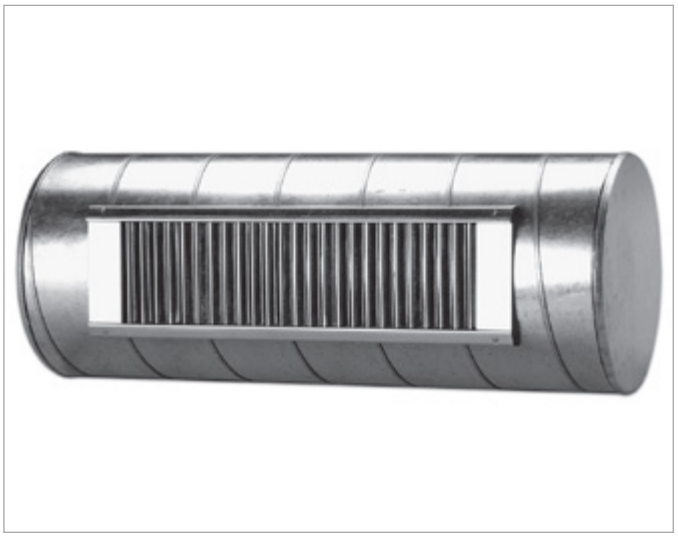
Registers for spiral ducts RGS-3



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

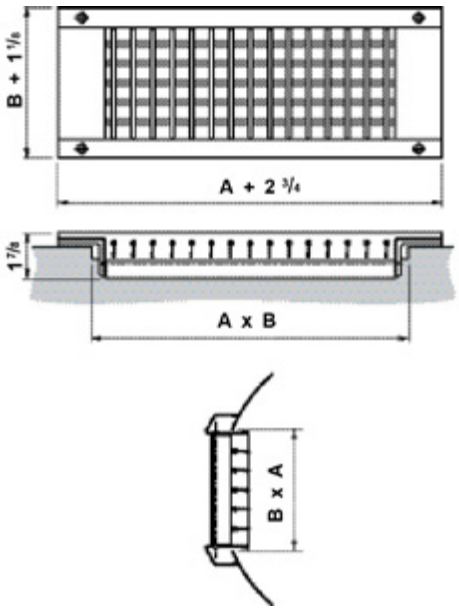
The grille should be removed to gain access to the duct.

Order example

RGS-3 13 3

Product
Length (A)
Width (B)

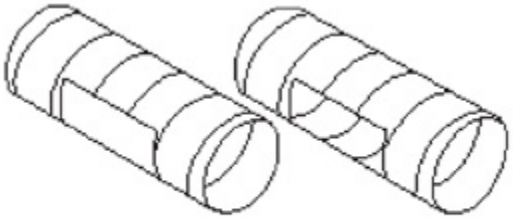
Dimensions



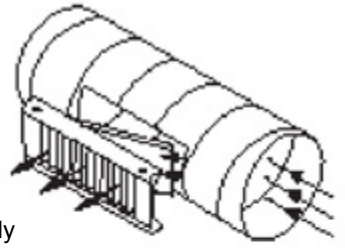
Register nom. size (in)	Min. duct diameter (in)	Free area (ft^2)	Duct opening A x B (in)	Weight (lb)
13 ×3	6	0.18	12 3/4 × 3	2.4
17 ×3	6	0.25	16 3/4 × 3	3.1
21 ×3	6	0.30	20 5/8 × 3	3.7
25 ×3	6	0.36	24 5/8 × 3	4.2
33 ×3	6	0.48	32 1/2 × 3	5.3
41 ×3	8	0.60	40 3/8 × 3	6.4
49 ×3	8	0.73	48 1/4 × 3	7.1
13 ×6	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

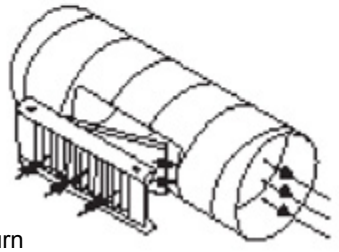
Mounting



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”.

