air master

Chapter 9

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Disc valve

Model: ADV

Construction:

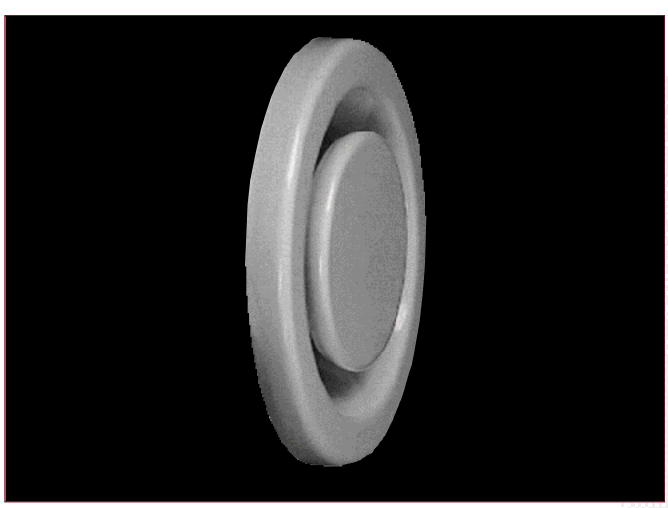
- **Frame and disc:** Steel sheet construction.
- **Mounting rings:** Galvanized sheet steel.

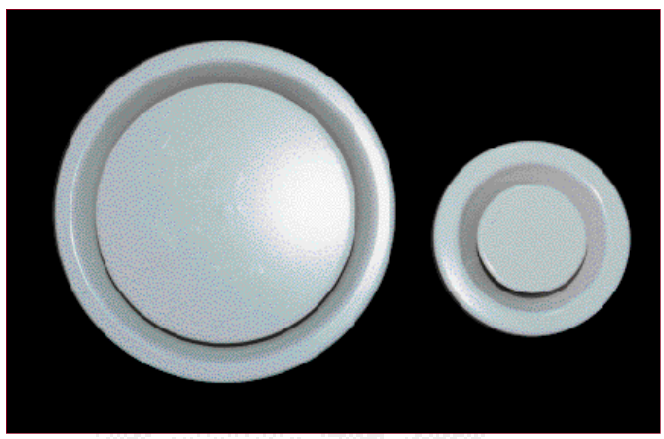
Description:

- Frame and disc is made of high quality galvanized steel sheet construction with powder coating to RAL colours.
- Disc is attached to the frame by threaded rod.
- Air flow can be adjusted by regulating the cone up or down (+A or -A)
- Foam gasket is sealed around the back of the frame to avoid air leakage.
- These valves can be used for supply, exhaust and ventilation applications.
- Air master disc valves are best suited to air distribution systems handling relatively low air flow rates within small circular duct work.
- Can be mounted in wall, ceiling or exposed air ducts with mounting rings.
- Recommended for exhaust of greasy and damp air in damp areas such as toilets, bathrooms and kitchens.

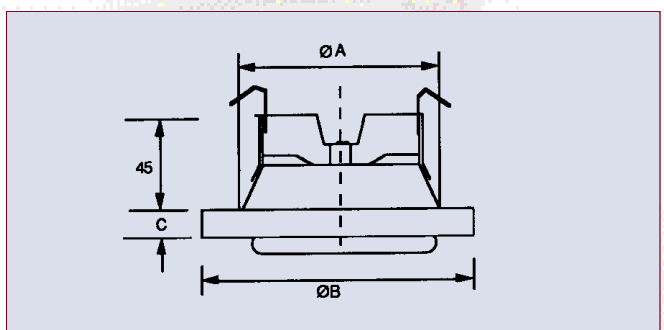
Standard finishes:

Steel sheet powder coated to RAL 9010 colour.
Flexibility of finishing is available as option.

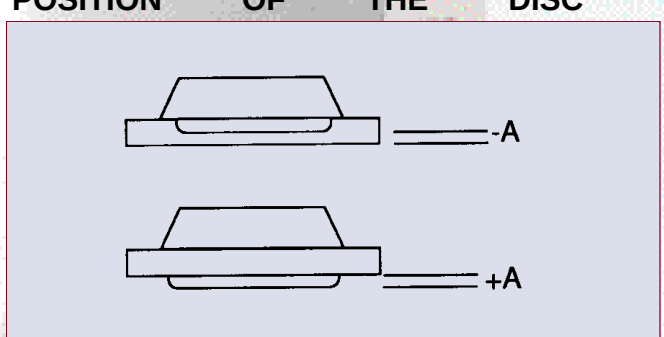




ADV



POSITION OF THE DISC



Size	ADV		
	A	B	C
80	80	106	15
100	100	135	15
125	125	160	15
160	160	194	15
200	200	238	18

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Standard sizes:

N = Neck size in mm dia	80	100	125	160	200

Fixing details:

Direct fixing into the duct with mounting rings.
First mounting ring has to be fixed into the duct outlet before the valve is pushed into the ring.

