

Halton TSB – Swirl diffuser (terminated)



Overview

Terminated as of 1st July 2023
-> replaced with Halton Jaz JWC

- Horizontal air supply
- Suitable for supply and exhaust
- Ceiling integration installation
- Supply air jet velocity is effectively reduced due to high mixing effect
- Suited for installation in a modular 600×600 mm suspended ceiling
- Circular duct connection with rubber gasket
- Openable front panel enables cleaning of the terminal unit and supply ductwork.

Accessories

- Balancing plenum with measurement and adjustment functions

Quick selection

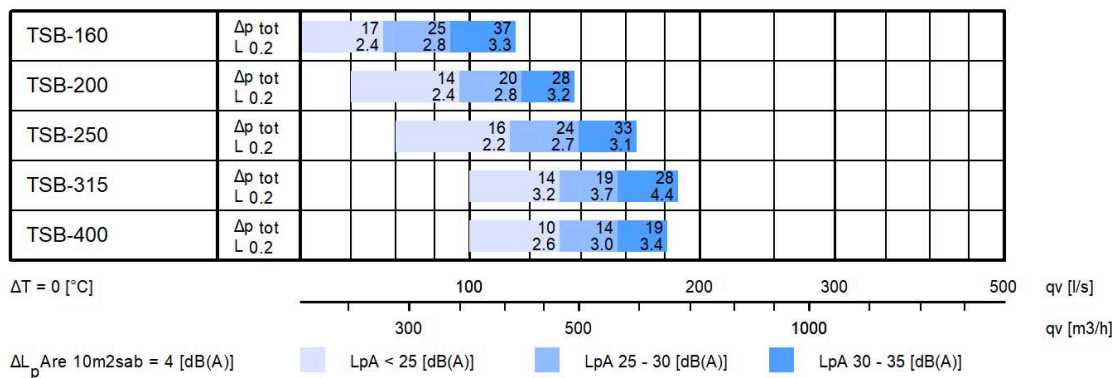


Fig.1. Halton TSB

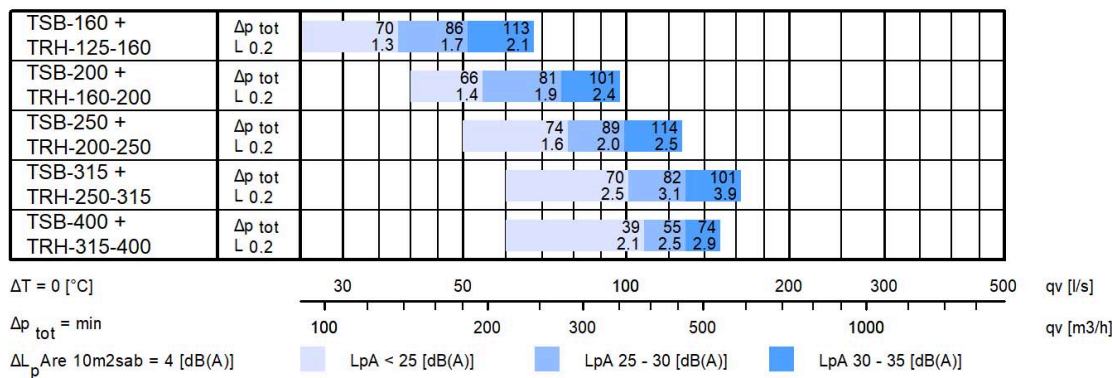
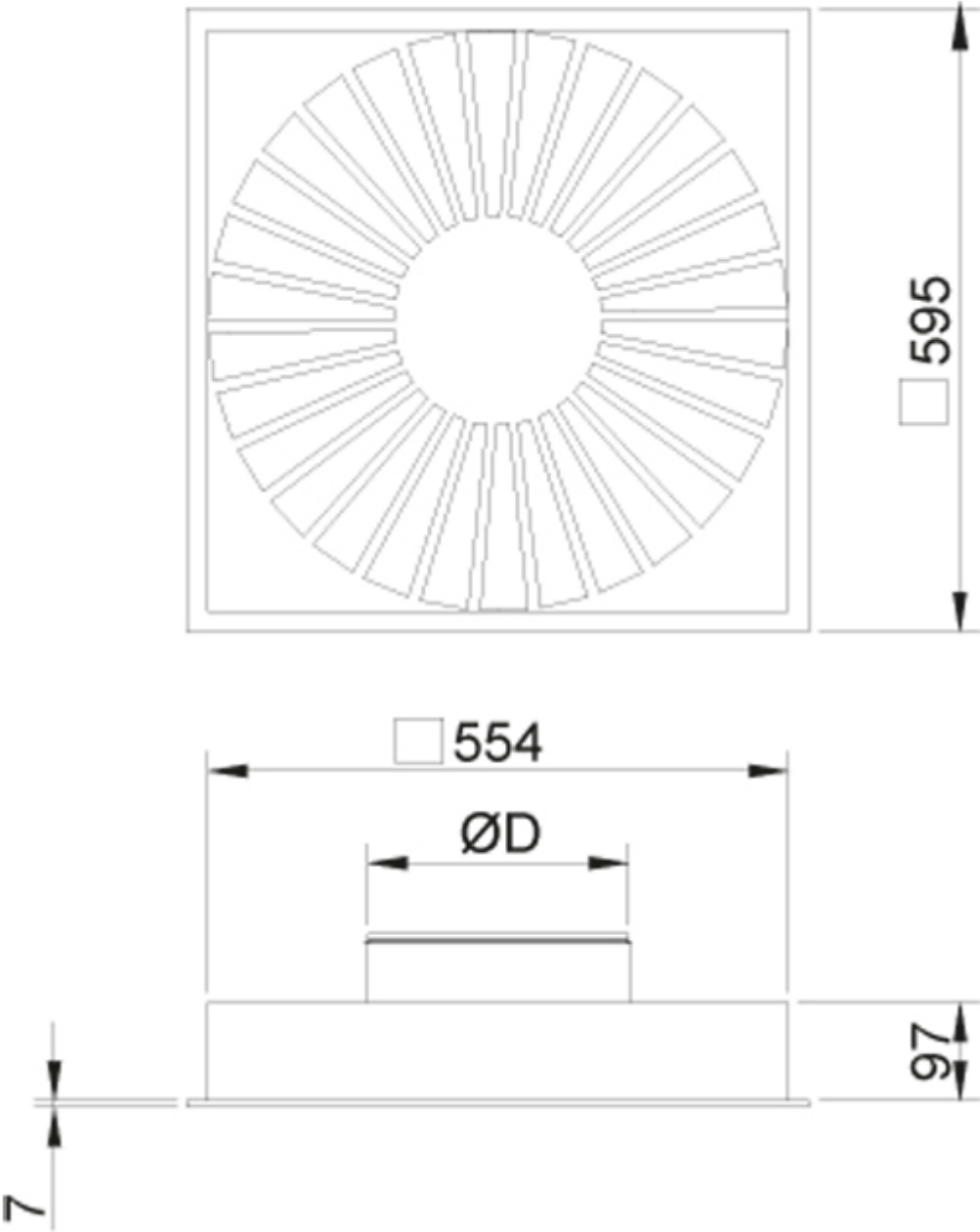


