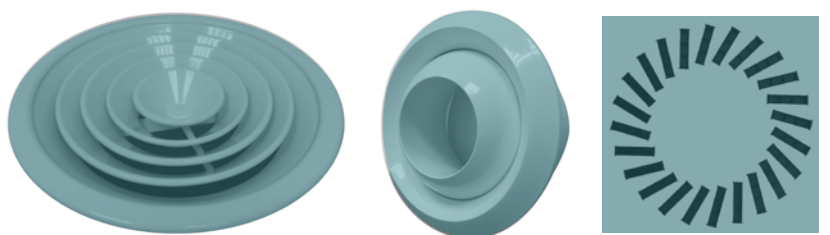


CHAPTER 12



OTHER AIR OUTLETS

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02	CIRCULAR CEILING DIFFUSER (FIXED CORE) DETAILS & DIMENSIONS
03	CIRCULAR CEILING DIFFUSER (FIXED CORE) TABULAR SELECTION
04	JET NOZZLE DIFFUSER (BALL TYPE) INTRODUCTION
05	JET NOZZLE DIFFUSER (BALL TYPE) DETAILS, DIMENSIONS & SELECTION
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Model CSCD C/W BFD (FIXED CORE)

This model of circular Diffuser is totally different in its design, construction & concept from our one mentioned in chapter # 10. In this model core (Inner cones) is :

- Fixed.
- Flushed to the frame.
- Can't be adjusted vertically up or down.
- But still removable from the face.

Each diffuser already equipped with ABS (plastic) butterfly damper in black color as standard.



Features & Characteristics :

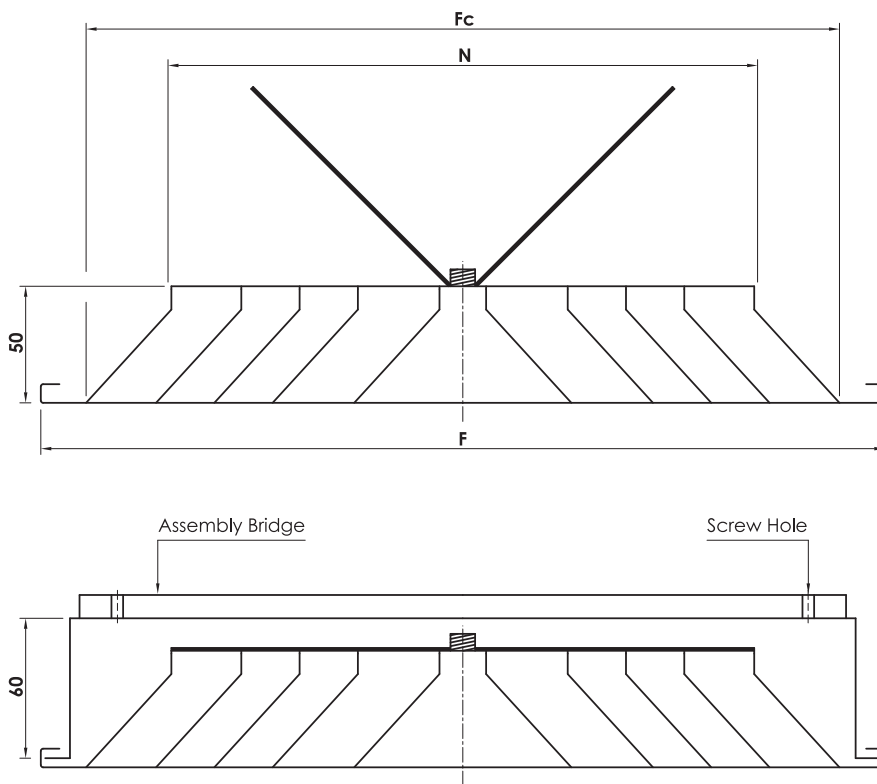
- Frame & inner cones (core) are made of high quality Aluminum sheet pressed to give the circular shape.
- Damper (Butterfly type): made of ABS (plastic) in black color.
- The inner cones (core) are designed in conical shape, modern styling & easy removable allowing for easy installation, balancing, cleaning, damper adjustment & access to duct system.
- Available in 5 standard sizes ranging from 150 mm to 350 mm Ø in 50 mm increments.
- Provided with standard sealing sponge gasket fixed backside of each diffuser.
- Provided with G.I. assembly bridge & screws for easy installation.
- Good for installations between 2.6 to 4.1 mtr height.



