



air master

Chapter 11

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Jet diffuser

– Panel type

► Model: AJD-P

Construction:

- **Frame:** High quality heavy gauge aluminium sheet.
- **Outer flange:** High quality extruded aluminium profiles.
- **Inner rings:** Aluminium spun rings.
- **Optional accessories:** Plenum box either lined or un lined as per clients choice.

Description:

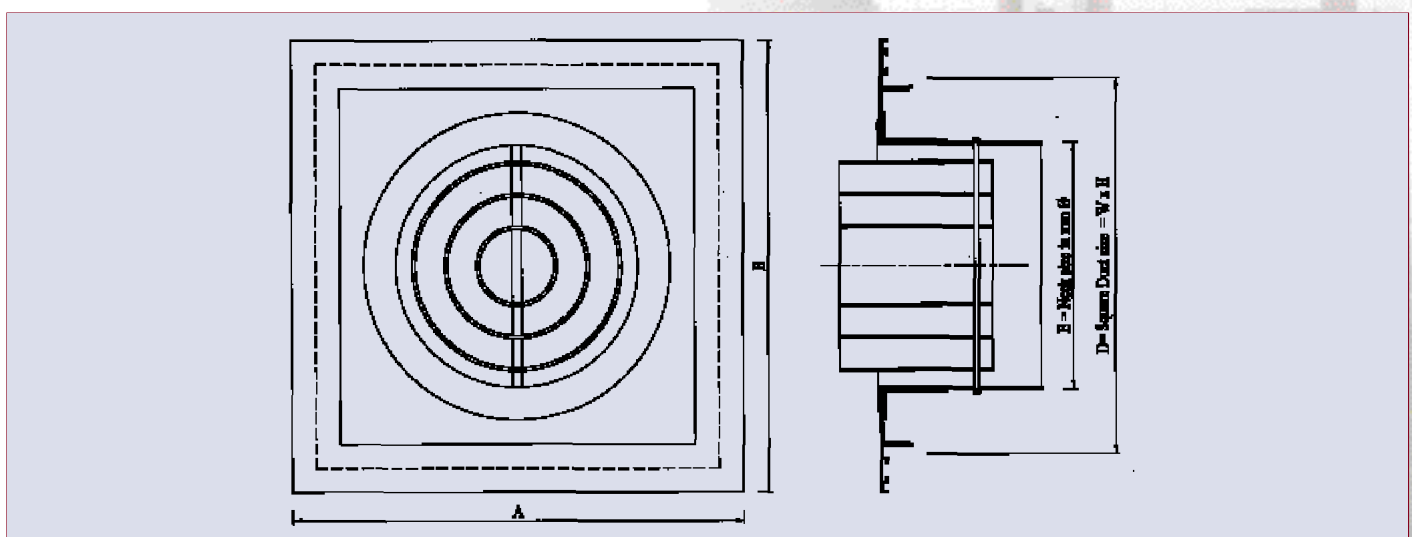
- Frame and inner rings are high quality aluminium construction with the advantages of corrosion resistance.
- Jet nozzle section is mounted in aluminium square plate covered by flanged border.
- Nozzles can be adjusted 30° up words and down words to achieve required throw as per site condition. Nozzle jet can be rotated by 360° by adjusting the mounting frame.
- Generally designed for wall mounting. For ceiling mounting, drill 2 to 4 holes in the face of the flanged border.
- Air master jet diffusers are specially suitable to handle large quantity of air with long throw.



- Ideal for commercial use such as concert halls, theatres, exhibition and sport halls.
- Jet nozzles can be supplied with plenum box, which is manufactured from galvanized steel sheet as option.
- Plenum boxes can be supplied with round duct damper at the spigot as option.

Standard finishes:

- Powder coated colour finish as per RAL colour codes.
- Flexibility of finishing is available.



Standard sizes:

Available from 100 mm dia to 400 mm dia with the increments of 50 mm.