Fig.2. Halton TSB

with Halton TRH plenum

Dimensions



NS	ØD
160	159
200	199
250	249
315	314
400	399

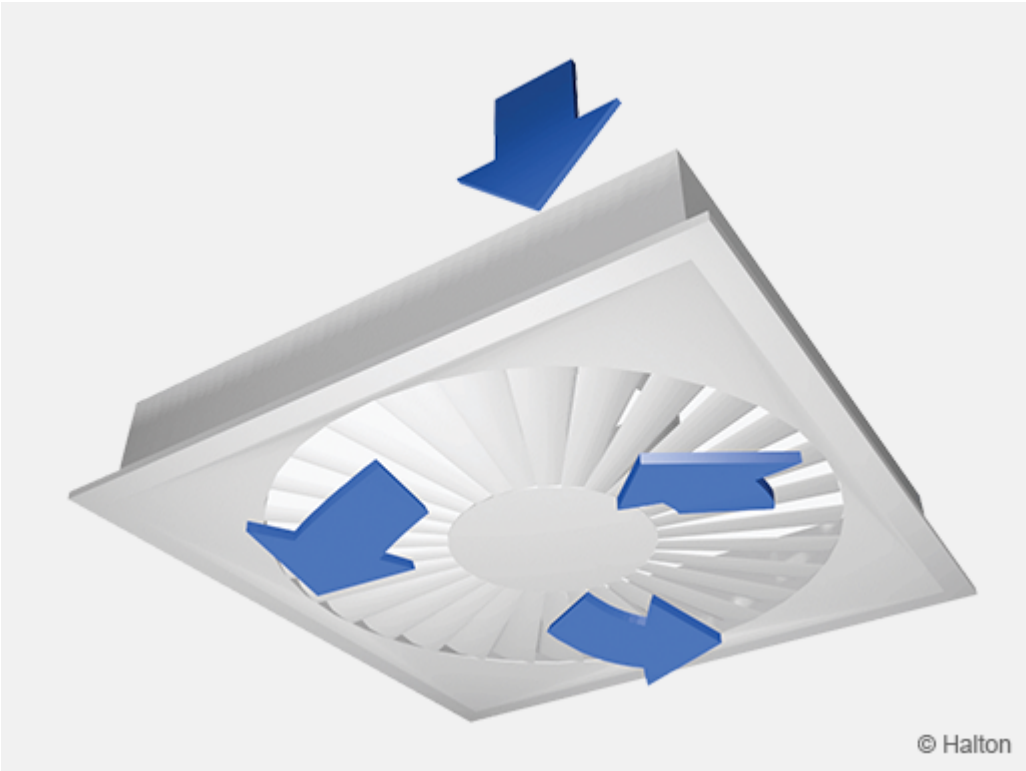
Material

Part	Material	Note
Casing	Galvanised steel	
Front panel	Steel	
Coupling sleeve	Galvanised steel	
Duct gasket	Rubber compound	
Finishing	Epoxy-painted / White (RAL 9003)	Special colours available

Accessories

Accessory	Code	Description
Balancing plenum	TRI	For balancing, equalising the airflow and attenuating the duct noise
Balancing plenum	TRH	For balancing, equalising the airflow and attenuating the duct noise

Function

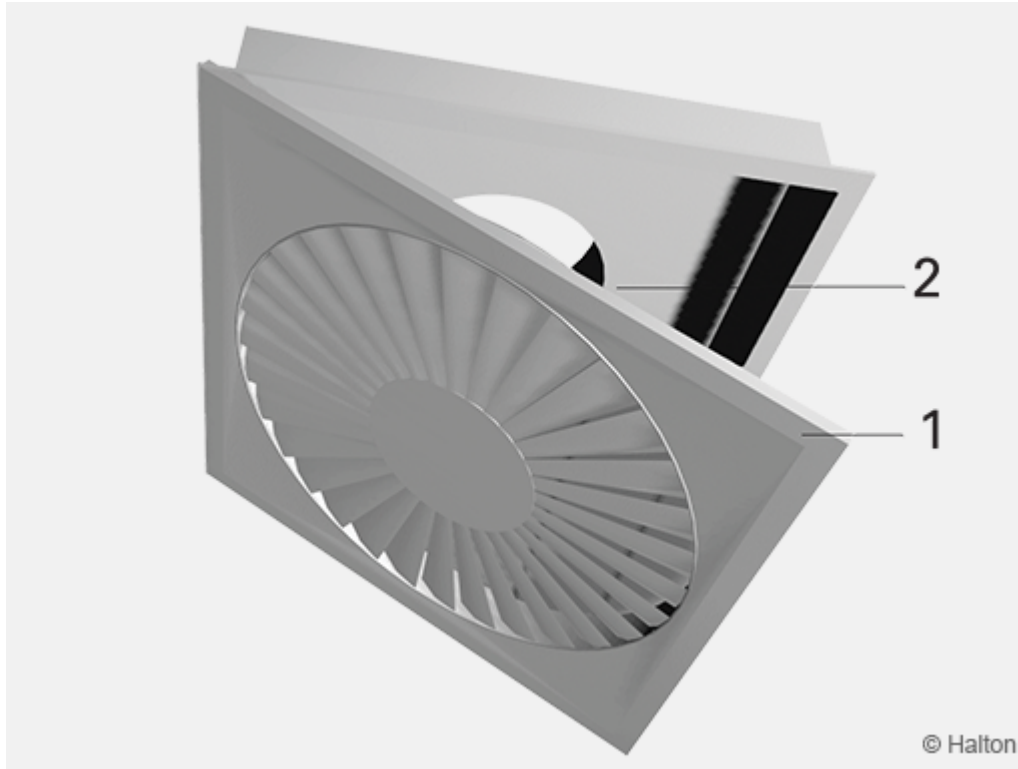


Horizontal radial swirl jet air is supplied into the space through the profiled spiral blades of the

diffuser. Supply air jet velocity is effectively reduced due to the high mixing effect.

Halton TSB can also be used as an exhaust unit.

Installation



Code Description

- 1. Front panel
- 2. Casing

The Halton TSB diffuser is connected either directly to the duct by screwing or by riveting or alternatively to the Halton TRI balancing plenum.

