

Halton TCM – Conical diffuser



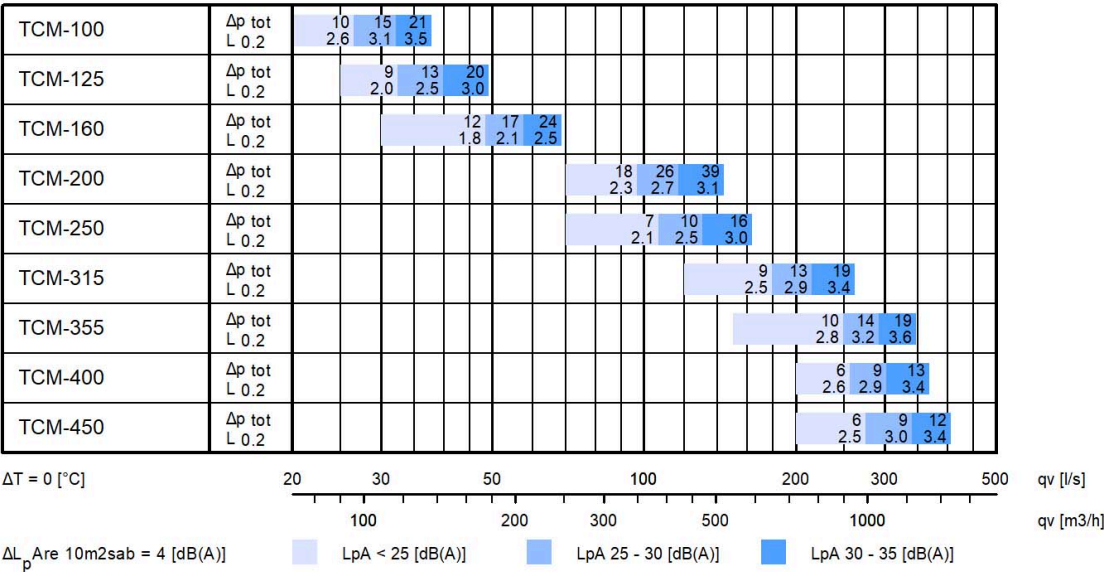
Overview

- Suitable for horizontal supply and exhaust
- Suitable for cooling applications with supply/room air temperature difference as low as -12 °C
- Integrated or suspended ceiling installation
- Circular duct connection with rubber gasket
- Detachable cone module, enabling the cleaning of the diffuser and ductwork

