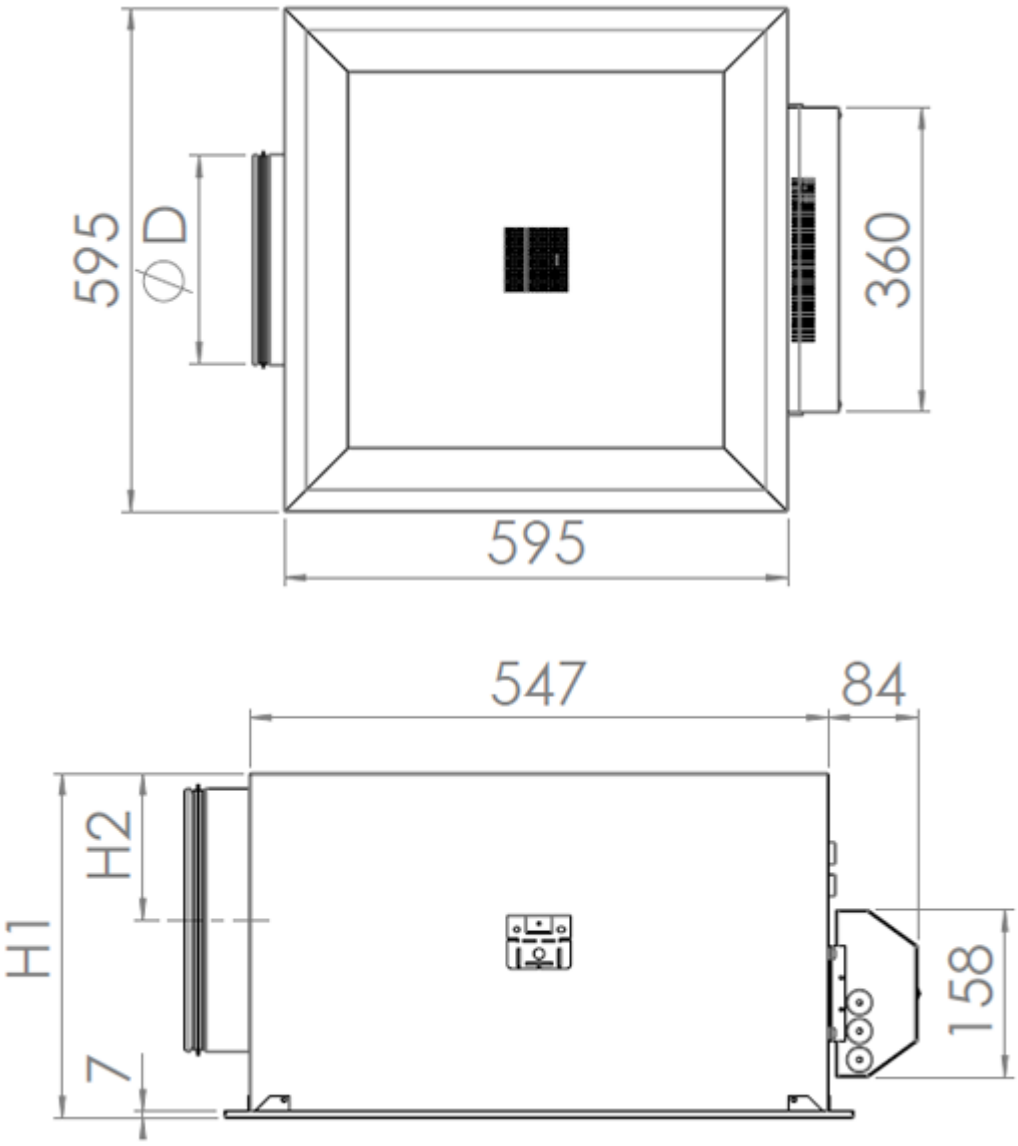
Halton Jaz Conical VAV (JDS) – Conical diffuser

Overview

- Stable throw length with variable air flow rates for enabling draught free air distribution
- Installation for suspended ceiling
- Designed for systems with constant static pressure ductwork system
- Integrated balancing plenum with measurement and adjustment functions
- Effective sound attenuation