D = Dia of jet diffuser in mm	100	150	200	250	300	350	400
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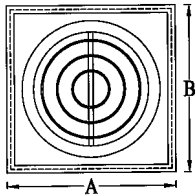


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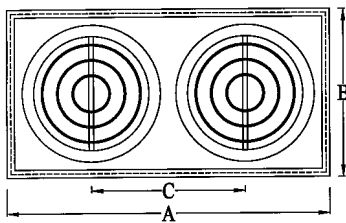
Fixing details: Screw fixing from flange to duct.

Panel arrangement:

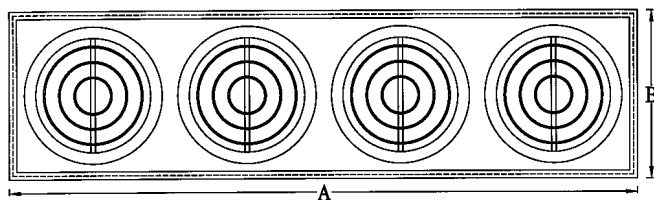
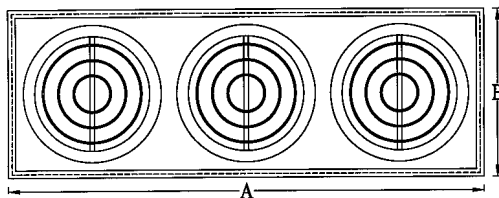
1,2,3 or 4 nos of jet diffusers will be arranged in a panel as per performance requirement.



Model	Duct size L x W in	A	B	(Ø) E
AJD 100-P	200 x 200	250	250	100
AJD 150-P	250 x 250	300	300	150
AJD 200-P	300 x 300	350	350	200
AJD 250-P	350 x 350	400	400	250
AJD 300-P	400 x 400	450	450	300
AJD 350-P	450 x 450	500	500	350
AJD 400-P	500 x 500	550	550	400



Model	Duct size L x W in	A	B	C
AJD 100-2P	390 x 200	440	250	200
AJD 100-3P	580 x 200	630	250	200
AJD 100-4P	790 x 200	840	250	200
AJD 150-2P	490 x 250	540	300	250
AJD 150-3P	730 x 250	780	300	250
AJD 150-4P	990 x 250	1040	300	250
AJD 200-2P	590 x 300	640	350	300
AJD 200-3P	880 x 300	930	350	300
AJD 200-4P	1190 x 300	1240	350	300
AJD 250-2P	690 x 350	740	400	350
AJD 250-3P	1030 x 350	1080	400	350
AJD 250-4P	1390 x 350	1440	400	350
AJD 300-2P	790 x 400	840	450	400
AJD 300-3P	1180 x 400	1230	450	400
AJD 300-4P	1590 x 400	1640	450	400
AJD 350-2P	890 x 450	940	500	450
AJD 350-3P	1330 x 450	1380	500	450
AJD 350-4P	1770 x 450	1820	500	450
AJD 400-2P	990 x 500	1040	550	500
AJD 400-3P	1480 x 500	1530	550	500
AJD 400-4P	1970 x 500	2020	550	500



• All sizes are in mm.

How to order:

Model	Size	No of diffusers / panel	Quantity	Finish	Optional accessories
AJD	Specify neck diameter of the inner round diffuser	P	Specify in numbers	B = RAL 9010	Plenum box
		2P			
		3P		C = Other RAL colours.	
		4P			

Ordering example:

To select jet diffuser of size 150 mm dia, 4 diffusers arranged in one panel, quantity = 25 nos with RAL 9010 colour.

Order as : AJD 150 - 4P - 25 - B.