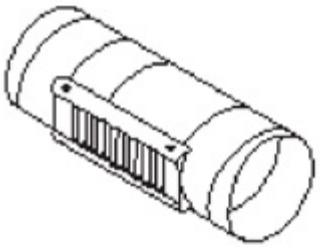


Supply



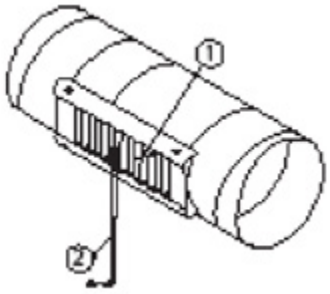
Return

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.

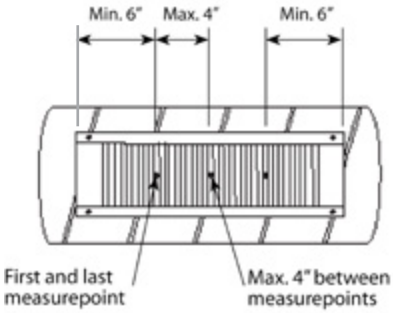
Balancing



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

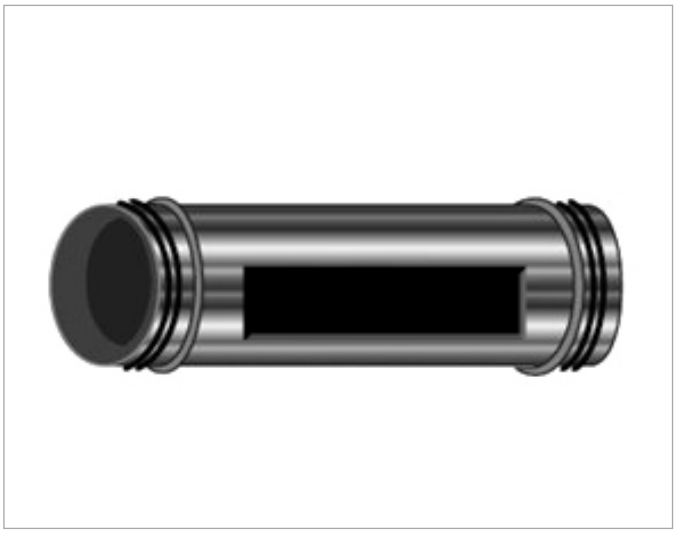
Core velocity (fpm)			300	400	500	600	700	800	1000	1200
Velocity Pressure			0.006	0.010	0.016	0.023	0.031	0.040	0.063	0.090
Total Pressure		0°	0.011	0.019	0.028	0.039	0.052	0.067	0.101	0.141
		22.5°	0.012	0.021	0.032	0.044	0.059	0.075	0.114	0.159
Size		45°	0.019	0.033	0.049	0.069	0.092	0.117	0.177	0.248
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

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)	cfm		300	400	500	600	700	800	1000	1200
33 x 6,	NC	0°	10	21	29	35	41	46	54	61
21 x 9	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)	cfm		360	480	600	720	840	960	1200	1440
41 x 6,	NC	0°	13	23	31	38	43	48	56	63
25 x 9	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)	cfm		438	584	730	876	1022	1168	1460	1752
49 x 6	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)	cfm		480	640	800	960	1120	1280	1600	1920
33 x 9	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)	cfm		600	800	1000	1200	1400	1600	2000	2400
41 x 9	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)	cfm		723	964	1205	1446	1687	1928	2410	2892
49 x 9	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