Dimensions

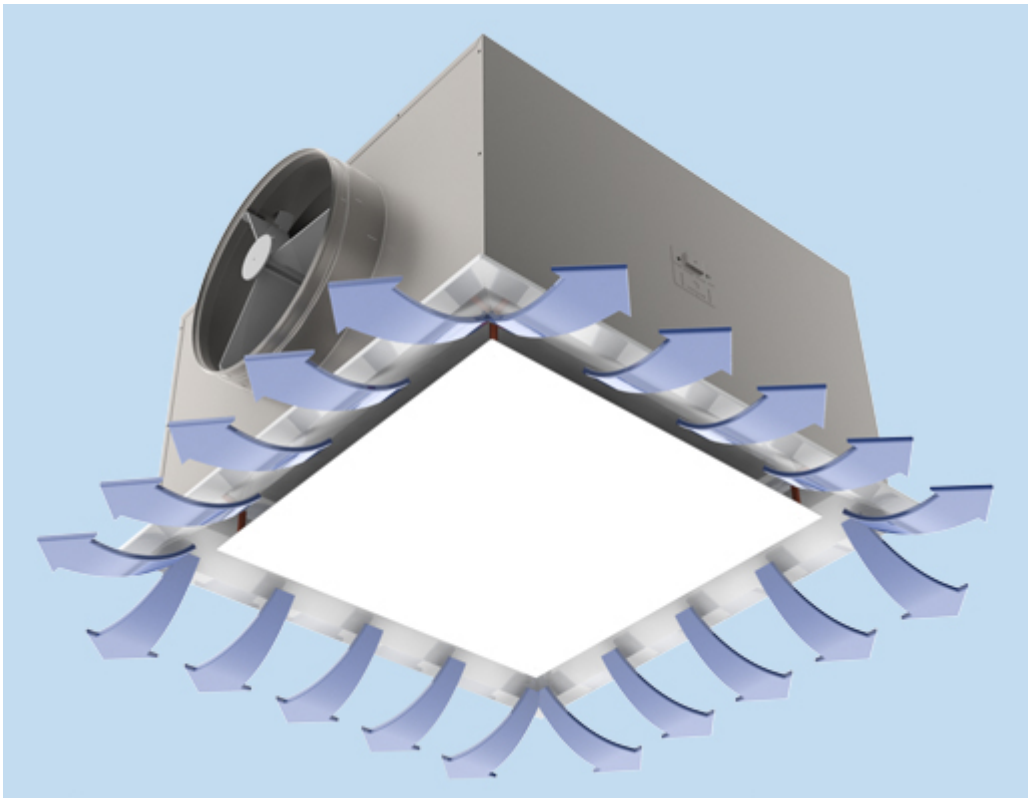


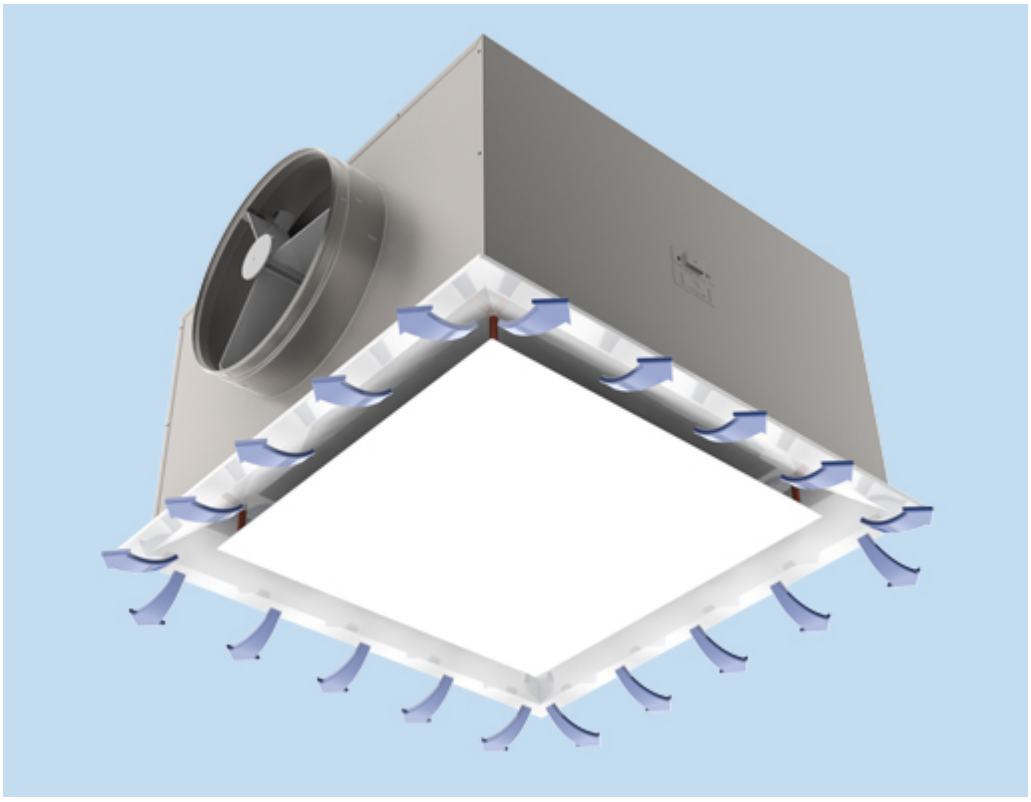
NS	Ø D	H1	H2
125	124	276	114
160	159	276	114
200	199	326	139
250	249	326	139