Jet diffuser

– Panel type
 Model: AJD-P

**Table 11.1 (A) Air flow data
 Jet diffuser at 0° position**

Size in mm dia	Neck velocity in m/sec	1.5	2.0	2.5	3.0	3.5	4.0	5.0	6.0	7.0
Neck area in sq mt	P _v =vel pr loss in mm H ₂ O	0.15	0.25	0.41	0.56	0.79	1.016	1.57	2.29	3.1
100 0.0079	Cfm M ³ /sec. P _s in mm H ₂ O Throw in m NC	30 0.0141 <0.25 2.7 <15	40 0.0189 <0.25 3.1 <15	50 0.0236 0.76 3.4 15	60 0.0283 1.22 3.8 16	70 0.0331 1.65 3.9 22	80 0.378 2.37 4.2 24	90 0.0425 3.08 4.2 33	110 0.052 3.68 4.5 36	130 0.614 6.0 4.7 42
150 0.0177	Cfm M ³ /sec. P _s in mm H ₂ O Throw in m NC	60 0.0283 <0.25 3.0 <15	80 0.0378 <0.25 3.9 <15	100 0.0472 0.51 4.5 15	120 0.0567 0.76 4.8 16	140 0.066 1.27 4.8 24	160 0.756 1.25 5.7 26	200 0.0945 2.06 6.4 33	240 0.113 3.35 7.1 37	280 0.132 4.75 7.7 43
200 0.0314	Cfm M ³ /sec. P _s in mm H ₂ O Throw in m NC	110 0.052 <0.25 4.3 <15	140 0.066 0.254 5.8 <15	180 0.085 0.51 6.1 15	210 0.099 0.61 6.9 16	250 0.118 1.02 7.1 24	280 0.132 1.54 7.8 27	350 0.165 2.51 8.5 33	420 0.198 4.19 8.9 37	490 0.231 6.15 15 43
250 0.049	Cfm M ³ /sec. P _s in mm H ₂ O Throw in m NC	170 0.08 <0.25 6.4 <15	220 0.104 <0.25 7.7 <15	280 0.132 0.25 7.9 15	330 0.156 0.46 8.8 16	390 0.184 0.76 8.8 25	440 0.208 1.12 9.7 27	550 0.26 1.5 10.2 34	660 0.312 2.12 11.27 38	770 0.364 2.79 18 44
300 0.071	Cfm M ³ /sec. P _s in mm H ₂ O Throw in m NC	240 0.113 <0.25 7.6 <15	320 0.151 <0.25 8.6 <15	400 0.189 <0.25 9.2 15	480 0.227 0.9 9.7 16	550 0.26 1.02 10.0 27	630 0.298 1.4 10.6 29	790 0.373 1.4 12.3 34	950 0.449 1.67 12.53 38	1100 0.519 2.79 12.8 45
350 0.096	Cfm M ³ /sec. P _s in mm H ₂ O Throw in m NC	330 0.156 <0.25 8.2 <15	430 0.203 <0.25 9.6 <15	540 0.255 <0.25 10.1 15	650 0.307 0.84 11.5 17	750 0.354 0.78 11.9 27	860 0.406 0.88 12.3 29	1070 0.505 1.17 13 35	1290 0.609 1.46 15.5 39	1500 0.708 3.5 17.6 45
400 0.126	Cfm M ³ /sec. P _s in mm H ₂ O Throw in m NC	420 0.198 <0.25 9.1 <15	560 0.264 <0.25 10.9 <15	700 0.331 <0.25 11.5 15	840 0.397 0.62 12.8 17	980 0.463 0.92 12.7 29	1120 0.529 1.17 13.9 31	1400 0.66 1.46 16.3 36	1680 0.793 1.75 18.5 41	1960 0.926 2.04 20.8 46

- Neck velocity is measured in m/sec.
- P_s & P_v = Static and dynamic pressure losses across the diffuser in mm of H₂O.
- Throw (meters) is measured for a terminal velocities of 0.25 m/sec.
- NC based on room attenuation of 10 dB.



