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BETEC CAD.

Valves & Nozzles



Jet Nozzles

Selected Products of the company have been Classified / Listed / Tested by various international testing authorities.



Valves & Nozzles**Table Of Contents**

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Disc Valves

BETEC CAD. manufactures disc valves and jet nozzels, which meet the contemporary room design and are adaptable to any type of ceilings or walls and its edges are shaped to fit almost any design when flush mounted with the surrounding ceiling tiles. They are suitable for all types of ventilation systems and depending on the application, different constructions are available for supply and extract air functions.

Rotating the central disc can change the air volume setting. The Supply or Exhaust air pattern is uniformly circular. Disc valves are normally used in the central air conditioning systems where space is an important factor.



DV-AB-11E

Item	Series	Type	Neck Size					
			100	150	200	-	-	-
Disc Valve	B-10	S-Supply	100	150	200	-	-	-
		E - Exhaust	100	150	200	-	-	-
Jet Nozzles	B-10	A - Square	150	200	250	300	350	400
		B - Round	150	200	250	300	350	400
Ball Jet Diffuser	B-20	B - Round	150	200	250	300	350	400

Material Details

All types and models of Disc Valves, Jet Nozzels & Jet Diffusers are available in GI, SS & AL according to the design and application.

Sheet Metal Galvanized Steel (GI)

Zinc coating Z-22 to Z-27 as per **ASTM-A653** Standards.

Sheet Metal Aluminium (AL)

Aluminium Sheet as per Alloy **A1100** Standards.
Extruded aluminium as per Alloy **6063 A** Standards.

Sheet Metal Stainless Steel (SS)

Stainless steel **304 / 316L**.

Applications:

GI Construction : For **HVAC** Commercial, Residential etc.

Aluminium Construction: For Hospitals, Labs, Green Building etc.

SS Construction: For Offshore, Oil & Gas etc.

The respective alphabet indicates the type of material.

G - Galvanized steel (GI)

S - Stainless steel (SS)

A - Aluminum (AL)

All Valve and Nozzles units are designed as per International Standards to shape for aerodynamic performance.

Note:

* Indicates **BETEC CAD's Standard** Construction

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Disc Valve - DV

Model: DV-GB-11E

Type: E- Exhaust

Construction: Galvanized Steel (GI)

Description

Disc Exhaust valves are used for air extraction applications. The multiple contour construction provides a uniform circular air pattern which makes it suitable for variable air volume applications, maintaining high efficiency.

The construction is of steel sheet, with mounting ring made of galvanized steel which is used for easy installation. Disc is attached to the frame by threaded rod.

Foam gasket is provided along the back of the frame to maintain tight seal and avoid air leakage and the air flow can be adjusted by regulating the cone up or down.

All models are available in plastic, aluminum with any color to suit according to the design conditions.

Disk valves can be installed in wall, ceiling or exposed air ducts with mounting rings and can be used in toilets, bathrooms and kitchens.

Standard Construction

Frame

Steel Sheet

Disc

Steel Sheet

Mounting Ring

Galvanized steel

Finish

Available with RAL powder coating, please specify color.

Optional Fittings

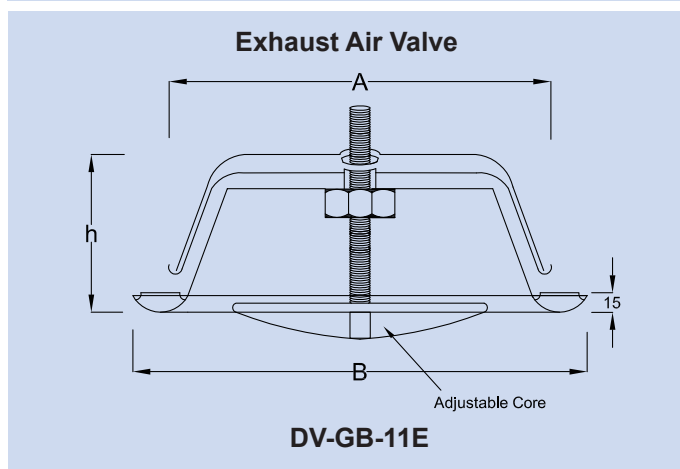
Finish

Mill finish or Chrome plating.