Material

Part	Material	Finishing	Note
Diffuser plate	Steel	Powder painted, white (RAL 9003)	Special colours available
Front panel	Steel	Powder painted, white (RAL 9003)	Special colours available
Control cone	Steel	Powder painted, black	
Gasket	Rubber compound		
Plenum casing	Galvanised steel		
Control box	Galvanised steel		
Attenuation material	Polyester fiber		
Spigot with gasket	Galvanised steel		Gasket of rubber compound
Measurement and adjustment module (MSM)	**Body:** aluminium **Plate:** galvanised steel **Brackets:** galvanised steel **Plastic parts:** polypropylene (PP) **Spindle:** stainless steel		

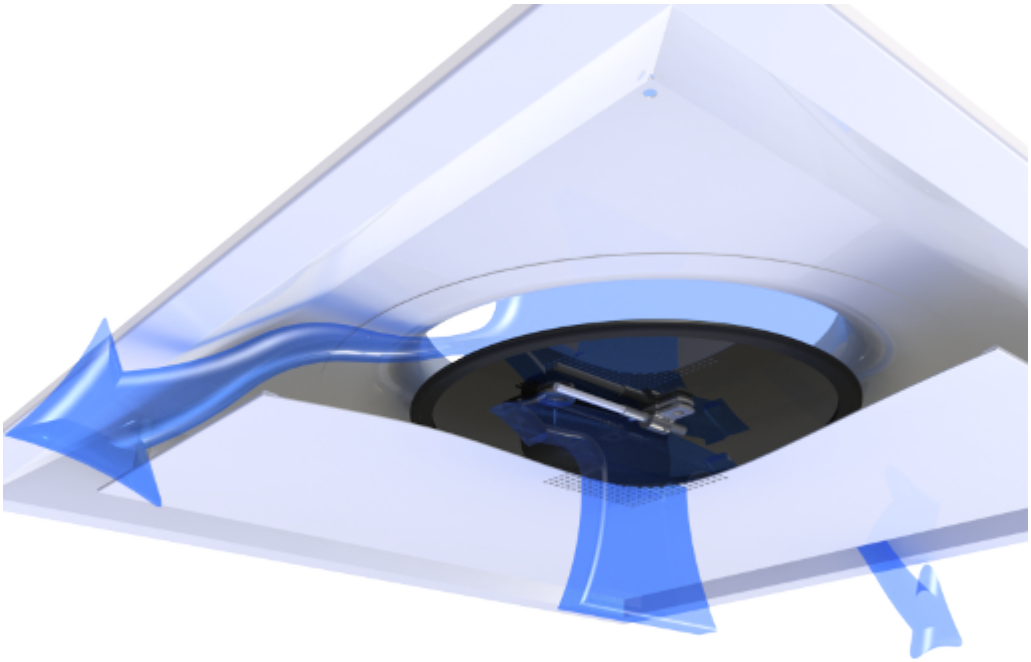
Function





The Halton Jaz Conical VAV is an active ceiling diffuser for supply air in variable conditions.

Air is supplied horizontally to the room space mainly through the slots of the diffuser.



The room air will circulate through the perforation in the front panel to the sensors located inside the diffuser.

The unit maintains a nearly constant outlet air velocity between the minimum and maximum airflow rates, create comfortable conditions and low residual air velocities in the occupied zone. Room conditions can be guaranteed without a risk of draughts, at both the maximum and minimum airflow rate.

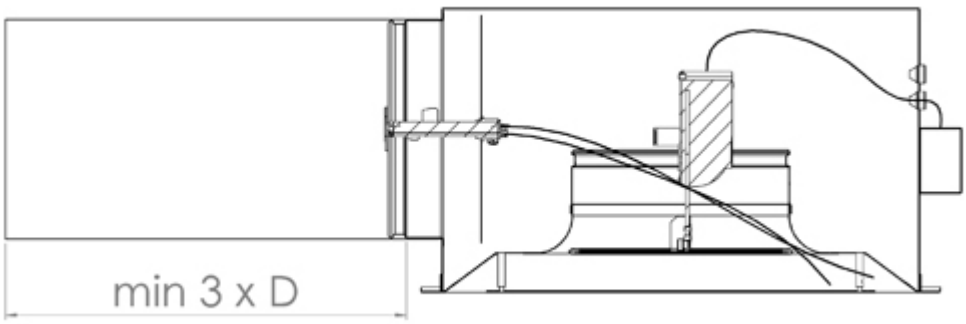
Recommended maximum air temperature difference between supply and room air is 12 ° C.

An external room controller varies the room air flow rate by running the Halton Jaz Conical VAV diffuser actuator with a standard 0...10 VDC control signal.

The pressure dependent function of the Halton Jaz Conical VAV operates in combination with a constant pressure duct zone.

Exhaust diffuser do not include any airflow control function, will need a separate flow control damper (like Halton HFB).