OPERATING RANGE & QUICK SELECTION TABLE

Nominal Neck size (N)		CFM Range
mm	Inch	
150 Ø	6" Ø	60 to 200
200 Ø	8" Ø	120 to 320
250 Ø	10" Ø	180 to 470
300 Ø	12" Ø	240 to 630
350 Ø	14" Ø	300 to 820

- @ Max 40 dBA.



NECK & OTHER DIMENSIONS				
Nominal Neck size (N)		Dimensions in mm		No. of cones
mm	Inch	F Ø	Fc Ø	
150 Ø	6" Ø	262	214	2
200 Ø	8" Ø	304	256	3
250 Ø	10" Ø	362	314	4
300 Ø	12" Ø	401	353	5
350 Ø	14" Ø	452	404	6

- All Dimensions are in mm and subject to ± 2 mm tolerance.

CIRCULAR CEILING DIFFUSER (Fixed core)



Engineering & Performance Data

TABULAR SELECTION FOR CSCD C/W BFD (FIXED CORE)

CFM	SIZE ▶	150 mm	200 mm	250 mm	300 mm	350 mm		
60	Vel	2.75	1.20	0.77	0.54	0.40		
	Δ P	0.70	0.28	0.23	0.21	0.20		
	Th. min	0.50	0.33	0.27	0.22	0.19		
	Th. max	0.92	0.70	0.61	0.55	0.51		
	dbA	< 15	< 15	< 15	< 15	< 15		
90	Vel	4.12	1.79	1.16	0.81	0.60		
	Δ P	1.33	0.40	0.28	0.23	0.21		
	Th. min	0.75	0.49	0.40	0.33	0.29		
	Th. max	1.25	0.92	0.79	0.70	0.64		
	dbA	< 15	< 15	< 15	< 15	< 15		
120	Vel	5.50	2.39	1.55	1.08	0.81		
	Δ P	2.22	0.57	0.35	0.27	0.23		
	Th. min	1.00	0.66	0.53	0.44	0.38		
	Th. max	1.59	1.13	0.96	0.85	0.77		
	dbA	< 15	< 15	< 15	< 15	< 15		
150	Vel	6.87	2.99	1.94	1.35	1.01		
	Δ P	3.37	0.79	0.44	0.31	0.26		
	Th. min	1.24	0.82	0.66	0.55	0.48		
	Th. max	1.92	1.35	1.14	0.99	0.89		
	dbA	32	18	< 15	< 15	< 15		
180	Vel	8.25	3.59	2.32	1.61	1.21		
	Δ P	4.77	1.05	0.55	0.36	0.29		
	Th. min	1.49	0.99	0.79	0.66	0.57		
	Th. max	2.25	1.57	1.32	1.14	1.02		
	dbA	37	24	< 15	< 15	< 15		
210	Vel	9.62	4.18	2.71	1.88	1.41		
	Δ P	6.42	1.37	0.68	0.43	0.32		
	Th. min	1.74	1.15	0.93	0.77	0.67		
	Th. max	2.58	1.79	1.49	1.29	1.15		
	dbA	41	28	18	< 15	< 15		
240	Vel	10.99	4.78	3.10	2.15	1.61		
	Δ P	8.33	1.73	0.83	0.50	0.36		
	Th. min	1.99	1.31	1.06	0.88	0.76		
	Th. max	2.91	2.01	1.67	1.43	1.28		
	dbA	45	32	21	< 15	< 15		
270	Vel	12.37	5.38	3.49	2.42	1.81		
	Δ P	10.50	2.14	1.01	0.58	0.41		
	Th. min	2.24	1.48	1.19	0.99	0.86		
	Th. max	3.24	2.23	1.84	1.58	1.40		
