JD – Jet Diffuser

Model: **JD**

The Holyoake JD range of Jet Diffusers have been designed to provide an attractive option for air conditioning large areas. JD diffusers are perfect for situations where large supply air quantities and throw distances are required. All JD diffusers are constructed from three cones that provide a uniformity of appearance through the range.

The JD has two separate modes. Firstly there is diffuse mode where the supply air is spread and diffused into the room over a relatively short distance. The second mode is Jet Mode that throws a high velocity jet of air over a long distance. In Jet mode the direction of throw can be adjusted by up to 15˚ from the centre line of the diffuser. Switching between the two modes is achieved by rotating the cone set through 180˚.

Sizes range from 200mm to 350mm in 50mm increments. JD diffusers can be mounted directly into the end of circular duct, or can be mounted into a plenum box, which may supply air to a number of JD diffusers. Alternatively the JD diffuser may be mounted into a wall, or angled ceiling.

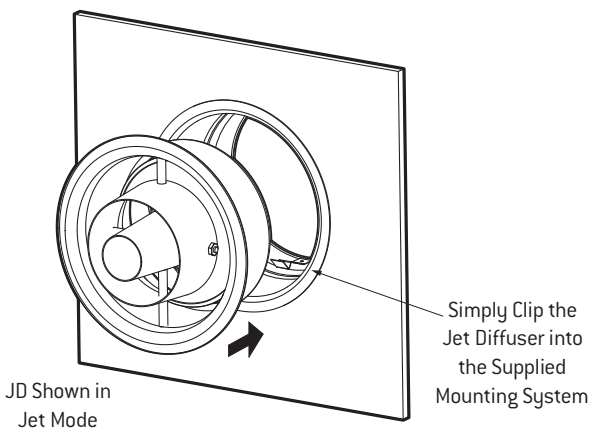
Construction

JD Jet Diffusers are constructed from aluminium spinnings and are held together using threaded rods and aluminium spacers.

The diffuser comes complete with an installation system that is also of spun aluminium construction.

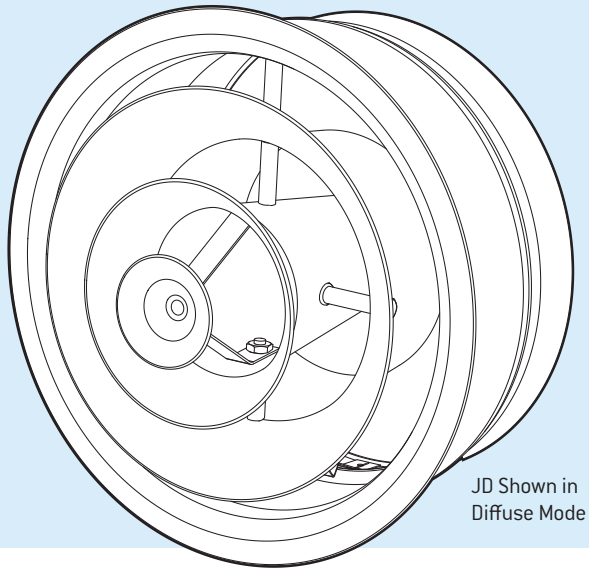
Installation - Mounting System

The JD comes complete with a mounting system designed to provide a perfect finish, regardless of the wall, or ceiling construction. The mounting plate can be fitted after the wall, or ceiling is in place and then the JD simply pushed into place when all finishing work is complete. The JD is held securely in place with spring steel retaining clips.

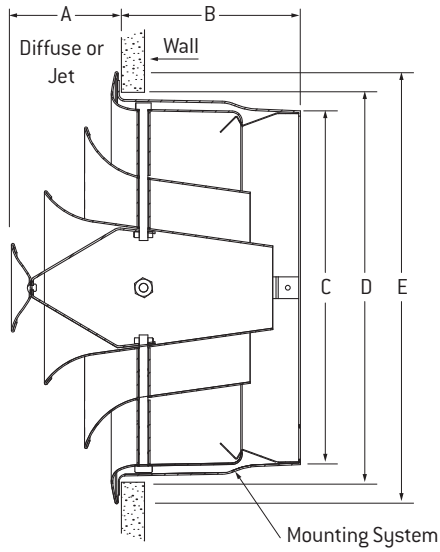


JD Shown in Jet Mode

Jet Diffuser

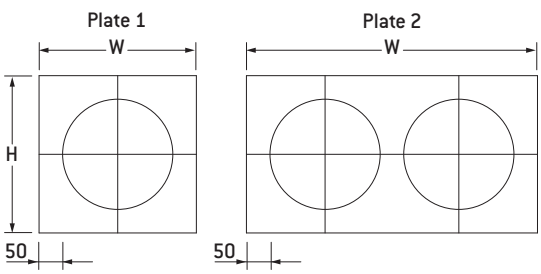


JD Shown in Diffuse Mode



Size	Dimensions (mm)				
	A	B	C	D	E
JD-200	58	126	184	205	234
JD-250	74	126	244	268	298
JD-300	92	140	294	319	348
JD-350	94	140	344	369	398

Optional Mounting Plates



JD Size	Number of JD Mounting Holes			
	1	2	3	4
	W x H	W x H	W x H	W x H
JD-200	334x334	618x334	902x334	1186x334
JD-250	398x398	746x398	1094x398	1442x398
JD-300	448x448	846x448	1244x448	1642x448
JD-350	498x498	946x498	1394x498	1842x498

Plate constructed from aluminium sheet mounted in a Style No. 1 Frame surround, see page 51B. W and H dimensions listed are neck sizes.