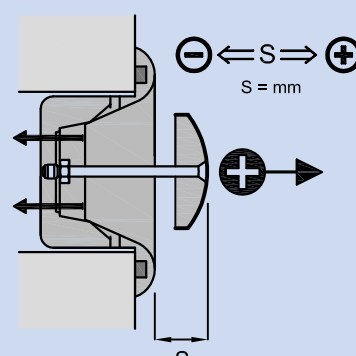
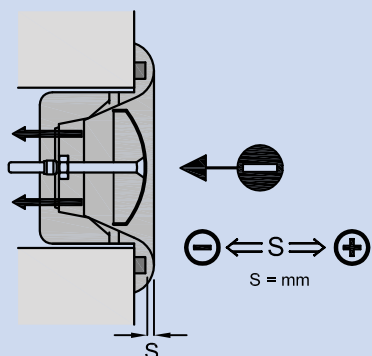
B-10 Series



DV-GB-11E



Dimensions for Disc Valve Model : DV-GB-11E			
N = Nominal Duct Dia (mm)	A = Neck Size (mm)	B = Face Size (mm)	h
100	98	140	55
150	148	200	60
200	198	248	65



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Disc Valve - DV

Model: DV-GB-11S

Type: S- Supply

Construction: Galvanized Steel (GI)

B-10 Series

Description

Disc Supply valves are used for air supply related applications. The multiple contour construction provides a uniform circular air pattern which makes it suitable for variable air volume applications, maintaining high efficiency.

The construction is of steel sheet, with mounting ring made of galvanized steel which is used for easy installation. Disc is attached to the frame by threaded rod.

Foam gasket is provided along the back of the frame to maintain tight seal and avoid air leakage and the air flow can be adjusted by regulating the cone up or down.

All models are available in plastic, aluminum with any color to suit according to the design conditions.

Disk valves can be installed in wall, ceiling or exposed air ducts with mounting rings and can be used in toilets, bathrooms and kitchens.

Standard Construction

Frame

Steel Sheet

Disc

Steel Sheet

Mounting Ring

Galvanized steel

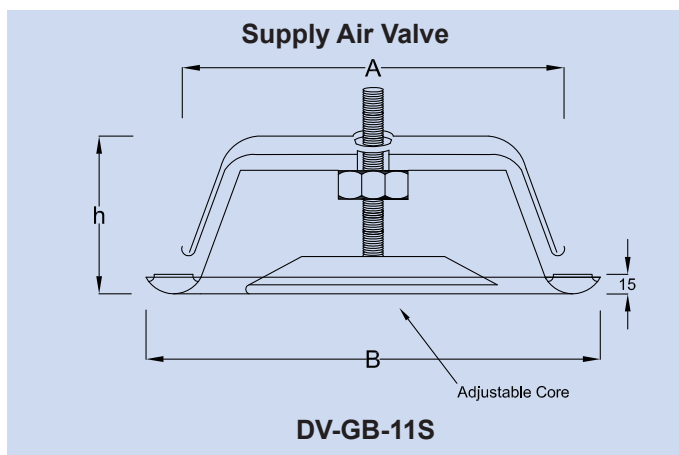
Finish

Available with RAL powder coating, please specify color.

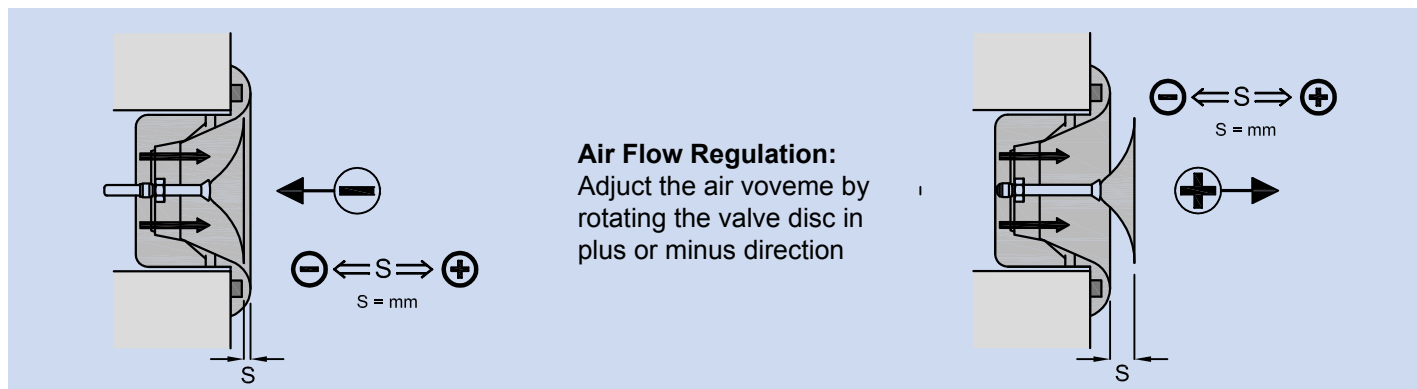
Optional Fittings

Finish

Mill finish or Chrome plating.