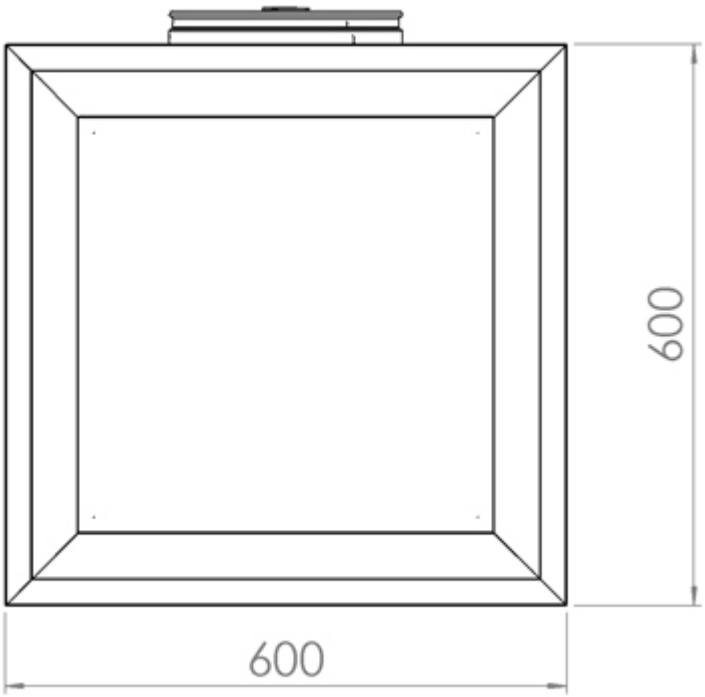
Installation

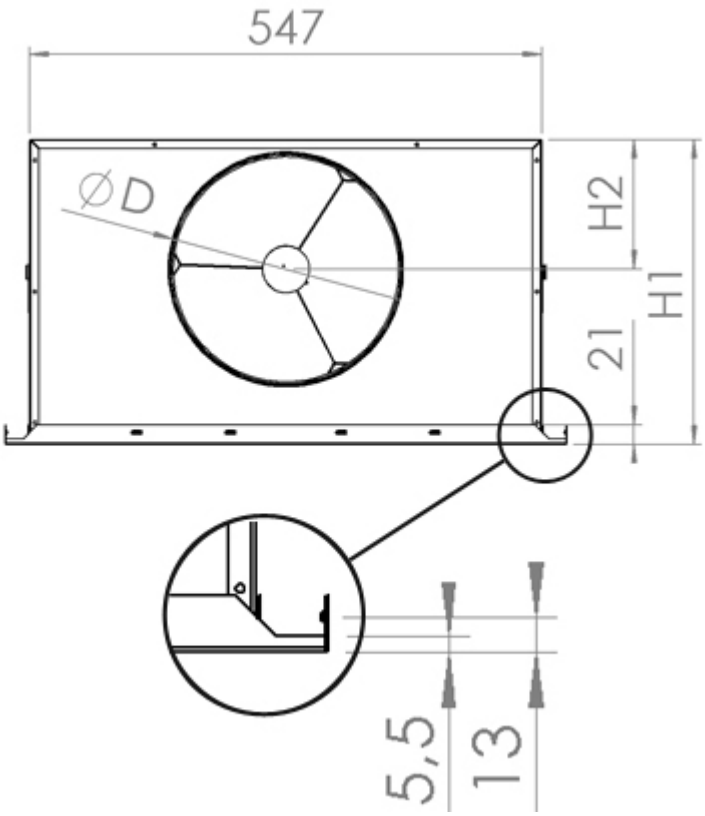


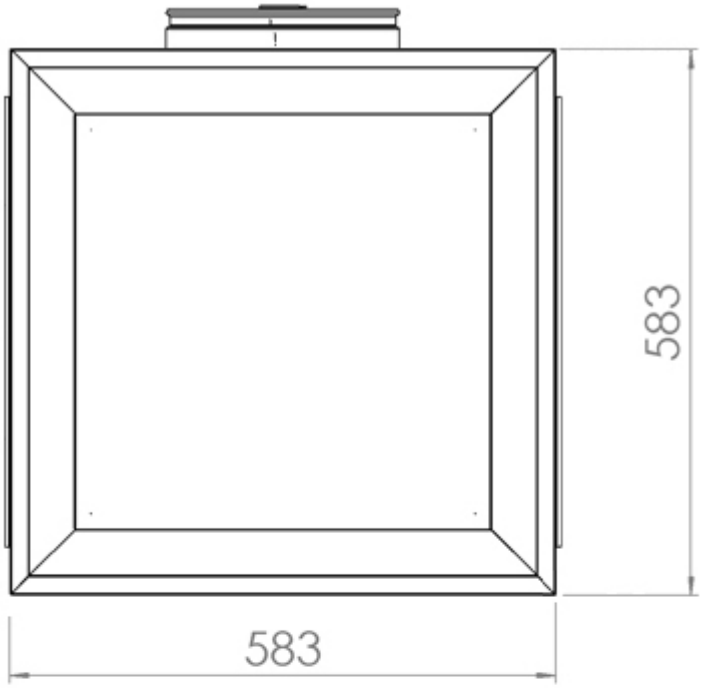
The Halton Jaz Integrated VAV active diffuser shall have a minimum safety distance of 3 x duct dimension to ensure reliable measurement and accurate control of the airflow rate.

