

ZCO - Halton Zen Corner

Displacement ventilation unit



- Capacity for wide supply airflow range
- Uniform supply air distribution is achieved through small perforations, providing optimal conditions in the immediate proximity of the diffuser
- Low velocity air is supplied horizontally at the floor level
- Suitable for installation in the corner of a room; the air flow pattern is diffused at an angle of 90 degrees
- The detachable front plate and metallic internal structure enable cleaning of the unit and ductwork.
- Circular duct connection with an integrated rubber gasket on top/bottom

Product models & accessories

- Model with stainless steel (AISI 316) design
- Model with thick front panel (1,5 mm)
- Duct cover
- Installation base

MATERIAL AND FINISHING

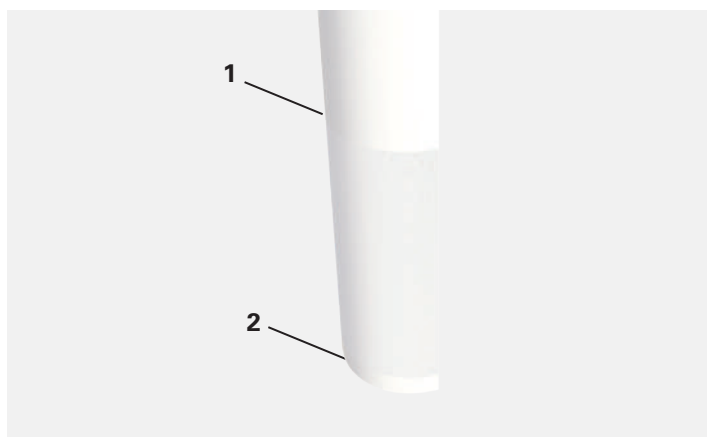
| PART | MATERIAL | NOTE |
|---------------------------|--|------------------------------------|
| Front panel | Perforated galvanised steel | Stainless steel AISI 316 as option |
| Casing | Galvanised steel | Stainless steel AISI 316 as option |
| Flow equalisation element | Perforated galvanised steel | |
| Pressure measurement pipe | Plastic | |
| Spigot | Galvanised steel | |
| Gasket | Rubber compound | |
| Installation base | Galvanised steel | |
| Duct cover | Galvanised steel | |
| Finishing | Polyester-epoxy-painted White RAL 9010 (30% gloss) | Special colors available |

ACCESSORIES AND OPTIONS

| ACCESSORY | CODE | DESCRIPTION |
|---------------------------------------|------|--|
| Duct cover (1) | DC | Standard lengths 1000 / 1500 / 2000 mm |
| Installation base (2) | AB | Standard height 100 mm |
| Installation base, high (store) model | SB | Standard height 200 mm / Dimensions = unit size + 60 mm |

Options

- Model with stainless steel (AISI 316) design
- Duct cover (DC) made of perforated steel (same as ZCO unit)
- Thick front panel (1.5 mm)



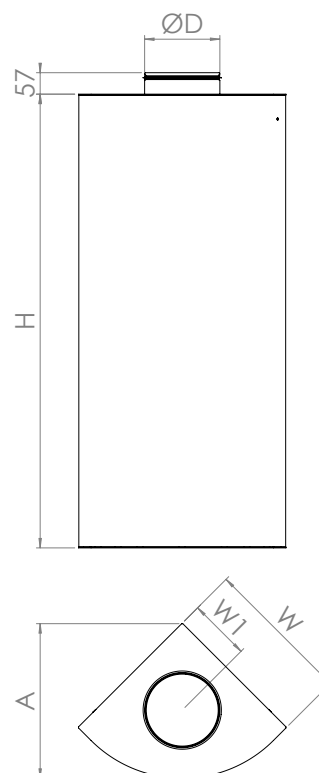
DIMENSIONS AND WEIGHT

| Size | W | W1 | H | ØD | A |
|------|-----|-----|------|-----|-----|
| 125 | 280 | 108 | 600 | 124 | 295 |
| 160 | 340 | 139 | 800 | 159 | 357 |
| 200 | 390 | 163 | 1200 | 199 | 410 |
| 250 | 440 | 180 | 1200 | 249 | 460 |
| 315 | 515 | 214 | 1600 | 314 | 540 |
| 400 | 620 | 262 | 2000 | 399 | 650 |
| 500 | 750 | 325 | 2000 | 499 | 790 |
| 630 | 900 | 375 | 2000 | 629 | 945 |

- AB/ZCO installation base: height = 100 mm.
- SB/ZCO installation base, high (store) model:
height = 200 mm, $W = W+60$.

Weight

| Size | kg |
|------|-------|
| 125 | 8.18 |
| 160 | 12.70 |
| 200 | 20.18 |
| 250 | 23.12 |
| 315 | 34.67 |
| 400 | 51.55 |
| 500 | 66.53 |
| 630 | 81.85 |





FUNCTION

Air is supplied into the space uniformly through the front panel of Halton Zen Corner, generally at a slightly lower temperature than the room air. The supply air flows down to the floor level, before gradually pervading the occupied zone at a low velocity. Finally the convection of warm surfaces causes the air to rise out of the occupied zone. The low velocity flow pattern is quarter-circular (90°).