Dimensions for Disc Valve Model : DV-GB-11S			
N = Nominal Duct Dia (mm)	A = Neck Size (mm)	B = Face Size (mm)	h
100	98	140	55
150	148	200	60
200	198	248	65



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Disc Valve - DV
B-10 Series
Engineering And Performance Data
Model: DV-GB-11S/E
Type: S- Supply; E- Exhaust
Construction: Galvanized Steel (GI)

Neck Diameter in mm				Airflow								
Opening in mm	100	150	200	CFM	10	20	40	60	80	100	120	140
	-12			Ps	0.36							
				NC	17							
	-9			Ps	0.18	0.68						
				NC	17	22						
	-6			Ps	0.08	0.32	0.8	1.2				
				NC	17	23	26	32				
	0	-12	-15	Ps	0.04	0.2	0.48	0.8				
				NC	19	21	30	34				
	6			Ps		0.12	0.28	0.48	0.8			
				NC		22	31	37	43			
			-15	Ps		0.08	0.16	0.32	0.5			
				NC		20	34	39	45			
	12	-6		Ps		0.08	0.12	0.2	0.32	0.8		
				NC		20	30	36	43	47		
		0		Ps			0.06	0.1	0.16	0.36	0.68	
				NC			26	34	40	45	49	
			-6	Ps				0.06	0.1	0.24	0.4	0.88
				NC				29	38	46	>50	>50
		12		Ps					0.06	0.12	0.24	0.6
				NC					35	43	>50	>50

Note:

1. Airflow is measured in Cubic foot/ minute (CFM).
2. Static Pressure (Ps) is measured in inch water guage (in.w.g).
3. Noise Criteria (NC) is measured in decibals (dB).

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Jet Nozzle – JN

Model: JN-AB-11A/B

Type: A- Square Face; B- Round Face

Construction: Aluminium (AL)

BETEC CAD. manufactures Jet Nozzles, which are designed to be used mainly in HVAC systems for the supply of conditioned (cool / hot) air from the jet diffuser, which has to travel a large distance to the occupied zone, where the distribution of air via ceiling diffusers is not possible. The jet nozzles are placed in the corners, high level areas and can be mounted in any angle, as its air pattern can be altered to any angle.

Jet Nozzle are suitable for vertical, inclined and horizontal air discharge applications, where spot heating or cooling is required such as entrances and concentrated areas of machinery which have high heat loads and are hence used normally in large rooms like Malls, Airports, Auditoriums, Sports Arena, Hyper markets, Zoo etc.

Description

The frame, inner rings and mounting plate are of high quality aluminium construction. Nozzles are 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. The diffusers are wall mounted and are designed to withstand larger airflows with longer throws.

They are ideal for concert halls, theatres, exhibition and sport halls.

Standard Construction

Frame

Aluminium sheet.

Outer flange

Aluminium sheet.

Inner rings

Aluminium spun rings.

Mounting plate

1.2 mm thick aluminium sheet.

Finish

Mill Finish

Optional Fittings

Plenum chamber

Plenum is available with circular, square or rectangular spigots in either top or side entry applications.

Plenum Casing

0.7 mm thick galvanized steel sheet.

Insulation

Acoustic liner of 13 mm thickness, 32 kg/m³ density.

Finish

Available with RAL powder coating, please specify color.