Nominal Size	Mode		Air Flow Rate (l/s) 100	150	200	250	300	400	500	600	800	1000
JD-200	Diffuse Mode	Throw (m)	3.4	4.9	7.0	9.0						
		Static Pressure (Pa)	9	18	29	42						
		NC	26	29	35	44						
	Jet Mode	Throw (m)	7.0	9.8	13.8	18.0						
		Static Pressure (Pa)	46	99	154	240						
		NC	30	40	50	59						
JD-250	Diffuse Mode	Throw (m)	1.5	2.5	4.0	5.3	7.0	9.7				
		Static Pressure (Pa)	4	9	14	22	32	55				
		NC	-	24	31	39	44	51				
	Jet Mode	Throw (m)	5.7	8.0	10.0	13.0	15.6	21.5				
		Static Pressure (Pa)	24	56	103	152	220	390				
		NC	16	25	28	39	45	54				
JD-300	Diffuse Mode	Throw (m)		3.0	4.1	5.2	5.9	7.8	9.6	12.0	16.0	
		Static Pressure (Pa)		2	3	4	6	10	16	22	37	
		NC		-	20	27	34	41	47	52	70	
	Jet Mode	Throw (m)		6.0	8.2	10.2	11.8	15.6	19.2	24.0	31.2	
		Static Pressure (Pa)		17	28	44	60	110	170	235	418	
		NC		-	29	37	38	45	55	63	75	
JD-350	Diffuse Mode	Throw (m)			3.2	4.1	4.8	6.4	8.4	9.8	13.2	16.8
		Static Pressure (Pa)			3	4	6	9	12	17	33	57
		NC			18	22	23	34	38	45	51	68
	Jet Mode	Throw (m)			6.5	8.2	9.6	12.6	16.8	19.7	26.4	33.6
		Static Pressure (Pa)			18	28	40	67	104	147	258	396
		NC			30	34	36	41	46	52	61	70

Heating Throw Factors			
Size	Heating Differential		
	5°C	10°C	20°C
JD-200	1.30	0.90	0.65
JD-250	1.20	0.85	0.60
JD-300	1.10	0.75	0.55
JD-350	1.00	0.65	0.45

To estimate maximum vertical projection under heating conditions multiply jet throw data by the relevant factor.

Performance Notes

1. Listed throw distances are to a terminal velocity (Vt) of 0.5 m/s for isothermal conditions.
2. The NC values are based on a room absorption of 10dB re 10^{-12} Watts.
3. To estimate vertical projection under cooling conditions multiply throw factors as follows:-
   10°C cooling x 1.15, 5°c cooling by 1.10.
4. Caution is advised if combining 'diffuse' mode and 'jet' mode off the same supply air system.
   There are considerable static pressure differences between both modes.
5. Seismic Restraints required, but not supplied.

Due to a policy of continuous development and improvement the right is reserved to supply products which may differ slightly from those illustrated and described in this publication.

Nominal Duct Size	Approximate Weight in Kg.
JD - 200	1.10
JD - 250	1.20
JD - 300	1.50
JD - 350	1.80

BHC, DFR, DS & JD

Product Ordering Key and Suggested Specifications

BHC – SIZE – OPTIONS – FINISH

- **BHC**: High Capacity Barrel Diffuser
- **SIZE**: 635 x 300 or 1270 x 300
- **OPTIONS**: 24 V AC or, 230 V AC Actuators / Thermal Power Pill
- **FINISH**: Mill Aluminium Anodized Aluminium Holyoake White Powder Coat

High Capacity Barrel Diffusers shall be Holyoake Series BHC. They shall be designed to be mounted into a supply plenum that may contain a number of BHC units, which will provide high capacity and long throw diffusion. Adjustment is available to change the vertical and horizontal throw and spread.

Series BHC shall be finished in Mill Aluminium and fitted with accessories where indicated.

All shall be as manufactured by Holyoake.

DFR – FINISH

- **DFR**: Displacement Floor Mounted Round Diffuser
- **FINISH**: Black Holyoake White Powder Coat

Displacement Floor Mounted Round Diffusers shall be Holyoake Series DFR. They shall be designed to mount into a supply plenum at floor level and to provide an even distribution of air flow at low velocity, thereby creating a draft-less environment. Pressure drop through the displacement diffusers will be such to provide balance within the supply plenum, while being low enough to generate very low noise levels.

Series DFR Displacement Diffusers shall be circular.

All shall be as manufactured by Holyoake.