	dbA	48	35	25	16	< 15		
300	Vel		5.98	3.87	2.69	2.02		
	Δ P		2.60	1.20	0.67	0.46		
	Th. min		1.64	1.32	1.10	0.95		
	Th. max		2.45	2.02	1.73	1.53		
	dbA		38	28	19	< 15		
360	Vel		7.17	4.65	3.23	2.42		
	Δ P		3.66	1.64	0.89	0.58		
	Th. min		1.97	1.59	1.32	1.14		
	Th. max		2.88	2.37	2.02	1.78		
	dbA		43	33	24	17		
420	Vel				8.37	5.42	3.37	2.82
	Δ P				4.91	2.17	1.14	0.72
	Th. min				2.30	1.85	1.54	1.33
	Th. max				3.32	2.72	2.31	2.04
	dbA				47	37	29	21
480	Vel					6.20	4.31	3.22
	Δ P					2.78	1.44	0.89
	Th. min					2.11	1.76	1.52
	Th. max					3.08	2.61	2.29
	dbA					41	32	25
540	Vel					6.97	4.84	3.67
	Δ P					3.47	1.77	1.07
	Th. min					2.38	1.98	1.72
	Th. max					3.43	2.90	2.55
	dbA					44	36	29
600	Vel					7.75	5.38	4.03
	Δ P					4.23	2.14	1.28
	Th. min					2.64	2.20	1.91
	Th. max					3.78	3.19	2.80
	dbA					8.52	39	32
660	Vel					5.08	5.92	4.43
	Δ P					2.91	2.55	1.51
	Th. min					4.13	2.42	2.10
	Th. max					50	3.49	3.05
	dbA						41	34
720	Vel						6.46	4.84
	Δ P						3.00	1.76
	Th. min						2.64	2.29
	Th. max						3.78	3.31
	dbA						44	37
780	Vel						7.00	5.24
	Δ P						3.49	2.04
	Th. min						2.86	2.48
	Th. max						4.07	3.56
	dbA						46	39
900	Vel							6.05
	Δ P							2.65
	Th. min							2.86
	Th. max							4.07
	dbA							43
1,000	Vel							6.85
	Δ P							3.35
	Th. min							3.24
	Th. max							4.58
	dbA							46
1,200	Vel							7.66
	Δ P							4.14
	Th. min							3.62
	Th. max							5.08
	dbA							50

- Vel = Velocity (m/s)
- Δ P = Pressure Drop (mm. wg)
- Th. min = Throw, Minimum (m)
- Th. max = Throw, Maximum (m)
- dbA = Noise level (dbA)

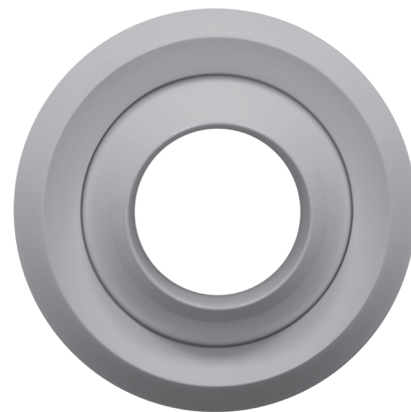
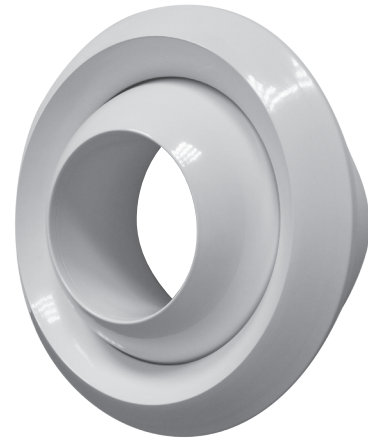
Model : JET NOZZLE DIFFUSER (BALL TYPE)

The ball type Jet Nozzles with variable diffusion directions are particularly designed for Air Conditioning systems which require long concentrated throws in order to reach areas which are distant from the duct system or hidden by structural elements.

