

## JET SWIRL DIFFUSER



## Description

The SMARTEMP® Jet Swirl Diffuser, type JSC-AD (figure 1), offers adjustable discharge direction from horizontal to vertical for extremely high discharge heights. In cooling mode, horizontal discharge with strong swirl produces high induction, diffusing the swirling air stream with strong mixing characteristics into the space. In heating mode, concentrated vertical supply air is discharged as a jet – without swirl – to achieve exceptionally long downward throw.

The JSC-AD diffuser can be flush mounted in a ceiling or freely suspended (ie no Coanda attachment to the ceiling required). Cambered radial swirl vanes surrounding a central core tube that houses the adjustment mechanism are recessed within a round bell-mouth with suspended guide ring and integrated jet straightener.

The JSC-AD diffuser is made of powder coated aluminium.

Diffuser discharge direction is adjustable (manual or electrically motorised) from a horizontally projecting swirl disc to a vertically projecting jet.

The diffuser is characterised by highly inductive swirl discharge when discharging horizontally, which achieves intense mixing as the highly turbulent supply air stream projects from the diffuser to be strongly diluted with large quantities of entrained room air. The discharge velocity breaks down rapidly. Enhanced draught-free comfort with uniform temperature distribution is achieved throughout the occupancy space. Vertical jet discharge allows heating, with large penetration depth, to be achieved in applications with extreme discharge heights.

The stable discharge characteristics of the JSC-AD swirl diffuser over a wide range of supply air temperatures, make this swirl diffuser suitable for extremely high discharge height applications, such as sports arenas, exhibition halls, and large factories.

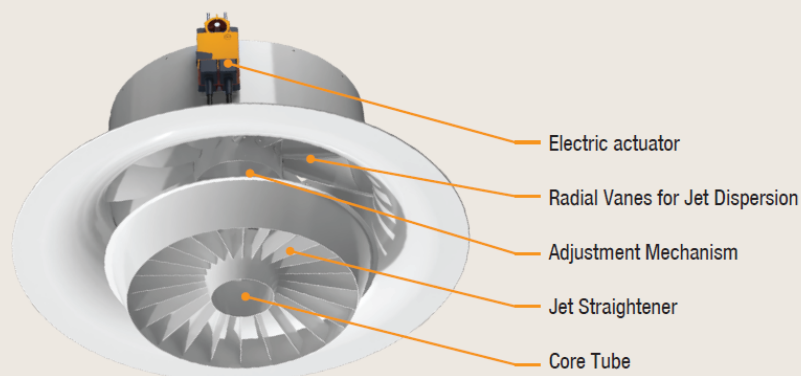


Figure 1

## Description

<b>Construction:</b>	The JSC-AD swirl diffuser is available in two sizes. The diffuser comprises an outer neck and bellmouth incorporating curved aluminium radial vanes, a central control mechanism, and a guide ring with jet straightener. The guide ring with jet straightener can be adjusted either manually or by means of an electric actuator.
<b>Volume flow rate range:</b>	300 - 2400 L/s
<b>Available sizes:</b>	DN400 and DN630
<b>Discharge height:</b>	8 - 22 m
<b>Features:</b>	<ul style="list-style-type: none"><li>• Very large penetration depth when heating.</li><li>• Adjustable discharge direction either manually or with actuator.</li><li>• Highly inductive air pattern.</li></ul>

## Technical Data

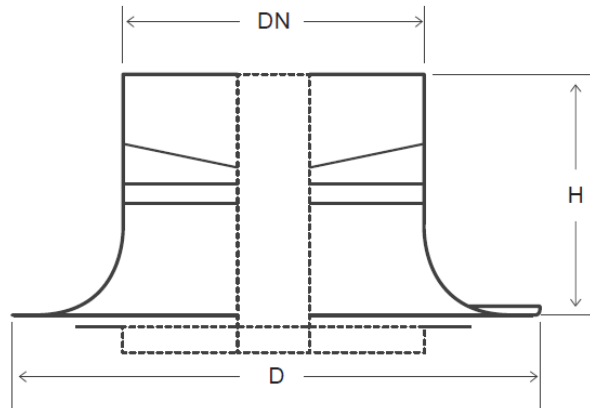
Recommended Maximum dT in Heating [K] - Neck Size DN400

V [L/s]	Installation Height [m]							
	8	10	12	14	16	18	20	22
300	+7.0	+4.5						
350	+9.5	+6.0	+4.2					
400	+12.4	+7.9	+5.5	+4.0				
450	+15.7	+10.0	+6.9	+5.1	+3.9			
500	+19.3	+12.4	+8.6	+6.3	+4.8	+3.8		
550	+23.3	+14.9	+10.4	+7.6	+5.8	+4.6	+3.7	
600		+17.8	+12.3	+9.1	+6.9	+5.5	+4.4	+3.7
650		+20.9	+14.5	+10.6	+8.2	+6.1	+5.2	+4.3
700			+16.8	+12.4	+9.5	+7.5	+6.0	+5.0
750			+19.3	+14.2	+10.9	+8.6	+6.9	+5.7
800			+22.0	+16.1	+12.4	+9.8	+7.9	+6.5