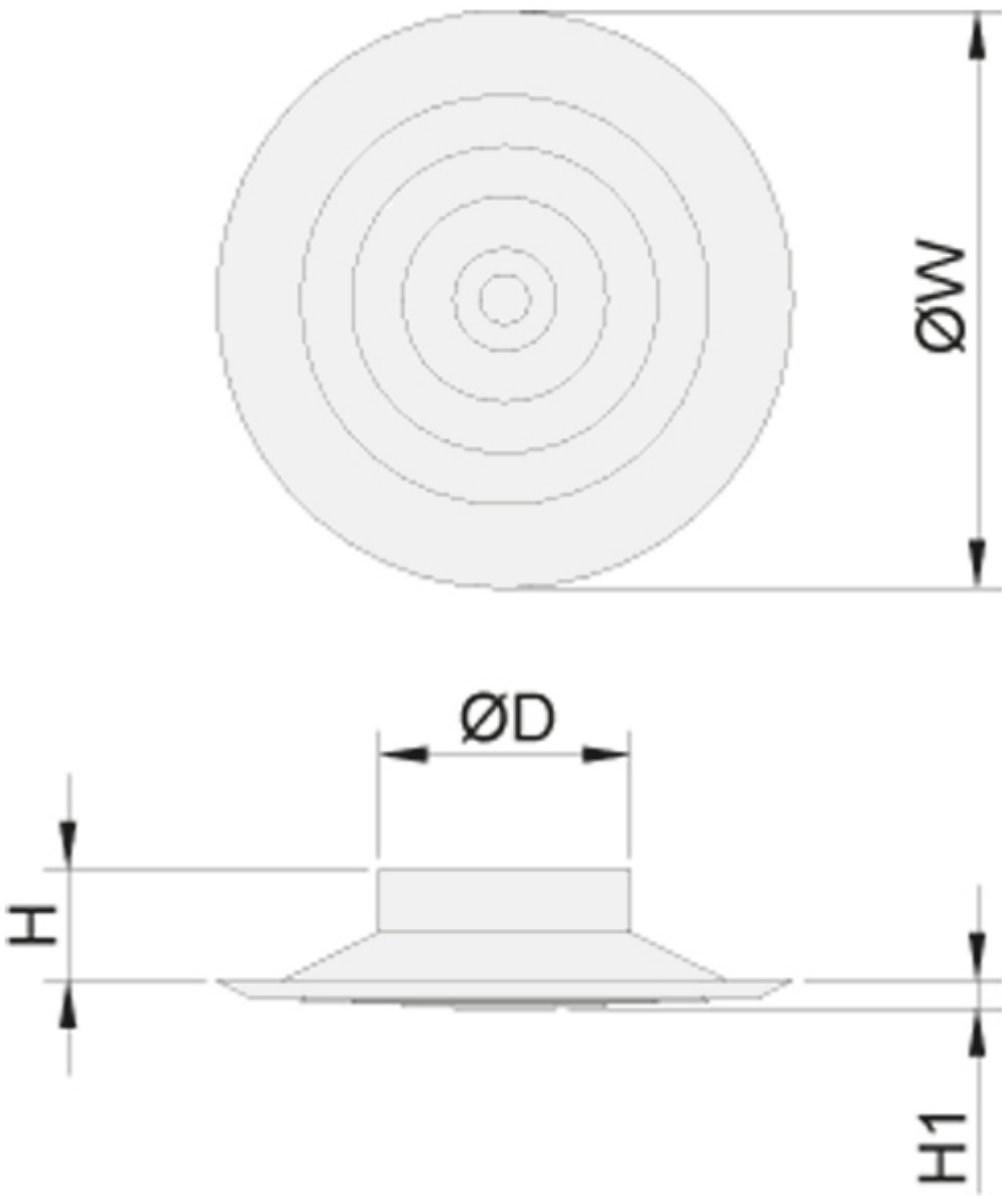
Product Models and Accessories

- Models integrated in a panel for installation in modular suspended ceilings with dimension options of 450×450, 600×600 or 675×675 mm
- Plenum options with measurement and adjustment functions
- Measurement and adjustment module

Quick selection



Dimensions



NS	W	H	H1	ØD
100	330	80	17	99
125	330	80	17	124
160	330	73	17	159
200	457	88	22	199
250	610	110	27	249
315	610	95	27	314
355	863	139	35	354
400	863	129	35	399
450	863	121	35	449

Material

Part	Material	Finishing
Diffuser	Steel	Epoxy-painted White (RAL 9003) 30% gloss
Plenum	Galvanised steel	