Fitting bodies

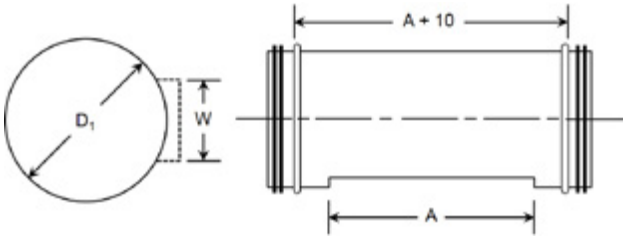
TRGSU

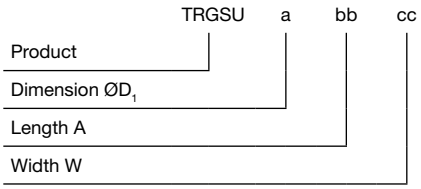


Description

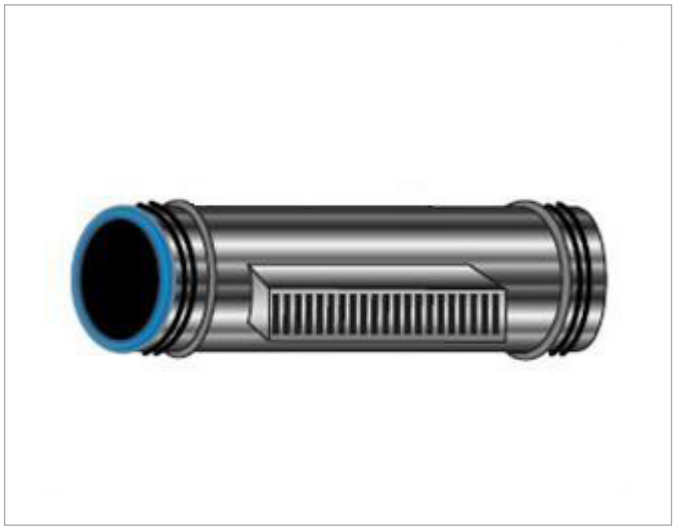
Single wall smooth fitting body
Length of body = A+10
Register sold separately

Dimensions





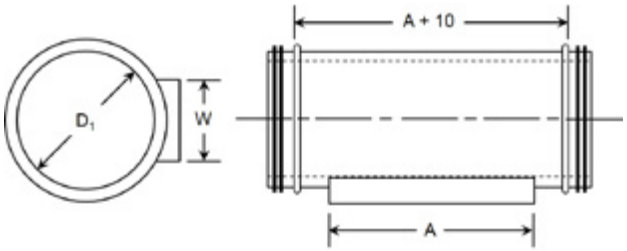
TRGSUI

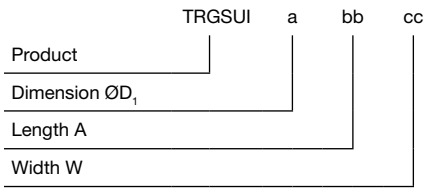


Description

Double Wall smooth fitting body with mounted register (RGS)
Length of body = A+10