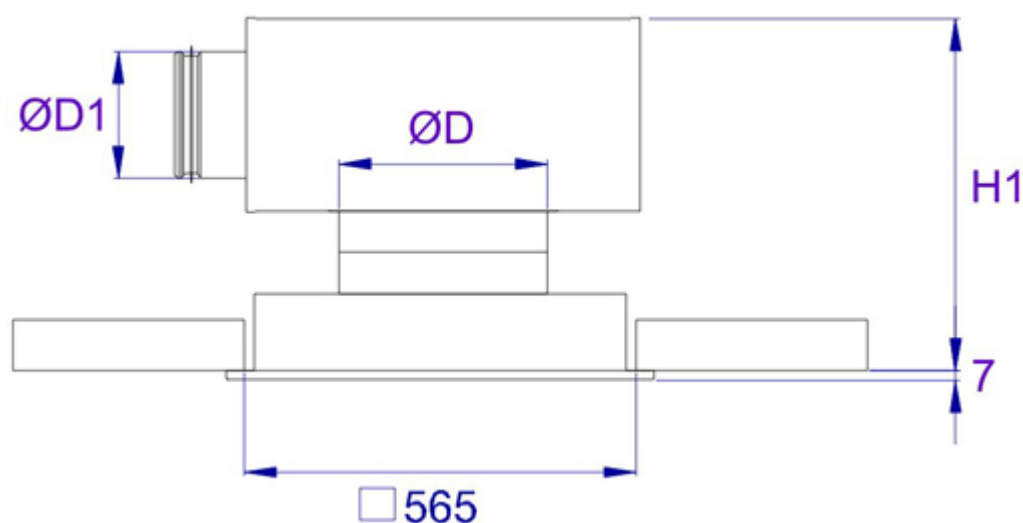
Detach the front panel by pulling it gently down and let it hang by its hinges.

Direct the flow pattern in the desired directions by installing deflector panel on the perforated front panel.

Reattach the front panel by swinging up and pushing until the springs lock.

The recommended minimum safety distance upstream of the diffuser is $3 \times D$.

Installation with plenum



The collar of the Halton TRI plenum can be installed either internally in the plenum or externally onto the bottom of the plenum. The height of the unit is presented in the table below for the external installation. When the collar sleeve is installed internally, the total height H is reduced by 60 mm.

Note: The technical performance for the combination of supply air diffuser and plenum is presented separately for the two different installations.

TSB,(ØD)	ØD1	TRI	H
160-600	160	TRI-160-160	383 – 433
200-600	160	TRI-160-200	383 – 433
200-600	200	TRI-200-200	433 – 483
250-600	200	TRI-200-250	433 – 483
250-600	250	TRI-250-250	497 – 547
315-600	250	TRI-250-315	497 – 547
315-600	315	TRI-315-315	543 – 593
400-600	250	TRI-250-400	497 – 547
400-600	315	TRI-315-400	543 – 593

Adjustment

The Halton TSB itself has no means for airflow adjustment.

In order to enable airflow adjustment and measurement of airflow rate it is recommended that the diffuser be connected to the Halton TRI balancing plenum.

The supply flow rate is determined by using the MSM measurement and adjustment module. Open the front panel and pass the tubes and control spindle through the diffuser front panel. Replace the front panel. Measure the differential pressure using a manometer. The flow 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 replace the diffuser front panel.

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

TRI	> 8 x D	min 3 x D
160	16.9	21.9
200	28.3	31.0
250	47.9	51.5
315	78.6	–

Servicing

Detach the front panel of the diffuser by gently pulling it down and let it hang by its hinges. Wipe the parts with a damp cloth. Push the front panel back into place so that the springs lock.

Option with balancing plenum

Remove the measurement and adjustment module by gently pulling out the shaft (NB. not the control spindle or measurement tubes!). Wipe the parts with a damp cloth instead of immersing in water. Remount the measurement and adjustment module by pushing in the shaft until the module meets the stopper. Push the front panel back into place so that the springs lock.

Specification

The swirl diffuser is made of epoxy-painted steel with a white (RAL 9003) colour. The swirl diffuser comprises fixed spiral blades to ensure high mixing rate.

Alternative 1; no balancing plenum

The diffuser has a galvanised steel casing with a spigot with integral gasket for connection to the circular duct.

The diffuser has a detachable perforated front panel to provide access to the duct.

Alternative 2; option with balancing plenum

The diffuser is connected to a balancing plenum equipped with a measurement and adjustment module.

The diffuser has a detachable perforated front panel to provide access to the measurement and adjustment module in the plenum.

The balancing plenum has a spigot with integral gasket for airtight duct connection.

The balancing plenum comprises sound attenuation material made of polyester fibre with a washable surface.

Order Code

TSB-D; CO-ZT

D = Connection size

160, 200, 250, 315, 400

Other Options and Accessories

CO = Colour

SW White (RAL 9003)

X Special colour

ZT = Tailored product

N No

Y Yes (ETO)

Sub products

TRI Plenum (Diffusers)

Code example

TSB-160, CO=SW, ZT=N