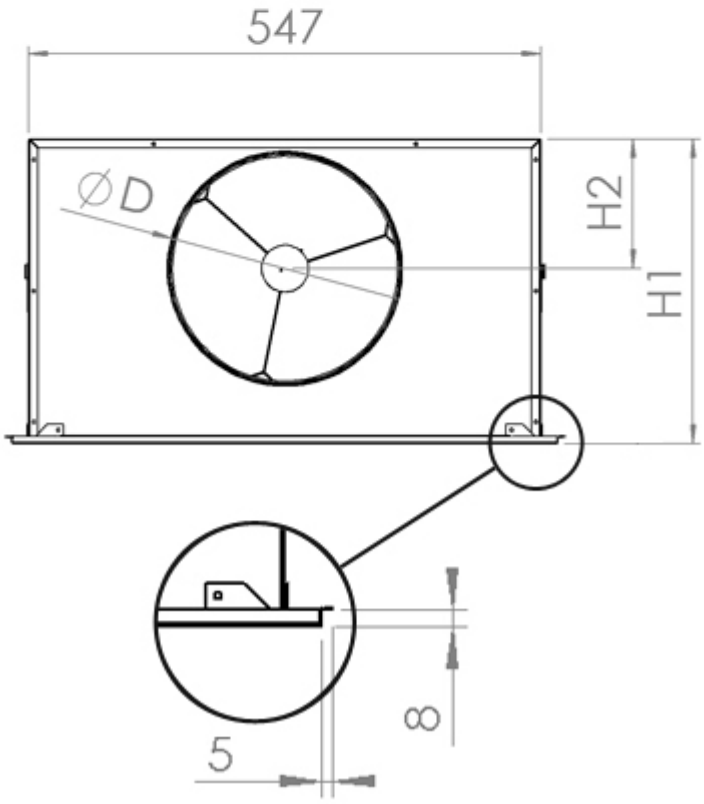
Hang the diffuser by using the brackets located on two sides of the plenum.

Alternatively ceiling integrations









Clip-in ceilings

Fineline-15 ceilings

NS	ØD	H1	H2
125	124	276	114
160	159	276	114
200	199	326	139
250	249	326	139

Controls

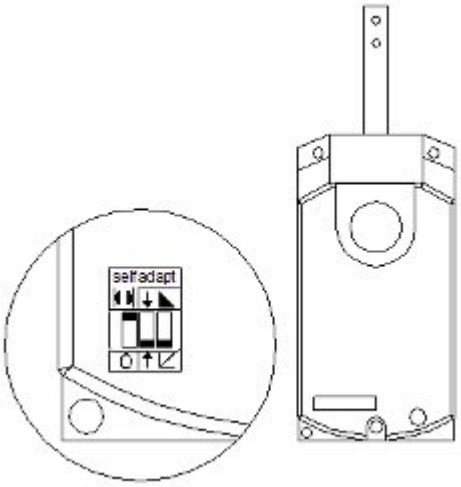
The Halton Vario Jaz controller is a room controller dedicated to complete room applications providing the demand controlled ventilation.

- Halton Vario Jaz diffuser integrated with room controller
- Room air temperature measurement to control space temperature
- Occupancy sensor for demand based operation located outside of the diffuser (separate ceiling installation)
- Air quality control with carbon dioxide sensor, CO_2

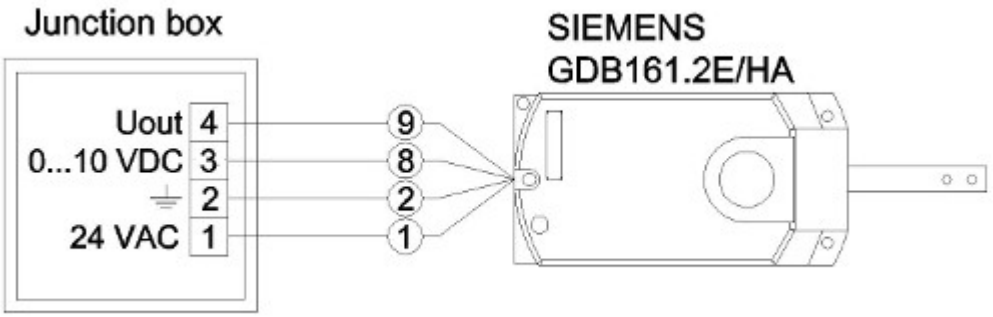
The Halton Vario Jaz room controller provides a wide variety of connections for sensors and actuators and the possibility to connect a wall mounted panel with or without a display for local set points adjustment e.g. temperature, and a wireless remote control.

See documents from the Documents-section for more information.