B-10 Series

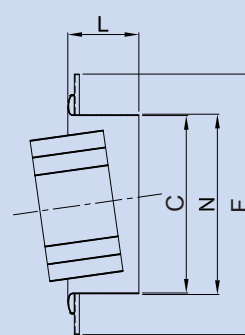


JN-AB-11A

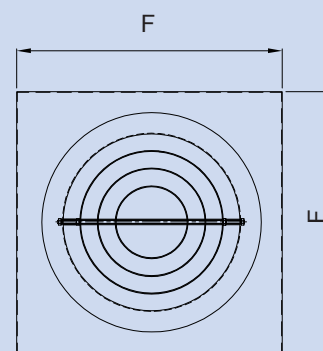


JN-AB-11B

JN-AB-11A

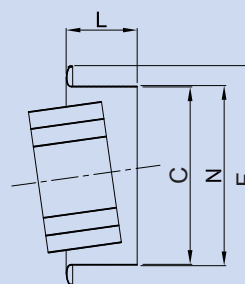


Side View

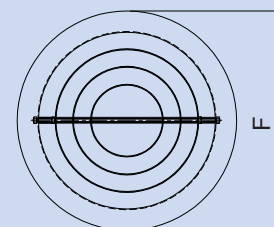


Front View

JN-AB-11B



Side View

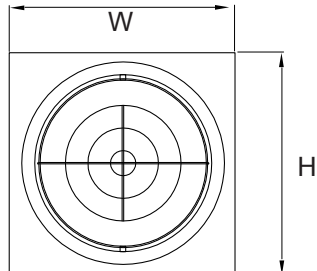
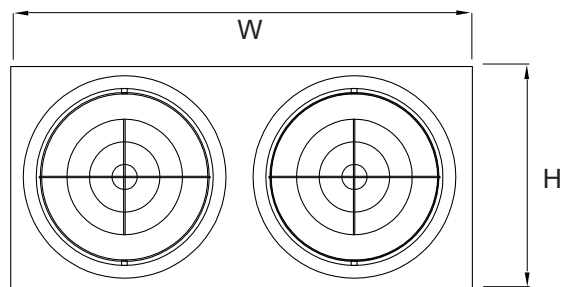
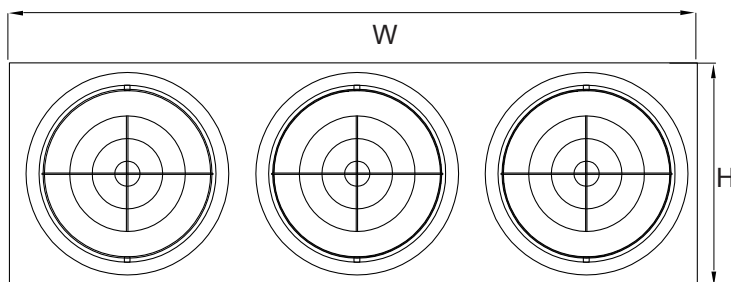
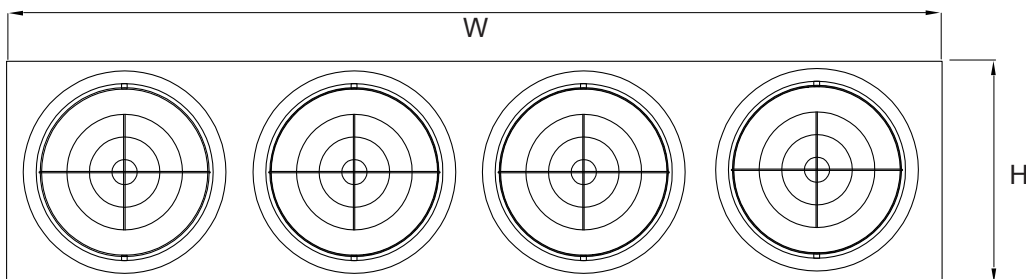


Front View

N = Nominal Duct Dia	JN-AB-11A	JN-AB-11B		L	No of Slots
	F=Face Size	C	F=Face Size		
150	240 x 240	150	220	130	2
210	295 x 295	205	275	130	3
250	350 x 350	248	325	130	4
300	400 x 400	300	375	130	5
350	450 x 450	340	425	130	6
400	500 x 500	398	475	130	7

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Jet Nozzle – JN
B-10 Series
Construction Details and Daimensions
Model: JN-AB-11A/B
Type: A- Square Face; B- Round Face
Construction: Aluminium (AL)

Model: JN-AB-11A- 1P

Model: JN-AB-11A-2P

Model: JN-AB-11A-3P

Model: JN-AB-11A-4P

Model JN-AB-11A-1P	Face Plate	
	Width (mm)	Height (mm)
150 mm Neck Dia	250	250
200 mm Neck Dia	300	300
250 mm Neck Dia	350	350
300 mm Neck Dia	400	400
350 mm Neck Dia	450	450
400 mm Neck Dia	500	500

Model JN-AB-11A-2P	Face Plate	
	Width (mm)	Height (mm)
150 mm Neck Dia	500	250
200 mm Neck Dia	610	300
250 mm Neck Dia	710	350
300 mm Neck Dia	810	400
350 mm Neck Dia	910	450
400 mm Neck Dia	1010	500

Model JN-AB-11A-3P	Face Plate	
	Width (mm)	Height (mm)
150 mm Neck Dia	750	250
200 mm Neck Dia	915	300
250 mm Neck Dia	1065	350
300 mm Neck Dia	1215	400
350 mm Neck Dia	1365	450
400 mm Neck Dia	1515	500

Model JN-AB-11A-4P	Face Plate	
	Width (mm)	Height (mm)
150 mm Neck Dia	1000	250
200 mm Neck Dia	1220	300
250 mm Neck Dia	1420	350
300 mm Neck Dia	1620	400
350 mm Neck Dia	1820	450
400 mm Neck Dia	2020	500

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Jet Nozzle – JN
B-10 Series
Engineering And Performance Data
Model: JN-AB-11A/B
Type: A- Square Face; B- Round Face
Construction: Aluminium (AL)