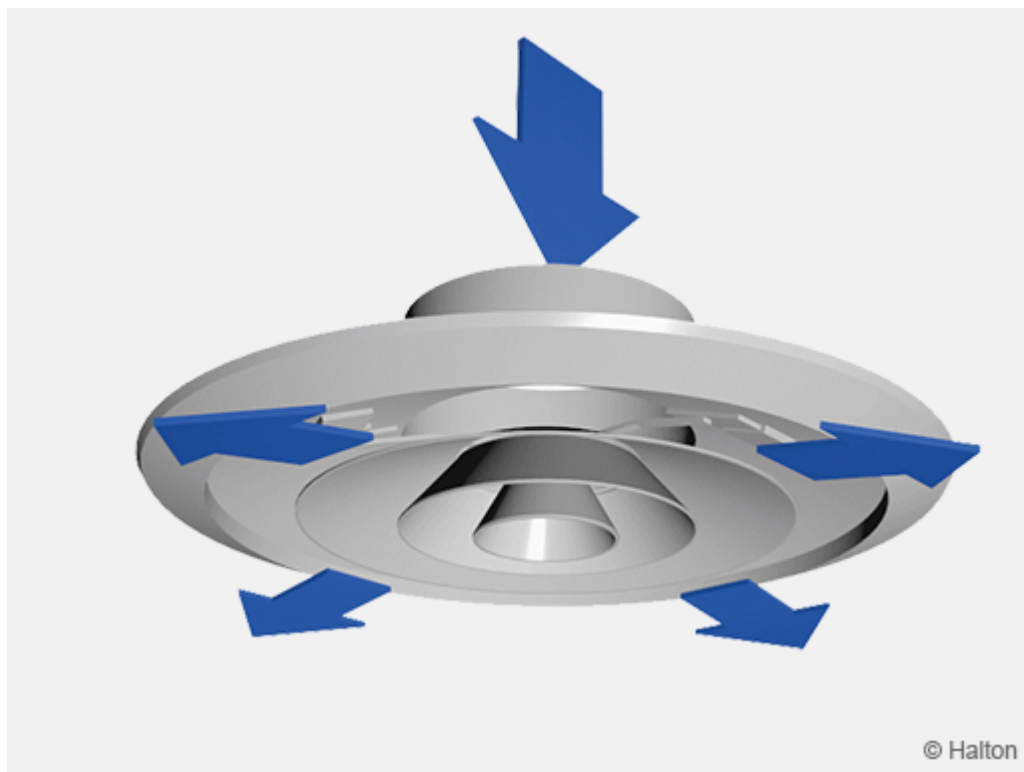
Accessories

Accessory	Code	Description
Balancing plenum with airflow measurement and adjustment unit	TRI/N	For balancing, equalising the airflow
Plenum	TRH	Plenum for duct connection (with or without insulation)
Sound attenuation	IN	Polyester fibre as sound attenuation material in Halton TRI plenum. Mineral wool as sound attenuation material in Halton TRH plenum.
Airflow measurement and adjustment unit	MSM	For supply installation
Airflow adjustment unit	LD	Circular galvanised steel unit for airflow adjustment (inside the coupling sleeve)
Airflow adjustment damper	DD	Circular galvanised steel blade damper for flow adjustment (inside the coupling sleeve)

Product models

Product model	Code	Description
Diffuser integrated in front panel, 600×600 mm	TCM/B	Sizes 100, 125, 160, 200, 250 and 315 are available integrated in a steel panel for installation in a modular 600×600 mm suspended ceiling. The external dimensions of the front panel are 595×595 mm.
Diffuser integrated in front panel, 450×450 mm	TCM/C	Sizes 100, 125 and 160 are available integrated in a steel panel for installation in a modular 450×450 mm suspended ceiling. The external dimensions of the front panel are 445×445 mm.
Diffuser integrated in front panel, 670×670 mm	TCM/D	Sizes 100, 125, 160, 200, 250 and 315 are available integrated in a steel panel for installation in a modular 675×675 mm suspended ceiling. The external dimensions of the front panel are 670×670 mm.

Function



Supply air is divided into several jets through the cones.