Wiring

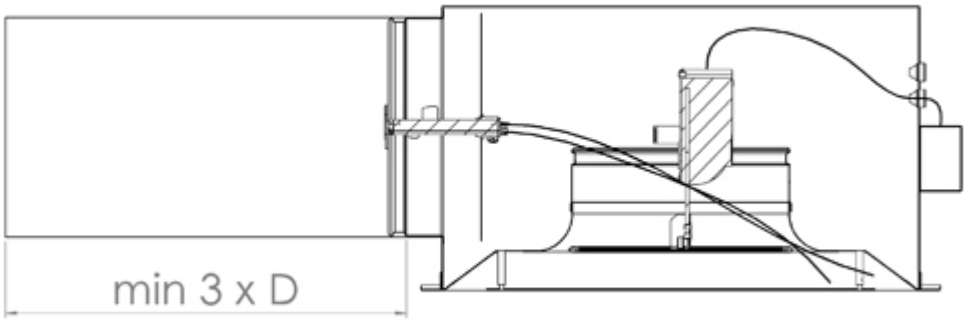


Control that the actuator settings are in line with the factory pre-setted DIL switches.



Control signals in junction box:
Terminal 1 Power supply 24 VAV
Terminal 2 Ground
Terminal 3 0 VDC = minimum position / airflow
10 VDC = maximum position / airflow
Terminal 4 Not connected (feedback form actuator)

Commissioning



Make sure that the control plate of diffuser is fully open (at the lowest position). This can be done either mechanically or electrically:

- If the power is not connected to active diffuser, detach the control plate for releasing the actuator clutch and pull the control plate to the fully open position.
- If a 24 VAC power supply is connected to diffusers, please make sure that the control signal is constantly at 10 VDC.

Check that the duct zone constant pressure is at the intended level (for example, between 30 and 50 Pa).

If the duct zone pressure is too low and the zone pressure control damper is fully open, you should either adjust the supply fan pressure set point to be higher or adjust the MSM adjustment unit.

The zone pressure control damper shall have a sufficient operative differential pressure over the damper (for example, 30 Pa or more).

Adjustment

The maximum airflow rate of the active diffuser is measured and adjusted using the MSM module.

Airflow rate is calculated using the pressure difference reading and the k factor.

$$q_v = k * \sqrt{\Delta p_m}$$

qv Calculated airflow rate (l/s)
k Factor from the table
Δp_m Measured pressure (Pa)

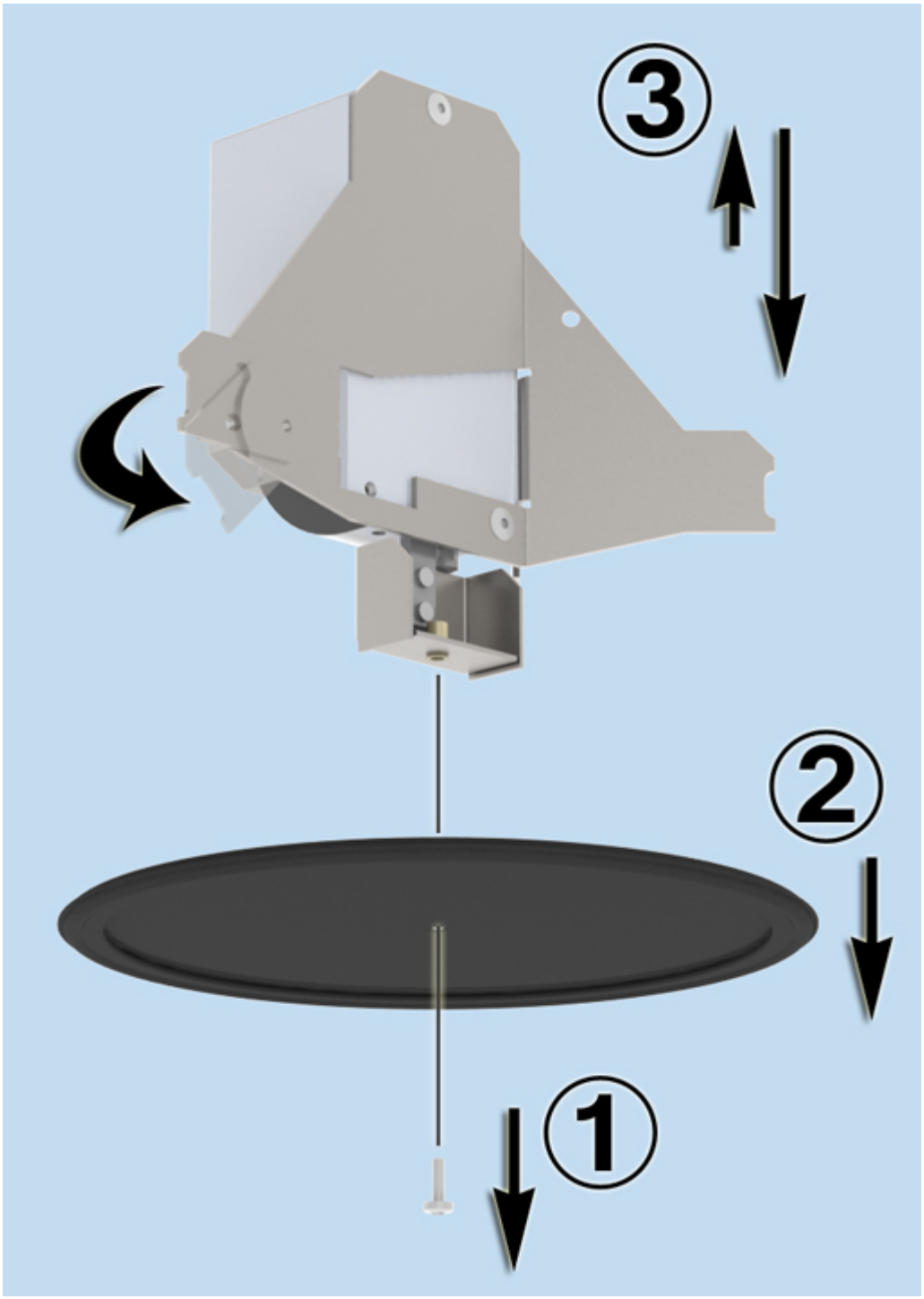
The k-factors for installation with different safety distances
(D = duct diameter).