Size	Neck Velocity	400	800	1200	1600	2400	2800	3200	3600	4000
6	CFM	123	153	183	213	243	273	303	333	363
	Ps (in.w.g)	0.023	0.036	0.05	0.12	0.21	0.33	0.52	0.74	0.92
	Throw	13.12	16.4	19.6	23	26.2	29.5	50	60	72
	NC	<15	<15	18	20	22	23	24	25	25
8	CFM	142	187	232	277	322	367	412	457	502
	Ps (in.w.g)	0.024	0.048	0.096	0.15	0.25	0.37	0.61	0.82	1.22
	Throw	22	37	52	65	111	127	137	147	160
	NC	<15	<15	17	18	19	21	23	24	25
10	CFM	175	235	295	350	410	470	530	590	650
	Ps (in.w.g)	0.017	0.034	0.069	0.12	0.23	0.41	0.74	0.93	1.31
	Throw	30	48	69	101	147	183	210	231	256
	NC	<15	<15	17	19	20	21	21	22	24
12	CFM	222	302	382	462	542	622	702	782	862
	Ps (in.w.g)	0.02	0.05	0.1	0.15	0.3	0.53	0.87	1.02	1.37
	Throw	30	52	72.12	107	152	191	217	237	267
	NC	<15	<15	16	18	19	22	26	28	30
14	CFM	277	376	475	574	672	770	869	968	1067
	Ps (in.w.g)	0.03	0.06	0.1	0.16	0.31	0.59	0.99	1.1	1.42
	Throw	32	55	90	125	162	203	226	249	276
	NC	<15	<15	18	20	21	24	27	30	32
16	CFM	347	467	587	707	827	949	1070	1190	1313
	Ps (in.w.g)	0.04	0.069	0.16	0.2	0.39	0.71	1.19	1.37	1.57
	Throw	36	62	101	136	179	210	237	263	294
	NC	<15	<15	22	24	25	28	31	33	36

Note:

1. Airflow is measured in Cubic foot/ minute (CFM).
2. Static Pressure (Ps) is measured in inch water guage (in.w.g).
3. Noise Criteria (NC) is measured in decibals (dB).
4. Neck velocity is measured in feet/ minute (fpm).

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Ball Jet Diffuser - BJD - ETL - Intertek Tested
B-20 Series
Model: BJD-AB-20B
Type: Ball Jet Diffuser
Construction: Aluminium (AL)

BETEC CAD. manufactures Eyeball type Ball Jet Diffuser, which are designed for delivering accurate and powerful stream of air over long distances. Jet nozzles are mainly used in HVAC systems for spot cooling applications, where air has to travel a large distance to the occupied zone and where the distribution of air via ceiling diffusers is not possible. The Ball Jet Diffuser are placed in the corners, high level areas and can be mounted in any angle, as its air pattern can be altered to any angle.

Eyeball type Ball Jet Diffuser angular movement allows the airstream to be delivered throughout a wide area either in full jet position or in reduced jet position with trajectory control and make them suitable for vertical, inclined and horizontal air discharge applications, where spot heating or cooling is required such as entrances and concentrated areas of machinery which have high heat loads and are hence used normally in large rooms like Malls, Airports, Auditoriums, Sports Arena, Hyper markets, Zoo etc.

Standard Construction

High Quality Aluminium Construction

Finish

Mill finish

Optional Construction
Mounting plate

1.2 mm thick aluminium sheet.

Foam Gasket

Provided all around the frame, to prevent leakage of air.

Plenum chamber

Plenum is available with circular, square or rectangular spigots in either top or side entry applications.

Plenum Casing

0.7 mm thick galvanized steel sheet.

Insulation

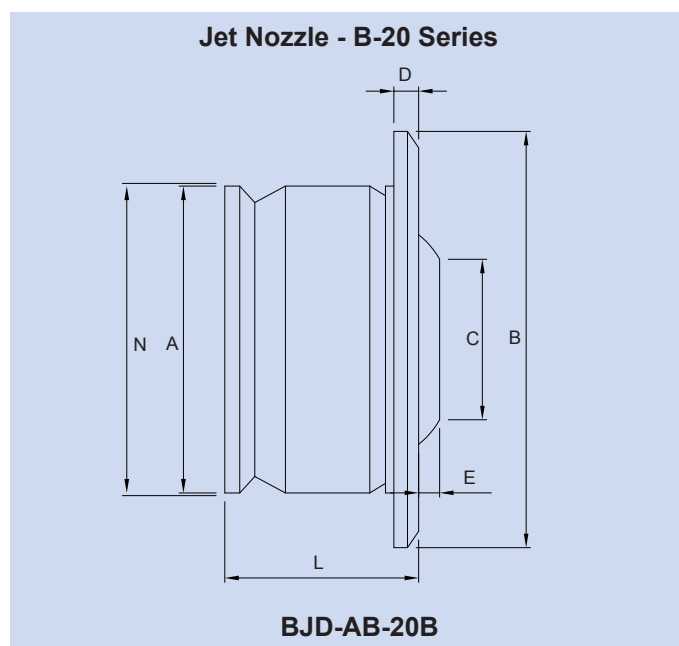
Acoustic liner of 13 mm thickness, 32 kg/m³ density.

