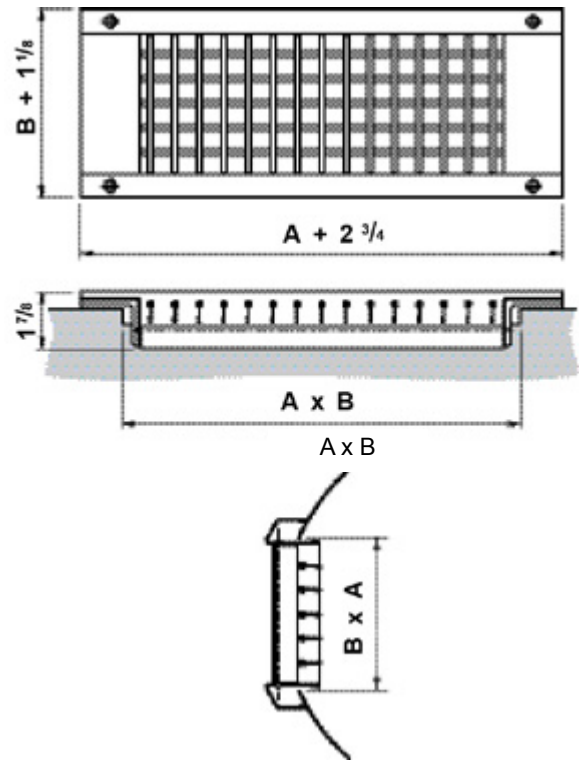


Dimensions



Description

The DMR 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. It also comes equipped with end caps and a gasketing material installed around the neck of the register. This prevents air leakage. DMR 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

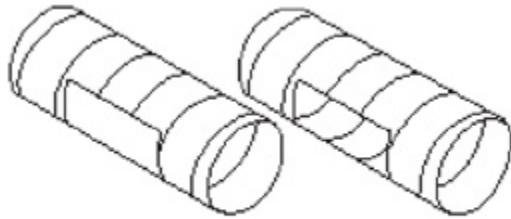
Damper: electro-galvanized sheet steel

Maintenance:

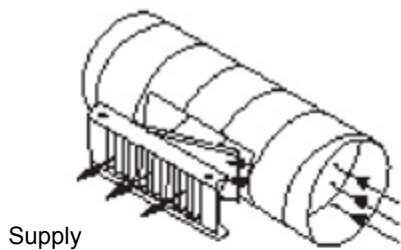
The grille should be removed to gain access to the duct.

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

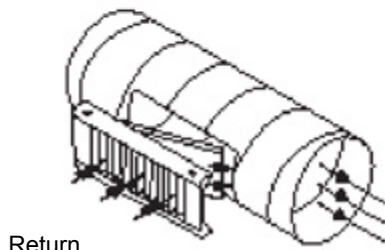
Mounting



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".

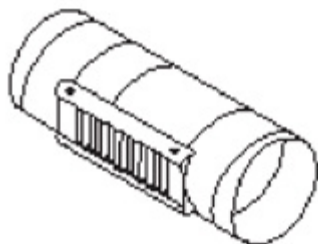


Supply



Return

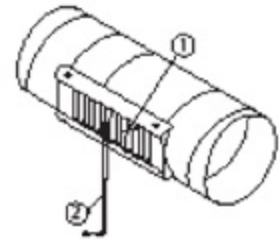
Insert the air extractor control rod through the tension lock on the face of the register. Position the DMR register in the opening, making certain that the gasket material remains in place. Check that register has been installed correctly in relation to the direction of air flow.



Secure the DMR with screws (provided). Adjust vanes as necessary.

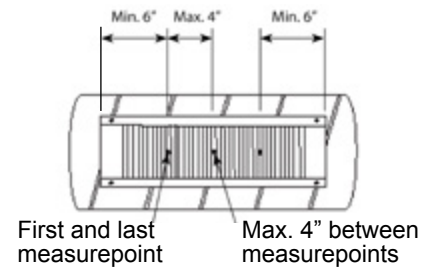
Balancing

- 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] = $F \times V_o$
 V_o Mean velocity [fpm]
 F Flow factor



n number of measurement points

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

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

Dim. A	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

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
		45°	0.019	0.033	0.049	0.069	0.092	0.117	0.177	0.248
6 A _c 0.18 (ft ²) 13 x 3	Size	45°	0.019	0.033	0.049	0.069	0.092	0.117	0.177	0.248
	cfm		54	72	90	108	126	144	180	216
	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) 17 x 3	cfm		72	96	120	144	168	192	240	288
	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) 21 x 3	cfm		90	120	150	180	210	240	300	360
	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) 25 x 3, 13 x 6	cfm		108	144	180	216	252	288	360	432
	NC	0°	-	-	14	21	26	31	39	46
	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) 33 x 3, 17 x 6	cfm		144	192	240	288	336	384	480	576
	NC	0°	-	12	20	27	32	37	45	52
	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) 41 x 3, 21 x 6, 13 x 9	cfm		180	240	300	360	420	480	600	720
	NC	0°	-	15	23	29	35	40	48	54
	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 0.73 (ft ²) 49 x 3, 25 x 6	cfm		219	292	365	438	511	584	730	876
	NC	0°	-	15	23	29	35	40	48	54
	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) 17 x 9	cfm		240	320	400	480	560	640	800	960
	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