Jet Nozzles of ball type can be utilized for both vertical & horizontal air diffusion, thanks for their easy orientation in all directions around 360°, also the minimum construction tolerance & an accurate smooth finish of the spherical body together with its surrounding ring guarantees easy & precise movement.

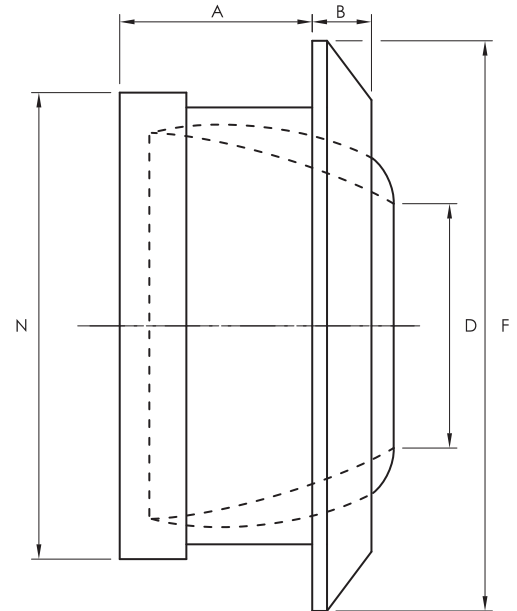
Features & Characteristics :

- Spherical body & its ring are made of high quality Aluminum sheet pressed to give the ball shape.
- The ball can be oriented around 360°.
- Fixing ring is provided with holes for easy screw installation.
- An extra covering ring is provided to conceal the fixing screws (turning this ring clockwise is only what you need to fit it in place).
- The built in circular neck provided at the backside of each diffuser allows for easy connection to flexible duct.
- A double felt seal between the ball body & its ring permits a perfect seal & a self locking position once desired angle has been chosen.
- Available in five standard sizes 150, 200, 250, 315 & 400 Ø mm.
- Good for installations between 2.8 to 30 mtr height.



Nominal Size (N)	Neck & other Dimensions				
	N Ø	D Ø	F Ø	A	B
150 Ø	145	75	198	80	23
200 Ø	198	105	261	105	30
250 Ø	247	130	316	135	35
315 Ø	314	162	392	170	40
400 Ø	398	210	495	215	55

- All Dimensions are in mm and subject to ± 2 mm tolerance.



OPERATING RANGE & QUICK SELECTION TABLE

Nominal Size (N)	A _{eff.} (m ²)	CFM RANGE	Throw @Vt=0.25m/s (m)	Pressure drop Δ P (Pa)	Noise Level (dBA)
150 Ø	0.00503	65 - 225	18.0 - 31.50	24 - 275	<20 - 41
200 Ø	0.00950	125 - 425	21.0 - 33.50	23 - 277	<20 - 46
250 Ø	0.01360	175 - 620	21.5 - 34.00	24 - 277	<20 - 46
315 Ø	0.01770	225 - 790	22.0 - 35.00	23 - 275	<20 - 47
400 Ø	0.03142	400 - 1400	25.0 - 37.00	23 - 276	<20 - 49

