

# Halton TRI – Plenum for diffusers



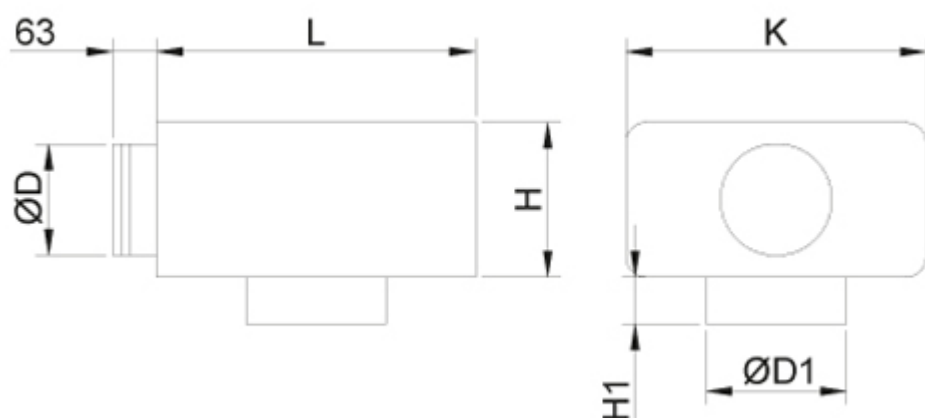
## Overview

- Plenum for connecting ceiling diffuser/exhaust unit to ductwork
- Ensures proper function of the supply air diffuser
- Airtight, robust construction with aesthetically pleasing design
- Flexibility for levelling diffuser elevation
- Detachable measurement and airflow rate adjustment module
- Effective sound attenuation
- Access for ductwork cleaning

## Product models

- Model for active diffusers

# Dimensions and weight



NS	L	H	H1	K	ØD	ØD1
100/100	308	152	67	282	99	102
100/125	308	152	67	282	99	127
100/160	308	152	67	282	99	162
125/125	458	182	67	432	124	127
125/160	458	182	67	432	124	162
125/200	458	182	67	432	124	202
125/250	458	182	67	432	124	252
160/160	458	222	67	432	159	162
160/200	458	222	67	432	159	202
160/250	458	222	67	432	159	252
200/200	618	272	67	592	199	202
200/250	618	272	67	592	199	252
200/315	618	272	67	592	199	317
200/400	618	272	67	592	199	402
250/250	618	336	67	592	249	252
250/315	618	336	67	592	249	317
250/400	618	336	67	592	249	402
315/315	618	382	67	592	314	317
315/400	618	382	67	592	314	402

# Weight

## Halton TRI/S + MSM

NS	Weight (kg)
100/125	2.19
100/160	2.30
125/125	4.04
125/160	4.05
125/250	4.19
160/160	4.40
160/200	4.60
160/250	4.55
200/200	9.39
200/250	9.62
200/400	9.67
250/250	10.76
250/315	10.90
250/400	11.09

# Material

Part	Material	Note
Casing	Galvanised steel	–
Collar	Galvanised steel	–
Attenuation material	Polyester fibre	–
Spigot with gasket	Galvanised steel	Gasket rubber compound
Measurement and adjustment module MSM/MEM	<b>Body:</b> Aluminium <b>Plate:</b> Galvanised steel <b>Brackets:</b> Galvanised steel <b>Plastic parts:</b> Polypropylene (PP) <b>Spindle:</b> Stainless steel	–
Junction box	Plastic	–
Hanging and safety wire	Steel	–

# Accessories

Accessory	Code	Description
Airflow measurement and adjustment unit	MSM	Adjustment and measurement module for supply airflow rate
Airflow adjustment unit	MEM	Adjustment module for exhaust airflow rate
Sound attenuation	IN	Internal sound attenuation material of polyester fibre