DS – W x H – FLANGE – OPTION – FINISH

- **DS**: Displacement Step Mounted Diffuser
- **W x H**: Hole Size
- **FLANGE**: 17mm 25mm
- **OPTION**: RC Removable Core (25 mm flange only).
- **FINISH**: Powder Coat Mill Aluminium

Displacement Step Mounted Diffusers shall be Holyoake Series DS. They shall be designed to mount into a supply plenum at floor level and to provide an even distribution of air flow at low velocity, thereby creating a draft-less environment. Pressure drop through the displacement diffusers will be such to provide balance within the supply plenum, while being low enough to generate very low noise levels.

Series DS Displacement Step Mounted Diffusers are designed to be face fixed, or supplied with the Holyoake Removable Core System (25 mm flange only).

All shall be as manufactured by Holyoake.

JD – 250 – OPTIONS – FINISH

- **JD**: Jet Diffusers
- **250**: Nominal Size
- **OPTIONS**: Mounting Plate (Type 1, 2, 3 or 4)
- **FINISH**: Holyoake White Mill Aluminium Powder Coat

Circular Jet Diffusers shall be Holyoake Model JD constructed from spun aluminium cones. JD Jet Diffusers shall be capable of operating in either diffused, or jet air pattern configurations. The air patterns shall be achieved by rotating the cone assembly through 180 degrees. JD Jet Diffusers shall be complete with a mounting system suitable for wall, or ceiling applications.

Series JD shall be finished in powder coat and fitted with accessories where indicated.

All shall be as manufactured by Holyoake.

Note

For ceiling applications of JD Diffusers, Seismic Restraints would be required, but not supplied.

JND, EL, EL-P, FSD & TLC-EL

Product Ordering Key and Suggested Specifications

JND – SIZE – FINISH

- JND: Jet Nozzle Diffuser
- SIZE: 160, 200, 250, 360, 400
- FINISH: Powder coat white, special colours available on request

Holyoake Jet nozzle diffusers shall be of spun aluminium construction with a steel concealed mounting system. They shall be designed to supply large air quantities over large throws.

Series JND shall be finished in powder coat and all shall be as manufactured by Holyoake.

FSD — Floor Swirl Diffuser

OPTIONS — Die Cast Aluminium Mill Finish, or, Die Cast Aluminium Powder Coat Finish

Circular floor diffusers shall be Holyoake FSD Series manufactured in glass filled polycarbonate, in self-coloured grey, or black, as standard. Nominal FSD diffuser size shall be 220mm in diameter. The FSD diffuser shall contain a flow regulation damper and the fascia is complete with 'Min/Max' indication.

Series FSD mounting clamp and trim ring shall also be manufactured in glass filled polycarbonate.

FSD diffusers shall contain a dust/dirt collection basket.

All Series FSD materials used are fire retardant and the diffusers shall resist permanent deformation when subject to point loads up to 500 Kg.

All shall be as manufactured by Holyoake.

EL – 2 – S – 300 x 300 – ACCESSORIES – OPTIONS – FINISH

- EL: Series "Eyelash"
- 2: Core Model
- S: Style
- 300 x 300: Duct Size
- ACCESSORIES: OBD-1 Opposed Blade damper
- OPTIONS: RC 25, RC 50, CMF — Removable Core Frame Option
- FINISH: Holyoake White Mill Aluminium Powder Coat

Surface Mounted Eyelash Type

EL surface mounted diffusers shall be of the "Eyelash", or curved blade type. They shall be of extruded aluminium construction, with each blade individually adjustable from the face. Optional opposed blade damper can be adjusted through the face of the diffuser.

All shall be as manufactured by Holyoake

EL – P – 2 – S – 300 x 150 – 600 x 600 – ACCESSORIES – FINISH

- EL: Series "Eyelash"
- P: Panel Lay-in
- 2: Core Model
- S: Style
- 300 x 150: Duct Size
- 600 x 600: Module Size
- ACCESSORIES: OBD-1 Opposed Blade damper
- FINISH: Holyoake White Mill Aluminium Powder Coat

Panel Lay-in Eyelash Type

EL-P Panel Lay-in diffusers shall be of the "Eyelash", or curved blade type. They shall be of extruded aluminium construction, with each blade individually adjustable from the face. Optional opposed blade damper can be adjusted through the face of the diffuser.

All shall be as manufactured by Holyoake.

TLC-EL – 2 – L – 400 x 150 – ACCESSORIES – FINISH

- TLC-EL: Series Curved Frame "Eyelash"
- 2: Core Model
- L: Style
- 400 x 150: Nominal Duct Size
- ACCESSORIES: OBD-1 Opposed Blade damper
- FINISH: Holyoake White Mill Aluminium Powder Coat

Curved Frame Eyelash Type

TLC-EL diffusers shall be of the "Curved Frame Eyelash" type, with curved blades. They shall be of extruded aluminium construction, with each blade adjustable from the face. Optional opposed blade damper can be adjusted through the face of the diffuser.

All shall be as manufactured by Holyoake.

Note

For ceiling applications of EL Diffusers, Seismic Restraints would be required, but not supplied.