NS	> 8 * D	min 3 * D
125	9,5	12,6
160	18,0	22,2
200	28,6	32,9
250	44,6	46,0

If the airflow rate of the active diffuser is too high, adjust the position of the MSM adjustment unit to closer position. If maximum airflow can't be reached, open MSM module first full open and if this is not enough, increase the duct zone pressure

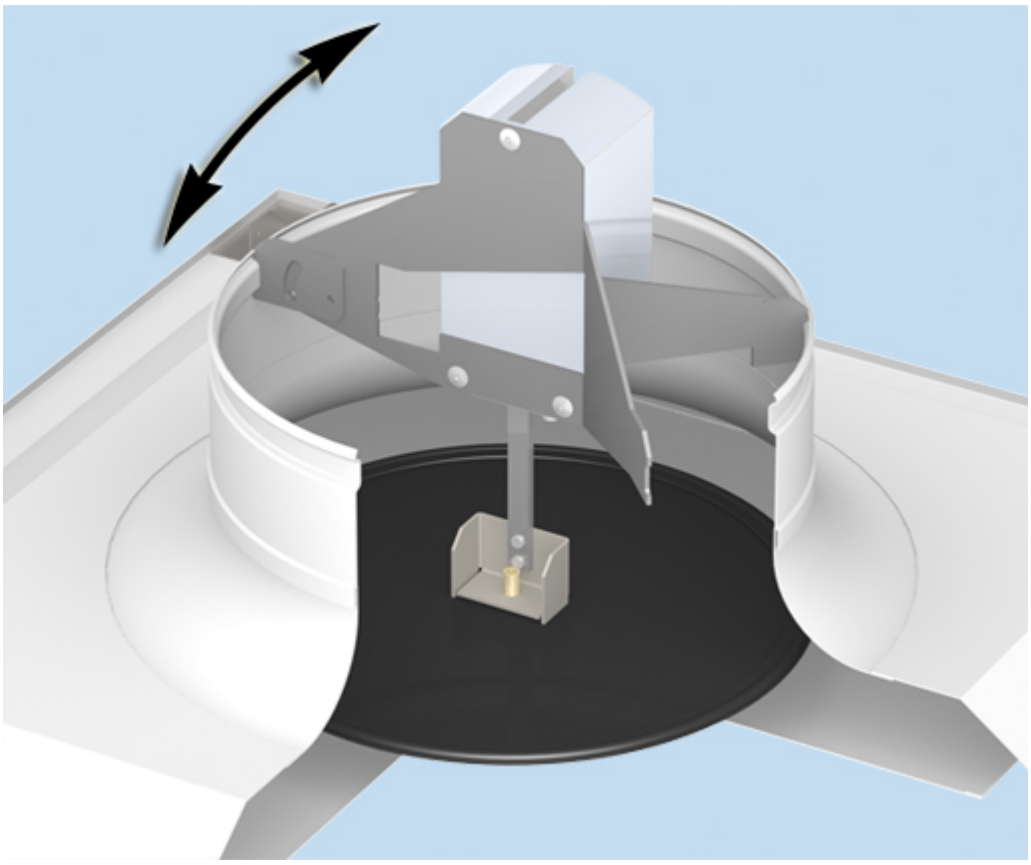
The minimum airflow for the diffuser is fixed by factory and cannot be adjusted.