How to order:

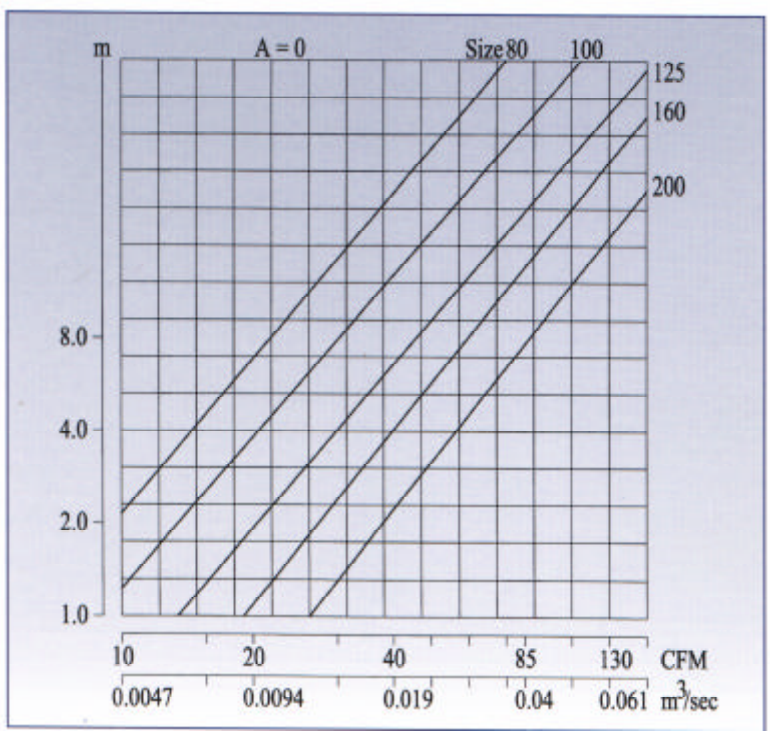
Model	Size	Quantity	Finish
ADV	Specify neck diameter of the valve in mm dia.	Specify in numbers	B = steel sheet with RAL 9010
			C = Other RAL colour

Ordering example:

To select Air master disc valves of dia 200 mm, quantity 50 nos with RAL 9010 colour.
Order as: ADV 200-50-B.

Performance data:

Table 9.1 Supply air valves Vs Throw in meters (A = 0)



Note:

- For position A = +10, reduce throw by 30%.
- For position A=-10, increase throw by 40%

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Table 9.2(A) Air flow data
Supply air disc valve.

Neck size in mm dia	Position of disc	Air flow rate								
		CFM	10	20	40	60	80	100	120	140
		M^3/sec	0.0047	0.0094	0.0189	0.0283	0.0378	0.0472	0.0567	0.0661
80	A =+10	P_t in mm H_20 NC in dB	0.76 <20	1.83 22	5.6 38	----------	----------	----------	----------	----------
	A =0	P_t in mm H_20 NC in dB	1.22 <20	3.4 26	9.6 44	----------	----------	----------	----------	----------
	A =–10	P_t in mm H_20 NC in dB	2.04 <20	5.6 35	>20 >45	----------	----------	----------	----------	----------
100	A =+10	P_t in mm H_20 NC in dB	0.51 <20	1.12 <20	3.46 30	6.6 38	----------	----------	----------	----------
	A =0	P_t in mm H_20 NC in dB	0.71 <20	2.04 20	6.11 36	11.21 44	----------	----------	----------	----------
	A =–10	P_t in mm H_20 NC in dB	1.43 <20	4.08 31	12.23 45	>20 >45	----------	----------	----------	----------
125	A =+10	P_t in mm H_20 NC in dB	0.41 <20	1.12 <20	3.06 26	5.61 33	9.2 42	----------	----------	----------
	A =0	P_t in mm H_20 NC in dB	0.82 <20	1.83 <20	5.61 33	9.4 40	14.78 >45	----------	----------	----------
	A =–10	P_t in mm H_20 NC in dB	1.22 <20	3.06 26	8.87 42	16.3 >45	>20 >45	----------	----------	----------
160	A =+10	P_t in mm H_20 NC in dB	<0.4 <20	0.61 <20	1.83 20	4.3 25	5.7 31	9.2 37	12.7 40	----------
	A =0	P_t in mm H_20 NC in dB	<0.4 <20	1.22 <20	3.78 25	8.2 35	11.2 41	18.3 45	>20 >45	----------
	A =–10	P_t in mm H_20 NC in dB	1.0 <20	2.75 30	8.2 41	16.3 >45	>20 >45	>20 >45	>20 >45	----------
200	A =+10	P_t in mm H_20 NC in dB	<0.4 <20	<0.4 <20	0.82 <20	1.63 <20	3.1 22	4.1 25	5.1 33	7.9 37
	A =0	P_t in mm H_20 NC in dB	<0.4 <20	0.71 <20	1.83 <20	4.1 24	5.61 30	9.1 36	10.7 40	18.3 45
	A =–10	P_t in mm H_20 NC in dB	<0.4 <20	1.22 <20	4.3 26	7.6 35	10.7 39	18.3 45	>20 >45	>20 >45