The non-clogging unit can be easily opened and cleaned.

Halton PRA or PTS/C can be used as an airflow adjustment damper in round duct sections. The safety distance for reliable air flow measurement from the displacement unit is 5 duct dimensions between displacement unit and air flow adjustment damper. If air flow adjustment damper is installed closer to the displacement unit (minimum distance about 3 duct dimensions), supply air throw pattern is correct, but air flow measurement result will not be accurate. When installing air flow adjustment damper close to the displacement unit (minimum 3xD), attenuator could be needed between the damper and the displacement unit.

NOTE: The flow pattern data has been defined for floor installation.

INSTALLATION

Perform the installation of Halton Zen Corner in the following order:

A) Without AB/SB base:

- Fix mounting brackets (4 places) to the displacement ventilation unit (1).
- Position the unit (2) against wall and secure with mounting brackets (included in delivery).

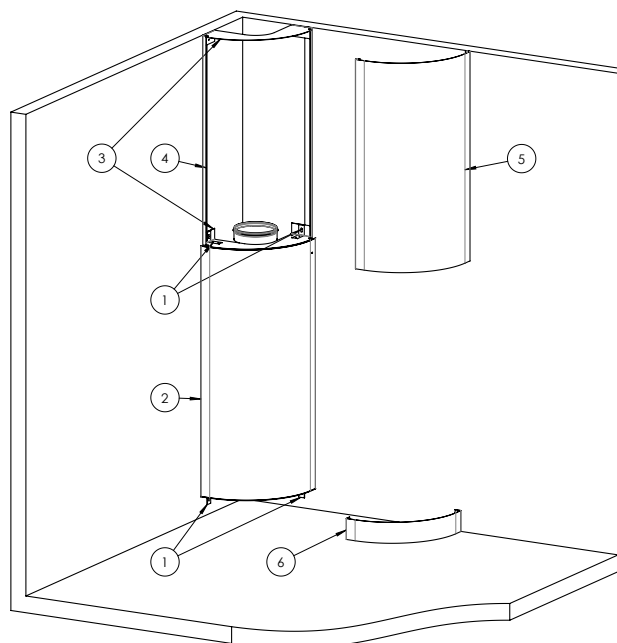
With AB/SB base :

- Position the unit (2) against wall and secure with mounting brackets (included in delivery).
- Secure with mounting brackets on top (1) (2 places).

B) Fix displacement ventilation unit duct cover frames (4) onto the wall between the unit and ceiling with screws (3).

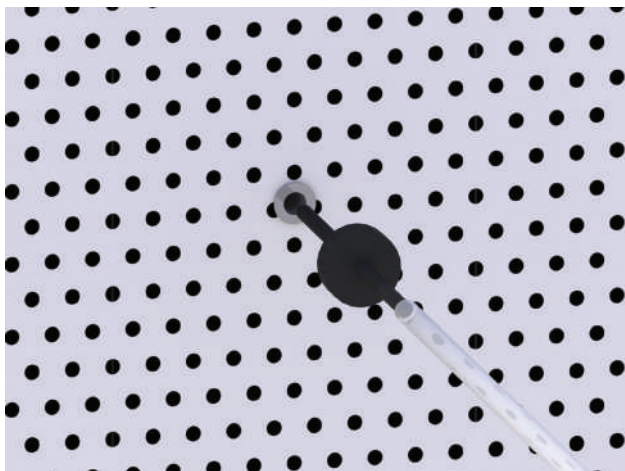
C) After installation of the ductwork, install the front plate of the DC duct cover (5).

D) When multiple sections of DC duct cover are used, secure the DC duct covers with screws (not included in delivery).



ADJUSTMENT

The supply flow rate for Halton Zen Corner is determined by measuring the differential pressure from the measurement nipple with a manometer. Use a measurement probe thin enough fit into the nipple. Then use tape or another gasket to create a seal in the nipple in order to get an accurate reading.



The flow rate is calculated by using the formula below:

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

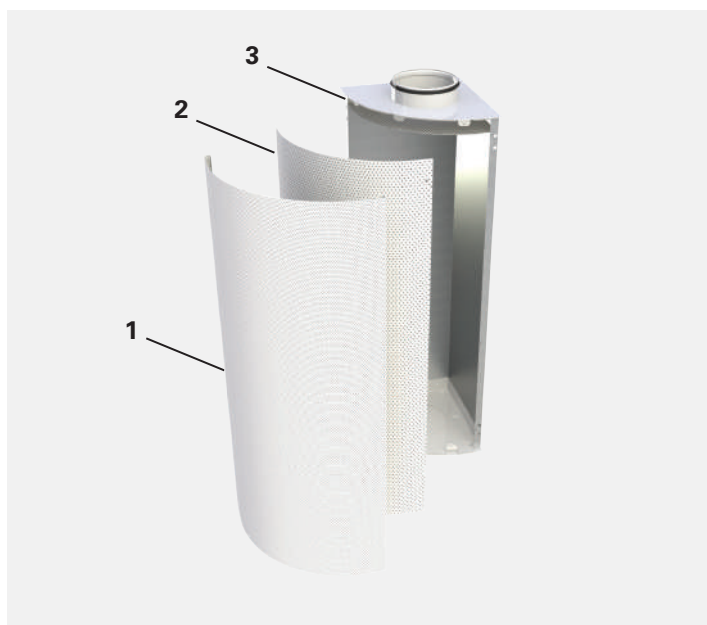
q_v : airflow rate, [l/s]

k : k factor

Δp_m : differential pressure of the measurement probe [Pa]

K factor for formula (D = duct diameter):

| D | K |
|-----|-------|
| 125 | 11.3 |
| 160 | 18.8 |
| 200 | 29.4 |
| 250 | 43.7 |
| 315 | 67.9 |
| 400 | 104.2 |
| 500 | 153.1 |
| 630 | 220.8 |



SERVICING

1. Front panel
2. Inner panel
3. Casing

Open the front panel (1) by carefully pulling the spring connections out.

Open the inner panel (2) by unscrewing the screws. If required, the flow equalisation plate can be detached.

Wipe the parts with a brush or damp cloth. Do not immerse in water.

After cleaning, reassemble in reverse order.

SOUND DATA

| Size | Duct velocity | | Airflow | | ΔP [Pa] | LpA (1) [dB(A)] |
|---------|---------------|-------|---------------------|---------------------|--------------------|--------------------|
| | [m/s] | [l/s] | [m ³ /h] | [m ³ /h] | | |
| ZCO-125 | 3,5 | 43 | 155 | | 5 | <20 |
| | 4 | 49 | 177 | | 6 | <20 |
| | 5 | 61 | 221 | | 9 | 20 |
| | 6 | 74 | 265 | | 13 | 25 |
| ZCO-160 | 3,5 | 70 | 253 | | 4 | <20 |
| | 4 | 80 | 289 | | 6 | <20 |
| | 5 | 101 | 362 | | 9 | 21 |
| | 6 | 121 | 434 | | 12 | 26 |
| ZCO-200 | 3,5 | 110 | 396 | | 5 | <20 |
| | 4 | 126 | 452 | | 6 | <20 |
| | 5 | 157 | 565 | | 10 | 23 |
| | 6 | 188 | 678 | | 14 | 29 |
| ZCO-250 | 3,5 | 172 | 619 | | 6 | <20 |
| | 4 | 196 | 707 | | 8 | <20 |
| | 5 | 246 | 884 | | 12 | 23 |
| | 6 | 294 | 1060 | | 17 | 28 |
| ZCO-315 | 3 | 234 | 842 | | 5 | <20 |
| | 4 | 312 | 1122 | | 9 | <20 |
| | 5 | 390 | 1403 | | 13 | 24 |
| ZCO-400 | 3 | 377 | 1357 | | 6 | <20 |
| | 4 | 503 | 1809 | | 11 | <20 |
| | 5 | 628 | 2262 | | 17 | 27 |
| ZCO-500 | 3 | 589 | 2121 | | 9 | <20 |
| | 4 | 785 | 2827 | | 15 | 23 |
| | 5 | 982 | 3534 | | 24 | 31 |
| ZCO-630 | 3 | 935 | 3367 | | 13 | 20 |
| | 4 | 1247 | 4489 | | 23 | 29 |
| | 5 | 1559 | 5611 | | 35 | 38 |

(1) LpA values presented with room attenuation 8 dB (red 10m² - sab). When using room attenuation 4 dB (red 10m² - sab): LpA + 4dB.

SPECIFICATION

The displacement ventilation supply unit is made of galvanised steel, polyester-epoxy-painted with a white (RAL 9010 / 30%) colour.

The unit has a robust maintenance free, non-clogging design.

The unit is comprised of a detachable, perforated front and inner panel, an internal flow equalization plate, and casing.

The unit has a circular duct connection at the top or bottom, depending on the location of the unit.

Mounting brackets are included in the delivery, screws not.

Options

The unit can be equipped with a duct cover and/or installation base, where required.

The front panel of the unit is available of 1.5mm thick galvanised steel for demanding spaces.

PRODUCT CODE

ZCO-D

D = Diameter of duct connection
125, 160, 200, 250, 315, 400, 500, 630

Specifics and accessories

MA = Material
CS : Steel
AS : Stainless steel, AISI 316

TP = Front panel, thickness 1,5 mm
N : No
Y : Yes

CO = Color (metallic parts)
W : White
X : Special color

Accessories

DC : Duct cover
AB: Standard base
SB: High store base

Code example

ZCO-125, MA=CS, TP=N, CO=W