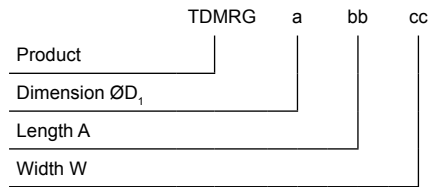
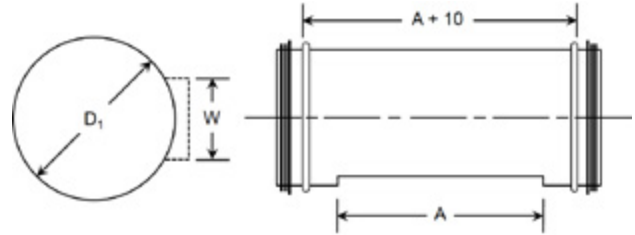
Core velocity (fpm)			300	400	500	600	700	800	1000	1200
Velocity Pressure			0.006	0.010	0.016	0.023	0.031	0.040	0.063	0.090
Total Pressure		0°	0.011	0.019	0.028	0.039	0.052	0.067	0.101	0.141
		22.5°	0.012	0.021	0.032	0.044	0.059	0.075	0.114	0.159
Size		45°	0.019	0.033	0.049	0.069	0.092	0.117	0.177	0.248
A _c 1.00 (ft ²) 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 20 39	18 23 45	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

Fitting bodies

TDMRG



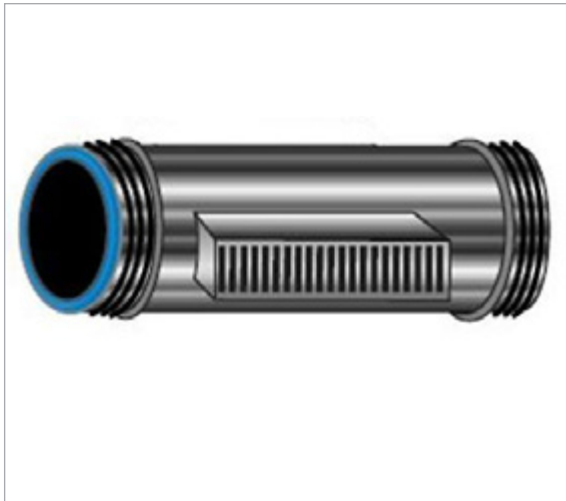
Dimensions



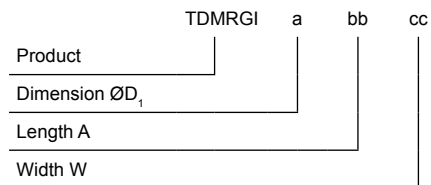
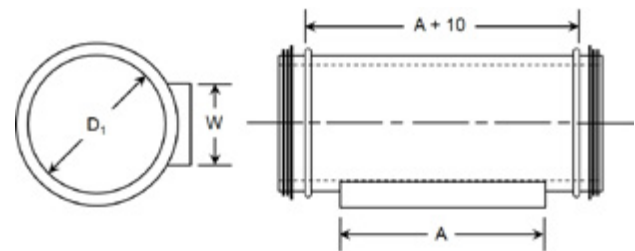
Description

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

TDMRGI



Dimensions



Description

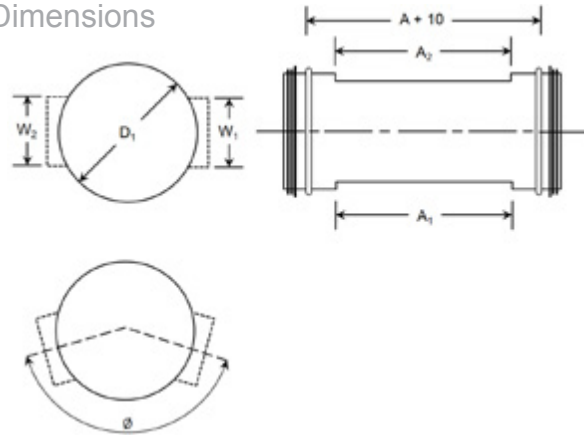
Double wall smooth fitting body with mounted register (DMR)
 Length of body = $A+10$