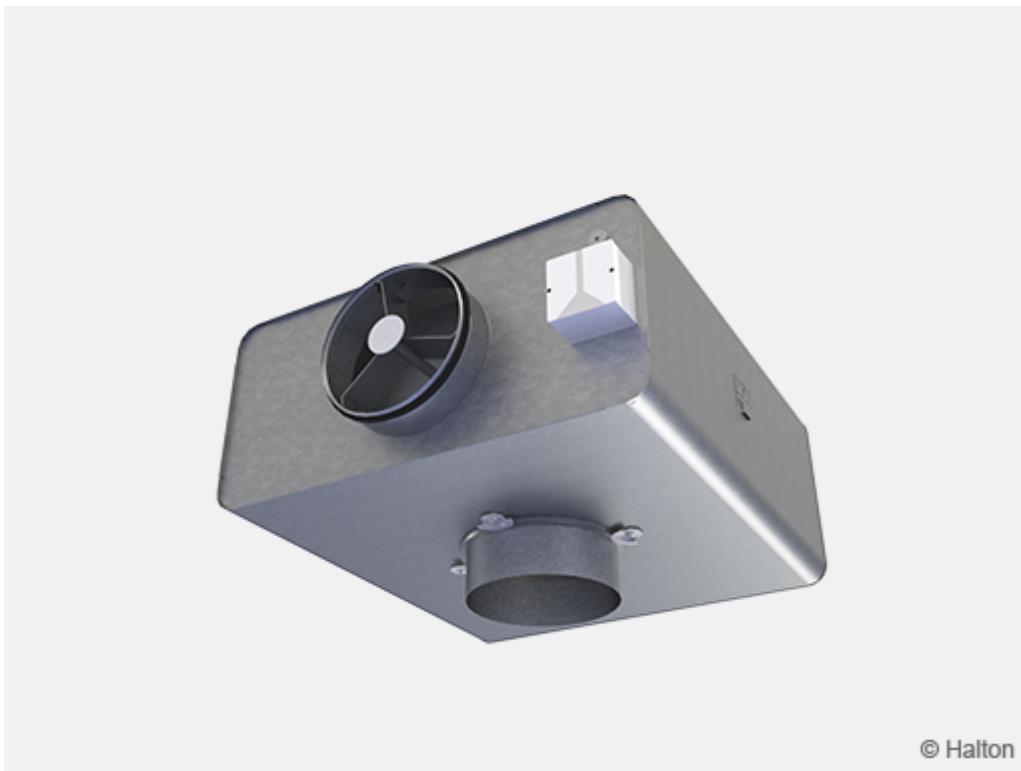
# Product models

Model	Description
TRI/S	Balancing plenum for supply air with adjustment and measurement module MSM and internal sound attenuation material
TRI/E	Balancing plenum for exhaust air with adjustment module MEM and internal sound attenuation material
TRI/N	Balancing plenum for supply or exhaust air without adjustment and measurement module and internal sound attenuation material
TRI/V	Balancing plenum for active supply air diffusers with adjustment and measurement module MSM and internal sound attenuation material. Available only for sizes 160-160, 200-200 and 250-250.



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**Fig.1.** Halton TRI/S, E and N