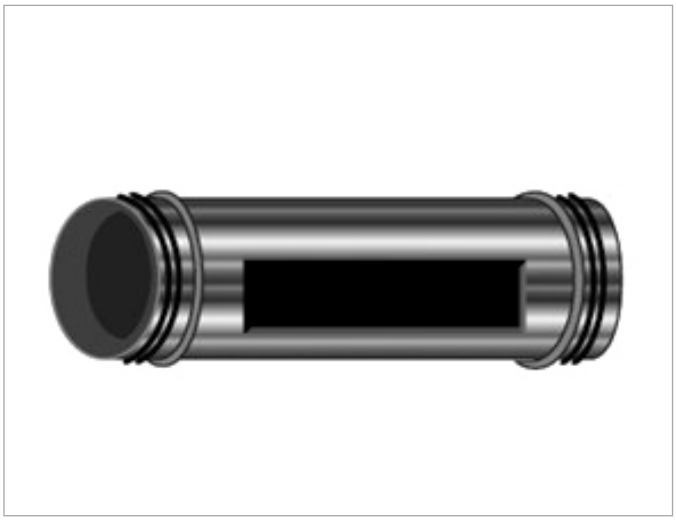
Dimensions





Crossing fitting bodies

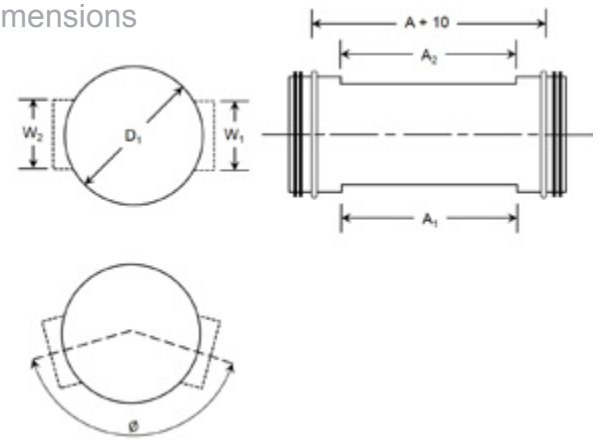
XRGSU



Description

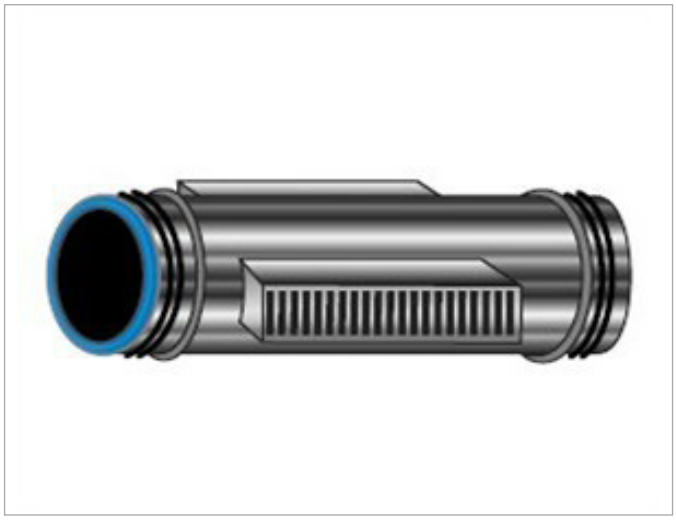
Single wall smooth fitting body cross
Length of body = A+10
A= largest (A_2 or A_1)
Register sold separately

Dimensions



XRGSU	a	bb	cc	dd	ee	ff
Product						
Dimension D_1						
Length A_1						
Width W_1						
Length A_2						
Width W_2						
Angle between taps Ø						

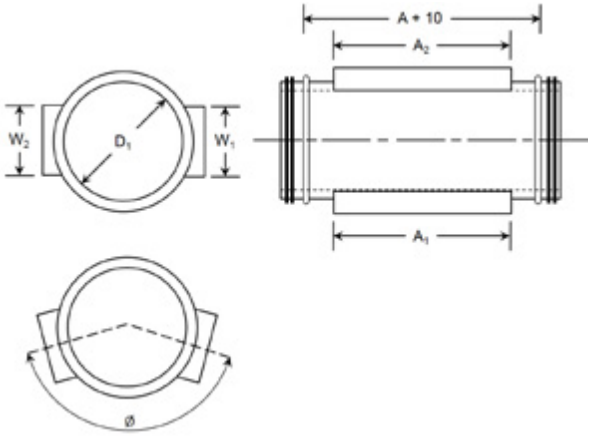
XRGSUI



Description

Double wall smooth fitting body cross with mounted registers (RGS)
Length of body = A+10
A= largest (A_2 or A_1)