- P_t = Total pressure loss across the disc valve in mm of H_2O.
- NC based on a room attenuation of 10 dB.
- A = +10,0 & -10 = Position of the disc 10 mm down of normal position, at normal position, and 10 mm above normal position.

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Table 9.2(B) Air flow data
Return air disc valve.

Neck size in mm dia	Position of disc	Air flow rate								
		CFM	10	20	40	60	80	100	150	200
		M^3/sec	0.0047	0.0094	0.0189	0.0283	0.0378	0.0472	0.071	0.094
80	A =+10	P_t in mm H_20 NC in dB	<0.4 <20	0.91 <20	4.3 26	10.2 37	----------	----------	----------	----------
	A =0	P_t in mm H_20 NC in dB	<0.4 <20	1.43 <20	7.1 32	17.3 45	----------	----------	----------	----------
	A =–10	P_t in mm H_20 NC in dB	1.83 <20	5.1 23	18 45	>20 >45	----------	----------	----------	----------
100	A =+10	P_t in mm H_20 NC in dB	<0.4 <20	<0.4 <20	1.63 <20	3.8 23	5.8 31	9.7 37	----------	----------
	A =0	P_t in mm H_20 NC in dB	<0.4 <20	0.76 <20	2.5 <20	5.6 30	9.7 35	14.7 45	----------	----------
	A =–10	P_t in mm H_20 NC in dB	0.61 <20	2.24 <20	7.6 35	15.2 40	>20 >45	>20 >45	----------	----------
125	A =+10	P_t in mm H_20 NC in dB	<0.4 <20	<0.4 <20	0.71 <20	1.42 <20	2.9 20	4.1 25	9.7 37	----------
	A =0	P_t in mm H_20 NC in dB	<0.4 <20	<0.4 <20	1.83 <20	4.1 21	8.15 30	11.2 35	>20 >45	----------
	A =–10	P_t in mm H_20 NC in dB	<0.4 <20	2.1 <20	7.1 23	16.8 35	>20 >45	>20 >45	>20 >45	----------
160	A =+10	P_t in mm H_20 NC in dB	<0.4 <20	<0.4 <20	0.4 <20	0.81 <20	1.43 <20	2.1 <20	5.2 28	9.7 37
	A =0	P_t in mm H_20 NC in dB	<0.4 <20	<0.4 <20	0.81 <20	1.74 <20	3.4 <20	5.3 25	12.2 37	>20 45
	A =–10	P_t in mm H_20 NC in dB	<0.4 <20	0.5 <20	1.74 <20	3.8 <20	7.6 27	14.7 35	>20 >45	>20 >45
200	A =+10	P_t in mm H_20 NC in dB	<0.4 <20	<0.4 <20	<0.4 <20	<0.4 <20	0.76 <20	1.12 <20	2.6 27	4.38 34
	A =0	P_t in mm H_20 NC in dB	<0.4 <20	<0.4 <20	0.7 <20	1.4 <20	2.3 <20	3.4 20	8.4 35	12.2 42
	A =–10	P_t in mm H_20 NC in dB	<0.4 <20	0.5 <20	1.62 <20	3.4 <20	7.1 <20	11.2 34	>20 >45	>20 >45

- P_t = Total pressure loss across the disc valve in mm of H_2O.
- NC based on a room attenuation of 10 dB.
- A = +10,0 & -10 = Position of the disc 10 mm down of normal position, at normal position, and 10 mm above normal position.