Cross fitting bodies

XDMRG



Dimensions

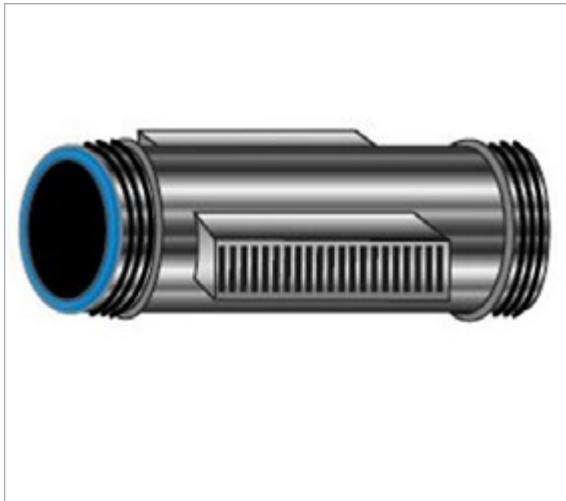


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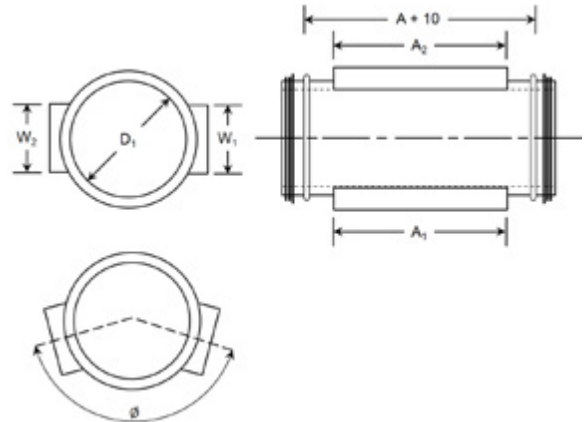
Description

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

	XDMRG	a	bb	cc	dd	ee	ff
Product	[Line connecting to XDMRG]						
Dimension D_1	[Line connecting to D1]						
Length A_1	[Line connecting to A1]						
Width W_1	[Line connecting to W1]						
Length A_2	[Line connecting to A2]						
Width W_2	[Line connecting to W2]						
Angle between taps \emptyset	[Line connecting to angle symbol]						



Dimensions



XDMRGI

Description

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

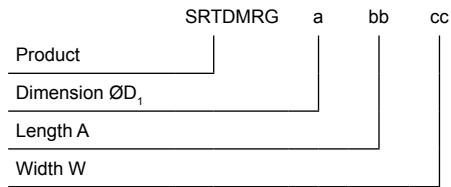
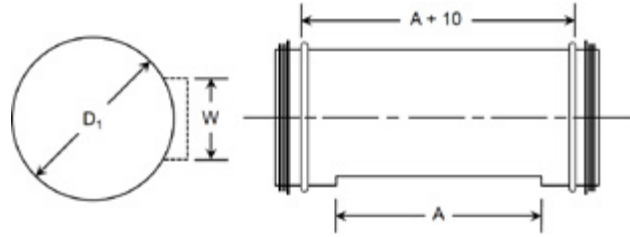
	XDMRGI	a	bb	cc	dd	ee	ff
Product	[Line connecting to XDMRGI]						
Dimension D_1	[Line connecting to D1]						
Length A_1	[Line connecting to A1]						
Width W_1	[Line connecting to W1]						
Length A_2	[Line connecting to A2]						
Width W_2	[Line connecting to W2]						
Angle between taps \emptyset	[Line connecting to angle symbol]						