Finish

Available with RAL powder coating, please specify color.



BJD-AB-20B



BJD-AB-20B

Sizes and Dimensions

Neck Size	A	B	C	D	E	L
150 Ø	146	195	80	22	10	100
200 Ø	198	260	108	20	12	132
250 Ø	248	310	128	28	15	170
300 Ø	313	380	165	30	29	205
350 Ø	348	430	190	29	33	220
400 Ø	398	483	210	38	33	250

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Ball Jet Diffuser - BJD - ETL - Intertek Tested

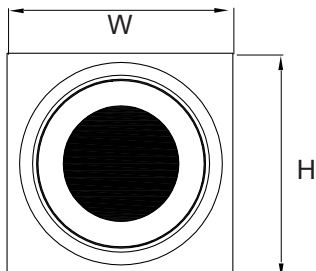
Construction Details and Daimensions

B-20 Series

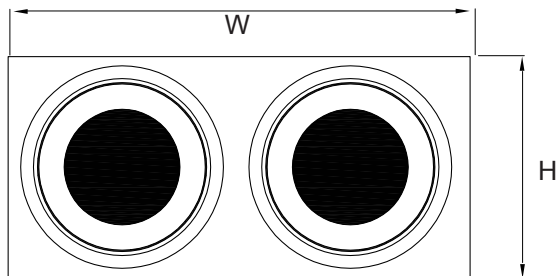
Model: BJD-AB-20B

Type: Ball Jet Diffuser

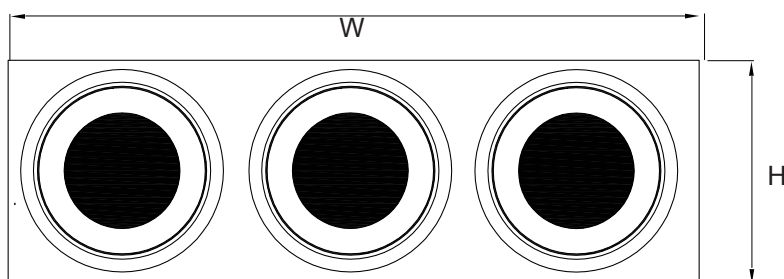
Construction: Aluminium (AL)



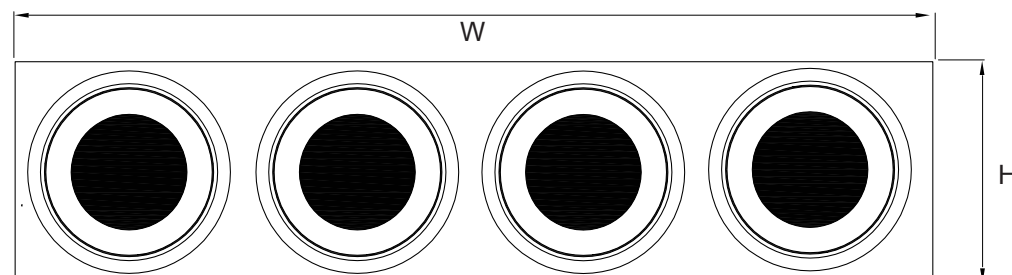
Model: BJD-AB-20B-1P



Model: BJD-AB-20B-2P



Model: BJD-AB-20B-3P



Model: BJD-AB-20B-4P

Model BJD-AB-20B-1P	Face Plate	
	Width (mm)	Height (mm)
150 mm Neck Dia	225	225
200 mm Neck Dia	290	290
250 mm Neck Dia	340	340
315 mm Neck Dia	410	410
350 mm Neck Dia	460	460
400 mm Neck Dia	515	515

Model BJD-AB-20B-2P	Face Plate	
	Width (mm)	Height (mm)
150 mm Neck Dia	450	225
200 mm Neck Dia	580	290
250 mm Neck Dia	680	340
315 mm Neck Dia	820	410
350 mm Neck Dia	920	460
400 mm Neck Dia	1030	515

Model BJD-AB-20B-3P	Face Plate	
	Width (mm)	Height (mm)
150 mm Neck Dia	675	225
200 mm Neck Dia	870	290
250 mm Neck Dia	1020	340
315 mm Neck Dia	1230	410
350 mm Neck Dia	1380	460
400 mm Neck Dia	1545	515