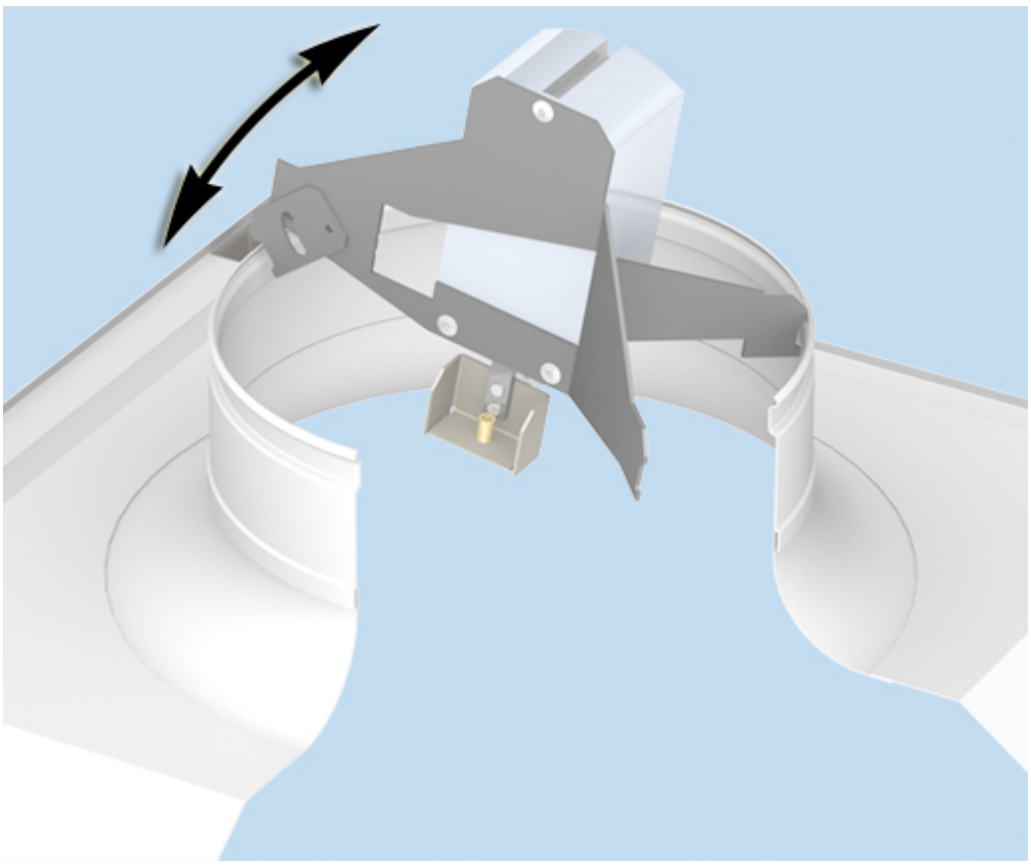
Servicing



For servicing open the front panel of the diffuser and detach the flow control element.

Detach the flow control plate by opening the screw (1) and remove the plate (2).
Remove the motor assembly (3) on JDS body by pushing the mounting shaft and let it hang on the wire.





The MSM is removed through diffuser outlet by pulling from it's body – not from the measurement tubes or control spindle.

Clean the parts with a damp cloth, instead of immersing in water.

Replace all parts in opposite order. Ensure that the actuator is locked and the control plate is in right position.

Specification

The Halton Jaz Conical VAV supply air diffuser is made of painted steel with a white (RAL 9003) standard colour.
Air is introduced into the space through the adjustable control plate and the side slots of front panel, ensuring a high mixing rate. The diffuser maintains appropriate discharge velocity throughout the total airflow range.

The diffuser is integrated to a balancing plenum designed for the active diffuser installation and equipped with a measurement and adjustment module.

The diffuser has a gasket of rubber compound to ensure tight connection to the duct work.

The diffuser enables to be equipped with sensors and control system.

Order code

JDS/S-D; CO-IO-RC-SE-ED-CP-ZT

S = Model
S Supply
E Exhaust

D = Duct connection
125, 160, 200, 250

Other options and accessories

CO = Colour
SW White (RAL 9003, standard)
X Special colour

IO = Ceiling type installation options
NA Standard T-profile
DC Clip-In ceiling
FL Fineline-15

RC = Room controller
NA Not assigned
LA1 LON, HVL-527 for single unit
LA2 LON, HVL-527 for up to 6 units
LA3 LON, without room controller

BA1 BACnet, HVB-527 for single unit
BA2 BACnet, HVB-527 for up to 6 units
BA3 BACnet, without room controller

All room controller models include unit integrated temperature sensor.

SE = Sensors
NA Not assigned
SA1 Occupancy (only with LA- and BA- series)
SA2 Occupancy and CO2 (only with LA- and BA- series)
SA3 CO2 (only with LA- and BA- series)

ED = Exhaust air diffuser control
Y Yes
N No

CP = Control panel
NA Not assigned
PA2 With setpoint shift and display (BACnet and LON only)
PA3 Remote control unit (BACnet and LON only)

ZT = Tailored product
N No
Y Yes (ETO)

Code example

JDS/S-200, CO=SW, IO=NA, RC=LA1, SE=SA3, ED=N, CP=PA2, ZT=N