38	14 23 43	16 25 47	19 29 55	21 33 62
		22.5°	4 9 18	6 12 22	8 14 27	10 16 31	11 18 34	13 20 38	15 23 44	17 26 50
		45°	3 6 11	4 7 14	5 9 17	6 10 19	7 11 21	8 12 24	9 15 8	10 16 31

Registers for spiral ducts RGS-3

SELECTION CHART SUPPLY AND RETURN

Core velocity (fpm)			300	400	500	600	700	800	1000	1200
Velocity Pressure			0.006	0.010	0.016	0.023	0.031	0.040	0.063	0.090
Total Pressure		0°	0.011	0.019	0.028	0.039	0.052	0.067	0.101	0.141
		22.5°	0.012	0.021	0.032	0.044	0.059	0.075	0.114	0.159
Size		45°	0.019	0.033	0.049	0.069	0.092	0.117	0.177	0.248
A_c 1.00 (ft^2) 33 x 6, 21 x 9	cfm		300	400	500	600	700	800	1000	1200
	NC	0°	10	21	29	35	41	46	54	61
	Throw ft	0°	6 13 24	8 16 30	11 18 35	13 21 40	15 23 44	16 26 49	19 30 57	21 34 64
		22.5°	5 10 19	7 12 24	9 15 28	10 17 32	12 19 36	13 21 39	15 24 45	17 27 51
		45°	3 6 12	4 8 15	5 9 17	6 10 20	7 12 22	8 13 24	10 15 28	11 17 32
A_c 1.20 (ft^2) 41 x 6, 25 x 9	cfm		360	480	600	720	840	960	1200	1440
	NC	0°	13	23	31	38	43	48	56	63
	Throw ft	0°	6 13 24	9 16 30	11 18 35	13 21 40	15 23 44	17 26 49	20 30 57	22 34 64
		22.5°	5 10 19	7 12 24	9 15 28	11 17 32	12 19 36	14 21 39	12 24 45	18 27 51
		45°	3 6 12	4 8 15	6 9 17	7 10 20	8 12 22	9 13 24	10 15 28	11 17 32
A_c 1.46 (ft^2) 49 x 6	cfm		438	584	730	876	1022	1168	1460	1752
	NC	0°	15	25	33	40	46	50	59	65
	Throw ft	0°	7 11 21	10 14 27	12 17 32	14 20 37	16 22 42	18 24 46	21 29 54	23 32 61
		22.5°	6 9 17	8 11 22	10 14 26	11 16 30	13 18 34	14 20 37	17 23 43	18 26 49
		45°	4 6 11	5 7 14	6 8 16	7 10 19	8 11 21	9 12 23	10 14 27	11 16 31
A_c 1.60 (ft^2) 33 x 9	cfm		480	640	800	960	1120	1280	1600	1920
	NC	0°	16	26	35	41	47	52	60	66
	Throw ft	0°	8 10 19	10 13 25	13 16 30	15 18 35	17 21 39	18 23 44	21 27 52	23 31 59
		22.5°	6 8 15	8 10 20	10 13 24	12 15 28	13 17 32	15 18 35	17 22 41	19 25 47
		45°	4 5 9	5 6 12	6 8 15	7 9 17	8 10 2	9 12 22	11 14 26	12 15 29
A_c 2.00 (ft^2) 41 x 9	cfm		600	800	1000	1200	1400	1600	2000	2400
	NC	0°	19	29	37	44	49	54	62	69
	Throw ft	0°	9 12 22	12 15 28	14 18 34	16 21 40	18 23 44	20 26 49	23 29 56	25 32 61
		22.5°	7 9 18	9 12 23	11 14 27	13 17 32	14 19 35	16 2039	18 2345	20 26 49
		45°	4 6 11	6 7 14	7 9 17	8 10 20	9 12 22	10 13 24	11 15 28	12 16 30
A_c 2.41 (ft^2) 49 x 9	cfm		723	964	1205	1446	1687	1928	2410	2892
	NC	0°	21	31	40	46	52	57	65	71
	Throw ft	0°	10 13 5	13 17 32	15 20 38	17 23 43	19 25 48	21 27 52	24 31 59	26 34 64
		22.5°	8 11 20	10 13 25	12 16 30	14 18 34	15 20 38	17 22 41	19 25 47	21 27 51
		45°	5 7 13	6 8 16	8 10 19	9 11 21	10 13 24	10 14 26	12 16 29	13 17 32