Model BJD-AB-20B-4P	Face Plate	
	Width (mm)	Height (mm)
150 mm Neck Dia	900	225
200 mm Neck Dia	1160	290
250 mm Neck Dia	1360	340
315 mm Neck Dia	1640	410
350 mm Neck Dia	1840	460
400 mm Neck Dia	2060	515

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Ball Jet Diffuser - BJD - ETL - Intertek Tested
B-20 Series
Engineering and Performance Data
Model: BJD-AB-20B
Type: Ball Jet Diffuser
Construction: Aluminium (AL)

Size In Inches	Neck FPM		800	1200	1600	2000	2400	2800	3200	3600	4000	4400
6	Ak 0.077	CFM	62	92	123	154	185	216	246	277	308	339
		Sp in.wg	0.052	0.117	0.209	0.326	0.470	0.639	0.835	1.057	1.305	1.579
		NC	<15	<15	21	26	31	35	38	41	44	46
		Throw	25,16,12	34,21,16	40,24,18	45,27,21	48,29,22	52,31,24	54,33,25	57,34,26	59,36,27	61,37,28
8	Ak 0.122	CFM	98	146	195	244	293	342	390	439	488	537
		Sp in.wg	0.021	0.046	0.082	0.129	0.185	0.252	0.329	0.416	0.514	0.622
		NC	<15	<15	<15	<15	<15	20	25	29	32	36
		Throw	35,19,11	44,26,14	51,30,17	56,34,19	60,37,21	63,39,22	66,42,24	69,43,25	71,45,26	73,47,27
10	Ak 0.175	CFM	140	210	280	350	420	490	560	630	700	770
		Sp in.wg	0.009	0.021	0.037	0.058	0.084	0.114	0.149	0.189	0.233	0.282
		NC	<15	<15	<15	<15	<15	<15	18	23	27	31
		Throw	41,21,11	51,28,14	58,33,17	64,37,18	68,40,21	71,42,21	75,45,23	78,47,24	80,48,25	82,51,26
12	Ak 0.236	CFM	189	283	378	472	566	661	755	850	944	1038
		Sp in.wg	0.018	0.042	0.074	0.116	0.166	0.227	0.296	0.375	0.462	0.560
		NC	<15	<15	<15	<15	<15	<15	19	24	28	32
		Throw	44,22,12	55,28,15	62,33,17	68,36,19	72,39,21	76,41,22	80,43,23	83,45,24	85,46,25	88,48,26
14	Ak 0.301	CFM	241	361	481	601	721	841	961	1081	1201	1321
		Sp in.wg	0.027	0.062	0.075	0.1	0.124	0.152	0.174	0.2	0.223	0.247
		NC	<15	<15	<15	<15	20	25	27	31	34	37
		Throw	46,24,12	56,30,16	64,35,18	70,38,21	74,40,22	77,43,24	81,46,25	83,47,26	86,48,27	90,50,28
16	Ak 0.375	CFM	300	450	600	750	900	1050	1200	1350	1500	1650
		Sp in.wg	0.098	0.221	0.392	0.613	0.882	1.201	1.569	1.985	2.451	2.966
		NC	<15	<15	17	25	31	37	41	46	49	>50
		Throw	38,21,17	54,19,23	58,24,20	67,22,24	68,22,24	77,24,27	81,21,23	84,26,24	86,24,25	91,24,26

Note:

1. Airflow is measured in Cubic foot/ minute (CFM).
2. Static Pressure (Ps) is measured in inch water guage (in.w.g).
3. Noise Criteria (NC) is measured in decibals (dB).
4. Neck velocity is measured in feet/ minute (fpm).

Selected Products of the company have been Classified / Listed / Tested by various international testing authorities.



Performance Test Certificate

Issued To

RENDERED TO
BETEC CAD Ind. (Fzc)
Plot No. P4-02, PO Box 8805
Sharjah Airport International Free Zone,
Sharjah-U.A.E.
Tel: +971-6-5575252
Fax: +971-6-5575151/61

Branch:
Kross Air Distribution Systems
Plot No. 90-93, Road No. 9
EPIP Zone, Pashamylaram
Hydrabad-502307, A.P. India
Tel: 009140-8455224212

Intertek has tested three representative samples of
BETEC CAD Ind. (Fzc) Ball Jet Diffusers
Model Number BJD-B20B
6, 8, and 12" diameter models were tested
in accordance with the standards listed below and were found
to perform in a manner appropriate to the dictates of the standards.