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**Fig.2.** Halton TRI/V

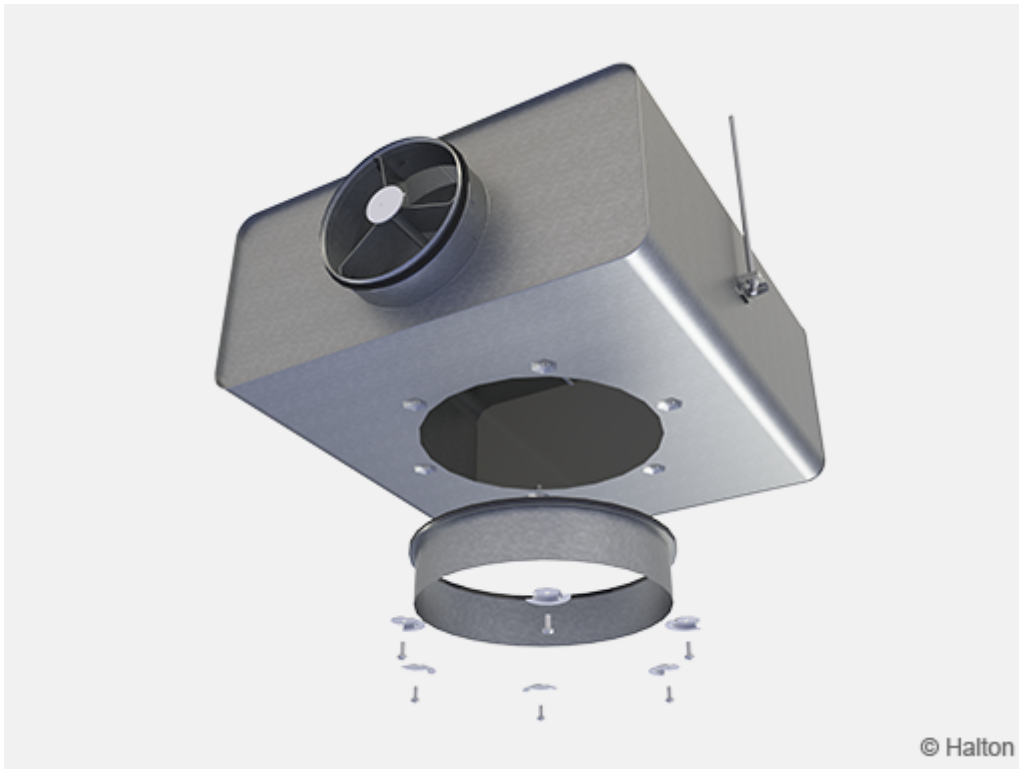
# Function



- Halton TRI balancing plenum equalises the airflow by reducing the flow velocity
- Air is spread evenly into the diffuser ensuring proper function
- A range of diffusers can be connected to the distribution ductwork using Halton TRI-plenum, which improves their functional characteristics considerably
- The balancing plenum also attenuates duct noise
- Halton TRI plenum can also be used as an exhaust unit.

The technical performance is presented for installation with the collar connected outside (Halton TRI-(N)) the balancing plenum.

# Installation



Halton TRI plenum can be installed using two strips or with M8 drop rods (not supplied).

Halton TRI is connected to the distribution ductwork with a spigot equipped with an integral gasket.

Due to the modular collar system, the diffuser can be connected to the plenum in three different ways:

- The collar connected to the outside of the plenum box
- The collar mounted internally
- Directly to the plenum without collar (possible only in limited cases).

In order to change the connection method, the collar is detached by opening the brackets and the collar is remounted into the desired position.

## Halton TRI/V

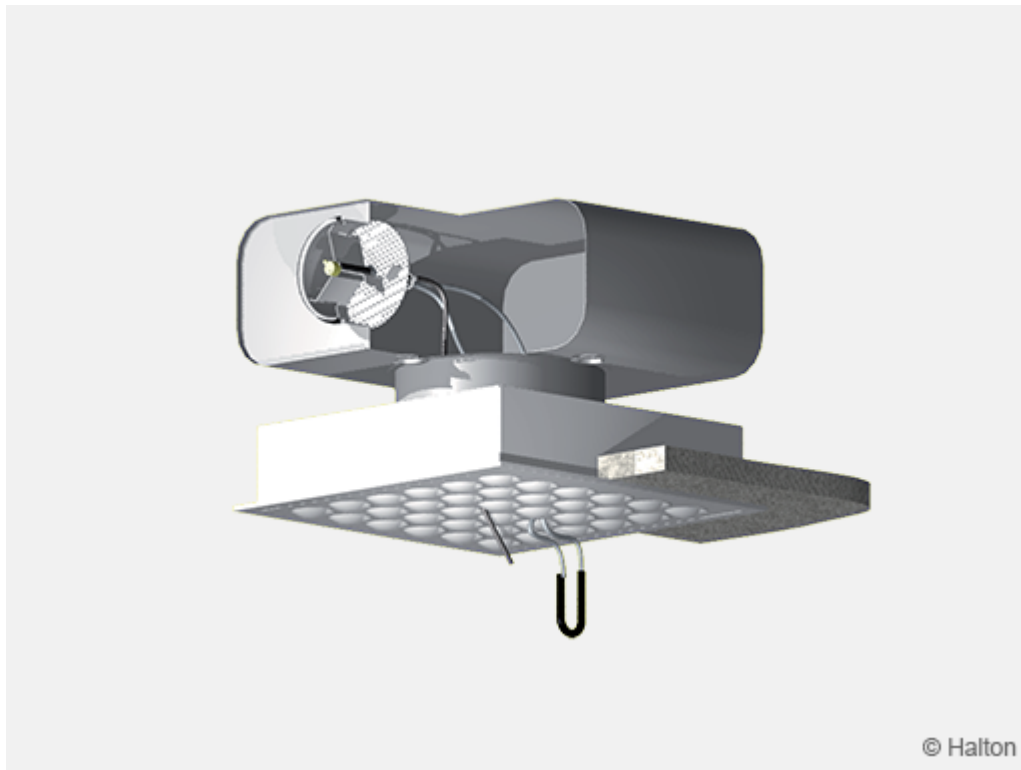
The Halton TRI/V is connected to the ventilation ductwork with a male inlet connection. After the ductwork pressure test, the diffuser can be installed.