Model : SWD 16 / 24 / 48

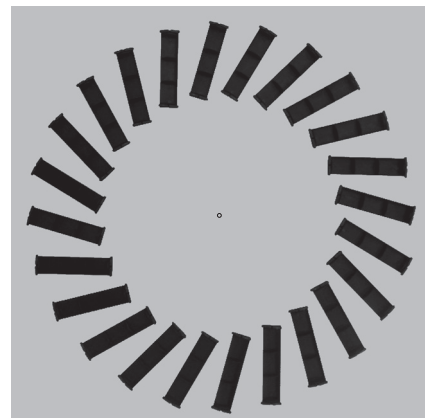
The swirl Diffuser with manual adjustment deflectors has been especially developed to enable the direction of air discharge to be altered on site to cater for any changes in room layout or partitions. Due to the rotary swirling motion of the air discharge, induction of room air occurs very quickly resulting in a rapid decay of supply air velocity & temperature difference so that a large number of air changes (up to 30 per hour) can be obtained with temperature difference between + 10 c° & - 10 c°.

Features & Characteristics :

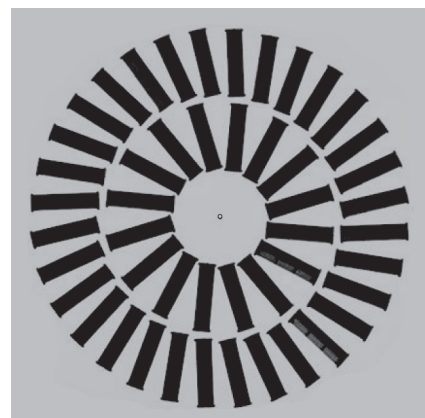
- Face plate (panel) made of high quality steel sheet finished in white powder coating in standard size 595*595 mm outer dimensions.
- Ready to fit in standard 600*600 mm false ceiling tile.
- The control deflectors are made from plastic (ABS) in black color as standard.
- Each deflector is singularly adjustable & fit in place to give the final geometry.
- The pivoting deflectors can be set in different positions in order to vary the direction of discharged air. By turning all deflectors in the same direction (set @45°), the air flow will discharge in the form of centrifugal swirl motion, in this case this diffuser will be suitable for all applications which require high induction for heating & cooling.
- Available in three different options of number of deflectors giving different quantity of air flow, thus 16, 24 & 48 deflectors.



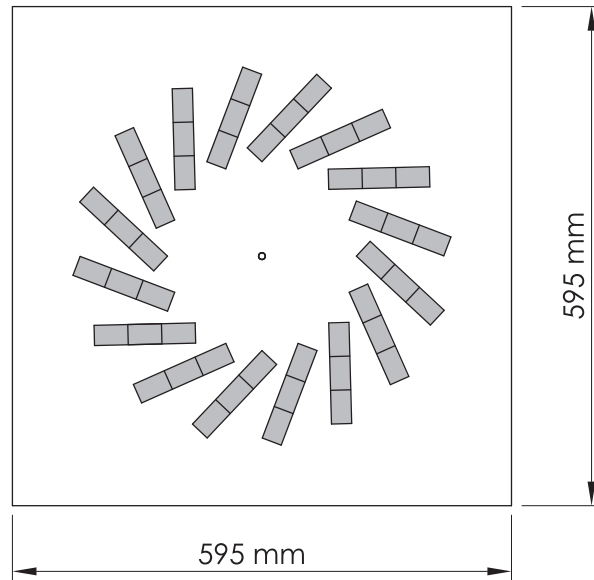
SWD 16



SWD 24



SWD 48



OPERATING RANGE & QUICK SELECTION TABLE

Model	Outer Size (mm)	Number of Deflectors	A _{eff.} (m ²)	CFM Range	Throw @V _t =0.25m/s (m)	Pressure drop Δ P (Pa)	Noise Level (dBA)
SWD 16	595 x 595	16	0.022	90 - 320	<1 - 6.1	6 - 71	<20 - 54
SWD 24	595 x 595	24	0.032	135 - 480	<1 - 7.3	6 - 72	<20 - 51
SWD 48	595 x 595	48	0.043	185 - 600	<1 - 6.4	6 - 62	<20 - 54



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