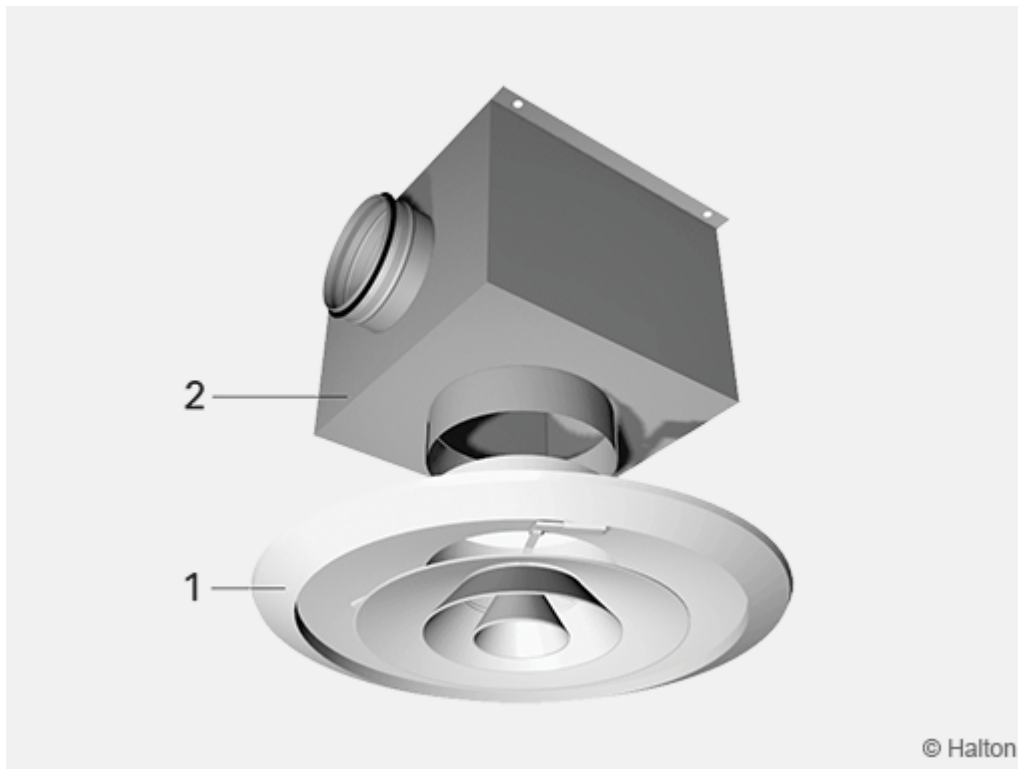
The divergent sections of the diffuser create negative pressure below the diffuser so room air is induced into the supply air device. Room air and supply air mix.

This internal induction reduces temperature and the air velocity into the space.

The process is the same outside the diffuser between the supply and mixed room air, with external induction further reducing velocity and the temperature difference between supply and room air. This effect reduces the flow disturbances.

The diffuser can also be used as an exhaust unit.

Installation



Code description

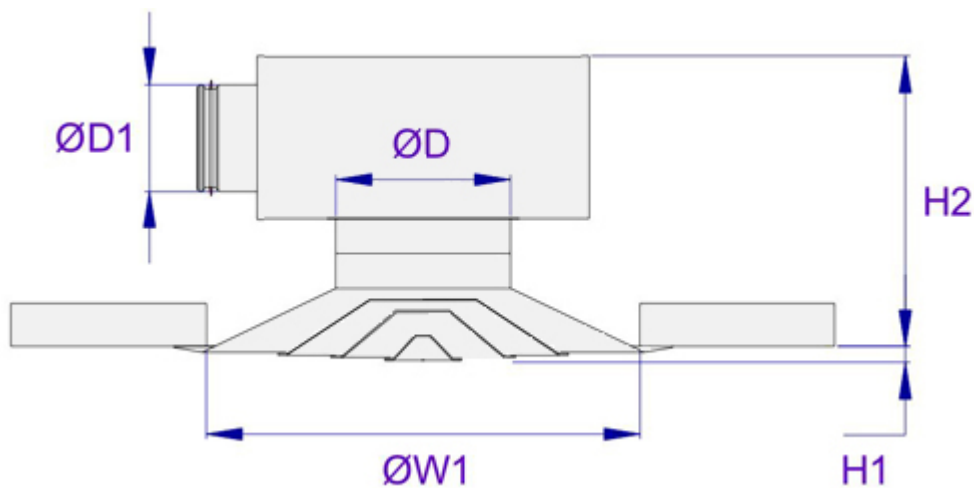
1. TCM
2. TRH plenum

The Halton TCM diffuser can be installed flush with a suspended ceiling or fully exposed in the space.