Hang the diffuser to the wire of the Halton TRI/V plenum.  
Connect the actuator cable connector plug to the plug from the plenum junction box.

Fix the actuator assembly to the plenum and tighten two screws.  
The power supply and control signal cables are connected to junction box according to the

diffuser's wiring instructions.

## Adjustment



The supply flow rate is determined by using the measurement and adjustment module MSM. The tubes and control spindle are passed through the diffuser. Measure the differential pressure with a manometer. The flow rate is calculated using the formula below:

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

$\Delta p_m$  Measured pressure [Pa]

$k$  The k factor given as a function of mounting and diameter

$q_v$  Airflow rate [l/s]



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

TRI	> 8xD	min. 3xD
100	6.0	7.5
125	9.9	12.6
160	16.9	21.9
200	28.3	32.0
250	47.9	51.5

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 into the plenum.

When Halton TRI is used for exhaust air, it is not possible to measure airflow rate with adjustment module MEM.

## Servicing

Open or detach the diffuser. Detach the measurement and adjustment module by pulling gently from the casing (not from the control spindle or measurement tubes). Wipe the parts with a damp cloth, instead of immersing in water.

The measurement and adjustment module is remounted by pushing the body until it meets the stopper.

The sound attenuation material within the plenum can also be removed (the material is washable), to enable cleaning of the inner side of the plenum.

The material is detached by releasing the retaining brackets, which are replaced after washing.

Close or replace the diffuser after cleaning.

## Specification

The balancing plenum is made of galvanised steel and has a robust and airtight construction. The airflow rate measurement and adjustment module are available for supply application. The measurement and adjustment module is adjustable without opening the device.

The balancing plenum has a spigot with integral gasket for airtight duct connection and a plug for ductwork pressure testing.

The balancing plenum attenuates duct noise. The sound attenuation material is made of polyester fibre with a washable surface.

# Order code

## TRI/S-D-E; AC-ZT

### S = Model

S Supply (MSM-module,sound attenuation)

E Exhaust (MEM-module,sound attenuation)

N Naked (Model without MSM or MEM-module,sound attenuation)

V Demand based model for active diffusers  
(only sizes 160-160, 200-200 and 250-250)

### D = Duct connection size (mm)

100, 125, 160, 200, 315

### E = Diffuser connection size (mm)

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

## Other options and accessories

### AC = Accessories

MSM Measurement and adjustment module, supply

MEM Adjustment module, exhaust

MS1 MSM with adjusting spin.L=1500

ME1 MEM with adjusting spin.L=1500

IN Sound attenuation material

### ZT = Tailored product

N No

Y Yes (ETO)

## Code example

TRI/S-100-100; ZT=N