STANDARDS

ASHRAE 70-2006 "Method of Testing for Rating
the Performance of Air Outlets and Inlets"

ADC 1062: GRD-84 "Test Code for Grilles, Registers and Diffusers"

ISO 5219 "Air Distribution and Air Diffusion – Laboratory
Aerodynamic Testing and Rating of Air Terminal Devices"

SCOPE OF TESTING

The diffusers were tested for the following performance characteristics:
"Reference Intertek Report Number 100354230CRT-001a dated May 31, 2011 and
Report Numbers 3185702CRT-001d and -001e dated November 20, 2009"

- A) Sound Power Level (NC)
- B) Air Velocity versus Static Pressure
- C) Area Factor
- D) Throw Pattern

Date: July 6, 2011



James R. Kline
Intertek
Engineer / Quality Supervisor

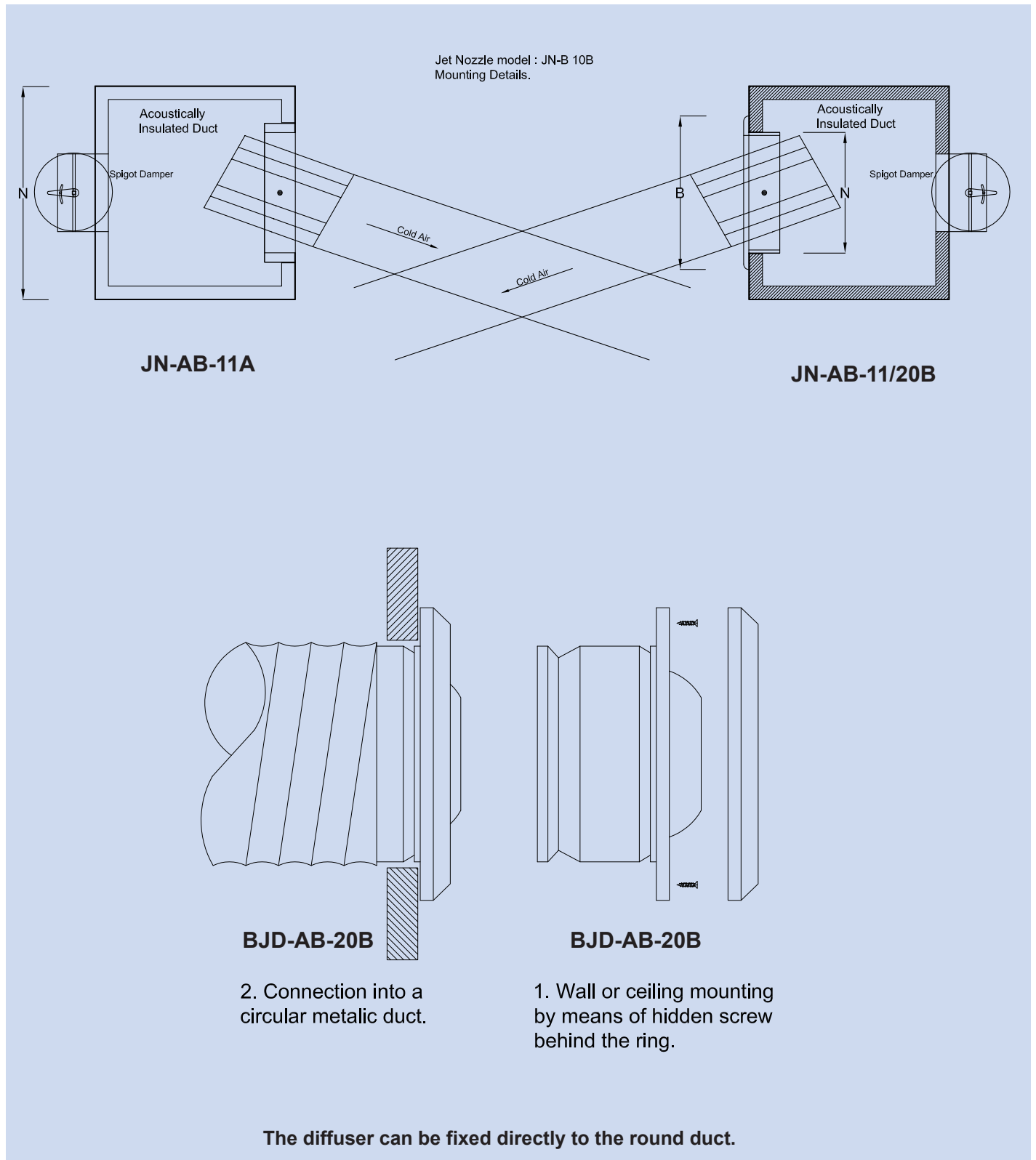
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Valves & Nozzles

Installation Details



Selected Products of the company have been Classified / Listed / Tested by various international testing authorities.

Special Notes:

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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"Due to continuous progress and product improvement, **BETEC CAD.** reserves the right to make changes without notice"

November - 2019