Jet diffuser

– Panel type
 Model: AJD-P

**Table 11.1(B) Air flow data
 Jet diffuser at 30° position**

Size in mm dia	Neck velocity in m/sec	1.5	2.0	2.5	3.0	3.5	4.0	5.0	6.0	7.0
Neck area in sq mt	P _v =vel pr loss in mm H ₂ O	0.15	0.25	0.41	0.56	0.79	1.016	1.57	2.29	3.1
100	Cfm M ³ /sec. P _s in mm H ₂ O Throw in m NC	30 0.0141 <0.25 2.4 <15	40 0.0189 <0.25 2.4 <15	50 0.0236 1.67 2.7 <15	60 0.0283 1.81 2.9 19	70 0.0331 2.8 3.4 24	80 0.378 3.4 3.7 32	90 0.0425 4.3 4.0 36	110 0.052 6.2 4.3 40	130 0.614 8.7 4.6 44
150	Cfm M ³ /sec. P _s in mm H ₂ O Throw in m NC	60 0.0283 0.51 2.4 <15	80 0.0378 <0.75 3.0 <15	100 0.0472 1.4 3.7 <15	120 0.0567 1.4 4.6 19	140 0.066 1.76 5.0 24	160 0.756 2.13 5.5 33	200 0.0945 3.64 6.1 36	240 0.113 5.8 6.7 40	280 0.132 8.5 7.0 45
200	Cfm M ³ /sec. P _s in mm H ₂ O Throw in m NC	110 0.052 <0.25 3.7 <15	140 0.066 0.51 5.2 18	180 0.085 0.84 5.5 18	210 0.099 1.11 6.1 19	250 0.118 1.71 6.4 24	280 0.132 2.85 7.0 33	350 0.165 3.41 7.6 37	420 0.198 6.1 8.2 40	490 0.231 8.7 8.5 45
250	Cfm M ³ /sec. P _s in mm H ₂ O Throw in m NC	170 0.08 <0.25 5.5 <15	220 0.104 0.51 6.1 <15	280 0.132 0.84 6.4 15	330 0.156 1.11 7.3 20	390 0.184 1.42 8.3 25	440 0.208 1.76 8.5 33	550 0.26 2.6 9.5 37	660 0.312 3.8 10.1 42	770 0.364 7.0 10.7 46
300	Cfm M ³ /sec. P _s in mm H ₂ O Throw in m NC	240 0.113 <0.25 6.4 <15	320 0.151 <0.25 7.0 <15	400 0.189 0.7 7.9 <15	480 0.227 1.11 8.5 21	550 0.26 1.42 9.5 27	630 0.298 2.85 9.8 34	790 0.373 2.56 11.6 38	950 0.449 2.9 12.2 43	1100 0.519 5.8 12.5 47
350	Cfm M ³ /sec. P _s in mm H ₂ O Throw in m NC	330 0.156 <0.25 7.0 <15	430 0.203 <0.25 7.9 <15	540 0.255 0.73 9.5 <15	650 0.307 1.14 10.1 21	750 0.354 1.14 11.0 27	860 0.406 1.42 11.9 36	1070 0.505 1.71 12.5 38	1290 0.609 2.9 14.0 43	1500 0.708 7.3 15.2 47
400	Cfm M ³ /sec. P _s in mm H ₂ O Throw in m NC	420 0.198 <0.25 8.2 15	560 0.264 <0.25 9.8 <15	700 0.331 0.84 11.0 <15	840 0.397 1.06 11.9 22	980 0.463 0.63 12.5 28	1120 0.529 0.85 13.1 36	1400 0.66 1.17 14.6 39	1680 0.793 2.05 16.4 43	1960 0.926 2.5 18.3 47

- Neck velocity is measured in m/sec.
- P_s & P_v = Static and dynamic pressure losses across the diffuser in mm of H₂O.
- Throw (meters) is measured for a terminal velocities of 0.25 m/sec.
- NC based on room attenuation of 10 dB.