Spiral bodies

SRTDMRG



Dimensions

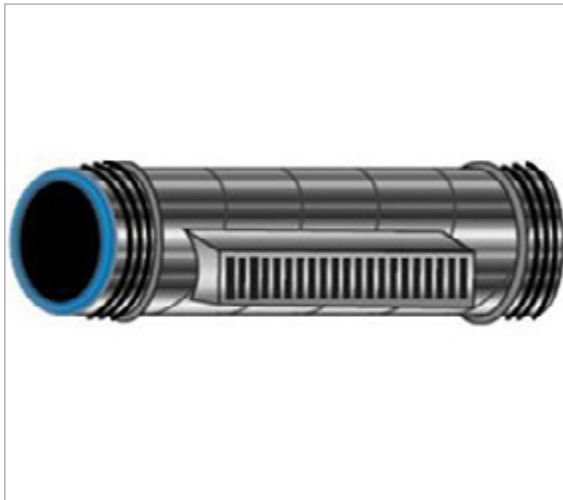


10

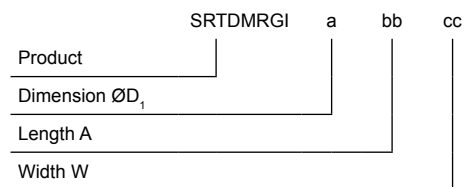
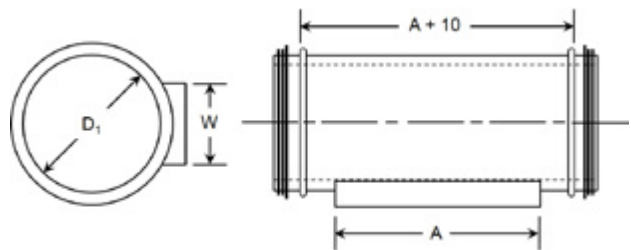
Description

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

SRTDMRGI



Dimensions



Description

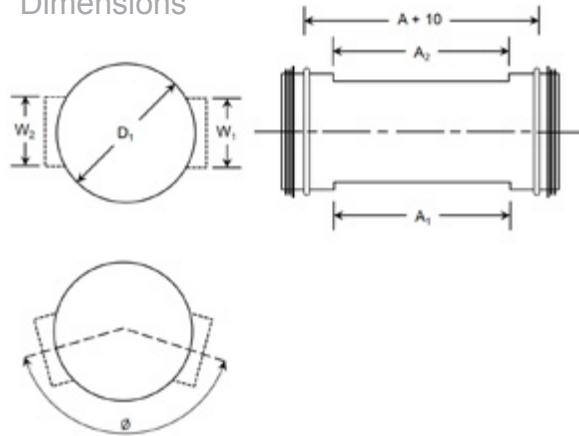
Double wall spiral fitting body with mounted register (DMR)
 Length of body = $A+10$

Cross spiral bodies

SRXDMRG



Dimensions



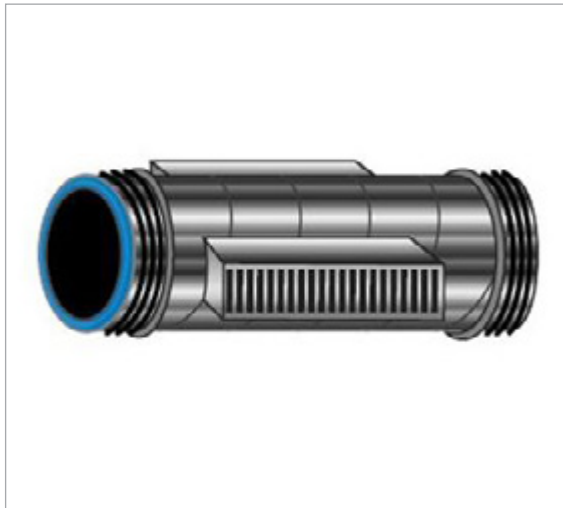
11

Description

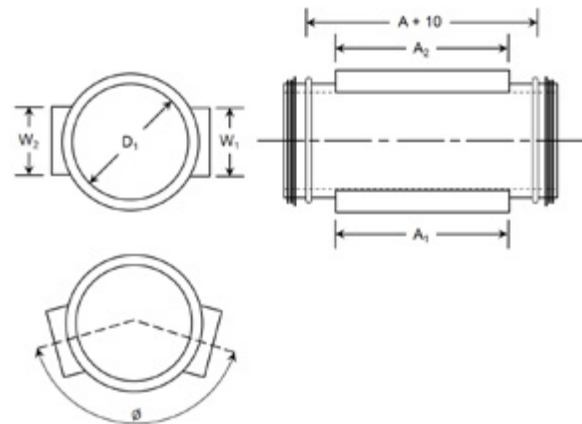
Single wall spiral fitting body cross
 Length of body = $A+10$
 Register sold separately

	SRXDMRG	a	bb	cc	dd	ee	ff
Product	SRXDMRG						
Dimension D_1		a					
Length A_1			bb				
Width W_1				cc			
Length A_2					dd		
Width W_2						ee	
Angle between taps \emptyset							ff

SRXDMRGI



Dimensions



Description

Double wall spiral fitting body cross with mounted registers (DMR)
 Length of body = $A+10$
 $A = \text{largest } (A_2 \text{ or } A_1)$

	SRXDMRGI	a	bb	cc	dd	ee	ff
Product	SRXDMRGI						
Dimension D_1		a					
Length A_1			bb				
Width W_1				cc			
Length A_2					dd		
Width W_2						ee	
Angle between taps \emptyset							ff