Recommended Maximum dT in Heating [K] - Neck Size DN630

V [L/s]	Installation Height [m]							
	8	10	12	14	16	18	20	22
800	+5.7	+3.7						
900	+7.3	+4.7						
1000	+9.0	+5.7	+4.0					
1100	+10.9	+6.9	+4.8	+3.5				
1200	+12.9	+8.3	+5.7	+4.2				
1300	+15.2	+9.7	+6.7	+5.0	+3.8			
1400	+17.6	+11.3	+7.8	+5.7	+4.4	+3.5		
1500	+20.2	+12.9	+9.0	+6.6	+5.0	+4.0		
1600	+23.0	+14.7	+10.2	+7.5	+5.7	+4.5	+3.7	
1700		+16.6	+11.5	+8.5	+6.5	+5.1	+4.1	
1800		+18.6	+12.9	+9.5	+7.3	+5.7	+4.7	+3.8
1900		+20.7	+14.4	+10.6	+8.1	+6.4	+5.2	+4.3
2000		+23.0	+16.0	+11.7	+9.0	+7.1	+5.7	+4.7
2100			+17.6	+12.9	+9.9	+7.8	+6.3	+5.2
2200			+19.3	+14.2	+10.9	+8.6	+6.9	+5.7
2300			+21.1	+15.5	+11.9	+9.4	+7.6	+6.3
2400			+23.0	+16.9	+12.9	+10.2	+8.3	+6.8

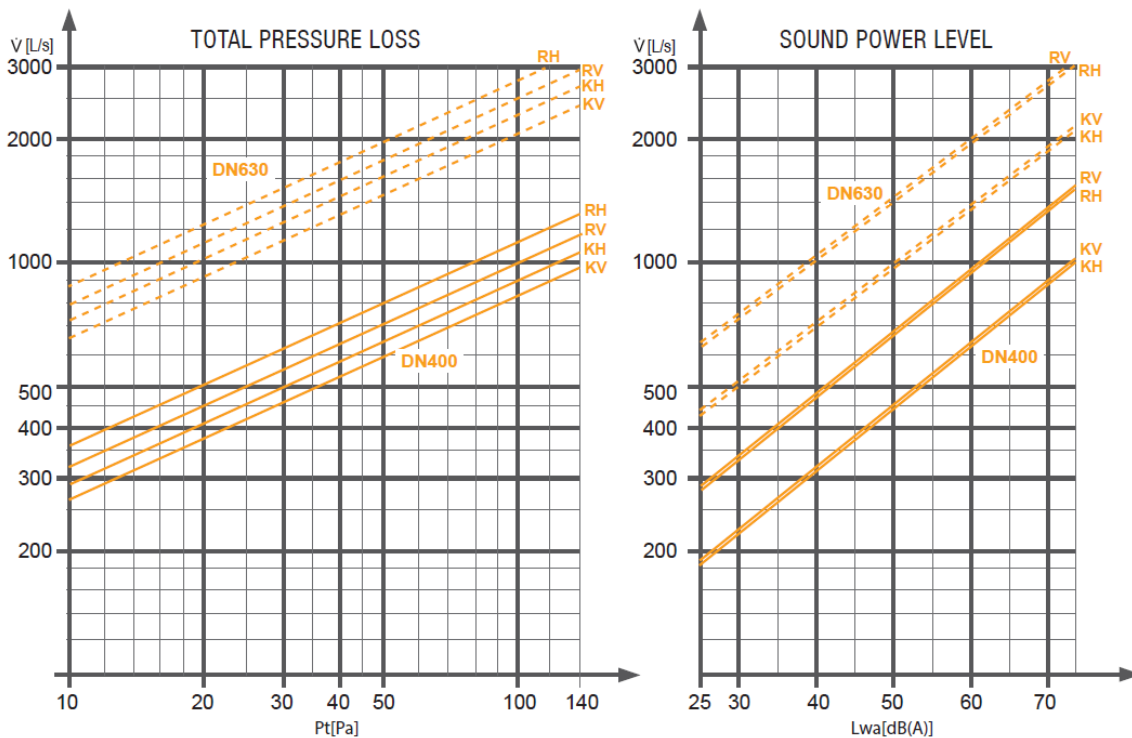
## Technical Data



### DIMENSIONS

Nominal Size	Face Dimension D [mm]	Height H [mm]	Actual Neck Diameter [mm]
DN400	700	320	398
DN630	1050	490	628

*Products supplied may differ slightly from those described in this technical brochure due to on-going product development.*



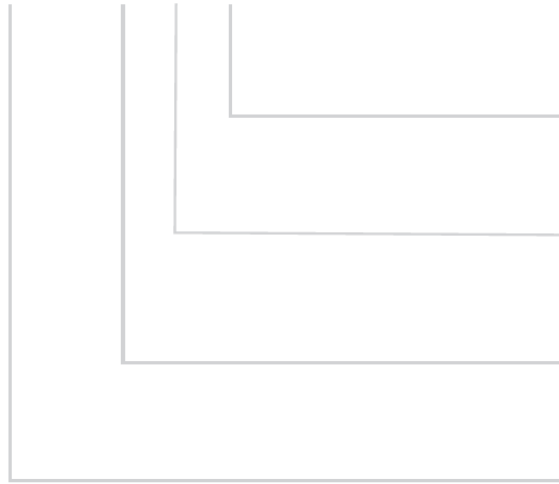
**Notes:**

R = Duct connection      H = Horizontal discharge  
 K = Connection box      V = Vertical discharge

DN400 ———  
 DN630 - - - -

## Ordering Details

JSC-AD-DN \_\_\_ - \_\_\_ - \_\_\_



**FINISH:**

- RAL \_\_\_\_

**ADJUSTMENTS:**

- M: Manual

- E: Electric actuator

**SIZE:**

- DN400

- DN630

**MODEL:**

- Jet Swirl Ceiling - Adjustable Direction

**Note:**

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