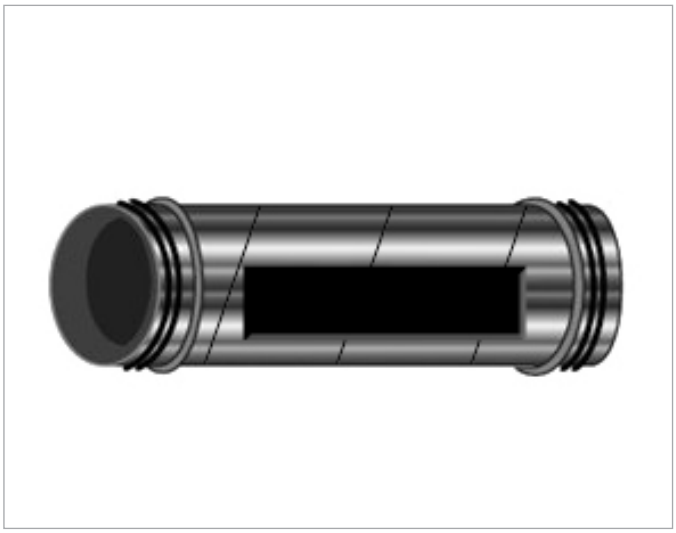
Dimensions



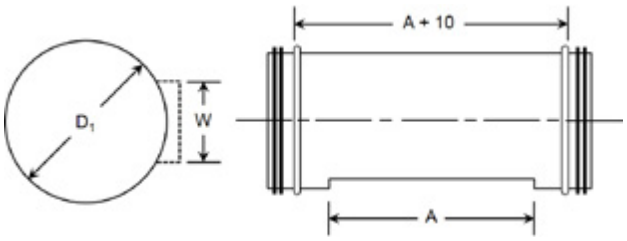
XRGSUI	a	bb	cc	dd	ee	ff
Product						
Dimension D_1						
Length A_1						
Width W_1						
Length A_2						
Width W_2						
Angle between taps Ø						

Spiral bodies

SRTRGSU



Dimensions

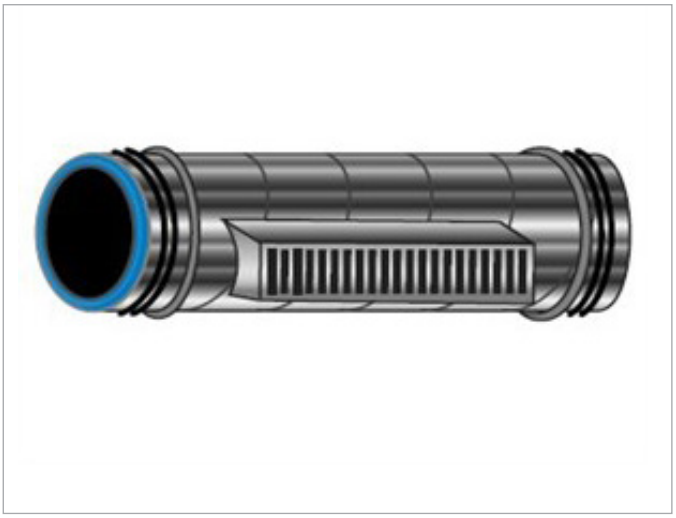


SRTRGSU	a	bb	cc
Product			
Dimension ØD$_1$			
Length A			
Width W			

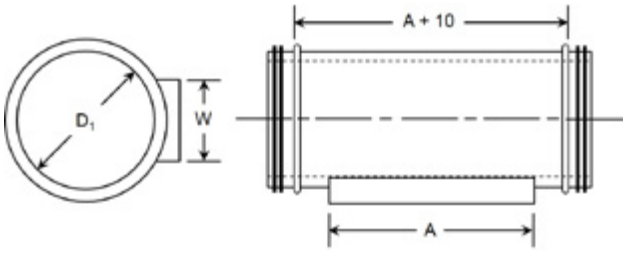
Description

Single wall spiral fitting body
Length of body = A+10
Register sold separately

SRTRGSUI



Dimensions

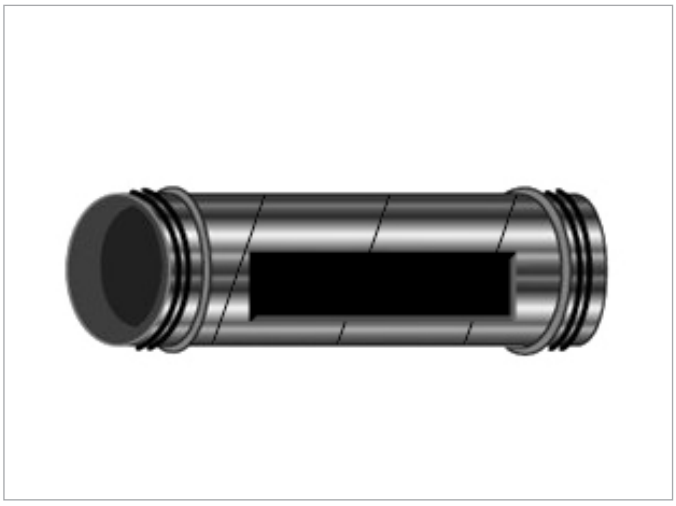


SRTRGSUI	a	bb	cc
Product			
Dimension ØD$_1$			
Length A			
Width W			

Description

Double wall spiral fitting body with mounted register (RGS)
Length of body = A+10

