

Private: Halton TCI

Introduction

TCI

Conical Ceiling Diffuser

- Horizontal air supply, suitable also for exhaust
- Cooling applications with supply/room air temperature difference as low as -18°C
- Installation flush to the ceiling or exposed
- Circular duct connection with rubber gasket
- Detachable cone module, enabling the cleaning of the diffuser and ductwork

Product Models & Accessories

- Models integrated in a panel for installation in modular suspended ceilings with dimension options of 600 x 600 or 675 x 675 mm

- Balancing plenum with airflow adjustment function (PLC) or even with measurement function (TRI)
- Adjustment module for balancing of the airflow

Dimensions

DIMENSIONS

NS	ØW	H	H1	ØD
125	330	75	22	124
200	457	90	38	199
315	610	100	60	314
355	863	135	78	354
400	863	116	78	399

Material

MATERIAL AND FINISHING

PART	MATERIAL	FINISHING
Diffuser	Steel	Epoxy-painted / White RAL 9010 or Grey RAL 7004, 50% gloss
Plenum	Galvanised steel	

Accessories

ACCESSORIES

ACCESSORY	CODE	DESCRIPTION
Balancing plenum with airflow measurement and adjustment unit	TRI/N	For balancing, equalising the airflow
Plenum	PLC	Plenum for duct connection (with or without insulation)
Sound attenuation	IN	Polyester fibre as sound attenuation material in the TRI plenum Mineral wool as sound attenuation material in the PLC 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 airflow adjustment (inside the coupling sleeve)

Product Models

PRODUCT MODELS

PRODUCT MODEL	CODE	DESCRIPTION
Diffuser integrated in front panel, 600 x 600 mm	TCI/B	Sizes 125, 200 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 mm x 595 mm.
Diffuser integrated in front panel, 670 x 670 mm	TCI/C	Sizes 125, 200 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 mm x 670 mm.

Function

FUNCTION

Supply air is divided into several jets through the cones.
Room air is induced into the supply air device. Room air and supply air mix.

The diffuser can also be used as an exhaust unit.

Installation

INSTALLATION

The TCI 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 PLC plenum or 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 TRI or PLC

TCI	ØD	TRI	ØW1	H	H1
125	125	TRI-125-125	266	273...303	22
200	200	TRI-200-200	406	379...409	38
315	315	TRI-315-315	533	499...529	60

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

TCI	ØD	PLC	ØW1	H	H1
125	125	PLC-125	266	300...330	22
200	200	PLC-200	406	405...435	38
315	315	PLC-315	533	565...595	60
355	355	PLC-355	787	600...630	78
400	400	PLC-400	787	581...611	78

Adjustment

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 using a manometer. The airflow rate is calculated using the formula below.

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

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.

k factor for installations with different safety distances (D= duct diameter)

PLC/TRI	>8XD	min 3XD
125	9.9	12.6
200	28.3	31.0
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

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 TRI + MSM or PLC + MSM

Remove the measurement and adjustment module by pulling gently on 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 pins lock.

Specification

SUGGESTED SPECIFICATIONS

The TCI diffuser shall comprise several cones, made of epoxy-painted steel with a white (RAL 9010) or grey (RAL7004) standard colour.

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

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

Option

The diffuser shall be connected to the ductwork using a PLC plenum, which utilises mineral wool as sound attenuation material.

The plenum shall comprise an airflow measurement and adjustment module.

The diffuser shall be suitable for installation in 600×600 mm and 675×675 mm false ceilings.
The conical central core shall be removable.

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

Product Code

PRODUCT CODE

TCI-D

D = Connection size

125, 200, 315, 355, 400, 450

Specifics and accessories

WS = Width of suspended ceiling tile

N Standard

600 600×600

675 675×675

CO = Colour

W White

G Grey

Code example

TCI-125, WS=N, CO=W, ZT=N

Sub products

PLC Plenum (Ceiling Diffusers)

TRI Plenum (Diffusers)

DD Airflow adjustment damper

LD Airflow adjustment damper