The diffuser is connected either directly to the duct or using a Halton TRH plenum or Halton TRI balancing plenum.

When it is connected directly to ductwork, a safety distance of minimum 3D upstream of the diffuser should be maintained.

Installation with plenum Halton TRI or TRH



TCM	ØD	TRI	H1	H2
100	100	TRI-100-100	17	249...279
125	125	TRI-125-125	17	279...309
160	160	TRI-160-160	17	312...342
200	200	TRI-200-200	22	377...407
250	250	TRI-250-250	27	394...424
315	315	TRI-315-315	27	494...524

When the Halton TRI spigot is installed in the plenum, the H2 dimension can be reduced by 60 mm.

Dimensions of ceiling opening

NS	ØW1
100	266
125	266
160	266
200	406
250	533
315	533
355	787
400	787
450	787

Adjustment

The airflow rate can be adjusted and measured only when the diffuser is installed.

In order to enable airflow adjustment and measurement of airflow rate, it is recommended that the diffuser be connected to a plenum equipped with the MSM module.

The supply flow rate is determined using measurement and adjustment module MSM.

Detach the conical central core and pass the tubes and control spindle through the diffuser. Measure the differential pressure with a manometer. The flow rate is calculated using the formula below.

Adjust the airflow rate by rotating the control spindle until the desired setting is achieved.

Lock the damper position with a screw.

Replace the tubes and spindle in the plenum and push the conical central core back into place.

**The k-factors for installations with different safety distances
(D = duct diameter)**

TRH/TRI	>8xD	min 3xD
125	9.9	12.6
160	16.9	21.9
200	28.3	31.0
250	47.9	51.5
315	78.6	

Airflow adjustment damper DD

The airflow rate is adjusted by turning the damper blades behind the diffuser with a screwdriver. The measurement is carried out when the diffuser is installed.

Servicing

Remove the conical central core by gently drawing it out by the central panel (simultaneously, a small pin on the inner side of the external cone is pushed and the assembly is turned clockwise, until it comes free).

Clean the parts by wiping them with a damp cloth.

Push the conical central core back into place so that the springs lock.

Option: with balancing plenum Halton TRI + MSM or TRH +

MSM

Remove the measurement and adjustment module by gently pulling the shaft (not the control spindle).

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

Reassemble the measurement and adjustment module by pushing the shaft until the module meets the stopper.

Push the conical central core back into place so that the pin locks.

Specification

The diffuser comprises several cones, made of epoxy-painted steel with a white (RAL 9003) standard colour.

The diffuser is suitable for exposed installation or installation flush to the ceiling.

The diffuser is connected to the ductwork using a Halton TRI balancing plenum, which utilises polyester fibre with a washable surface as sound attenuation material.

Option

The diffuser is connected to the ductwork using a Halton TRH plenum, which utilises mineral wool as sound attenuation material.

The plenum comprises an airflow measurement and adjustment module.

The diffuser is suitable for installation in 450×450 mm, 600×600 mm and 675×675 mm false ceilings.

The conical central core is removable.

The supply air pattern is radial in an angle of 360 degrees.

Order code

TCM-D, WS-CO-ZT

D = Connection size

100, 125, 160, 200, 250, 315, 355, 400, 450

Other Options and Accessories

WS = Width of suspended ceiling tile

N	Standard
450	450×450
600	600×600
675	675×675

CO = Colour

SW	White
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X	Special colour
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ZT = Tailored product

N	No
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Y	Yes (ETO)
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Sub products

TRH	Plenum (Ceiling Diffusers)
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TRI	Plenum (Diffusers)
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DD	Airflow adjustment damper
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LD	Airflow adjustment damper
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Code example

TCM-100, WS=N,CO=SW,ZT=N