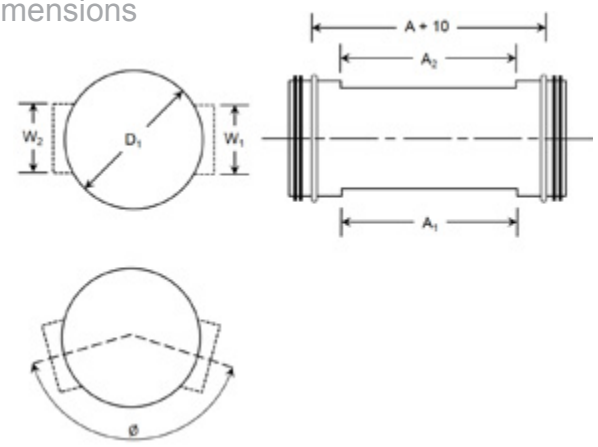
Crossing spiral bodies SRXRGSU



Description

Single wall spiral fitting body cross
Length of body = A+10
A= largest (A_2 or A_1)
Register sold separately

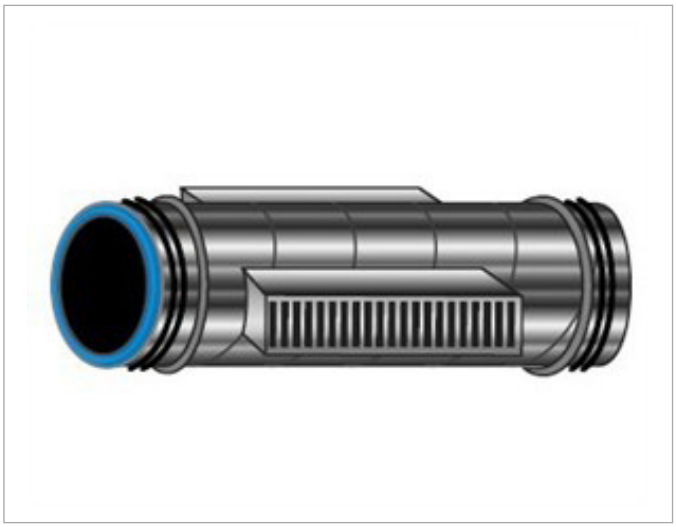
Dimensions



SRXRGSU a bb cc dd ee ff

- Product
- Dimension D_1
- Length A_1
- Width W_1
- Length A_2
- Width W_2
- Angle between taps Ø

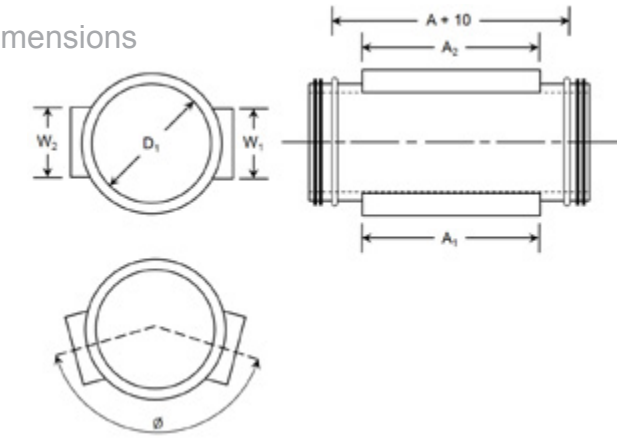
SRXRGSUI



Description

Double Wall spiral fitting body cross with mounted registers (RGS)
Length of body = A+10
A= largest (A_2 or A_1)

Dimensions



SRXRGSUI a bb cc dd ee ff

- Product
- Dimension D_1
- Length A_1
- Width W_1
- Length A_2
- Width W_2
- Angle between taps Ø